# British Lichen Society Bulletin no.130
# Summer 2022

Welcome to the Summer *Bulletin* and look forward to news of lichen hunting and discovery, eye-catching photographs and several articles to put your brain into top gear.

I have been particularly struck in this issue by the meeting of the worlds of old and new; at the turn of the year the lichen world lost two of its major players. Most of you will be familiar with Frank Dobson and a good number will have been fortunate enough to have known Peter Lambley as a friend and colleague. Tributes to each of these men, who contributed so very much to the Society over many years, appear in this *Bulletin*. Yet to lessen the sadness we feel, here you can enjoy a rich and varied compilation of articles from a new cohort of lichenologists working in both the north and the south of the country.

There is a dedicated commemoration programme planned to celebrate Frank Dobson's hugely valuable contribution to lichenology and you can read about this on page 130. Personally I feel that Frank will be beside us for many, many years to come as groups working in the field ferret about in a rucksack to the tune of "Where's the Dobson? Have you got one?"

Be sure you don't miss the **Closing Down Sale** at the back of the *Bulletin* as there are some really good bargains available until the end of July. You'll need to hurry before Graham Boswell and Eluned Smith turn up in a van at the Richmond Publishing Co. premises to carry away all the stock! If anyone can house a set of, say, 50 of the beautiful Clare Dalby posters please get in touch with the secretary at ehsbiol@hotmail.co.uk so they can continue to be kept for distribution in the future.

I am delighted that our busy president has been able to find the time to produce a comprehensive report of the recording meeting held at Rydal Park, Westmorland in 2019, and in addition I must draw your attention to some brilliant research articles in this issue ranging from original work on the true nature of cilia and rhizines, and an analysis of churchyard surveys through to exciting discoveries of lichenicolous fungi in the New Forest.

The Education & Promotions Committee as well as regular online Zoom meetings have encouraged members to get together in the field as well as virtually and recently a new group, "Lichens in South-east Scotland or LISS", was formed. You will find details of local group meetings quite easily now on the improved website under Upcoming Events on the home page. Currently there are more active groups in the north of the British Isles than those in the south so I am throwing down the gauntlet to any members in the south who might like to start a local group – all you need is two people to get started and there's a working group set up to help and encourage you. Just get in touch with education-promotion@britishlichensociety.org.uk.

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Merveille du jour, a master of camouflage, on lichens on an oak at Holne Woodlands, SSSI, Dartmoor National Park. Photo © Nicola Bacciu

# 1st Meeting of Cennau Cymru 14.11.21
# Castell y Bere, Dysynni Valley, Merionnydd (SH668087)

The first meeting of Cennau Cymru (loosely translates to Wales' Lichens) was held on 14 November 2021, at Castell y Bere in Meirionnydd (VC 48); a beautiful coastal and mountainous region of Wales. Castell y Bere is managed by the Welsh Government's historic environment service CADW. It is not a large site, with just the castle and wooded grounds below.

The castle was constructed by Llewelyn the Great in the 1220s, in the Upper Dysynni Valley on an elongated rock plateau, and was the last Welsh castle to fall to the English, in 1283 by King Edward. The site seemed a fitting place to hold our first meeting and was fairly central, just into North Wales.
Castell y Bere occupies a lofty position looking Southwest down the Dysynni Valley to Bird Rock, the only inland Cormorant breeding site which many moons ago was a coastal cliff, and on to Aber Dysynni opening into Cardigan Bay 10 miles away. Northeast Castell y Bere looks up to the massif of Cadair Idris, standing at 893m.

## Geology

The castle building is built on a felsic tuff (volcanic ash deposit with a high silica content) with the area immediately to the east (still within the site) being mudstone and siltstone deposits. All these rocks were deposited in the Caradoc period of the Ordovician system. The tuff being dated 449–458Ma (million years ago) and the mudstone and siltstones 453–458Ma. At this time this part of Wales was part of an extensive marine basin known as the Welsh Basin, into which sediments were

deposited. During this time there were several episodes of volcanism with the debris from these eruptions being interbedded within the mudstones and siltstones.
During a family walk in 2005, I had recorded *Pectenia atlantica* and *Dermatocarpon miniatum* on a rock seepage, just below the castle. Visiting again in 2019, no trace was found of the *Pectenia*, despite careful searching of the same rock seepage. The *Dermatocarpon* remained, with several other nice finds (see records below). Janet Simkin kindly supplied the only existing records for the site – just my 2 records from 2005 (I had not yet submitted my 2019 records. Whoops!) Clearly it was time for a more thorough recording visit!

Joining the first meeting were Steve Chambers, Raymond Griffiths, Susan Hepplewhite, Tracey Lovering, Annie Seddon, Eric and Mary Steer, Bob Kemp and Mark Stevens (the last 4 joining us from the Shropshire lichen group).

We had a wonderful day out together at this beautiful site, recording a range of species found within seepages on siliceous outcrops and inland cliff, castle walls and mossy mortar, old oaks, ash, soil pockets, stumps, and timber.

Interesting finds included new VC48 records *Catillaria atomarioides* (LC NS), *Muellerella lichenicola* {LF} (LC) and second VC48 records of *Caloplaca arenaria* (LC NS) and *Melaspilea interjecta* (DD NR Sc IR). Rock seepages and the castle walls provided the main interest; *Pectenia atlantica* (LC L IR) was re-found on an internal castle wall rock

seepage, along with *Nephroma laevigatum*. Lichens with photobiont *Nostoc* were prominent with *Collema auriforme, C. crispum* var. *crispum, C. flaccidum, C. furfuraceum,*

*Collema furfuraceum*

*C. subflaccidum,* and *C. tenax* var. *tenax, Leptogium cyanescens*, *L. lichenoides*, *L. pulvinatum* and *L. teretiusculum, Nephroma laevigatum, N. parile, Pectenia atlantica*, *Peltigera horizontalis, Peltigera hymenina*, *Peltigera praetextata*, *Sticta canariensis (dufourii)* and *Sticta ciliata*. All of these benefit from the position Castell y Bere holds on a rocky promontory receiving moisture laden Atlantic Ocean air sweeping up through the Dysynni valley from Cardigan Bay. The species recorded on the day are also indicative of the long ecological continuity of the site.
In April 2022 Steve Chambers re-visited Castell y Bere and found two further healthy colonies of *Pectenia atlantica* at both the W-end and S-side of the castle on flushed rockfaces. Good news!

## Context for Cennau Cymru in Wales

Natural Resources Wales (NRW) considers only lichen records post 2000 when responding to development proposals. This presents a big problem in assessing the potential impact of proposals, as even some common species have few records in some

VCs since 2000! Other notable records may not have been revisited or re-recorded since 2000. The importance of submitting records as soon as they are made is clear, but so easy to neglect as other life demands takeover.
The paucity of records post 2000, even for common species for some VCs, suggests a recording project for all in Wales, to look at records in their VC that have few or no repeated records since 2000. Lichen recording could be targeted to revisit sites supporting historic records of notable species: to check these species are still extant, and to target recording within further suitable habitat.

Castell y Bere

Cennau Cymru is well placed to target recording effort by including in its field programme interesting historic sites - to check if noted species are still present, as well as sites under recorded or not previously recorded.
Castell y Bere lies in the Dysynni Valley, a quiet pastoral landscape that would seem to be out of the radar of development threats. However, an intensive large chicken unit was given planning permission in recent years, despite there being a primary school in its vicinity. A parent told me that regulations would not allow the building of a school in such proximity to an intensive agricultural unit, however a loophole allows exactly this to be built at the same proximity to an existing school…How crazy is that?!

The table overleaf shows a selection of species recorded by Cennau Cymru at Castell y Bere on 14.11.21, with reference to existing VC 48 records held by the BLS since 2000. The number within brackets shows the number of actual sites species were recorded from, rather than the number of records collected within each site. It will be noted that many of these species are common and likely to be under recorded, rather than the number of sites reflecting the geographical distribution across VC48.

**Selection of species recorded at Castell y Bere against existing VC48 records**
*Species new to VC48 Meirionydd

| **Taxon name** | **VC 48 records since 2000 Number in brackets = no. of sites** | **Status** |
|---|---|---|
| *Caloplaca arenaria* | 1 | LC NS |
| *Catillaria atomarioides** | 0 | LC NS |
| *Clauzadea monticola* | 4 (3) | LC |
| *Collema crispum* | 3 (3) | LC |
| *Collema flaccidum* | 5 (4) | LC |
| *Collema subflaccidum* | 19 (10) | LC |
| *Collema tenax* var. *tenax* | 14 (7) | LC |
| *Dermatocarpon miniatum* | 3 (2) | LC |
| *Diplotomma alboatrum* | 7(7) | LC |
| *Enterographa hutchinsiae* | 12 (10) | LC |
| *Herteliana gagei* | 7 (6) | LC NS |
| *Hypotrachyna afrorevoluta* | 9 (6) | LC |
| *Hypotrachyna britannica* | 6 (5) | LC |
| *Leptogium pulvinatum* | 14 (3) | LC |
| *Melaspilea interjecta* | 1 | DD NR Sc IR |
| *Micarea denigrata* | 3 (2) | LC |
| *Muellerella lichenicola** | 0 | LC |
| *Pectenia atlantica* | 21 (5) | LC L IR |
| *Porina lectissima* | 10 (8) | LC |
| *Porpidia rugosa* | 8 (6) | LC |
| *Rinodina atrocinerea* | 3 (2) | LC |
| *Sticta canariensis (dufourii)* | 11 (5) | LC Sc L IR |
| *Sticta ciliata* | 13 (6) | LC NS |

Cetrelia olivetorum

Cennau Cymru group at Castell Bere

**Cennau Cymru species list for Castell y Bere 14.11.21** (codes as in BLS recording spreadsheet)
*Species new to VC48 Meirionydd

| **Taxon name** | **Status** | **Substrate** | **Small scale habitats** |
|---|---|---|---|
| *Agonimia tristicula* | LC | Sax | SMo; SWm |
| *Aspicilia caesiocinerea* | LC | Sax | SS; SCl; SOt |
| *Baeomyces rufus* | LC | Sax | SS; SOt |
| *Buellia aethalea* | LC | Sax | SS; SWm |
| *Caloplaca arenaria* | LC NS | Sax | SS; SCl; SOt |
| *Caloplaca flavescens* | LC | Sax | SWm |
| *Candelariella aurella* f. *aurella* | LC | Sax | SS; SWm |

| | | | |
|---|---|---|---|
| *Candelariella vitellina* f. *vitellina* | LC | Sax | SS; SWm |
| *Catillaria atomarioides** | LC NS | Sax | SS; SWm |
| *Cetrelia olivetorum* s. lat. | LC | Cort | CQp |
| *Cladonia furcata* subsp. *furcata* | LC | Sax | SS; SCl; SOt |
| *Cladonia macilenta* | LC | Lig | LTs |
| *Cladonia pyxidata* | LC | Sax | SS; SCl; SOt |
| *Cladonia ramulosa* | LC | Terr | SS; SWm |
| *Cladonia squamosa* var. *subsquamosa* | LC | Bry | SS |
| *Clauzadea monticola* | LC | Sax | SS; SWm |
| *Collema auriforme* | LC | Sax | Smo; SWm |
| *Collema crispum* var. *crispum* | LC | Sax | SS; SWm |
| *Collema flaccidum* | LC | Sax | SS; SCl; SOt |
| *Collema furfuraceum* | LC L | Sax | SS; SOt |
| *Collema subflaccidum* | LC | Cort | CFx |
| *Collema tenax* var. *tenax* | LC | Sax | SS; SWm |
| *Dermatocarpon miniatum* | LC | Sax | SS, SCI,SOt |
| *Diplotomma alboatrum* | LC | Sax | SS; SWm |
| *Evernia prunastri* | LC | Cort | CQp |
| *Flavoparmelia caperata* | LC | Cort | CQp |
| *Fuscidea cyathoides* var. *cyathoides* | LC | Sax | SS; SCl; SOt |
| *Fuscidea lygaea* | LC | Sax | S; SOt |
| *Graphis scripta* | LC | Cort | CFx |
| *Herteliana gagei* | LC NS | Sax | SS; SCl; SOt |
| *Hypotrachyna afrorevoluta* | LC | Sax | SS; SCl; SOt |
| *Hypotrachyna britannica* | LC | Sax | SS; SOt |
| *Lecanora albescens* | LC | Sax | SS; SWm |
| *Lecanora campestris* subsp. *campestris* | LC | Sax | SWm |
| *Lecanora chlarotera* | LC | Cort | CQp |
| *Lecanora gangaleoides* | LC | Sax | SS; SCl; SOt |
| *Lecanora polytropa* | LC | Sax | SS, SCI,SOt |
| *Lecidea fuscoatra* s. lat. | | Sax | SS; SWm |
| *Lecidella elaeochroma f. elaeochroma* | LC | Cort | CQp |
| *Lecidella scabra* | LC | Sax | SS; SWm |
| *Lepraria incana* s. lat. | | Sax | SS; SCl; SOt |
| *Leptogium cyanescens* | LC Sc IR | Sax | SS; SCl; SOt |
| *Leptogium lichenoides* | LC | Sax+Bry | SS; SCl; SOt |
| *Leptogium pulvinatum* | LC | Sax | SS; SWm |
| *Leptogium teretiusculum* | LC L* | Sax | SS; SCl; SOt |
| *Melanelixia fuliginosa* | LC | Sax | SS; SCl; SOt |
| *Melaspilea interjecta* | DD NR Sc IR | Sax | SS; SCl; SOt |
| *Micarea coppinsii* | LC NS | Sax | SS; SOt |
| *Micarea denigrata* | LC | Lig | Lig; LWT |

| | | | |
|---|---|---|---|
| *Micarea lignaria* var. *lignaria* | LC | Sax | SS; SWm |
| *Muellerella lichenicola (LF)** | LC | Lic | Z635 |
| *Nephroma laevigatum* | LC Sc L IR | Sax | SS; SOt |
| *Nephroma parile* | NT NR Sc | Sax | SS; SOt |
| *Normandina pulchella* | LC L* | Sax | SS; SCl; SOt |
| *Opegrapha atra* | LC | Cort | CFx |
| *Parmelia saxatilis* s. lat. | LC | Sax | SS; SCl; SOt |
| *Parmelia sulcata* | LC | Cort | CQp |
| *Parmotrema crinitum* | LC L | Cort | CQp |
| *Parmotrema perlatum* | LC | Cort | CQp; CUx |
| *Pectenia atlantica* | LC L IR | Sax | SS; SOt |
| *Peltigera horizontalis* | LC L* | Sax+Bry | SS;SOt |
| *Peltigera hymenina* | LC | Sax | SS; SCl; SOt |
| *Peltigera praetextata* | LC | Sax | SS; SOt |
| *Pertusaria albescens* var. *albescens* | LC | Cort | CQp |
| *Pertusaria aspergilla* | LC | Sax | SS; SCl; SOt |
| *Pertusaria leioplaca* | LC | Cort | CQp |
| *Placynthium nigrum* | LC | Sax | SS; SWm |
| *Porina lectissima* | LC | Sax | SS; SCl; SOt |
| *Porpidia cinereoatra* | LC | Sax | SS; SCl; SOt |
| *Porpidia rugosa* | LC | Sax | SS; SCl; SOt |
| *Porpidia tuberculosa* | LC | Sax | SS; SCl; SOt |
| *Protoblastenia rupestris* | LC | Sax | SS; SWm |
| *Pyrenula macrospora* | LC | Cort | CFx |
| *Rhizocarpon petraeum* | LC | Sax | SS; SWm |
| *Rinodina atrocinerea* | LC | Sax | SS; SCl; SOt |
| *Sticta canariensis (dufourii)* | LC Sc L IR | Sax | SS; SCl; SOt |
| *Stigmidium microspilum (LF)* | LC | Lic | CFx; Z533 |
| *Toninia aromatica* | LC | Sax | SS; SWm |
| *Trapelia glebulosa* | LC | Sax | SS; SOt |
| *Trapelia placodioides* | LC | Sax | SS; SWm |
| *Trapeliopsis flexuosa* | LC | Lig | LWT |
| *Trapeliopsis pseudogranulosa* | LC | Lig | LQ |
| *Varicellaria hemisphaerica* | LC L* | Cort | CQp |
| *Vouauxiella lichenicola* | LC | Lic | Z639 |
| *Xanthoparmelia conspersa* | LC | Sax | SS; SOt |

**Previous records**

Habitat: N facing dripping saturated, steep silicious rock face above bench, and adjacent trees (SH6670848) 29.11.19 Tracey Lovering

| Taxon name | Status | Substrate | Small scale habitats |
|---|---|---|---|
| *Aspicilia laevata* | LC NS | Sax | SS,SCl,SOt |
| *Cladonia furcata* subsp. *furcata* | LC | Sax | SS,SCl,SOt |
| *Cladonia pyxidata* | LC | Sax | SS,SCl,SOt |
| *Dermatocarpon miniatum* | LC | Sax | SS,SCl,SOt |
| *Enterographa hutchinsiae* | LC | Sax | SS,SCl,SOt |
| *Evernia prunastri* | LC | Cort | CQp |
| *Flavoparmelia caperata* | LC | Cort | CQp |
| *Lepraria vouauxii* | LC | Sax | SS,SCl,SOt |
| *Leptogium cyanescens* | LC Sc IR | Sax | SS,SCl,SOt |
| *Leptogium lichenoides* | LC | Sax | SS,SCl,SOt |
| *Normandina pulchella* | LC L* | Sax | SS,SCl,SOt |
| *Parmotrema perlatum* | LC | Cort | CQp |
| *Peltigera membranacea* | LC | Sax | SS,SCl,SOt |
| *Peltigera praetextata* | LC | Sax | SS,SCl,SOt |
| *Pertusaria aspergilla* | LC | Sax | SS,SCl,SOt |
| *Pertusaria pseudocorallina* | LC | Sax | SS,SCl,SOt |
| *Porina lectissima* | LC | Sax | SS,SCl,SOt |
| *Porina leptalea* | LC | Sax | SS,SCl,SOt |
| *Porpidia tuberculosa* | LC | Sax | SS,SCl,SOt |
| *Sticta canariensis (dufourii)* | LC Sc L IR | Sax | SS,SCl,SOt |
| *Sticta ciliata* | LC NS | Sax | SS,SCl,SOt |
| *Sticta fuliginosa* s. str. | LC | Sax | SS,SCl,SOt |
| *Sticta limbata* | LC Sc L IR | Sax | SS,SCl,SOt |
| *Umbilicaria deusta* | LC NS | Sax | SS,SCl,SOt |

Habitat: N facing dripping saturated, steep silicious rock face above bench (SH6670848) 24.09.05 Tracey Lovering

| **Taxon name** | **Status** | **Substrate** | **Small scale habitats** |
|---|---|---|---|
| *Dermatocarpon miniatum* | LC | Sax | SS,SCl,SOt |
| *Pectenia atlantica* | LC L IR | Sax | SS,SCl,SOt |

*Tracey Lovering*
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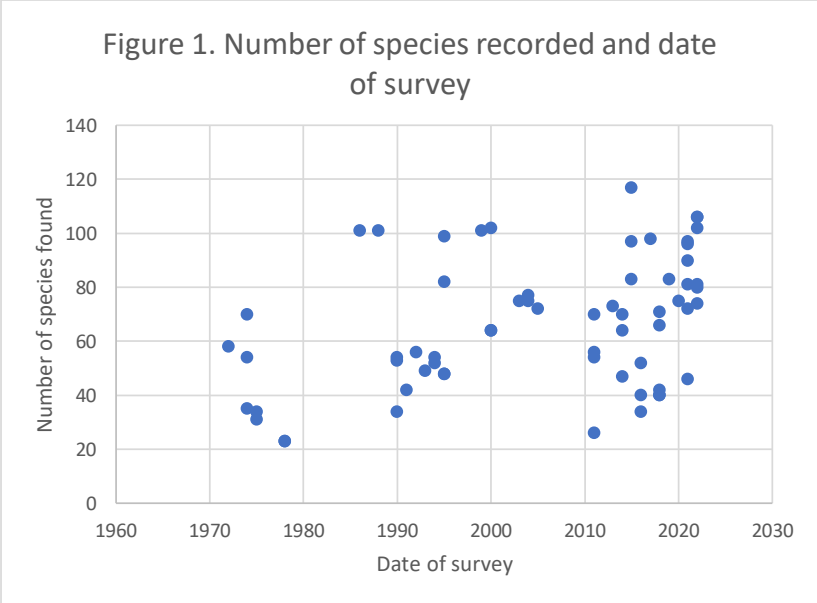
(With thanks to Mary Steer for kindly providing the geology)

# Churchyards Revisited

The BLS has had churchyards on the list of places to visit for many years. Now that we have hundreds or thousands of them surveyed, we have reached a significant coverage of Britain that ticks the box in finding out the geographical range of the species which have colonised this habitat. So does this mean it is not interesting to visit churchyards anymore?

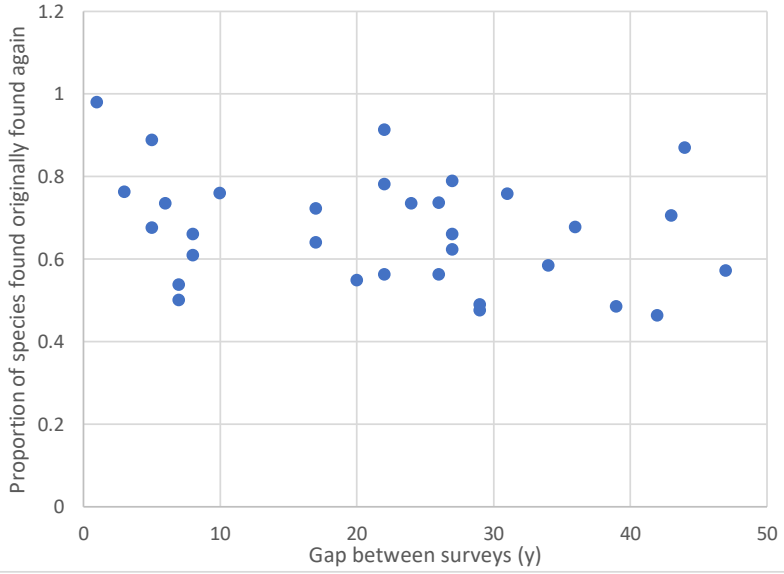
The surveys of churchyards that have been made are extremely variable. The main variables are when, who, how detailed and why. In terms of when, the survey dates mainly range from the1970s to the 2010s. Over this period, there has been an enormous improvement in the literature available for identification, the field knowledge of lichens especially the crustose ones, awareness of lichen-inhabiting lichens and fungi and availability of equipment with improved hand lenses and microscopes. Who surveyed a churchyard makes a considerable difference, some lichenologists being more experienced with churchyard surveying and some surveys being the result of several people visiting together. How detailed a survey has been done in part depends on how long the recorder has spent in the churchyard and ranges from minutes, with just a passing visit, or hours spent and in part whether all the potential substrates and habitats within the churchyard have been covered including trees and the tower of the church.



These variables give rise to wildly differing results. We have churchyards with just one species being recorded and many with in the low 10s of species which are unlikely to have any sense of completeness. Those churchyards with over say 60 species are likely to have been surveyed in more detail taking some time probably more than an hour or two.

With analysing record data, the advice I would give myself is "Fools rush in where angels fear to tread". With the variables mentioned above, comparing one survey with another is very difficult. Indeed, it may be hard to come to any conclusion as to what the data indicates. But this does not mean one should not look at some data to see what it does look like. Therefore, I have collected together some data for churchyards which have been surveyed at least twice to compare the data.

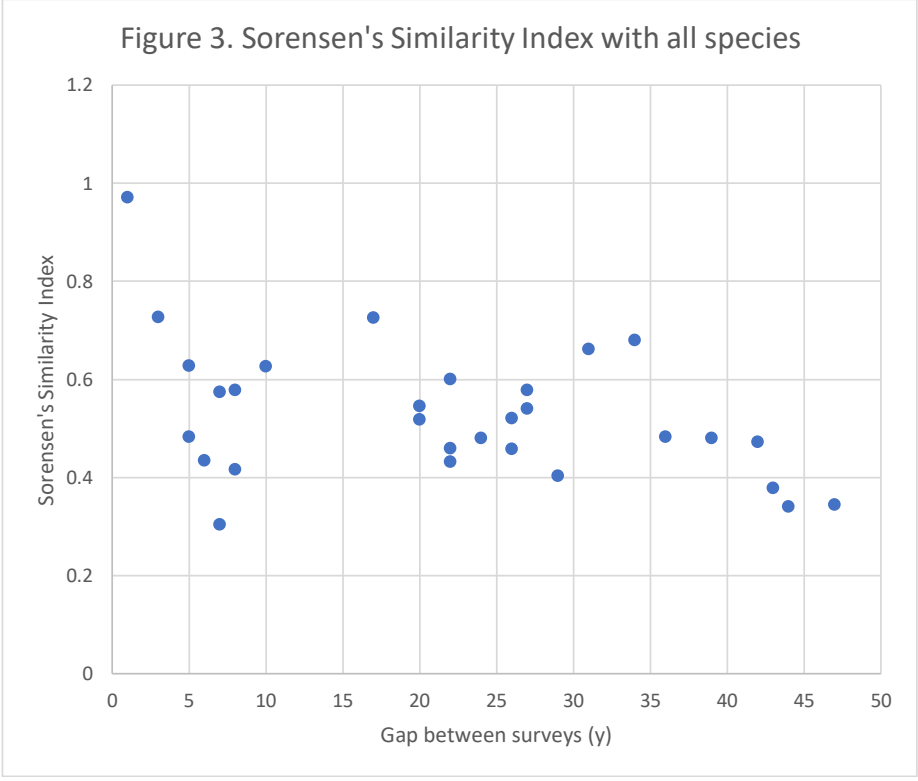
Figure 2. Proportion of those species found originally found again




Churchyards I have re-surveyed have not been chosen because they had been surveyed before so there is a huge random element in the choice of churchyards. To do this comparison I have taken churchyards mainly from North Somerset and Gloucestershire excluding surveys which list fewer than 20 species (Figure 1) What is striking about this is the wide differences in the numbers of species recorded. This is itself an interesting feature of this data. Then I took each pair of surveys and looked to

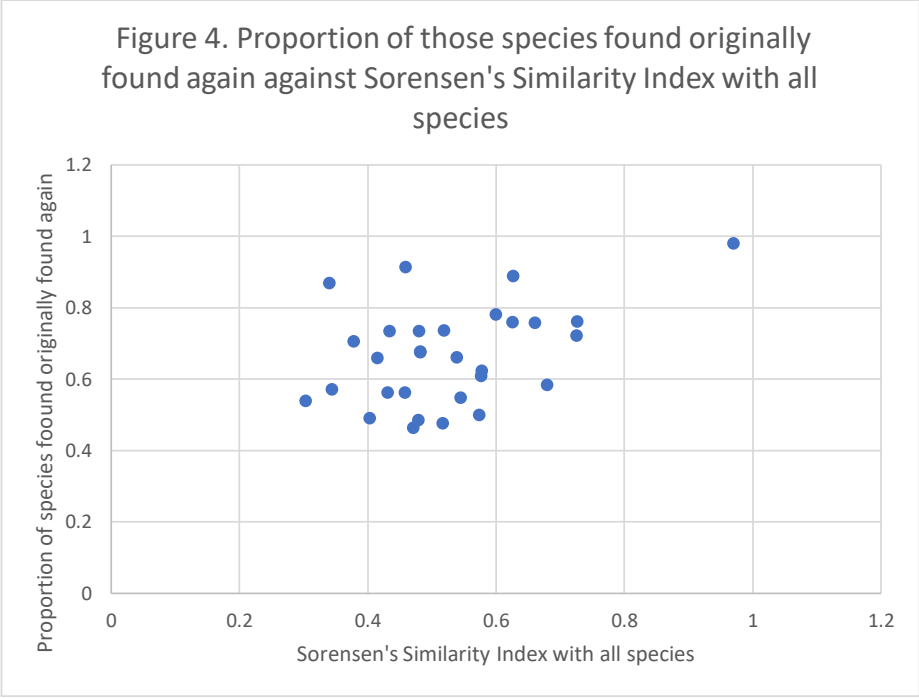
see how many of the species recorded in the first survey were found again in the second ignoring all the additional species recorded in the second survey and expressed this as a proportion of the original list (Figure 2). Very approximately about two thirds of them were found again and although there may be a fall in the proportion with the increasing time between the surveys this is not clear (i.e. the probability of a trend is not very high). In fact, the data indicate relatively little change over a time when we know that our environment has undergone great changes in levels and types of pollution and climate change.

As this is not the only way to compare two surveys, I decided to compare them with Sorensen's Index of Similarity (Figure 3) using all the data but this gave a similar result. Although the two methods are aiming at the same comparison, they are not closely correlated (Figure 4).




It is to be expected that not all the species found in the first survey would be refound in a new survey because different gravestones or areas of the church would be examined and different surveyors tend to look for or notice different species. In most cases the second surveys recorded more species than the first (Figure 5). The increase in number of species may been linked to the much-improved literature we have now, better techniques and better hand lenses and better microscopes compared with what

was available years ago. When I first started in the 1960s and1970s, a lot of the species we record regularly now were just not known or could not be identified with the literature and equipment available.
In processing the data, I made no attempt to "clean up the data" by checking whether or not trees were included or any other possible differences in survey methods or aims. I did not either check the names used nor did I exclude species that could not have been included in the first survey because they were not current at the time (e.g. the splitting up of the *Caloplaca citrina* group) or species what were subsequently described new to science (like *Petractis nodispora*). If there were a fall in graphs in Figure 3 and 4, this could be for these reasons rather than any actual change in the lichen flora. In cleaning up the data, one does not know how far to go, it makes significant assumptions and it can be very time consuming. It would also require an expertise that I am not at all sure I would have, certainly not if it means using computers to do the job.

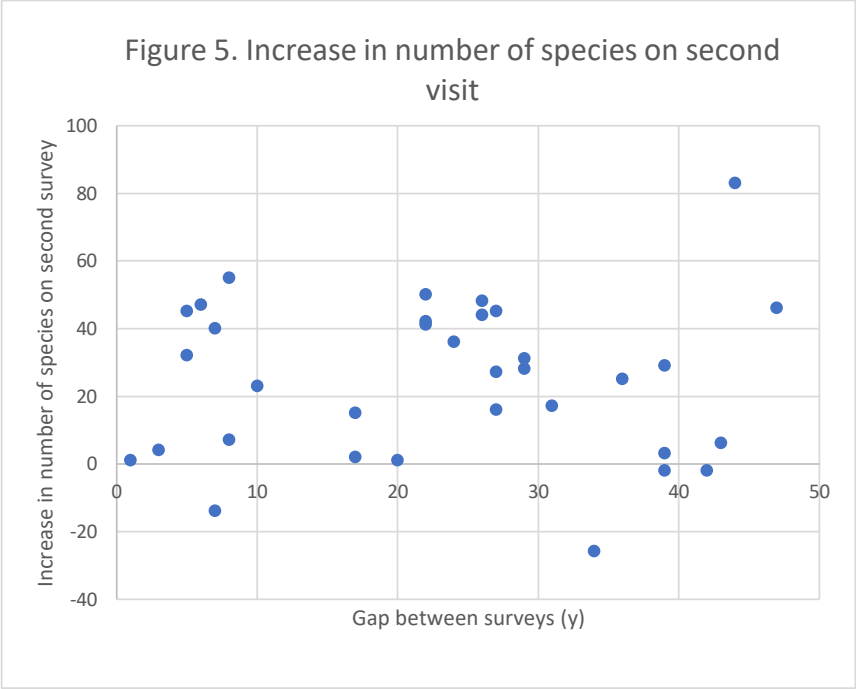



There are many more things apart from this one could do with the data. One could see whether there has been any change in the frequency of recording the species over time and if so to see if this is just a result of the changing of the names and identification or is it a real change in the species present. I guess that what one can do to investigate the churchyard data is only limited by one's imagination. For example, one might choose a certain group of species to follow such as the common species, species on particular substrates, or species that have known ecological preferences such as nitrophiles. It just

might possibly be an idea for a research project for a PhD student. It is all a matter of what does surveying really tell us about what is there.

What have I learned from this exercise? Firstly, the revisiting of churchyards is extremely worthwhile. I have found new VC records from churchyards visited previously more than once. This is not bragging; it is a fact of life. Each churchyard is like an island in that it is discretely defined area. Within that area species will colonise and go extinct resulting in a turnover. This was well described by Wilson in his Island Biogeography theory. One never knows what one is going to find when one starts working on a churchyard and really nice surprises turn up.

For example, I was visiting the churchyard in Fyfield near Marlborough (Wiltshire) earlier in the year and found a *Lecanora* that puzzled me. A few weeks later, Juliet Bailey found a similar one at the churchyard in Slimbridge, (Gloucestershire). Both had been previously surveyed. This *Lecanora* turned out to be *L. cenisia* and was the second record for Wiltshire and the first for Gloucestershire. It is not difficult to identify being like *L. campestris* but the epithecium has a brown colour and crystals that dissolve in K. The crystals give a milky whitening to the colour of the apothecia (which stand out being constricted below) so they look a pale yellowy brown – it also has a rather granular thallus.

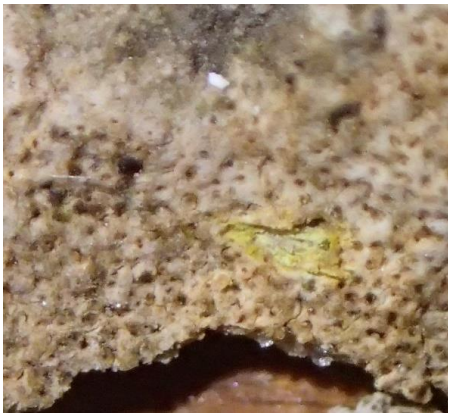


In another example, Bitton churchyard was very well surveyed in the 1980s as part of the BLS Bristol workshops. I went there in 2020 about 35 years later and found to my astonishment the largest population of *Petractis (Neopetractis) nodispora* I have ever seen with apothecia as well as the usual pycnidia (and the typically weird conidia like clusters of cells) but Alan Orange had not described this species new to science until 2009.

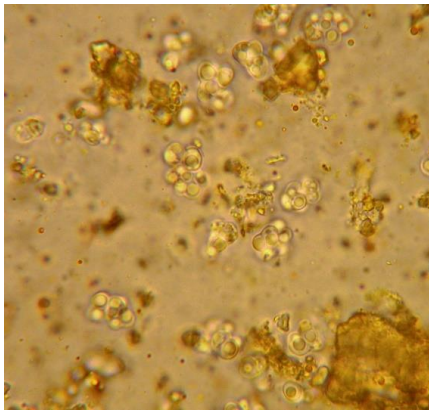
In Tormarton churchyard *Strigula calcarea* turned up with its beautiful 3 septate conidia. Again, it was not known in Britain at the time of the first survey. These two whitish pycnidiate crusts are not too difficult to spot and identify. They both have *Trentepohlia* photobiont and little sunken pycnidia that look like pin pricks in the case of *S. calcarea*. In 2020 I bumped into *Stereocaulon dactylophyllum* on the side of a leaning gravestone in Sopworth churchyard (North Wiltshire) which surprised me no end.

*Lecanora cenisia* at Fyfield churchyard (Wiltshire)

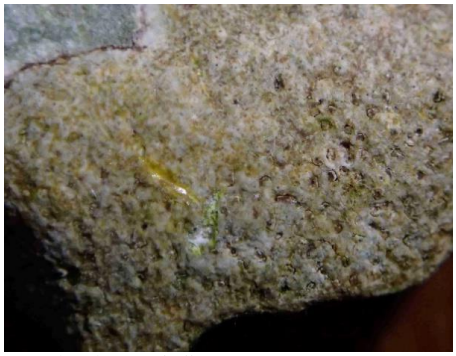
*Stereocaulon dactylophyllum* in Sopworth churchyard



*Petractis nodispora* at Hinton Charterhouse churchyard (North Somerset) - thallus



*Petractis nodispora* - conidia

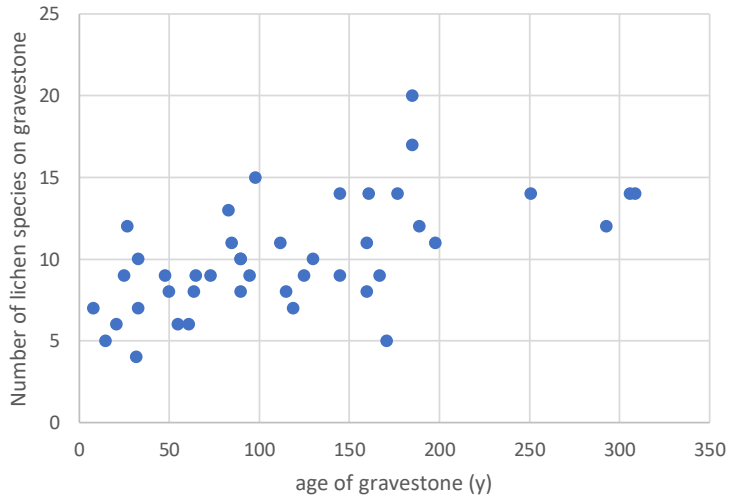


*Strigula calcarea* - thallus

*Strigula calcarea* - conidia

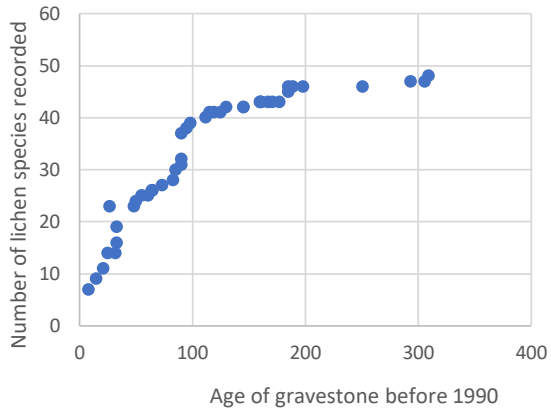
Thinking further ahead, there is a huge database of lichen records from churchyards, and as mentioned it is difficult to see how they might be best analysed. Analysing wildlife records on the national data bases of the less well known and speciose groups of organisms is fraught with difficulties for the reasons outlined above so it is not just lichens which have these problems. There are two ways forward. One is to carry out research into methods we could use to see what information can been gleaned from these records. The other is to continue recording lichens in churchyards but in a different way that helps with the process of analysis. What is probably unlikely (I would not want to say impossible) is to change the way we survey lichens in churchyards so that we have a standard churchyard survey procedure based on sound statistical technique. This straight-jacket approach has benefits for data analysis but is a killer to having the enthusiasm to record lichens in churchyards at all. The fun of surveying churchyards is that one does not know what one is going to find. By surveyor's diligence, curiosity and nous, unexpected and interesting finds are made which makes the survey fun and enjoyable. If we did have a standard procedure to use in addition to the way we do our own personal surveys, it would have to be so quick and simple that the accumulated data may not reveal on analysis anything of value.

Figure 6. Number of species on each gravestone with age of gravestone (data from 1994)




There are things we can do though that are fun and give rise to valuable information. One is to record all lichens present on gravestones which have legible dates. This was done in a small way in one part of Britain (Hill 1994) but there is much more which can be done along this line. My paper included a relatively small number of

Figure 7. Accumulation of the number of species recorded with age of gravestone from the most recent (data from 1994)




gravestones (calcareous and sandstone) over a small geographical area but it has been much viewed (over 1800 times on ResearchGate which links scientists across the world). More, better and more recent data would be much appreciated. Figures 6 and 7 are included here as they were not included in my original paper. At least it shows that the age of gravestones is important but one of the main criticisms of this study was that the gravestones were not chosen at random. Any suggestions of how such a study could be done by choosing gravestones with legible dates and even sampling over time and the country at random would be much appreciated! I tried to think how it might be done and soon realised I could not do this on my own.

**Acknowledgements**
Juliet Bailey and Janet Simkin have very kindly provided me with data from surveys in Gloucestershire and Somerset.

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**Photographs**


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# Cilia and rhizines in two common *Physcia* species

We were puzzled, as beginners, by the distinction between cilia and rhizines found on the underside of the thallus of *Physcia adscendens* and *P. tenella.* Conventional wisdom (see Smith et al, 2009) states a cilium is "a marginal, or submarginal, hair-like outgrowth of the thallus" and a rhizine is "a root-like hair or thread, consisting of a bundle of hyphae, acting as an attachment organ". In our study we found that distinction unclear as cilia, i.e. those outgrowths on the margin of the thalline lobes, in many cases acted as rhizines and at times the rhizines were unattached and might appear as cilia. This article describes what we found and confirms that the distinction between "cilia" and "rhizines" may be an artificial one. We go on to investigate the role of cilia and rhizines in lichen structure and speculate about the benefits of such interactions.

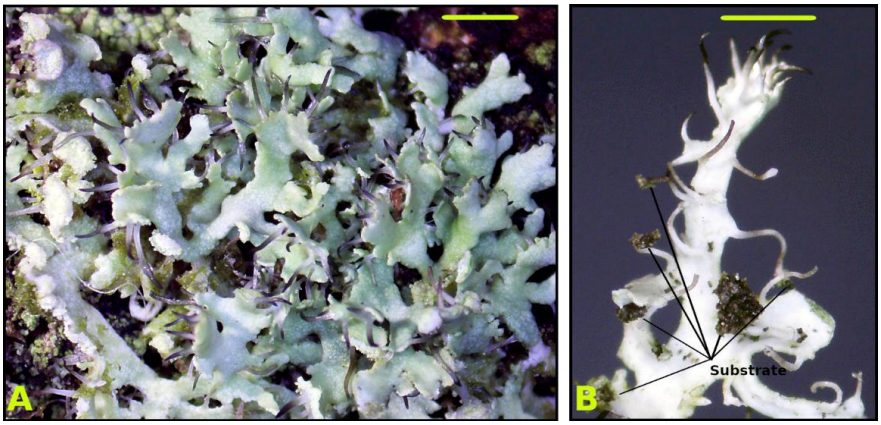


Figure 1: 1A shows the overall thallus morphology of *P. tenella* and 1B shows the underside of a lobe. Scale bar≈1mm.

Figure 1A shows the overall thallus of *P. tenella* with its abundant outgrowths that originate from both marginal and laminal positions. The thalli of both *P. tenella* and *P. adscendens* comprise a series of radially orientated lobes that are characterised by a series of attachment points towards the centre. Characteristically, outgrowths appear to flare from the apices of lobes and are often darkly coloured at their tips. Only by removing a lobe from the thallus can the arrangement of the cilia or rhizines be seen.

Figure 1B illustrates the underside of a lobe cut out of the thallus. The part nearest the centre has abundant attachment structures, conventionally termed rhizines, that originate from both laminal and marginal positions and unattached growths at the tip of the lobe, conventionally termed cilia, that originate from all points on the lower cortex. Samples were collected both in Buckinghamshire (VC24) and West Yorkshire (VC63) and exhibited the same characteristics. For this article we use the term

'outgrowths' for cilia and rhizines and distinguish them with the qualifying prefixes of laminal and marginal.


Figure 2: 2A shows a radial section through the thallus of *P. tenella* and 2B is a transverse section through wet lobe tips. AL=attached laminal outgrowth, AM=attached marginal outgrowth, UM= unattached marginal outgrowth. Scale bar≈1mm.


Figure 3: 3A shows the detail of a wet lobe and outgrowth attachment to the substrate and between lobes, 3B shows the detail of one marginal outgrowth attaching to the substrate. 3C shows the fine detail of a laminal outgrowth from an upper lobe attaching to a lower lobe. AL=attached laminal outgrowth, UM= unattached marginal outgrowth, Su=substrate, UL=upper lobe, LL=lower lobe, T=thickening of cortex or outgrowth at attachment. Scale bar≈200 microns.

Through careful radial sectioning of the thalli of *P. adscendens* and *P. tenella* we were able to observe and measure the outgrowths. We used a combination of macro-lens (attached to a mobile phone) and microscopy photography to observe, record and measure (using ImageJ) the specimens.

Radial and transverse sections through mature species revealed the thallus comprises a series of vertically stacked lobes. Figure 2A shows a radial section through the thallus with outgrowths on the oldest lobe, i.e. the basal lobe immediately above the substrate, forming the primary attachment for the lichen. We observed that there was no discrimination between marginal and laminal outgrowths forming attachments to the substrate. A transverse section, as shown in Figure 2B, through the tips of the lobes confirmed a similar arrangement with both laminal and marginal outgrowths attaching to either the substrate or other lobes. Those parts of the outgrowths that were white when dry turned transparent when wet. The common substrate we observed was bark, although in many cases other lichen species formed the substrate. In one example, we found *P. tenella* growing on algal encrusted, powder coated metal railings.

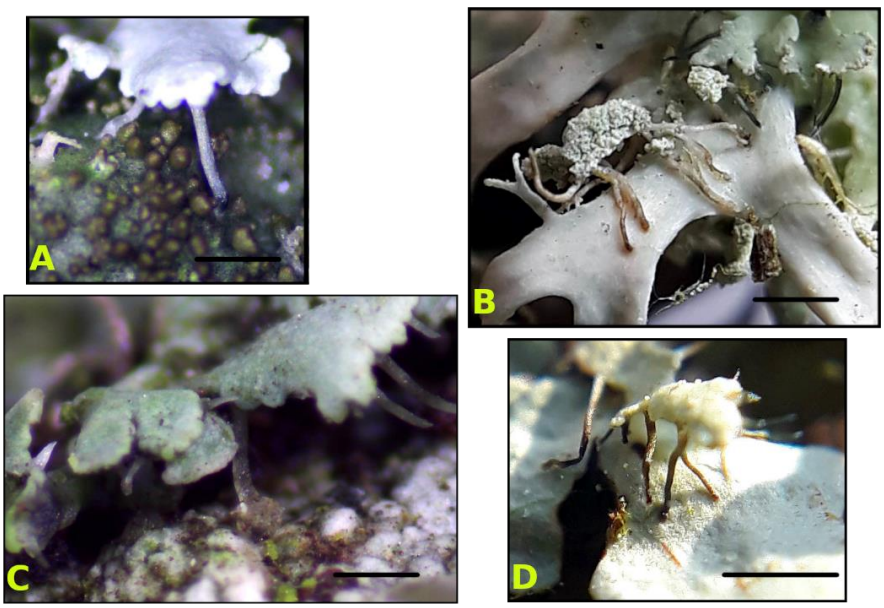


Figure 4 shows the attachment of outgrowths to the following lichens. 4A : *Melanohalea elegantula,* 4B: *Ramalina farinacea,* 4C*: Lecanora chlarotera* s. lat. and 4D*: Parmelia sulcata.* Scale bars≈1mm.

The nature of substrate attachment and inter-lobe attachment are shown in Figure 3. Figures 3A and 3B illustrate the nature of the laminal and marginal outgrowth attachments of the lowest lobe in the thalline stack to the substrate. The attachment at the substrate is characterised by a cone of hyphal material creating a hapter (see Sanders 1993). These cones of thickened material extend about 75-100µm from the

substrate. The sectioned thalli shown in Figures 3A and Figure 3C show the attachments between outgrowths and a neighbouring lobe. The laminal outgrowth, in Figure 3C, attached to the lower lobe shows similar thickening of hyphal material at the attachment point with the lobe. In this example the attachment appears to thicken the upper cortex leading to a depression of the photobiont layer.

We have illustrated the simplest case in Figure 3 of intra-lobe attachment; however, we have observed complex attachments of outgrowths to neighbouring lobes and that individual outgrowths will co-join laterally and not just at the tip.

In many cases we observed that outgrowths of *P. adscendens* and *P. tenella* can attach to, and even grow through, thalli of nearby crustose, foliose and fruticose lichen species. Figure 4 shows examples of outgrowths attaching to *Melanohalea elegantula, Ramalina farinacea, Lecanora chlarotera* s. lat. and *Parmelia sulcata.*

We have shown that the outgrowths appear to be very reactive and attach easily to any surface, including neighbouring outgrowths. We investigated the tips of the outgrowths which can be seen in Figure 5. The images in Figure 5 from left to right illustrate three distinct stages of growth.

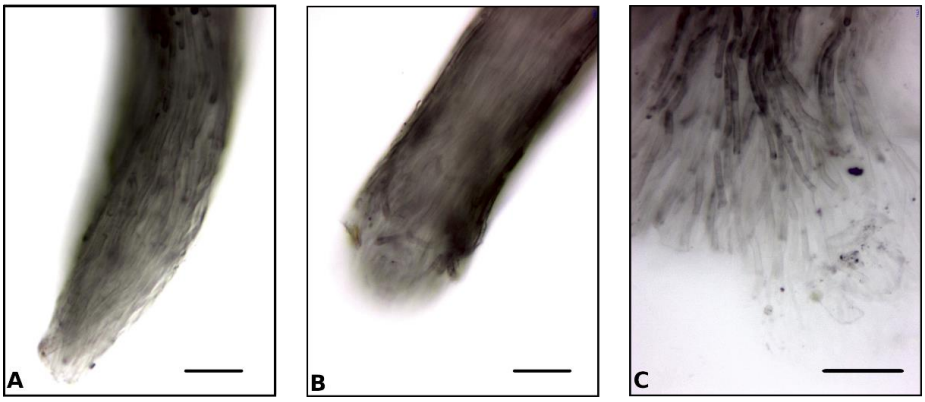


Figure 5 shows the tips of outgrowths. 5A is an unattached outgrowth, 5B is initiating hyphal spreading, and 5C is a section through a hapter. Scale bar≈50 microns.

Figure 5A shows a detailed image of an unattached outgrowth. The tip is conical, formed from a tight bundle of a few aggregated hyphae. The intermediate stage, shown in Figure 5B, shows a thickening of the tip and a slight disaggregation of hyphae. Figure 5C shows a previously attached outgrowth at the hapter stage where the hyphal mass is thickest and most individual hyphae are splayed out.

Our observations of thin sections of outgrowth and their originating growth points on the lower cortex revealed how the hyphal mass is organised within the outgrowth. Figure 6A shows a lateral view of an outgrowth with individual hyphae terminating along the length of the outgrowth. Occasionally these terminating hyphae detach from the side of outgrowth and curl away from the main stem, presumably ready to attach to another surface or neighbouring outgrowth. The cross section in Figure 6B shows

colourless or white hyphal core with a pigmented outer surface. Approximately 450–600 hyphae make up an outgrowth. Finally, Figure 6C shows a cross section through the lower cortex from which a marginal outgrowth is growing. The lower cortex appears to be made up of tightly packed sub-parallel hyphae which in turn curve and run, without termination, into the marginal outgrowth. The structure of the *P. adscendens* and *P. tenella* outgrowths differs from other species with rhizines, such as *Parmelia sulcata*, where rhizines appear to have discontinuous growth of hyphae from the lower cortex.

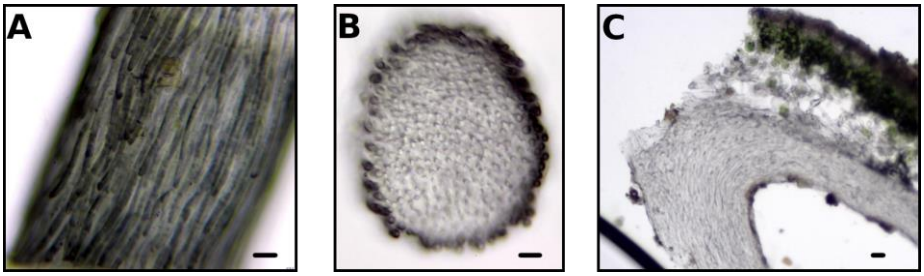


Figure 6A shows a lateral view of an outgrowth with terminating hyphae, 6B is a cross section through an outgrowth and 6C shows a cross section through the lower cortex and attached outgrowth. Scale bar≈10 microns.

We observed a variety of colours on marginal outgrowths including white, black, white with black tips, and black with white tips. The colour of laminal outgrowths can be black or pale, and may have different colour tips but invariably they are white when attached to the substrate or other parts of the thallus. We cannot explain the differences in colour found on outgrowths nor could we find any pattern apart from those outgrowths attached deep in the thallus mostly appeared to be white. We suggest this may be because the cells giving the dark colour to the surface of the unconnected outgrowth are associated with that lack of connection and once the outgrowth has connected to another lobe those cells are no longer required and so are gradually replaced by the pale outer hyphae.

Maturity and environment probably control the behaviour of outgrowths. We observed young *P. adscendens* on a twig appear to have very few raised marginal outgrowths with most pointing to or attached to the substrate. As the lichen matures or when new lobes grow over existing lobes, the thallus takes on a stacked nature. Maturity is often marked by the growth of soralia at the tips of the lobes. In these more mature specimens both the laminal and marginal outgrowths of the youngest lobes often appear to ascend and point away from the thallus.

On measuring outgrowth dimensions we found their length to vary from 0.8 to 2mm, with a diameter at the tip of 15µm with the base of 100-120µm. The 'nearest neighbour' distance is around 0.3-0.7mm with the majority of outgrowths marginal (~80%). A common feature of both *P. adscendens* and *P. tenella* is the relative paucity of outgrowths on each thallus compared to other foliose lichens, such as *Parmelia sulcata*.

*Parmelia sulcata* has over 9 times the number of rhizines compared to *Physcia adscendens*. We also investigated the spacing between the oldest lobe and substrate and the distance between stacked lobes. We found typical distances between lobe and substrate to be between 0.1-0.15mm at maximum separation. This maximum separation was never at the tips but invariably 0.1-0.25mm in from the tip. The spacing between stacked lobes increased from the 'holdfast' area to the tip and ranged from 0.1mm to 0.3mm towards the tip. In many cases the tip of the lobe was flared outwards and not attached. These measurements were carried out on dried specimens as we found there was considerable vertical movement of the individual lobes of the thallus when wet.

Having studied the 'cilia and rhizines' from *P. adscendens* and *P. tenella* and established their difference from other lichen species' rhizines, we were perplexed as to why a distinction has been drawn between the laminal and marginal features, implying discrimination on functionality. Every definition we have looked at for rhizines includes a function and states that rhizines attach – their role is clear! However, authors' definitions of cilia almost invariably leave out their function and it appears to be a mystery apart from one (see Hannemann, 1973) suggesting that the unattached outgrowths may have a role to play in condensation of moisture.

In the case of *P. adscendens* and *P. tenella* we think the role of outgrowths is, firstly, to attach that thallus to the substrate and, secondly, to enable these species to create a multi-storey thallus once the initial lobe has attached to the substrate. Any section of *P. adscendens* or *P. tenella* shows that the thallus is not tightly attached to the substrate and over-stacking lobes are mostly 'widely spaced'. The structure of these thalli would allow good circulation of air, moisture and, to a certain degree, allow low-angled light to penetrate into the deeper parts of the thallus. In addition, the attached outgrowths provide a higher degree of structural integrity over relatively small areas.

We investigated the notion of outgrowths harvesting water. We measured the ratio of the surface area of the outgrowths to the total surface area of an entire lobe (upper and lower cortices, and outgrowths). The measurement was not precise, partly because defining which part of the thallus is the lobe is imprecise and secondly, measuring a 3D structure in two dimensions is an oversimplification. By measuring the length and diameter of the outgrowths and modelling them as cylinders and the lobes as flat, two-sided surfaces, we were able to estimate the surface areas of each feature. The results varied between 20-30%, indicating a possible role of the outgrowths in water capture. We think these results need to be set in the context of how water might be absorbed on the surface of the outgrowths' hyphae and the rapidity of water transport to the area where needed in the thallus. To investigate this uncertainty we timed how long it took the connecting outgrowths to change from white (dry) to transparent (wet) and this happened in less than 30 seconds. It seems possible therefore that these interconnecting outgrowths play a significant role in absorbing moisture (note refer to earlier Figure 2B and Figure 3A of transparent connecting outgrowths).

Additionally, in many cases we observed unattached marginal outgrowths to be associated with soralia. It might be that extended outgrowths provide a point of initiation for the development of soralia in a manner similar to that found in some other genera such as *Usnea* and *Ramalina*.

Following our study we conclude that the current definitions of cilia and rhizines are misleading as all outgrowths can attach whether marginal or laminal. In our view it is unnecessary to distinguish between different types of outgrowth other than that some become attached. We have established by careful inspection that outgrowths have an important role in creating structural integrity between the thalline lobes and substrate and in creating a stacking structure for mature lichens. The benefits of this structure are that it allows good flow of air, moisture and nutrients to all parts of the thalline surface. The structure produced by these connecting outgrowths of *P. adscendens* and *P. tenella* may account for their success in many different environments.

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# Focus stacking with the Olympus Tough TG6

Fruticose and *Cladonia* species are difficult to photograph satisfactorily because they need a large depth of field if much of the lichen is to be in focus. The Olympus Tough TG6 camera offers, within its Microscope settings, focus stacking. According to the manual '*The camera shoots a number of images, automatically shifting the focus in each image. These* [are then] *combined into a composite image with a large depth of field.'* There is a warning that it may not be possible to create the composite image due to camera shake. As it takes at least one second to take the set of images, it seemed to me impossible to keep the camera steady without the use of a tripod. Consequently, I did not use focus stacking for several months, instead relying on the 'Microscope Control' setting that gives quite satisfactory images at one of three magnifications. However, only the centre of the images is in sharp focus and I became accustomed to cropping at least half of the image to get decent results.

Eventually I began experimenting with the focus stacking setting and to my surprise I found that I could get good results with the camera hand-held. Wherever possible I stabilise the camera with a 35mm long transparent tube cut from a plastic drinking cup, as recommended by Paul Whelan (*pers. comm.*). This allows adequate illumination during good daylight when the lichen is deliberately shaded from direct sunlight, even in winter.

Fruticose and *Cladonia* lichens do not allow use of the plastic tube and there may be no alternative to stabilising the camera by supporting the arms or wrists on the substrate. Surprisingly, this still works! Although there must be some camera shake, the software seems to cope with it.

For each pair, on the left is the first frame and on the right is the composite image. For the *Cladonia* I was able to rest my arms on the ground and shoot at a low angle. The increased depth of field extends from slightly nearer the camera lens to much further from the lens. The *Ramalina fraxinea* was growing on the bole of a tree above my head but almost within reach. I rested my arms on the bole and took the shots vertically. The composite image illustrates how far the depth of field extends beyond the lichen.

Nowadays I use focus stacking for all my lichen photography, including crustose species. Even where the substrate is a plane surface, the image is sharp enough at the margins not to need any cropping, so much more of the lichen can be shown.

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## *Icmadophila ericetorum* - What is going on?

*Icmadophila ericetorum* is fairly common on the uplands in Moray, Scotland, growing on the damp ground and on rotting wood. In November 2019 I investigated a rotting pine log in a pine plantation which is now a small mixed woodland of mainly pine and young birch at Findhorn on the Moray coast - an area of fairly low rainfall.
I was surprised to find *Icmadophila ericetorum*, with lots of its pink apothecia on one end of the log as in the photo above. A robin stayed alongside while I looked at it.

In July 2021 I revisited and found the thallus had covered the log but most of the apothecia had gone. I would not have recognised this as *Icmadophila ericetorum*.
What is happening? Were the apothecia eaten by slugs and snails? Is the growth of the apothecia seasonal? I will continue to revisit this each winter and summer to see what happens next.

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# Finding lichenicolous fungi on epiphytes in the New Forest

The New Forest at 4000ha is a BIG space so looking for lichenicolous fungi on corticolous lichens can be a slow and challenging process. So slow that even the tiniest scraps of old woodland require a 3–4 hour stint to do them justice. Sometimes you can spend the first two hours just nibbling at the edges of the car park and before you know it, it's lunchtime! So for starters I thought it might be helpful to suggest three interesting sites that should appeal to everyone whether you are just taking your first steps into the world of lichenicolous fungi (LFs) or are more experienced in this field of study. I have spent the last two years exploring these ancient woodlands, mostly in the north and west of the Forest, several on more than one occasion, and one (Anses Wood) six times. In order to avoid disappointment it is best to plan your visits between late September and early May and often following a few days of wet weather.

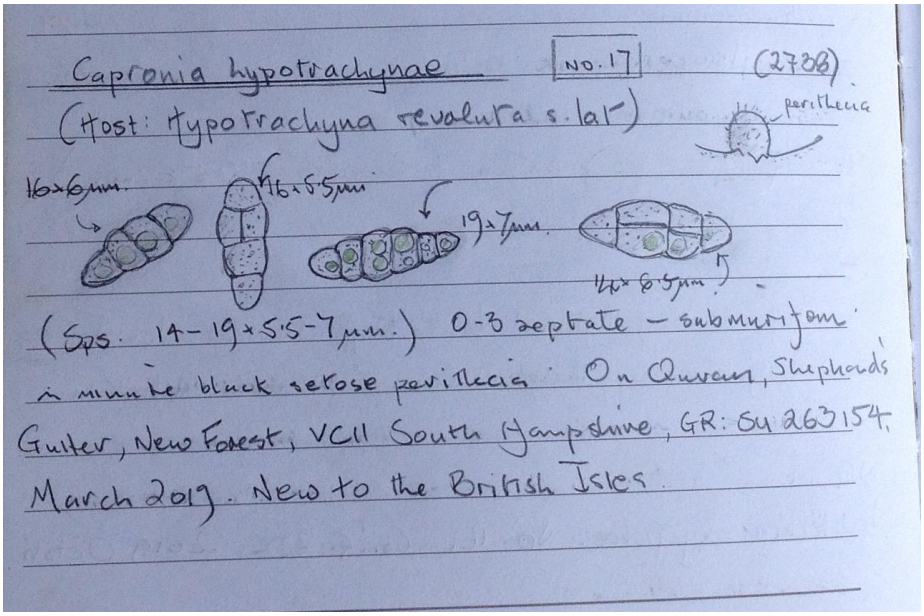
Each of the following have good car parking facilities:

A. Great Early Wood (near Burley, park at Oakley CP or Lucy Hill CP) ...beginners
B. Knightwood Oak (near Lyndhurst, park at Knightwood Oak CP) ...intermediate
C. Anses Wood (in the north near Fritham, park at Cadmans Pool) ...advanced

I use the terms beginners, intermediate and advanced not as a reference to aptitude as lichenologists but to one's experience as hunters of lichen fungi. I would expect those at intermediate to advanced level to already be using a logbook dedicated to itemising and sketching your discoveries including additional notes on the condition of the lichen host, tree type, grid reference and date of visit. For the New Forest in particular, field notebooks or mobile phones should carry a preliminary list of most likely species such as the 24 shown below as these taxa will form the main body of your records.

*Abrothallus bertianus*
*Abrothallus microspermus*
*Arthonia digitatae*
*Capronia hypotrachynae*
*Cladophialophora parmeliae*
*Didymocyrtis ramalinae*
*Epicladonia sandstedei*
*Erythricium aurantiacum*
*Heterocephalacria physciacearum*
*Homostegia piggotii*
*Illosporiopsis christiansenii*
*Laetisaria lichenicola*
*Lichenoconium erodens*
*Lichenostigma alpinum*
*Marchandiomyces corallinus*
*Monodictys epilepraria*
*Pronectria oligospora*
*Roselliniopsis tartaricola*
*Sclerococcum parasiticum*
*Skyttea nitschkei*
*Stictographa lentiginosa*
*Taeniolella toruloides*
*Lichenotubeufia heterodermiae*
*Vouauxiella lichenicola*

A note on *Hypotrachyna revoluta*/afrorevoluta; this taxon is possibly one of the most dominant foliose lichen everywhere in the Forest. It grows exuberantly within the canopy of trees and especially on low horizontal branches. For this reason it is a particularly good target for lichen parasites.




*Cladophialophora parmeliae* and the wart-like *Capronia hypotrachynae* are frequent colonists. But finds such as *Spirographa pyramidalis* and *Xenonectriella subimperspicua* are not unexpected and a mysterious and unidentified *Didymocyrtis* with 1-septate, uniseriate brown spores is a local speciality together with its likely anamorph.

## A. Great Early Wood (SU2204)

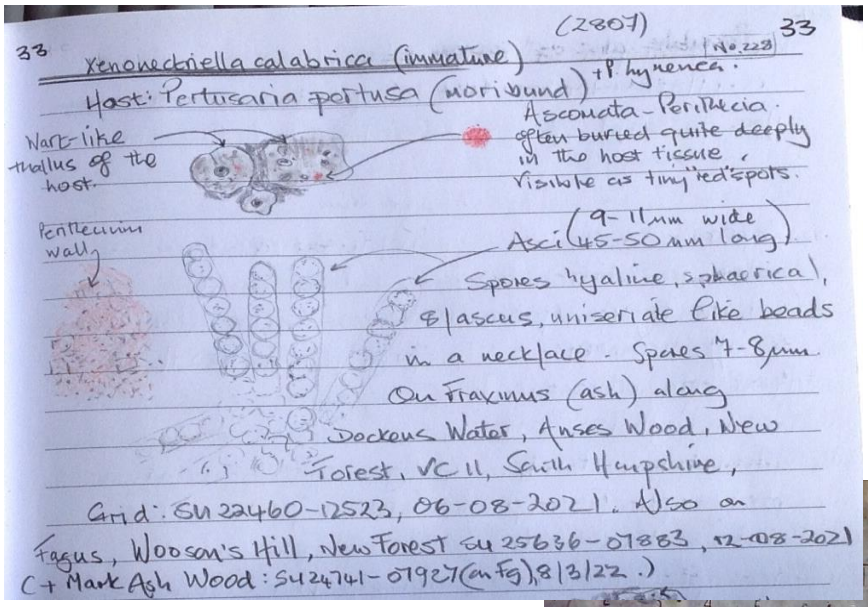
By far the most important part of this wood climbs above the Lyndhurst Road on sloping ground as far up as the boundary fence. (Note: Ignore the section marked Great Early on Explorer map 22 south east of the road.) The west side by Oakley car park is generally a good place to start. On the map the area appears deceptively small. Believe me, it isn't. On the higher ground the wood slopes in an easterly direction supporting habitat suitable for *Cladonia* parasites such as *Arthonia digitatae*, *Heterocephalacria bachmannii* and the rarer *Lichenosticta alcicornaria* and several other species on well-rotted fallen timber.

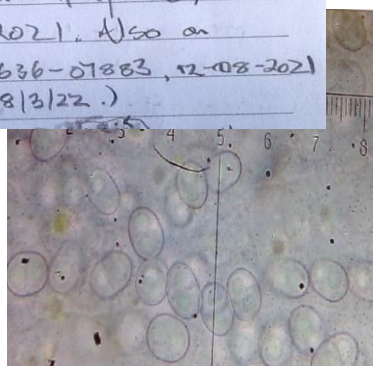
Standing *Fagus* and old *Quercus* are the frequent dominants among the carnage of collapsed limbs and fallen trees. *Usneion* communities are prolific in sheltered spots visible from the road but look out for *Roselliniopsis tartaricola* on *Pertusaria amara* which is plentiful on *Fagus* not far from the car park. *Monodictys epilepraria* should be sought

for on blackened patches of *Lepraria finkii.* The twigs and branches here can also be quite productive.

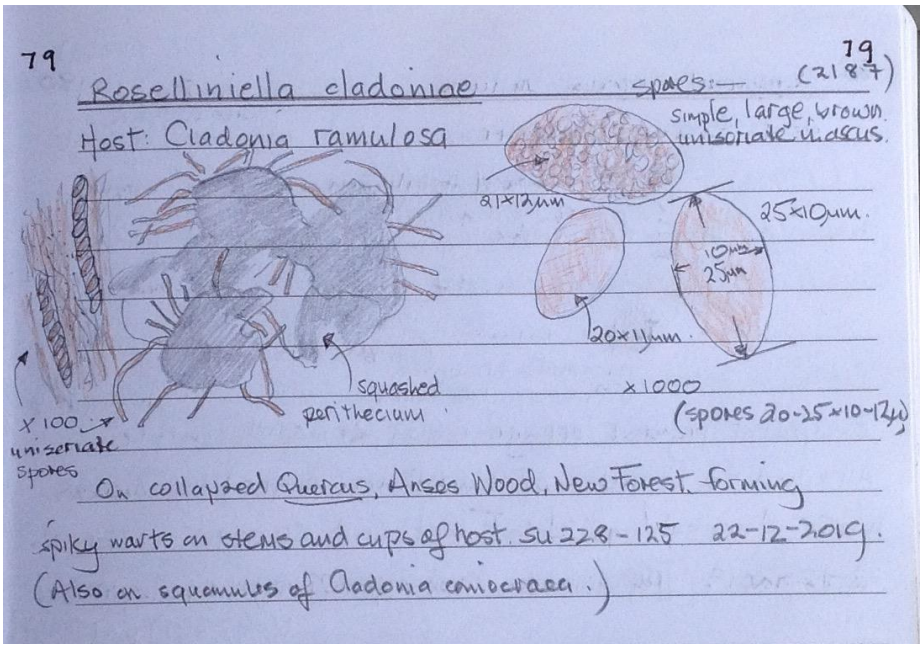
B. Knightwood Oak (SU2606)

This site has a fine concentration of *Quercus* and senile *Fagus* surrounding the small Knightwood Oak enclosure, the centre of which is out of bounds to visitors. This is a particularly attractive area to search low branches and tree bark for at least 15 of the more common species and to check for lichenicolous fungi on *Hypotrachyna afrorevoluta* including the familiar *Cladophialophora parmeliae* and local *Spirographa pyramidalis.* Also spend some time exploring the many colonies of *Cladonia* on well rotted logs for *Epicladonia sandstedii* and for the tiny sooty patches of *Milospium lacoizquetae.* Old *Fagus* bark provides a good selection of parasitic fungi on *Pertusaria pertusa* such as the familiar *Sclerococcum parasiticum* or even the recently discovered rarity *Xenonectriella calabrica* while colonies of *Pertusaria hymenea* may surprise with a *Tremella.*



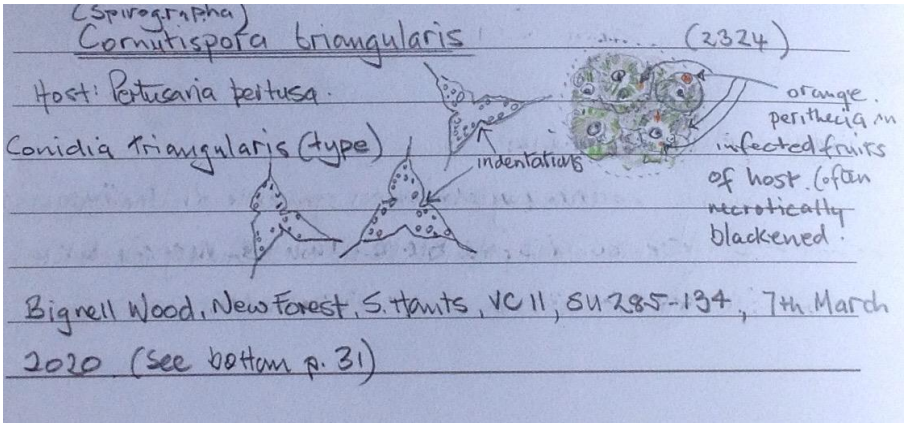



*Xenonectriella calabrica* with fully mature spores: Barrow Moor, New Forest, South Hants, SU25347-06819, on *Fagus,* 13 April 2022.




C. Anses Wood (SU2212)

This splendid *Fagus* - *Quercus* woodland sits on the summit of a north-facing slope running down to a fine stretch of watercourse along Dockens Water. Almost 60 species of lichenicolous fungi have been identified from here. Especially good are the riverine *Fraxinus* with *Nectriopsis physciicola* on several hosts, *Pronectria pertusariicola*, *Tremella macrobasidiata*, and various *Capronia* and *Spirographa* species mostly on *Pertusaria* and *Lecanora*.



The bushy thorn-scrub with scattered *Malus* is notable for species such as *Endococcus ramalinarius, Pronectria anisospora* and *Unguiculariopsis lettaui.* Unknown finds from here include a *Burgella* and a *Zwackhiomyces*. Both are probable new species. Park by Cadmans Pool and walk west exploring the *Xanthoria* on oaks at the top of the hill for *Didymocyrtis slaptoniensis* and *Telogalla olivieri,* before turning downhill and north along the track until you meet the stream at the foot of the valley.
Good hunting ...

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## *Caloplaca* growth dependent upon Atlantic depressions

During an archaeological study on Ingleborough Hill an attempt was made to date some stones using lichens. The brightly coloured *Caloplaca flavescens* was one of those investigated. There appeared to be little information about its growth but Richard Armstrong kindly directed me to an article by Fred Sowter who noted a radial growth rate of 2mm per year.

Fig. 1 *Caloplaca aurantia*

Both *C. flavescens* and the similar *C. aurantia* grow on the walls of my house in Cumbria so a brief study of their growth rates was made. A single thallus of *C. aurantia* 32 mm in diameter was chosen from a flat limestone slab on top of a wall (Fig. 1) plus a thallus of *C. flavescens* 31 mm in diameter growing on a vertical limestone wall nearby (Fig 2). Growth was measured over three years with measurements recorded between the equinoxes, from 20 March 2019 to 20 March 2022. 'Summer' growth (S) was reckoned between 20 March and 22 September and 'winter' growth (W) between 22 September and 20 March. Rates were measured from two finely cut lines in the limestone to the thallus edge using a hand lens and ruler and the two measurements averaged. The results are shown in the table and figure 3 below.

| Growth period | *C. aurantia* mm/a radial | *C. flavescens* mm/a radial |
|---|---|---|
| 2019 S | 1.9 | 0.1 |
| 2019/2020 W | 1.0 | 1.0 |
| 2020 S | 1.7 | 0.0 |
| 2020/2021 W | 2.4 | 0.8 |
| 2021 S | 1.3 | 0.0 |
| 2021/2022 W | 1.3 | 1.2 |
| Mean summer | 1.6 | 0.03 |
| Mean winter | 1.6 | 1.0 |
| Overall mean | 1.6 | 0.52 |
| | | |

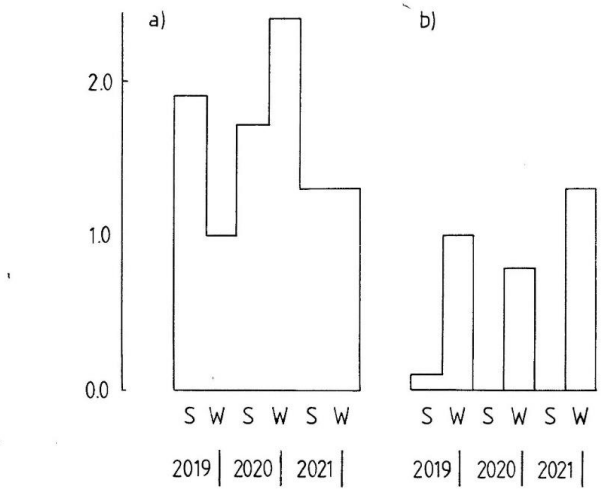


Figure 3 . Annual radial growth rates of a) *C. aurantia* and b) *C. flavescens*.

The mean annual radial growth rate of *C. aurantia* is seen to be 1.6 mm with summer and winter rates equal. The annual rainfall at this site is around 1100 mm with the mean annual temperature close to 10ºC. There was little seasonal variation in rainfall totals suggesting that water availability was more important than temperature.
Although the wall was only 3m distant from the house, the latter offered little shelter from the rain as the prevailing wind direction was in front of the house. In contrast, the growth of *C. flavescens* was less than half that of *C. aurantia*.
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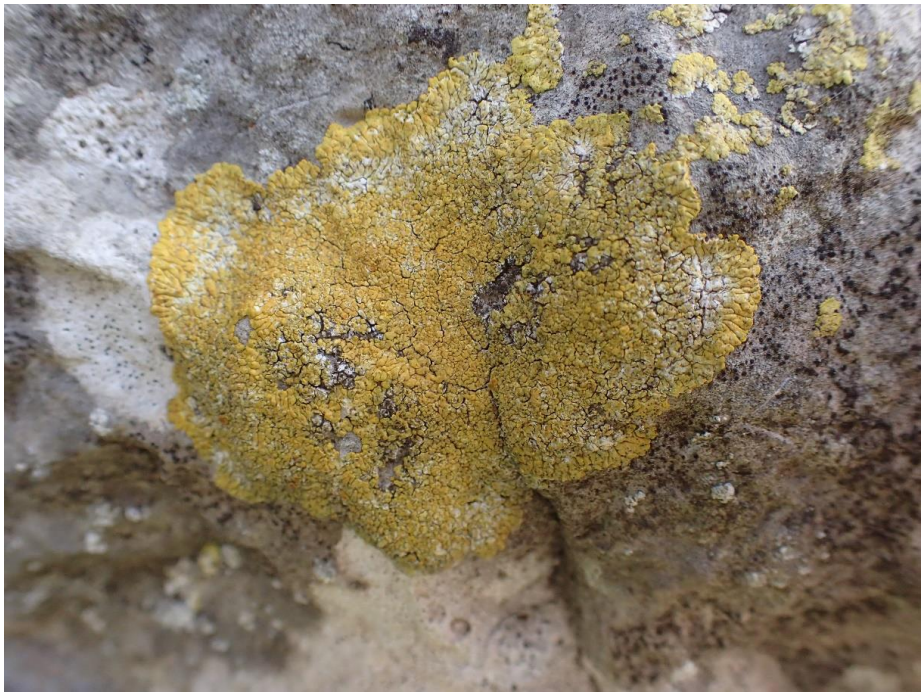

Fig. 2 *Caloplaca flavescens*

This lichen grew in such a position that it received no rain falling at or close to the vertical and was dependent upon wind-driven rain. Since the wall faced a west- south westerly direction, wetting occurred primarily as a result of winter depressions whose prevailing winds came from the above direction. The reduced annual growth rate obviously resulted from more limited wetting, probably exacerbated by the slope of the wall, allowing the water to drain more quickly than the flat slab where the *C. aurantia* grew.

**References**
Johnson, D., Asher, J., Gordon, S. & Pentecost, A. (2020). Ingleborough's Placed Stones. Stories in Stone: Project D9.22 Yorkshire Dales Millenium Trust, Clapham. 53 pp.
Sowter, F. A. (1950) The Cryptogamic Flora of Leicester and Rutland Lichens. Leicester Library and Philosophical Society.

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# It's an ill wind

I've often wondered about canopy lichens: are the same species found at the top of trees as on branches lower down? Are the sticks I pick up representative of what's going on above?

Storm Arwen (26–27 November 2021) gave an opportunity to find out. Strong winds (from the north!) barreled down the Rydal Beck valley and caused mayhem with the trees around Ambleside. Woodland trees crashed like dominoes, many isolated veterans fell. Those on the roches moutonees fared worst, especially the conifers. Local tree surgeons said there'd been nothing like it since 1989. Thankfully, the special trees in Rydal Park seem to have survived. But it wasn't just trees. Some were left without power for days; many houses needed roof work. Tragically, there was a fatality in Rothay Park.

But Arwen also brought the canopy within view. A couple of weeks after the event I spent two days looking at twigs. In each of seven areas within a kilometre or so of the village I picked five fallen trees/large boughs. On each tree I selected three "twigs": the first I came to, the last I'd pass as I walked by, and the one in the middle that seemed to protrude furthest. For each "twig" I tried to identify (and count) the species of lichen that grew on the outermost 70cm (the length of my folded trekking pole). Each species was counted only once per twig. Those that were unidentifiable in the field were taken home for microscopy.

In total I obtained 540 records, from 108 twigs (in one area I miscounted and looked at a sixth tree!). I managed to give 45 names to lichen: some were only identifiable to genus/group, often because they were too young to have developed reproductive features. I made no attempt to identify beyond *Lecanora chlarotera* s. lat. A couple of "mystery" specimens remain unnamed. I'm sure I missed some, and a more experienced lichenologist would no doubt have found more.

The "top ten" species (by number of twigs) are in the table below:

| | | |
|---|---|---|
| *Parmelia sulcata* | 51 | ( also 1 *Parmelia* unidentifiable to species) |
| *Melanelixia subaurifera* | 48 | |
| *Physcia tenella* | 36 | (also 7 *Physcia* unidentifiable to species) |
| *Physcia aipolia* | 34 | |
| *Evernia prunastri* | 32 | |
| *Lecanora chlarotera* s.lat. | 30 | |
| *Punctelia subrudecta* | 27 | |
| *Hypotrachyna revoluta* s. str. | 24 | (also 36 *Hypotrachyna revoluta* s. lat.) |
| *Lecidella elaeochroma* | 24 | |
| *Hypotrachyna afrorevoluta.* | 21 | (also 36 *Hypotrachyna revoluta* s.lat.) |

Perhaps there are no really big surprises. But I wasn't expecting *Parmelia sulcata* to be the "most common" species. I was surprised at how frequent *Melanelixia subaurifera* and *Physcia aipolia* were. Young lobes of *H. revoluta/afrorevoluta* without soredia mean they feature lower down in the top ten. *Parmelia saxatilis* wasn't anything like as common as I was expecting: I'd never noticed its relative scarcity on twigs compared to branches/trunks.

The next table shows the species that were "bubbling under", with between 10 and 20 records:

| | | |
|---|---|---|
| *Ramalina farinacea* | 16 | |
| *Hypogymnia tubulosa* | 15 | (also 12 to *Hypogymnia* genus) |
| *Arthopyrenia punctiformis* | 15 | |
| *Parmelia saxatilis* | 15 | |
| *Caloplaca cerinella* | 13 | |
| *Usnea subfloridana* | 11 | |
| *Xanthoria parietina* | 10 | |

I was pleased to note the relative scarcity of *Xanthoria parietina*, but *Caloplaca cerinella* (also thought to favour nutrient enrichment) seemed very widespread.

And it's here that absences/"rarities" begin to show up. *Hypogymnia physodes* was only found once (though maybe some of the young *Hypogymnias* were that species). *Platismatia glauca,* only found once, was common enough further down twigs and on branches: it obviously doesn't develop on younger, thinner stems. *Physcia adscendens*, relatively rare in the area, wasn't found at all (though some of the young *Physcia* without soredia might have been that species).

Many foliose species commonly seen on tree trunks/larger branches only appeared once or twice, for example *Flavopermelia caperata, Normandina pulchella, Parmotrema perlatum*, *Hypotrachyna laevigata* and *Melanelixia glabratula*. *Melanohalea exasperata*, which I'd previously thought of as being rare, occurred 5 times. Maybe it's more common that I had thought. I found *Arthopyrenia cinereopruinosa* for the first time and one specimen of *Eopyrenula grandicula*, a species not recorded in Westmorland until last year but that I'm beginning to think is relatively common in South Lakeland.

The mean number of species found per twig was 5. Eight twigs had no lichen visible on them, the most on any one twig being 12. Most of the trees looked at (26/36) were oaks. These proved to have a higher mean number of species per twig (oak mean: 5.53, non-oak mean: 3.6). No non-oak twig managed more than 9 species, though an impressive old cherry did manage 9,8 and 8 species on its 3 twigs.

Whilst the mean species per twig was 5, it differed between twigs: that for both the first and third twig per tree was 4.7, for the middle twig it was 5.58. Perhaps the twig that sticks out the furthest gets more species of lichen on it than those lower down (and more shaded?).

Examining trees in distinct areas enabled comparisons between the number of species found in each area. The two woodlands surveyed produced two of the three lowest mean number of species per twig, 2.5 and 4.66. Trees surveyed in woodlands were more likely to be "not oaks", but discounting non-oaks still gave woods the lowest and third lowest means. So there would appear to be fewer species on woodland trees than those in parks/farmland/wood pasture.

Overall, there did not appear to be a relationship between the number of species and distance from the village. However, for particular species there may well be: *Usnea subfloridana* was not found in Rothay Park or on Stoney Lane, the areas nearest the village. As for nitrogen loving/tolerant species, plotting total of *Physcia/ Xanthoria*

species against distance from the village centre suggested an inverse relationship, though it was not significant at 95% level. It would appear that they are more common nearer the village and Rydal Farm, and less common further away and in woodlands. Whilst 7/10 *Xanthoria* records were near the village or farm, the widespread occurrence of *Physcia* species suggests nitrogen pollution is beginning to have an effect across a wider area: it may be worth exploring this further.

As ever, a simple study like this has thrown up more questions than it answered, as well as getting me looking at twigs more carefully. I've learnt something new about which lichens grow where on a tree; that some lichens I think are common are maybe less so and vice versa. It would be interesting to compare these results with trees from other areas, particularly further away from built up areas and in the Cumbrian lowlands. How do twig species vary depending upon habitat type? How does abundance of a species correlate with the number of twigs it's found on? Roll on the next storm? No, I'm not asking for another one.

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# *Lobaria pulmonaria* translocation project at Haweswater, Cumbria

In early spring 2020, two English Lake District trees important for their *Lobarion* community were affected by storms. In Borrowdale an old oak came down and at Naddle Farm, HQ of RSPB Haweswater in the eastern fells, a large part of an ancient ash broke off. The Borrowdale oak hit national headlines when the National Trust, keen to save as much lichen as possible, worked with lichenologist April Windle, staff and volunteers to translocate material, mainly *Lobaria pulmonaria*, within the valley. At Haweswater there were fewer volunteers but the RSPB and landowner United Utilities were very supportive so it was agreed to go ahead with a translocation project of the large amount of *L. pulmonaria* on the fallen ash.

The NT hosted a planning meeting in March 2020 at which it was agreed to document, measure and monitor every stage with a view to writing up a scientific paper. Shortly afterwards of course everything shut down due to the pandemic. Somehow, between spells of restrictions, April managed to get the Borrowdale project done, though not in the way originally envisaged. At Haweswater it was left to Chris Cant and Caz Walker, who live nearby, to do whatever we could.

We did some research and found a range of articles detailing other translocation attempts, as well as the BLS *Lobarion* survey project mentioned on the BLS website which had useful lists for good habitat indicator species as well as those showing nitrogen pollution.

*Lobaria pulmonaria* on the fallen ash donor tree

The fallen ash stem supported a large patch of *Lobaria pulmonaria*, measuring 100cm by 80cm, with a mixture of large mature lobes and small new ones. Healthy *L. pulmonaria* remains on the standing tree and has spread on to a rowan growing within the ash. Having helped with the Borrowdale project, we had had a go at selecting good pieces of the lichen, getting the material off the bark and fixing it to the receptor tree. We decided against removing the *Lobaria* with bark attached (glue was needed to fix it into a crack on the host tree) and found that it could be eased off with little damage using a sharp knife. Larger pieces were torn into roughly 5cm fragments as long as the lobes looked healthy.

Our preferred method for attaching these to the receptor trees involved an industrial stapler, using stainless steel staples and fine plastic mesh. The specimens were fixed tightly to be in direct contact with the bark. We used aluminium tree tags and nails. Chris's phone has an accurate GPS facility so that was used to get a precise location for every tree. This was recorded along with the tag number, in situ position (north, south etc. side of trunk) and number of translocations. We tried to place the lichen at least a metre above ground level to deter browsing by molluscs and deer. Ideally, all sites will be monitored over a number of years.

*Lobaria pulmonaria* translocation held in place by plastic mesh and stainless steel staples

Our most important task was to identify good receptor trees, which needed to have non-acidic bark and be in a suitable situation, combining some moisture retention as well as being moderately well-lit and fairly sheltered - somewhat contradictory requirements, e.g. the damp areas are often north-facing and shaded. Some of the pre-existing *L. pulmonaria* colonies are indeed in shaded north-facing spots which suggests dampness is perhaps of greater importance here at the eastern limit of Atlantic oceanicity influence. Naddle Farm has adjacent wood pasture as well as extensive old woods nearby and along the north-eastern side of Haweswater just over the ridge. Unfortunately, many suitable trees are ash which we decided to avoid due to the likely demise of many of them from fungal disease. Most of the *L. pulmonaria* colonies known when we started were on ash so we wondered whether we would be able to find enough alternatives, not to mention being daunted by the large area we had to cover. Over several months, we walked through the woods searching for good-looking oak, wych elm, hazel, willow and sycamore, all of which can have non-acidic bark or develop it especially with age. This can be indicated by the presence of certain epiphytes, both lichens and bryophytes, which prefer neutral to basic bark (higher pH) whilst others have a preference for more acidic bark (lower pH). To start with this felt very difficult as we weren't confident about our ability to recognise some tricky (and

often tiny) indicator species. However as we became used to looking intently we found that from a distance it was possible to make a judgement: lots of dark purple-brown *Frullania* liverwort and grey *Cladonia*, *Ochrolechia* and *Parmelia* species suggested a more acidic tree whilst green *Metzgeria* liverwort along with lichens such as *Peltigera horizontalis*, *Pachyphiale carneola* and occasional *Thelopsis rubella* indicated a more basic substrate. *Dimerella lutea* is another species indicative of good (damp) habitat; *Normandina pulchella* and *Thelotrema lepadinum*, both moderately common here, also indicate the right conditions as well as ecological continuity. Luckily at Haweswater there are relatively few species indicative of nitrogen pollution.

The greatest number of recipient trees were oak with hazel second. In Scotland the *Lobarion* community is frequent on hazels so here, where indicated by the presence of base-loving lichens such as *Pachyphiale carneola,* it seemed worth trying (though few pre-existing colonies are on hazel). There are a few mature sycamores in the wood which were used where the bark was not peeling. One outlier site was away from the main woods to the south at Rowantreethwaite Beck where several mature elms in an area of basic geology seemed good candidates. Rowans were not usually found with good indicator species but one, supporting *Peltigera horizontalis*, was used.

In the course of carrying out this project we learned a lot and found several previously unrecorded *L. pulmonaria* sites, including on oaks in the damp and sheltered area below Haweswater dam and beside the road where Lee Schofield, the RSPB site manager, also spotted *Lobaria virens* - a first for the area. We also found *Pannaria conoplea*, previously unreported, on two ash trees and new instances of *Parmeliella triptophylla*, *Thelopsis rubella* and *Lopadium disciforme.* Other taxa found included glue fungus (*Hymenochaete corrugata*), spring hazelcup (*Encoelia furfuracea*) and horn stalkball (*Onygena equina*).

A small amount of the original *L. pulmonaria* remains in situ on the fallen ash and this will be moved to new sites soon. It is interesting to see that regeneration is occurring where lobes have been stripped off, presumably from residual tiny lobe fragments or fungal hyphae. The dead wood is still sound so a further harvest of lichen may be available in a year or two if we have the energy.

The naturally-occurring population of *L. pulmonaria* at Haweswater is healthier than previously thought. About 8 sites were known originally with several more being added by us over some years wandering in the woods and during the translocation project. The total now stands at 19 sites, in some cases with multiple thalli, on ash, oak, hazel and rowan. The translocations have added considerably to this and even if only a small number succeed long term the local *L. pulmonaria* population will have been bolstered.

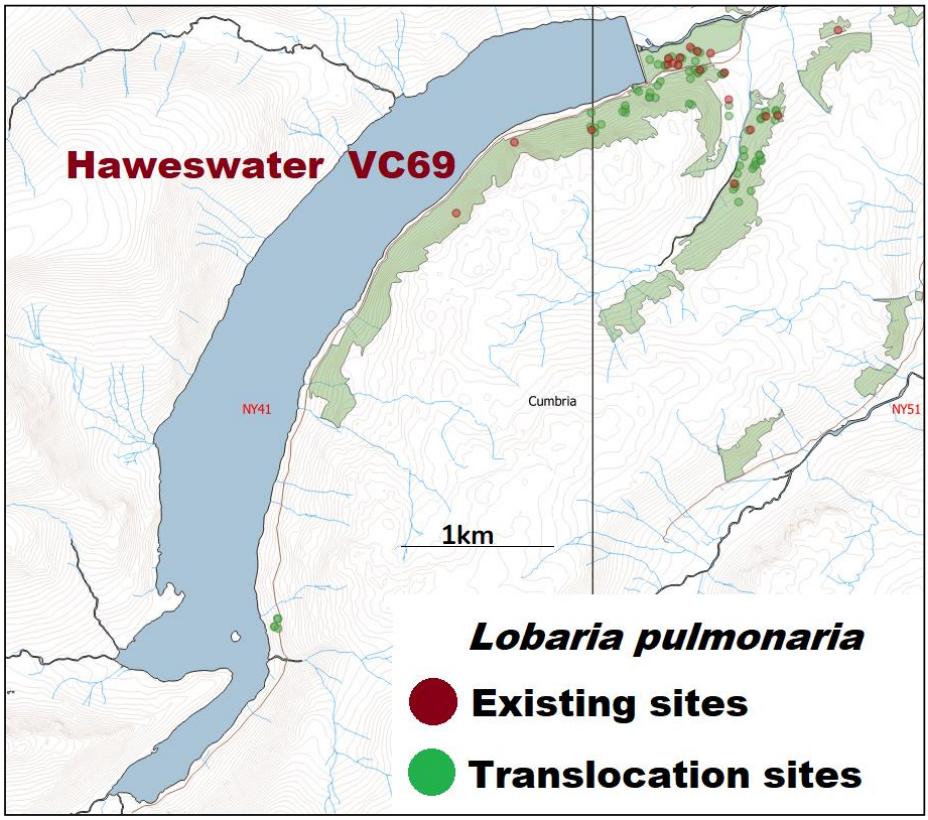
## Details

Total: 251 translocations on 76 trees – so far.

Transplantation locations with no. trees in brackets

Mirkside enclosure (15), Below Dam (13), Naddle Forest (26), Below road near Rowantreethwaite Beck/Old Corpse Road (6), Mirkside wood pasture (11), Naddle wood pasture (5).

Host trees
Ash (1), elm (5),hazel (26), oak (38), rowan (1), sycamore (3), willow (2).




Map showing existing and translocation sites for *Lobaria pulmonaria* at Haweswater. Created in QGIS. Ancient Woodland areas from Natural England. Map information from Ordnance Survey.

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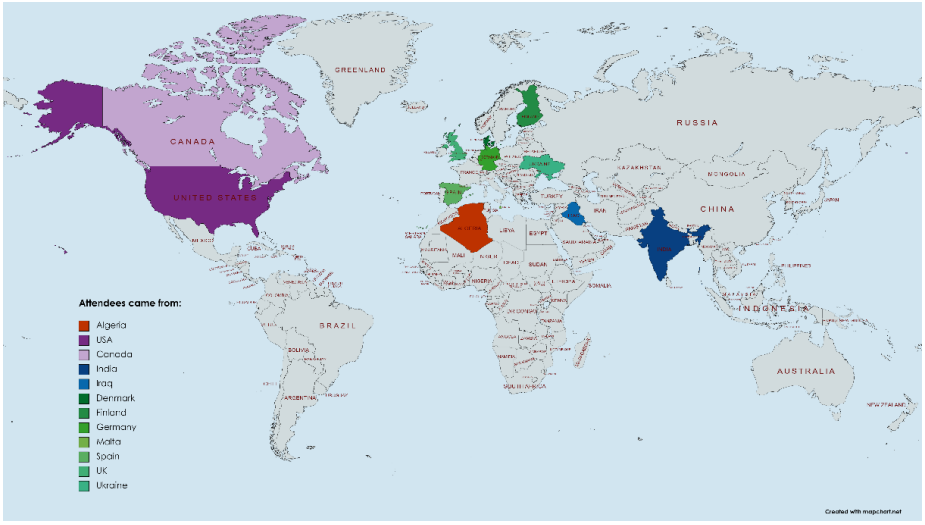
# Lichenicolous Fungi Zoom Chat & Improvement Group

Lichenicolous fungi: an obscure group of organisms but one that is attracting interest in the UK and beyond. They're small; most are tricky to identify; and approachable literature is scant. So why bother? I guess some people simply love the challenge!

Last autumn, a BLS member decided to offer a series of specialist Zoom Chat & Improvement meetings to look at these enigmatic fungi. Eight meetings were held at fortnightly intervals from November 2021 to February 2022.

The meetings attracted thirty people with 16–22 people present on any one occasion. Participants attended from twelve countries spread over four continents. Most considered themselves to be 'beginners' or 'improvers' with the latter group ranging from 'starting to make headway' to 'reasonably knowledgeable'.



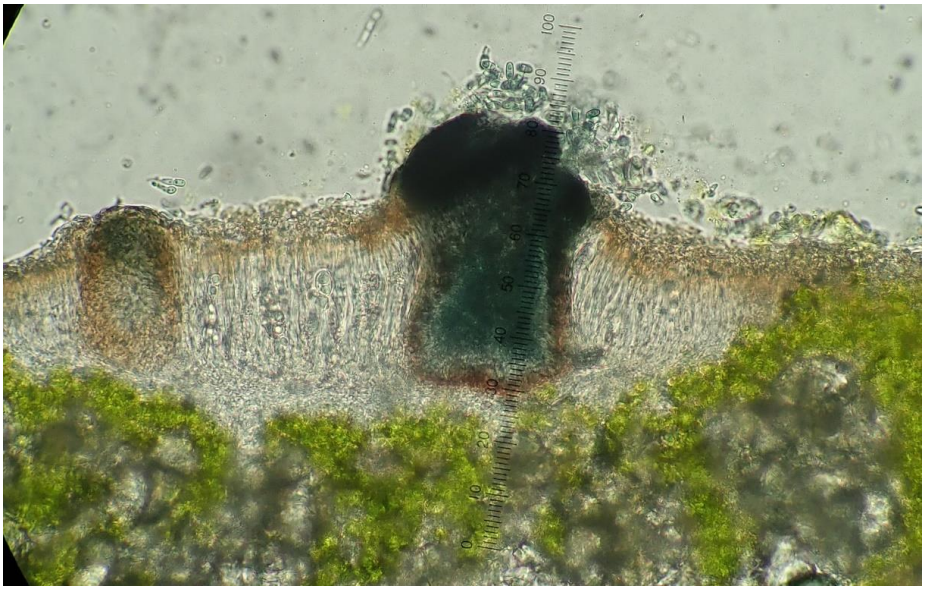

The meetings followed the pattern set up by Judith Allinson for her Lichen Chat & Improvement Groups and this worked well. Breakout rooms allowed people to get to know each other. Mini-talks covered interesting lichenicolous fungi local to the speaker or new finds that needed hints to enable further progress towards an identification. Group members also posed questions which others tried to answer, resulting in talks on pycnidia and pseudoparenchyma as well as other topics. Photographs were fun to share.

It's easy to feel isolated when you study a group of organisms that is particularly specialist. The Zoom meetings brought people together, enabling sharing of knowledge and offering people support. Lichenologists often feel that there are too few opportunities to go out in the field with like-minded people but imagine being the only person in your country looking at lichens and lichenicolous fungi!

Feedback after the meetings was extremely good, mentioning enjoyment, learning and even contributions to professional development.

It's easy to set up this kind of specialist group. The organiser doesn't even need to be a specialist themselves. In fact, the main skills required appear to be an interest in the subject, organisational skills and self-confidence.

*Marchandiomyces corallinus* on *Ophioparma ventosa*. Photo © Chris Cant



Young pycnidia of *Vouauxiella lichenicola* parasitising *Lecanora hybocarpa*. Photo © M. Putnam

The BLS has had a specialist Montane Group for a few years now. The group meets in the field and has contributed many BLS database records for some of out-of-the-way montane sites. It has also helped to improve the skills of intermediate lichenologists through being open to all interested BLS members.

Online meetings offer different opportunities and advantages. If you have an idea in mind, don't be afraid to make it happen. The BLS will be happy to support you. After all, we aim "to promote and advance the learning and teaching of lichens"!

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## Britain has a rainforest – and it's in trouble

This is the title of an article in the National Geographic magazine by Dr Vivien Cumming. (See https://bit.ly/3OSQ0GG *National Geographic* April 2022.)
It is based on interviews with Oliver Moore (Plantlife and bryophyte and lichen advisor for the Alliance for Scotland's Rainforest), and Gordon Gray Stephens who lives, works and manages the woodlands of the West coast of Scotland. The article is well written, giving a good, balanced overview of this habitat – why it is called a temperate rainforest, why it is important, and brings in the lives of local communities, and how conservation is helping to protect and restore this habitat for future generations.

A walk through the temperate rainforest along one of the knaps at Knapdale, Argyll.

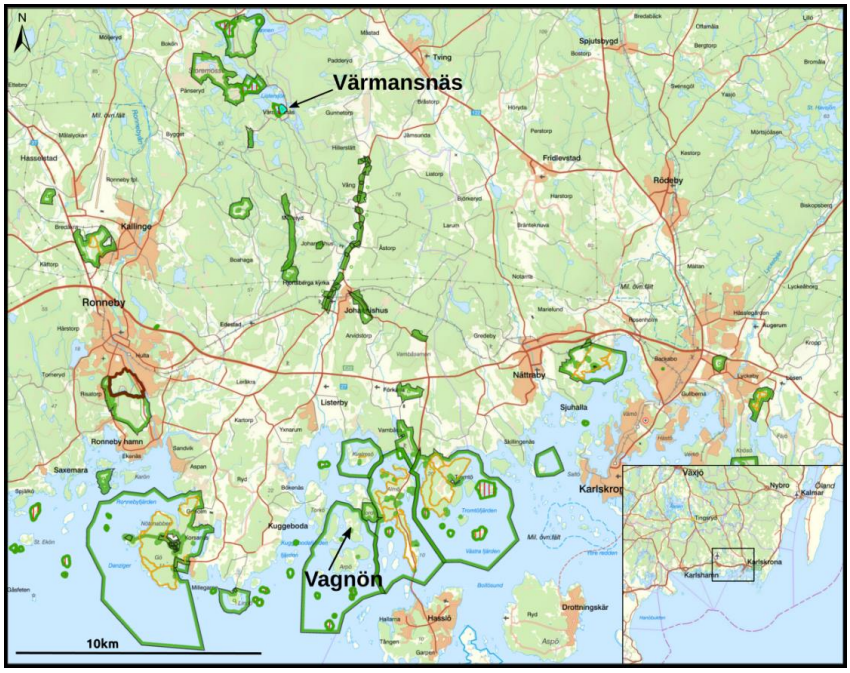
*Pseudocyphellaria citrina* (*P. crocata*) – the Golden specklebelly, a typical temperate rainforest lichen growing on old hazel in Ballachuan Hazelwood, Argyll.

*Lobarina scrobiculata* (*Lobaria scrobiculata*) – 'Lob scrob', another typical temperate rainforest lichen growing on oak at Knapdale, Argyll.

**Photographs** © Sandy Coppins

# Svensk lichenologisk föreningen (SLF) spring excursion to Blekinge

This year I was able to participate in the SLF's spring field trip which was held in Blekinge this year and expertly led by Ola Hammarström. Blekinge is a small county (roughly the area of Lancashire) in the south east of Sweden and is famous for its many small islands and deciduous forests growing on the shoreline of the Baltic. The field trip ran over the weekend of 22–24 April with around 25 participants coming from all over Sweden. The list of attendees included academics from Lund, Uppsala and Stockholm Universities plus researchers from the Natural History Museum in Stockholm.




Our first evening excursion was a relaxed visit to a beech and oak forest near the town of Ronneby to enable everyone to get familiar with the lichen flora of the area. The following day we departed early from the mainland by boat to survey Vagnön, one of several uninhabited islands making up the Listerby Skärgårds Naturreservat.

The islands are low lying with abundant exposure of Precambrian migmatites and gneiss. Vagnön is characterised by pasture and woodland abutting the sea, with many large oaks growing a few metres from the shoreline. Fifty three previously unrecorded

species were identified from the survey so far, including nine red listed species such as *Lecanographa amylacea, Gyalecta carneola* and *Opegrapha vermicellifera.*

*Thelotrema lepadinum* Photo © Stephen Crabtree

Sunday's trip was to Värmansnäs Naturrervat, which lies about 20km north of Vagnön. The nature reserve is only 3ha and comprises a small nose of land jutting northwards bounded by a lake on three sides with deciduous and coniferous woodland. Despite its small area the nature reserve has a rich lichen flora with many red listed and rare species. The entrance track to the reserve is through a curtain of *Usnea dasypoga* and the trunks of beech trees covered with different lirellate species. I have to

admit that I was a bit distracted looking for *Stereocaulon* sp. for a DNA project run by Alica Košuthová from the Natural History Museum in Stockholm. A large number of species were recorded.

A view looking north in Värmansnäs Naturrervat Photo © Stephen Crabtree

It was a great weekend although at times it felt a struggle to keep up with the bewildering array of difficult to identify species. However, I hope that I can attend future meetings and I am sure that lichenologists based outside Sweden would be made most welcome.

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# Local group training in Cumbria

Thanks to a grant from Natural England, the Cumbria Lichen and Bryophyte Group was able to run two-day training sessions in February 2022 for both bryologists and lichenologists. We successfully applied for a match-funding grant from the British Lichen Society to support this training, run indoor id sessions, get saxicolous crust training and buy extra equipment. Microscopes purchased from NE funds are held by Cumbria Biodiversity Data Centre and are available for loan from them.

## Lichen microscope training

To identify some lichens to species you need to look at the thallus, fruit and pycnidia under microscopes, typically doing sections using a razor blade at low magnification under a "dissecting microscope", then using a "compound microscope" to look at the microscopic details at higher magnification. There is useful guidance on techniques on the BLS website.

Lichen microscope training at Mungrisdale with John Douglass

Two days of microscope training from John Douglass aimed to ensure everyone could do the basics, moving on to cover more advanced techniques that are helpful.
Thanks to Becky Yahr and Brian Coppins for various useful chemicals, now in use.

The course was held in Mungrisdale Village hall, where the facilities were excellent. The ten attendees each had a table for themselves, giving plenty of space for microscopes and other equipment. These were well spaced out, which contributed to an atmosphere where concentration was needed to practise what was being taught. The sessions covered:

1. Squashes, sections and spores. Including identifying and measuring the different layers, dealing with pycnidia, applying K and C under cover slips and oil immersion
2. Identifying ascus tips and staining, including use of ink/vinegar and Lugol's Iodine to stain the medulla
3. Use of polarising filters to see crystals
4. Identifying photobionts – algae and cyanobacteria

In spite of having read about these aspects, it was really helpful to see the techniques demonstrated and have dedicated time to try them out. There is no short cut to making thin sections other than practice and a sharp razor blade. John Douglass was on hand to show us various refinements to the techniques such as the amounts of chemicals to use, how to apply them, and how to transfer sections of apothecia. It takes endless

patience which he certainly has. John and others brought previously identified specimens for participants to practise on which helpfully gave known outcomes.

The meeting provided a much needed opportunity to obtain polarising filters, chemicals and dropper bottles. These events take a lot of organising, much of which is "unseen" and so thanks to John, Caz and Chris plus the funders who enabled this to happen. These sessions gave people confidence to have a go at microscopy in a supportive atmosphere and to realise that it is do-able.

Some comments from attendees:
*"I was so glad I managed to get to the microscope training. It's something I've wanted to do for a couple of years now."*
*"What did I learn? First, that microscope work on lichens is do-able. It's fiddly, and it may go wrong, but you just have to get stuck in and try again. And second, everyone struggles at times; it isn't just me.*
*"But when it works, it opens up a whole new world, and I begin to see how it will make a big difference. I might even be able to follow Dobson's main key now!"*
*"For the last couple of years I have been trying to pluck up courage to buy microscopes. As a complete technophobe could I even cope with setting them up? Then this workshop appeared and it was the push I needed."*
*"The workshop was a fantastic help. A refresher on some things, some new ideas and great support from everyone. It was really helpful to see other people's work and get a better grip on what we were looking at. John's PowerPoint presentations were very clear and he was incredibly helpful. "*
*"My find of the day turned out not to be a lichen at all!"*
*"A week on from the event, I'm fired up to try out sectioning and staining lichens. I'm really looking forward to any follow ups."*
*"I'd be keen to attend the saxicolous crust training when it happens- I'm keen to start learning these, so I will look out for emails."*

## Indoor ID sessions

We are indeed keen to use our new microscope skills and pass on tips and tricks to others. Usually microscopy is not the first step when doing identifications, so the group decided to have general informal ID sessions. Members can bring along specimens for ID – we would use microscopes if need be.
Cumbria is a large county that largely covers two vice-counties. We are very grateful to Cumbria Wildlife Trust for free use of their spaces near Carlisle and Kendal to cover north and south.

Twelve people came to our first session at Plumgarths, a few days after our trip to Brantwood by Coniston. It was great that their head gardener Bethan Pettitt was enthused enough to come along to see some of the lichen and bryophyte finds being examined in more detail. A new trinocular compound SP52 microscope was hooked up to a laptop via a DigiCam adapter and the ToupCam software to allow sections to be displayed on the room projector. From the Brantwood specimens we were able to

identify *Arthonia elegans*, *Graphis scripta* and *Normandina acroglypta* from spores. We thought we found *Porpidia contraponenda* but are now not sure.

For the second session at CWT's northern office, Gosling Sike on the outskirts of Carlisle, we spent the morning going through many specimens from Russell Gomm. This included confirmation under the microscope for *Phaeographis smithii* as the exciple was not continuous at the base of the apothecia. Pete Martin showed us *Parmotrema reticulatum* under the dissecting scope with its faint network of white cracks on the upper surface and soredia visible at the lobe tips. The K+ yellow turning red reaction was clear too. After lunch, bryologist Ryan Clark took us round Gosling Sike, his workplace. Our quick species list included *Dimerella pineti* on a compost heap sleeper: we added this to the sightings board!

Russell was keen to have an ID session every week; it would be great to chat over a pint if we lived close enough. However, we have decided to wait until winter before having more full day indoor ID sessions. In the meantime we have the saxicolous training to look forward to.

Getting together with others in the field is a brilliant and fun way to improve your lichen skills. We would like to recommend that other local groups (a) get started, (b) ask for help and (c) apply for funding if need be. Other lichenologists and the BLS are keen to help, including for more specialist training, chemicals or equipment.

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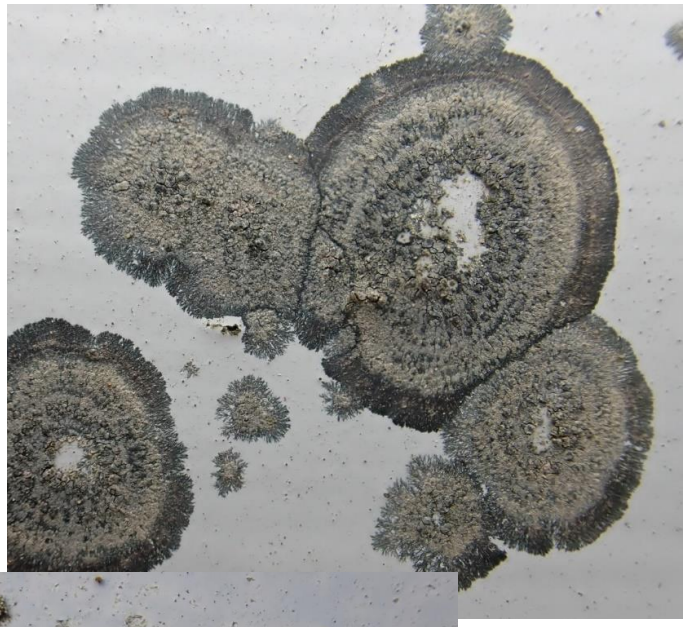
# Lichens on a painted steel bridge parapet

The bridge is in Manor Valley, Peeblesshire (Vice County 78) and the parapet consists of rectangular-section steel girders with a smooth painted surface.

On it there are some pioneering lichens showing neat prothallus detail. The main species is *Buellia aethalea*, with *Lecanora polytropa* seeming to follow its lead (identified by Brian Coppins).

*Buellia aethalea* (right)



*Lecanora polytropa* (left)

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# Unexpected consequences - a personal perspective

When COVID restrictions first started, it might have been thought that this would be a time when lichenology would go into hibernation. In fact the opposite has happened. This has come about by a combination of factors, principally Judith Allinson's personal initiative to hold Zoom sessions over the internet. This in turn has uncovered a latent, untapped interest in lichens in the public at large and more specifically the need for a support network for lichen beginners.

When the Zoom sessions were set up during lockdown, 2 years ago, little did I realise what a positive addition to the activities of the BLS they would be. These were described fully in The Bulletin, issue **128** (Summer 2021). The groups continue to flourish, there having been 10 so far, with this interest and commitment being an **unexpected consequence of COVID.**

LABs member in Local Group – note traditional pose. Photo © M. Stephens.

As a tutor for some of the LABs (Lichens for Absolute Beginners) groups, I have met lots of really keen "lichen beginners", made new friends and learnt a lot myself from the group members and other LABs tutors. After 2 years of looking at lichen photos via Zoom to discuss ID and following the easing of COVID restrictions, there is a growing desire to look at the real thing. Several new local groups have formed (see

BLS website) and the idea of a hands-on follow up course for LABs members, LEAF (Laboratory Extension and Fieldwork), was seen as a way of developing knowledge and skills from the LABs courses further. An application for funding from the BLS to support this was submitted. To provide evidence of the success and the tangible results of these meetings or output, (a word I hate), to the Grants Committee, I drew up the table below which illustrates how the LABs groups have benefited both individuals, the groups and the BLS. I was amazed when I pulled this together and felt I needed to share it with the members of the BLS. Willingness to engage and contribute has largely developed through social interaction and encouragement of group members, both attendees and tutors. Undoubtedly there is more to add to the table.

**An amazing series of unexpected outcomes way beyond my initial expectations of LABs and the Zooms.**

| **Output** | **Contributors** | **Examples of Contributions**<br>* see below |
|---|---|---|
| Delivery of presentations to the main Zoom groups in relation to lichen ID,, discussion and project ideas. | At least 10 | Lichens on your Doorstep project. |
| Delivery of presentations to the main Zoom groups in relation to lichen techniques. | At least 4 | Photography<br>Using Pd<br>Ink- vinegar staining |
| Development of observational skills leading to discussion at main Zoom group of previously unknown or rarely discussed topics. Increasing lichen knowledge. | At least 2 | Cilia<br><br>Pustules |
| Developing confidence for the delivery of lichen talks | At least 2 | Talks to local Natural History groups |
| Delivery of lichen walks | At least 1 | Leading lichen walks for local groups |
| Setting up of Post LABs self -help groups | 2 | LABs members taking on role of organising Post LABs groups |
| Technical support for AGM Zoom | At least 2 | Developed confidence in using Zoom and willingness to help in this area |
| Technical support for main Zoom | At least 3 | Assistance to Judith Allinson in relation to videos<br>Production of guides to using Zoom, Powerpoint and lichen photography |

| Output | Contributors | Examples of Contributions<br>* see below |
|---|---|---|
| LABs members have volunteered further support to BLS | 1<br><br>At least 2<br><br>At least 4 | 1 LABs attendee has taken on the role of Treasurer<br><br>LABs tutors are helping EPC via membership of working groups on on-line learning and Zoom<br><br>Trialled the "Learn the language " module |
| Greater involvement with local groups | At least 9 | Encouraging self-help in "learning about lichens". Joining local groups. |
| Members have committed financially | Many | Invested in microscopes, literature, chemicals and equipment to help photography etc. |
| Encouraging membership of the BLS | Several | |
| Tutor personal development | All tutors | Example – "on a personal level it got me to sort out my photos and improve my understanding / training skills which has been useful in e.g. helping April Windle with an FSC course, and in helping newcomers on a Cumbria local group trip"<br>Development of tutor understanding and confidence<br>Meetings of tutors |
| Tutors developing material | 2<br><br><br><br>All tutors | Working with Judith Allinson in the production of a checklist to record lichen features. This prompts Zoom members to give full descriptions when requesting lichen ID<br><br>Production of material, which can be shared |
| Tutors | All | Support to Post LABs groups |
| Promotion and marketing of lichenology and the BLS | Many | Contributions to the Bulletin<br>Contribution to lichen records<br>Contribution to Species Descriptions (in progress)<br>Contributions to Facebook<br>Contributions to YouTube |

*So many people have demonstrated commitment, and although names have been omitted their contributions have been much appreciated.

The Zoom groups have been an important "discovery" of the Covid pandemic and have been of particular value in a "field" where there are relatively few, widely distributed members (compared to Botany for example). The Zoom platform is certainly stimulating "lichen activity" e.g. the recent lichenicolous fungus group, on-going requests for new LABs groups, the formation of LABs follow-on self-help groups and engagement with the main Zoom groups.

**To nurture these unexpected consequences I would like to draw attention to the need to further this enthusiasm and commitment and for the BLS to develop and deliver an education strategy to support this.**

<
LABs member Duncan Wright, with 2 of 32 attendees at a local lichen walk.

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# How many lichens can you identify on a single photograph? An update

In Bull. British Lichen Society **129** page 76, a photograph showed several lichens on a young alder (*Alnus glutinosa*) tree in a recreation park in Peebles and invited readers to respond with an attempt to identify them. The response from readers was not overwhelming, but the tree has now been visited by the newly formed Local Lichen Group 'Lichens in South-east Scotland' (LISS) which included two experts. This photo is slightly to the left of the previous one to reveal an extra species.

Not surprisingly the experts found species that I had missed and corrected a couple of my errors.
The species on this photo are now thought to be:
*Hypogymnia tubulosa, Lecanora pulicaris, L. varia, Melanelixia subaurifera, Parmelia sulcata, Physcia tenella, Rinodina sophodes, Tuckermannopsis chlorophylla, Xanthoria polycarpa* and *Usnea subfloridana.*

Elsewhere on the tree (below 2 metres) are *Candelariella xanthostigmoides, Evernia prunastri, Hypogymnia physodes, Lecanora chlarotera, Melanelixia glabratula, Physconia enteroxantha, Pseudevernia furfuracea, Ramalina farinacea* and *Xanthoria parietina.*

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# Current questions in fungal taxonomy

Highlights from the Westerdijk Spring Symposium

April 21st marked the first day of the Westerdijk Spring Symposium, taking place at the Royal Netherlands Academy of Arts and Sciences (KNAW). Titled "Rise of the Fungi", this symposium hosted a wide range of fungal related topics, from antifungal resistance in human pathogens, to ecological threats facing forests in California. Of the four sessions hosted during the first day, session four 'Naming Fungal Taxa: From Linnaeus to Genomes', was one that interested us the most. This session featured talks by Dr. Gianluigi Cardinali and Dr. Robert Lücking.

## Naming Fungal Taxa: From Linnaeus to Genomes


Both talks raised important points concerning the taxonomic impediment; that is, the shortage of trained taxonomists and curators compared to the high demand for taxonomic information needed to measure the rapid biodiversity loss occurring in the present era. It is urgent that the mycological community reach a consensus on a standardized, universal method for classifying fungi, one that remains practical to all relevant fields. In the last decade, molecular identification (DNA barcoding) of fungi has been proposed as a quicker alternative to the traditional, time consuming process of morphological analysis (Hawksworth *et al.*, 2016). There was heated debate over this, and multiple papers critiqued the idea (Thines *et al*. 2018, Zamora et al. 2018). Barcoding is not foolproof; its reliability is dependent on the integrity of the databases the sequences are compared to (Lücking *et al.* 2020). The issue remains up for debate: how should we efficiently identify and name fungal species?

The first talk, given by Gianluigi Cardinali, focused primarily on the taxonomy of microbial strains of fungi. In this context, Cardinali investigated the building blocks of taxonomy beginning with designated type specimens and reference strains. The type specimen is the first specimen of a species to be described, and is the only 'true' reference of that species. However, in the case of microbial fungi, who may have dozens of strains that technically fall under the same species, a reference strain is also used as a more accurate current representation of the species. Any naturalist, mycologist or not, is all too familiar with the continual renaming and reclassification that the current taxonomic framework entails. This is primarily due to the interaction of the nomenclatural system with phylogenetic research improving the fungal tree of life. In the wake of this conundrum, Cardinali proposed that reference strains may be

used as a current representation of a given species, while the type specimen might be used only for nomenclatural purposes. In this sense, the reference strain would change over time but the reference name would remain the same. This approach may help to add more integrity to species concepts.

In the second talk of the session, Robert Lücking spoke about metabarcoding and the recognition of environmental fungal taxa only known from sequences, or "dark matter fungi". The dialogue of this talk centered around Lücking's recently published paper "Fungal taxonomy and sequenced based nomenclature", which proposed multiple solutions to the issue of naming dark taxa that lack an associated voucher specimen or culture (Lücking *et al*., 2021b). Interestingly, in a 2016 proposal, Dr. Lücking argued we should name species based only on DNA sequences (Hawksworth *et al*., 2016). Moving towards a middle ground, a 2020 paper with both Cardinali and Lücking as authors, dives into the importance of coupling work on phenotypes with DNA sequence information and explains current issues in molecular identification (Lücking *et al*., 2020). More recently, they have proposed that fungi identified from sequences be informally named and their Latin names be denoted with 'nom. seq.' to distinguish them from traditionally identified species (Lücking *et al*., 2021b). Lücking touched on this change in opinion over the past decade during his talk.

During the discussion that followed the talks, one question posed was whether we should fully automate the species delimitation process as a solution to the taxonomic impediment. This would mean loading all the data we have into an algorithm or pipeline of some sort, and accepting its output of delimited species groups. The majority of people at the conference responded that humans should have the final say in species. Perhaps this system could be used to create putative groupings that an expert taxonomist could then look over and adjust as needed. This would increase the speed of taxonomic research while retaining its integrity. Medical mycologists and health practitioners present advocated that they didn't care what the species concept is, as long as they could identify what fungus/strain is affecting their patient, and how to treat it. They essentially said "stop getting so caught up in the theory, and think about the applications."

## Lichenized fungi

Although the studies presented in the symposium focused mainly on non-lichenized fungi, the questions and possible solutions offered are equally relevant to lichen-forming fungi. Lücking even included examples of lichenized fungi in his talk. Lücking, Hawksworth, and Leavitt wrote an article published in 2021 tackling the taxonomy of lichenized fungi specifically. The paper is thorough, and well worth a read for anyone interested. They made several recommendations for lichen taxonomy and species delimitation. Firstly, they note that in ecological work, the term "lichen" makes sense to use, but in taxonomic works, it is best to refer to the lichen by the Latin name of the fungus and use the term "lichenized fungi" to describe the species.

They recommend that the fungal partner be named following the "one fungus = one name" concept. This is important in cases where one lichenized fungus species forms partnerships with both algae (chloromorph) and cyanobacteria (cyanomorph),

creating different physical appearances. An example of this is *Sticta latifrons*, with a green, leafy chloromorph and a paler, more fruticose and tree-like cyanomorph, pictured below. Despite the strong difference in appearance, the lichenized fungus is one species according to the DNA.

**Fig. 3** Phenotypic divergence of the same mycobiont under different conditions. **a** Chloromorph and **b** dendriscocauloid cyanomorph of *Sticta latifrons*.

Photographs by Robert Lücking (**a**–**c**)


Figure adapted from Fig. 3 Lücking et al 2021a

One of their recommendations goes against traditional taxonomy in the case of cryptic species. Sometimes species look the same until thorough microscopic work or chemical spot tests are performed. The authors argue that if molecular data (especially evolutionary history) proves two species are unique, they should be kept as separate species even when they look identical, or superficially identical, in the environment. In a similar vein, the authors also revised the current species pair concept. Currently, sexual and asexual morphs of the same lichenized fungi are considered two species in most cases. The authors instead suggested that if molecular data show the lichenized fungi is indeed one species that simply has two morphs, it should be named as one species. In situations where there is no molecular data, or molecular data is unclear, they could be left as two species until there is clarity. One temporary solution in these cases could be using (sor) or (isi) after the species name to denote sorediate or isidiate morphs, an example shown in Table 3 of the paper.

Overall, they suggest considering each species question independently and using the data to inform delimitation. In challenging and unclear situations, the authors recommend using statistical analysis and considering evolutionary history, morphological difference, and reproductive isolation to determine species splits. It is best to avoid splitting species further, except for when both the geographical distribution and evolutionary history support it.

**Looking ahead**

One thing everyone agreed on at the conference was the importance of fungal taxonomy, and the urgency of the taxonomic impediment. Expert identification via morphological examination remains a reliable way of identifying fungi (Lücking *et al.,* 2020). Metabarcoding (a type of identification using DNA) can allow for rapid analysis and grouping of sequences to determine fungal diversity, but faces many issues. As masters students we don't have the answers to looming taxonomic questions. However, we do know that taxonomy must be practical and work for the end users

such as field lichenologists. It is important that lichenologists (both professional and amateur) are included in the conversation.

Works such as the 2021 paper by Lücking *et al*. are extremely helpful as they create explicit guidelines for fungal taxonomy. Translating these papers from dense academic terms into digestible and informative documents for field biologists is key to engaging more people in taxonomy, and in making sure the practices that are outlined work for the end users. All taxonomy depends on good collections and detailed information about specimens, especially geographic data. There is not only a shortage of taxonomists, but a shortage of boots on the ground, collecting and documenting new specimens. The work of groups like the British Lichen Society is integral to taxonomy and the measurement of biodiversity. As mentioned above, it was non-taxonomists who had a lot to contribute to this discussion at the conference we attended. We urge all lichenologists to continue their hard work and to follow the ongoing taxonomic debates, as our feedback can help inform new guidance for species delimitation.


From left to right Rosey Jarvis, Keenan Harris, George Meadows,and Alex Dombrowski

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## Acknowledgements

We are immensely grateful to the BLS, RBG Kew and EET for helping fund our journey to Amsterdam for the Westerdijk Fungal Biodiversity Institute Spring 2022 conference: Rise of the Fungi. We also are grateful to our supervisor, Dr. Ester Gaya, who supported us in going to the conference. As young scientists, this was our first mycological conference and we found it inspiring and engaging.

*Keenan Harris*
*Alexandra Dombrowski*
(MSc students RGB Kew)

# Guide to identifying *Lecanora hybocarpa* and other *L. chlarotera* confusion species

| | Field characters | C reaction | Pd reaction | Thalline margin crystals | Episamma |
|---|---|---|---|---|---|
| *L. carpinea* | dense white pruina on disc | disc C+y | | granules rapidly dissolve in K | granules on epithecium |
| *L. albella* | dense white pruina on disc | disc C- | margin Pd+o | | granules on epithecium |
| *L. subcarpinea* | dense white pruina on disc | disc C+y | margin Pd+y/o | | |
| *L. leptyroides* | dense white pruina on disc | disc C+*y* | | do not dissolve in K | |
| *L. pulicaris* | dark brown disc | | margin Pd+o | | into hymenium |
| *L. intumescens* | margin broad and smooth | | margin Pd+y | | |
| *L. cinereofusca* | crenulate margin | | margin Pd+o | | |
| *L. campestris* | matt disc, smooth thalline margin | | | small | none |
| *L. horiza* | glossy disc, smooth thalline margin | | | small | none |
| *L. allophana* | | | | small | |
| *L. glabrata* | | | | small | |
| *L. chlarotera* | pale to dark disc | | | large | thin layer on epithecium only |
| *L. argentata* | dark chestnut disc, whiter thallus | | | large | none |

| | Field characters | C reaction | Pd reaction | Thalline margin crystals | Episamma |
|---|---|---|---|---|---|
| *L. hybocarpa* | w. bloom, medium brown never dark disc | | | large | into hymenium |
| *L. sinuosa* | w. bloom, medium brown never dark disc, thallus dominated by raised warts | | | large | into hymenium |

Version 1.0, 2 March 2022, Steve Price & Neil Sanderson

## Notes

*L. subcarpinea*, *L. leptyroides*, *L. allophana* and *L. glabrata* are continental species. For *L. campestris* and *L. horiza* see Bull. British Lichen Society **112** pp 66–71.

The above is based on Bull. British Lichen Society **126** pp 5–14, Neil Sanderson, How to Identify *Lecanora hybocarpa* and other confusions in *Lecanora chlarotera* s. lat.

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# BLS lichen survey meeting at Rydal Park
# 4th & 5th September 2019

## Introduction

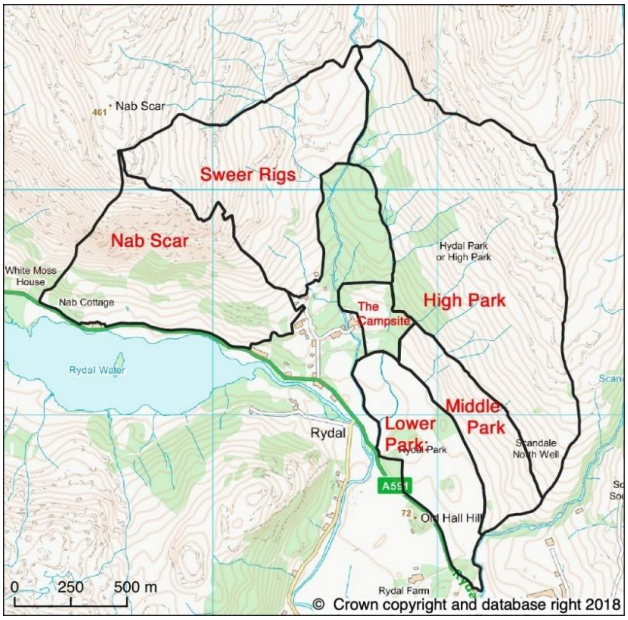
Over two days in September 2019, the BLS carried out its second survey meeting, in a similar style to the first such meeting at Moccas Park in 2018 (Sanderson, 2020), this time at Rydal Park, Westmorland (**Map 1**). These meetings concentrate on a detailed survey of a single site of high conservation interest.

As part of the Back from the Brink, Ancients of the Future project, funded by The National Lottery Heritage Fund, Plantlife requested that the British Lichen Society carry out a lichen survey of Rydal Park. This was intended to update the knowledge of the lichen assemblage of the park, concentrating on the veteran tree habitat, but examining other lichen habitats as well.

The meeting was attended by Nicola Bacciu, Paul Cannon, Brian Coppins, Vince Giavarini, Russel Gorm, Nerys Jones, Dave Lamacraft, Pete Martin, Allan Pentecost, Steve Price, Maxine Putnam, Neil Sanderson, Caz Walker, Tim Wilkins and April Windle. Thanks are due to Steve Price and Dave Lamacraft for organising the meeting and to Rydal Park for permission to carry out the survey.

A detailed report was produced (Sanderson, 2020), which can be downloaded from the BLS website.

**MAP 1**
**Rydal Park 2019 Location**

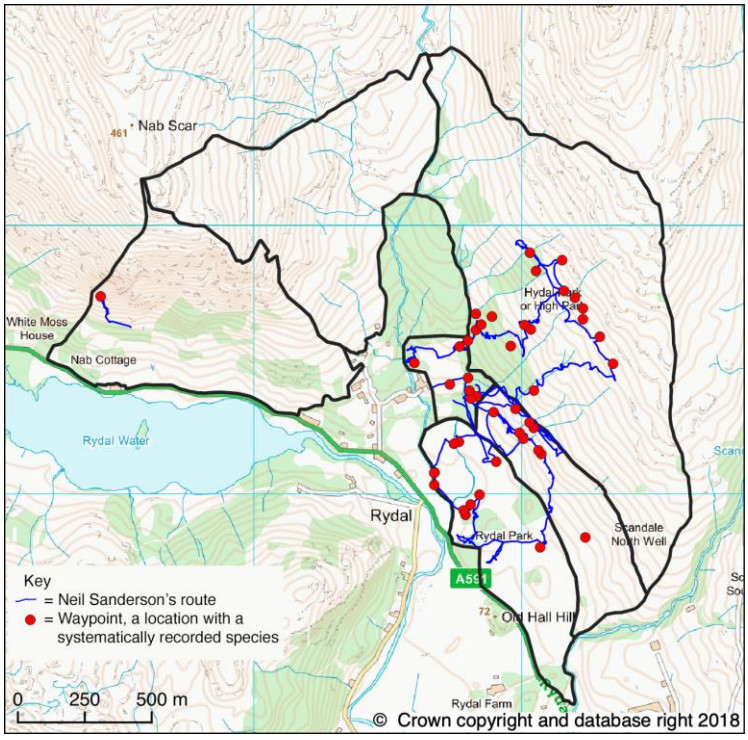


## Methods and background

Survey Methods: in the time available it was not possible to visit all of the park, which was in any case a very large site. The survey strategy was to focus on the largest concentrations of veteran trees, starting in areas with known interest and moving out from there. The result was transects across the adjacent areas to get an indication of the distribution of the interest.

All species were recorded to at least a six figure grid reference when first encountered, but with rare species rerecorded each time they were 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, were 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. Large areas were left unvisited by the end but good coverage of what seem to be the core areas of interest was achieved (**Map 2**).

**MAP 2**
**Rydal Park 2019 Neil Sanderson's Survey Route & Waypoints**



## Site

The survey concentrated on the area east of Rydal, where the parkland and pasture woodland habitat was already known to be of interest (Lower, Middle and High Parks). A brief reconnaissance was made to Nabb Scar to refind a known *Lobaria* tree and get an idea of the habitat. Sweer Rigs, which has some veteran trees on the lower slopes, was not reached. The survey also strayed outside of the main units. The Campsite is an extension of the same habitat as Middle Park and proved to be very lichen rich and was included in the survey, both by Neil Sanderson, who was staying in a camping pod in the campsite and by the whole group passing through to High Park. In addition, Vince Giavarini, recorded mainly lichenicolous fungi in the far west of Lower Park, west of Rydal Beck.

- **Lower Park**: a landscape park on in-bye land (intensively used land near the farm) below the old Ambleside to Grasmere coffin route. The historic gardens and parkland register implies that this area was still farmland in 1770, but was parkland on an 1840 estate map. There were some very old boundary trees, mainly oak and some ash, likely to predate the park along with clumps of younger, probably mainly early 19th century, trees. The latter were predominantly oak, but included sycamore, sweet chestnut and beech. The north of this area was well surveyed but the south was not reached. The lichen interest was fading out to the south at the southern edge of the area surveyed.

- **Middle Park**: a landscape park on the slopes above the old Ambleside to Grasmere coffin route. The boundary between this area and High Park is a recent 19th century one marked only by a cast iron fence with no wall or bank. This area of park was probably created out of similar out-bye (enclosed but extensively used land further form the farm) pasture woodland as seen in High Park above in the early 19th century. There are some very old oaks, including a maiden oak of 5.31m girth, a few ancient hollies and an ash pollard, along with ancient alder stools and younger oak, sycamore, ash and beech. The north of the side is well surveyed but the south was not reached and may harbour further lichen interest.

- **The Campsite**: the western end of Middle Park is now a campsite, but still supports similar habitat, including frequent lichen rich oaks.

- **High Park**: an out-bye pasture woodland higher on the slopes above. This was shown as pasture woodland on a 1770 estate map, when the Lower Park was still in-bye farmland. The pasture woodland includes flushed alder stands, groves of veteran oak lower down and veteran ash higher up. There are rare ancient hollies and occasional planted exotics including beech and horse chestnut. There are frequent glades with much bracken and areas of flushed grassland. The survey was a transect up and down through the wood and sizable areas were unsurveyed and likely to be of lichen interest.

• **Sweer Rigs**: not reached in 2019, but an ancient tree survey (Milligan & Preston, 2018) indicates that there is a concentration of veteran trees in an area of small fields, mainly ash and oak. This area is potentially of lichen interest but likely to have been badly impacted by acid rain and mists.

• **Nab Scar**: only briefly looked at. The upper slopes include a magnificent old growth oak dominated out-bye pasture woodland, with some groves of old holly and an old wych elm. What was seen of the site suggested it was very badly acidified but some further lichen interest is likely to survive, especially on older trees lower down on the slopes below the old Ambleside to Grasmere coffin route. The latter were not looked at in 2019.

**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 lists for the Lake District are Southern Oceanic Woodland Index (SOWI) (formerly the New Index of Ecological Continuity, SOWI) for more low lying and less exposed woods and the Upland Rainforest Index (URI) (formerly the Eu-oceanic Calcifuge Index of Ecological Continuity, EUOCIEC). The latter is intended for higher more exposed woods. In this area, it is recommended that the threshold for considering sites for SSSI status is a score of 20 for the SOWI and 10 for the URI.
In addition, significant populations of individual threatened species (Vulnerable or higher) or Near Threatened species, which are also International Responsibility species, can be considered as potentially notifiable features of an SSSI (Sanderson et al., 2018). The significance is measured either by the county or the SSSI Area of Search (the latter are the National Character Areas in England and here is the Cumbria High Fells, covering the core of the Lake District).

## Survey results

**Totals**: all significant epiphytic species recorded previously, mainly by Francis Rose in 1970 and 1981, were refound and only records from 2019 are considered here. A total of 277 taxa was recorded during the survey; of these 231 were lichens, 34 lichen parasites (lichenicolous fungi) and 10 associated non-lichenised fungi. There were 47 new records to Westmorland, 27 of which were lichenicolous fungi, a testament to Vince Giavarini's efforts looking at this previously neglected group. A total of 244 taxa were recorded as epiphytes with an additional 33 taxa on the rocks.
Epiphytic species of interest recorded for the SSSI included 34 Southern Oceanic Woodland Index (SOWI) species and 14 in the Upland Rainforest Index (URI). In addition, three Vulnerable, five Near Threatened and 31 Notable species were recorded. The overall totals and totals for the separate recording units are listed in **Table 1**. The combined total is also given for the Middle Park and the Campsite, as the habitat in the Campsite is an extension of the habitat in Middle Park.

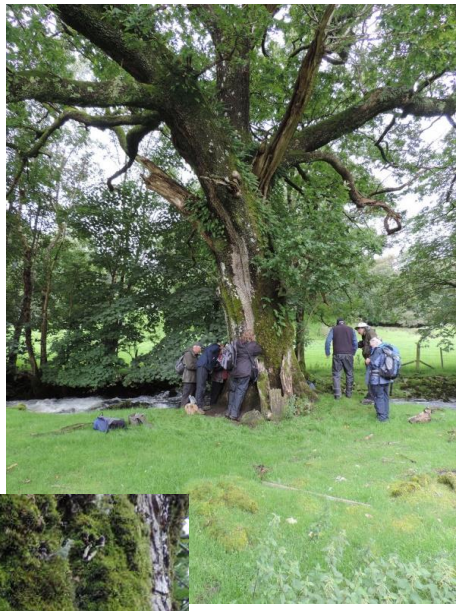
**Table 1**
**Total Numbers of Lichens Recorded from Rydal Park 2019**

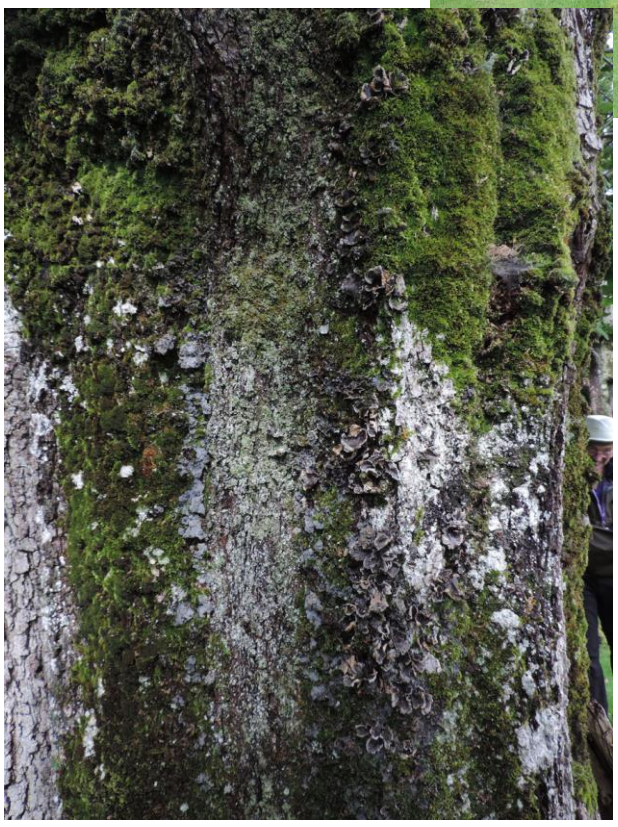
| Species | Lower Park | Middle Park | Campsite | Middle Park & Campsite | High Park | Nabb Scar | Rydal Park |
|---|---|---|---|---|---|---|---|
| **Totals** | | | | | | | |
| Total epiphytic taxa | 161 | 93 | 77 | 127 | 142 | 5 | 244 |
| Additional saxicolous taxa | 17 | 2 | 0 | 2 | 24 | 0 | 33 |
| Total taxa | 177 | 95 | 77 | 129 | 165 | 5 | 277 |
| **Biodiversity Scores** | | | | | | | |
| SOWI Index scores | 16 | **21** | **20** | **28** | **21** | 3 | **34** |
| URI Index scores | 4 | 7 | 8 | **10** | **10** | 0 | **14** |
| Pinhead Index | 4 | 3 | 4 | 5 | 4 | 0 | 9 |
| SSSI Criteria spp. | **5** | **3** | **2** | **3** | **1** | 0 | **7** |
| Vulnerable | 2 | 1 | 0 | 1 | 1 | 0 | 3 |
| Near Threatened | 2 | 3 | 2 | 3 | 2 | 0 | 5 |
| Notable | 14 | 10 | 13 | 19 | 15 | 2 | 31 |
| International Responsibility spp. | 9 | 9 | 10 | 15 | 8 | 2 | 21 |
| S41 Species | 3 | 2 | 1 | 2 | 1 | 0 | 5 |

**Key** **34** = Index score over the local SSSI quality threshold

These totals show rich epiphytic assemblages in Lower Park, Middle Park, Campsite and High Park, with the combined Middle Park and Campsite richest over all in species of interest. The whole site has high scores for the Lake District for SOWI Index scores and URI Index scores and 6 species potentially individually selectable as SSSI criteria were recorded. Middle Park, Campsite and High Park individually exceeded the SSSI criteria for SOWI, while the combined Middle Park and Campsite and individually the High Park also pass the criteria for the URI. All these sites have individual species potentially selectable as SSSI criteria, with the most recorded in Lower Park.

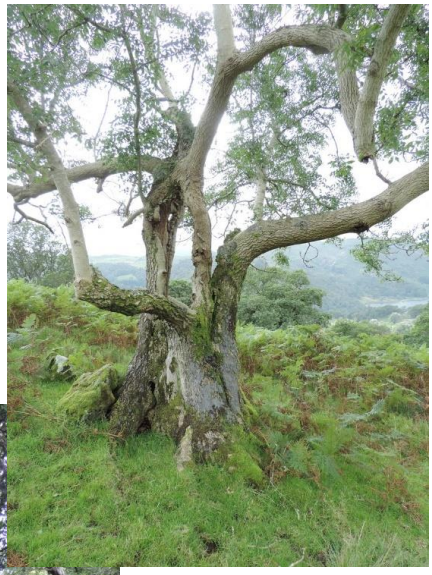
**Lower Park**: an ancient Sessile Oak by Rydal Beck, probably a boundary Oak predating the creation of the Lower Park out of in-bye land. A very rich tree with *Caloplaca herbidella* s. str., *Cetrelia cetrarioides*, *Lobaria pulmonaria*, *Pannaria conoplea*, *Peltigera collina*, *Rinodina roboris* var. *roboris*, *Sticta limbata* and *Thelopsis rubella*. A large colony of *Sticta limbata* in the picture below.



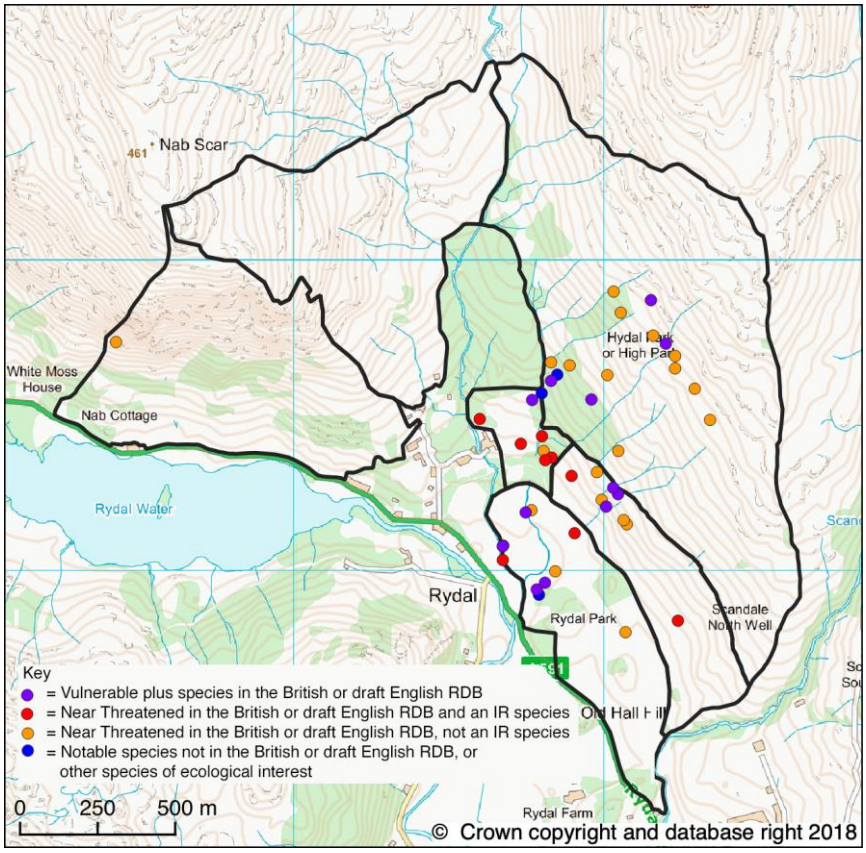


**Middle Park**: left, a post-mature sessile oak in unimproved parkland, a large tree 5.31m girth, and supporting the rare lichens *Lecanora quercicola* and *Rinodina isidioides*. Right, a close up of a *Lecanora quercicola* thallus on this tree (the white thallus below centre).

**High Park**: right, typical of the upper parts of the wood with scattered ancient ash trees, an ancient hollow ash in open ground in bracken and acid grassland, with *Pannaria conoplea* dominating the lower part of the tree. Left, an ancient holly on a rock outcrop in denser woodland lower down, with *Mycoporum lacteum* and also with *Taeniolella toruloides* parasitising *Thelotrema lepadinum*.



**MAP 3**
**Rydal Park 2019 Conservation Value, Systematically Located Species**




**Lichen Assemblages**: the habitats supporting assemblages of lichen interest show a strong gradient up-slope with the communities in Lower Park very different from those in the upper parts of High Park. Lower Park has very rich Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae* & *Agonimion octosporae*) (**Map 4**), with both Mediterranean – southern Atlantic (*Agonimion octosporae*) and general oceanic (*Lobarion pulmonariae*) species prominent. Not nearly as rich but also very significant here, is a veteran tree variant of the Mature Mesic Bark Community (*Pertusarietum amarae*) with rare sub-oceanic species (**Map 6**). The core of this area of interest is concentrated to within 200m of the very rich old boundary oak trees on the bank of the Rydal Beck, which predate formation of the park. Within this zone early 19th century parkland trees, mainly oak, have been colonised by some very rare species, however,

beyond this area the younger veteran trees in the Lower Park are of much more limited interest.

Middle Park and the Campsite also have very rich Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae* & *Agonimion octosporae*) (**Maps 4**), on oak and sycamore, again with both Mediterranean – southern Atlantic (*Agonimion octosporae*) and general oceanic (*Lobarion pulmonariae*) species prominent. The Mature Mesic Bark Community (*Pertusarietum amarae*) with rare sub-oceanic species (**Map 6**) also extends into Middle Park. In addition, on the upper slopes of the Middle Park and the Campsite, the Acid Bark Woodland Assemblages (*Parmelion laevigatae*) (**Maps 5**) on veteran oak become rich at above 100m. A revelation, on leaving the Campsite on the 6th August, was that incoming frontal clouds were forming a mist line at about 100m. The increase in the diversity of acid bark communities is likely to relate to the frequency of mists higher up the slopes; the woodland above 100m is a cloud forest. Also of interest in Middle Park and the Campsite are Dry Lignum Assemblages (*Calicietum abietinae*) (**Map 7**) on large pieces of dead oak wood, both standing and fallen but propped off the ground and, in Middle Park, Smooth Bark Communities (*Graphidetum scriptae*) (**Map 8**) on ancient hollies.

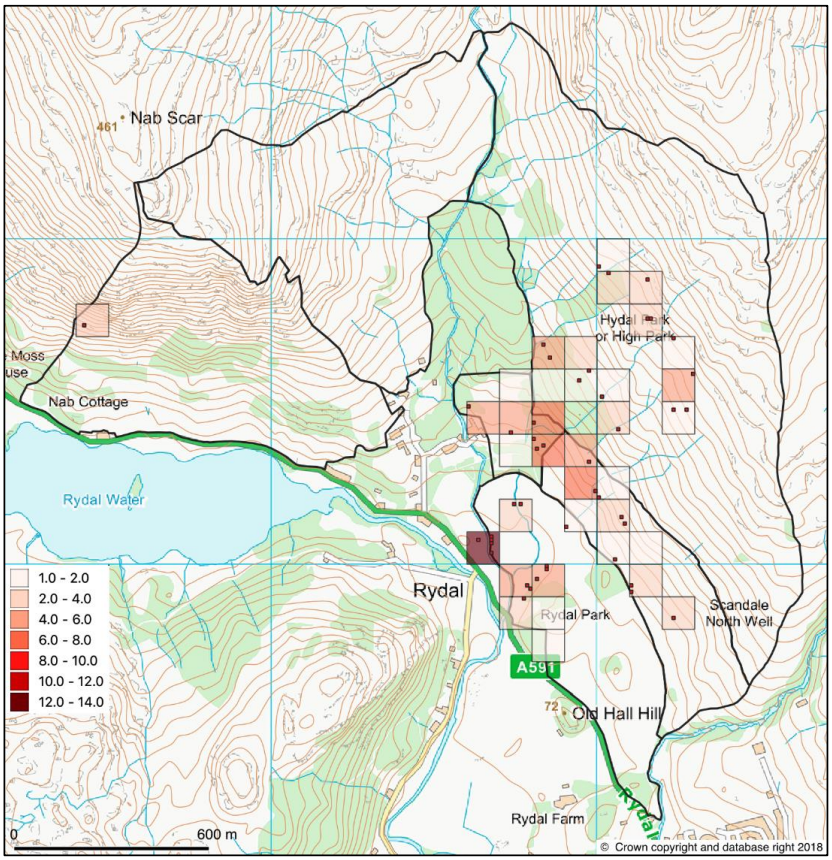
The lower section of High Park has a similar mixture of assemblages to the upper slopes to the Middle Park and the Campsite. The Acid Bark Woodland Assemblages (**Maps 5**) are well developed on oak, with the Base Rich Bark Woodland Assemblages (**Maps 4**) on both oak (with a rich oak spotted by the veteran tree survey carried out by Milligan & Preston (2018) but missed by the BLS) and ash also present. The interest of the latter was dropping off, however, with the southern oceanic element (*Agonimion octosporae*) absent. The Smooth Bark Communities (*Graphidetum scriptae*) also extends up hill on ancient hollies (**Map 8**), with further interest on alder and hazel. Up slope, however, the oaks lose most of their interest and no interesting oak was found above about 150m, although old oaks do extend above this height. Above this, high quality communities are confined to ash, which supports some significant Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae*) species and a limited Acid Bark Woodland Assemblage. In this area, only a few of the veteran ash are of high interest; most are species-poor and badly acidified by acid rain pollution.

Rydal Park ranges from a distinctly lowland and southern veteran tree site in Lower Park extending into Middle Park and the Campsite through a sharp transition to an upland cloud forest habitat in the upper part of Middle Park and the Campsite into the High Park. Within the cloud forest, increasing frequency of mists higher up the slope, however, appears to have exacerbated the impact of acid rain pollution.

**Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae* & *Agonimion octosporae*)**: a very rich habitat best developed on veteran trees, typically found on bark that is flushed by base rich water from above. It requires both humid conditions and good light to survive and it is vulnerable to increasing shade in neglected habitats. 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 lichens 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.

**MAP 4**
**Rydal Park 2019 Base Rich Bark Diversity**




Coincidence map, 29 species used

A total of 30 species of conservation interest were recorded from this habitat, the highest total from an individual habitat here. The park still has an impressive assemblage for England of leafy *Lobarion* species including *Lobaria pulmonaria*, *Lobaria virens*, *Pannaria conoplea*, *Parmeliella parvula*, *Parmeliella triptophylla*, *Peltigera collina*,

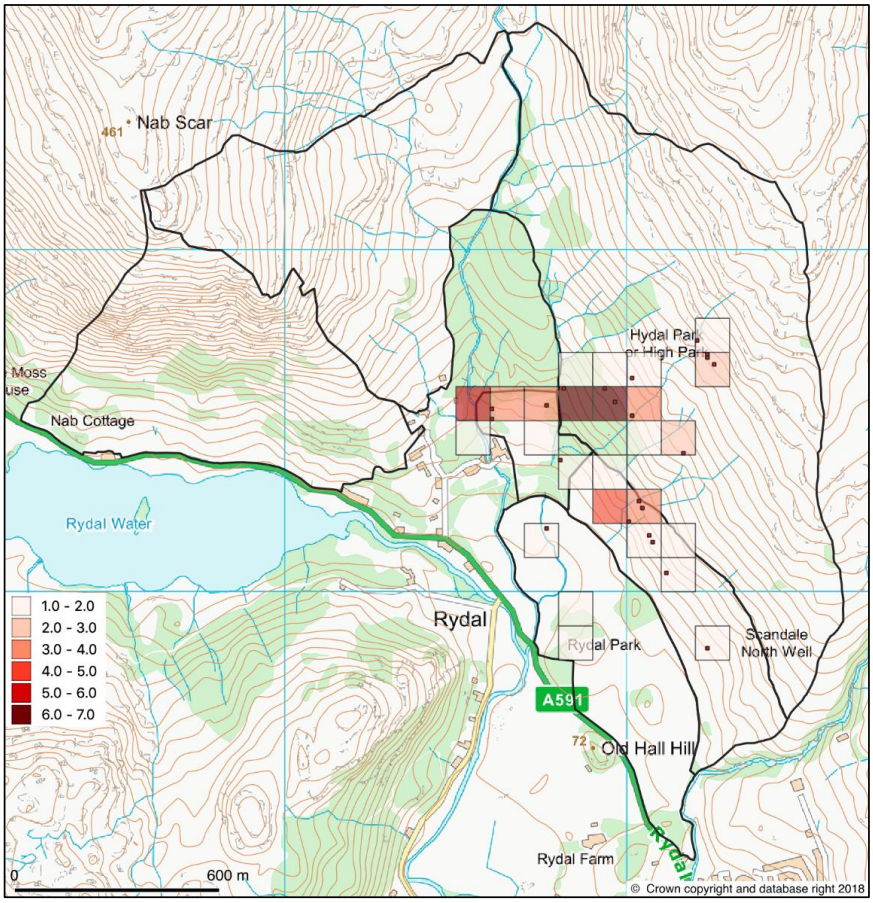
*Peltigera horizontalis* (supporting the rare lichenicolous fungi *Scutula epiblastematica*) and *Sticta limbata*. Also found was the squamulose *Phyllopsora rosei*. Most of these are sensitive to acidification, and are found on oak and sycamore lower down but only ash where they occur above about 120m. Crust forming *Lobarion* species found include the Vulnerable Lake District specialist *Toniniopsis separabilis* (*Bacidia subincompta*), along with more widespread species such as *Bacidia biatorina*, *Leptogium subtile*, *Leptogium teretiusculum*, *Mycobilimbia epixanthoides*, *Mycobilimbia sphaeroides* (*Mycobilimbia pilularis*) and *Pachyphiale carneola*.

The Mediterranean – south Atlantic element (*Agonimion octosporae*) is found mainly below 100m and mostly on oak. This element includes the Near Threatened species *Agonimia octospora*, new to Westmorland, and the Near Threatened *Rinodina isidioides*, both of which have large populations here for northern England. Other southern-western species include *Agonimia flabelliformis*, *Porina borreri*, *Ramonia dictyospora*, and *Rinodina griseosoralifera*, which were all new to Westmorland. Other species of interest include *Rinodina roboris* and *Thelopsis rubella*.

**Acid Bark Woodland Assemblages (*Parmelion laevigatae*)**: distinctive communities developed on well-lit but sheltered acid bark in woodlands in oceanic areas. The best known form (*Parmelietum laevigatae*) is characteristic of old growth high altitude "cloud forest" in very wet areas but less well known lowland forms occur on lower ground in wet areas and into drier but humid lowland sites. In old growth stands this habitat can be very rich in uncommon species and the community appears very sensitive to woodland management. Many species, which are quite mobile in areas with large areas of surviving habitat, can become rare in areas without large undisturbed refugia. In contrast to the Base Rich Bark Woodland Assemblage, this assemblage appears less able to survive on scattered and isolated individual veteran trees.

A total of 24 species of conservation interest were recorded from this habitat in 2019, the second richest habitat in the park. The assemblage has a strongly upland element but with some characteristic cloud forest species rare e.g. *Hypotrachyna laevigata*, *Mycoblastus sanguinarius* and *Sphaerophorus globosus* or absent e.g. *Ochrolechia tartarea*. This may be an impact of acidification. Other upland characteristic cloud forest species are present including *Biatora vernalis*, new to Westmorland, *Bryobilimbia sanguineoatra*, *Calicium lenticulare*, new to Westmorland, *Cetrelia cetrarioides*, *Hypotrachyna taylorensis* and *Micarea stipitata*. Strongly south-western species characteristic of more lowland acid bark communities are rare, but *Micarea doliiformis*, new to Westmorland, was locally widespread at Rydal. More generalist species of interest recorded in the habitat included *Anisomeridium ranunculosporum*, *Cladonia caespiticia*, *Cladonia cyathomorpha*, *Loxospora elatina*, *Megalaria pulverea*, *Micarea xanthonica*, *Mycoblastus caesius*, *Parmotrema crinitum*, *Trapelia corticola* and *Thelotrema lepadinum*.

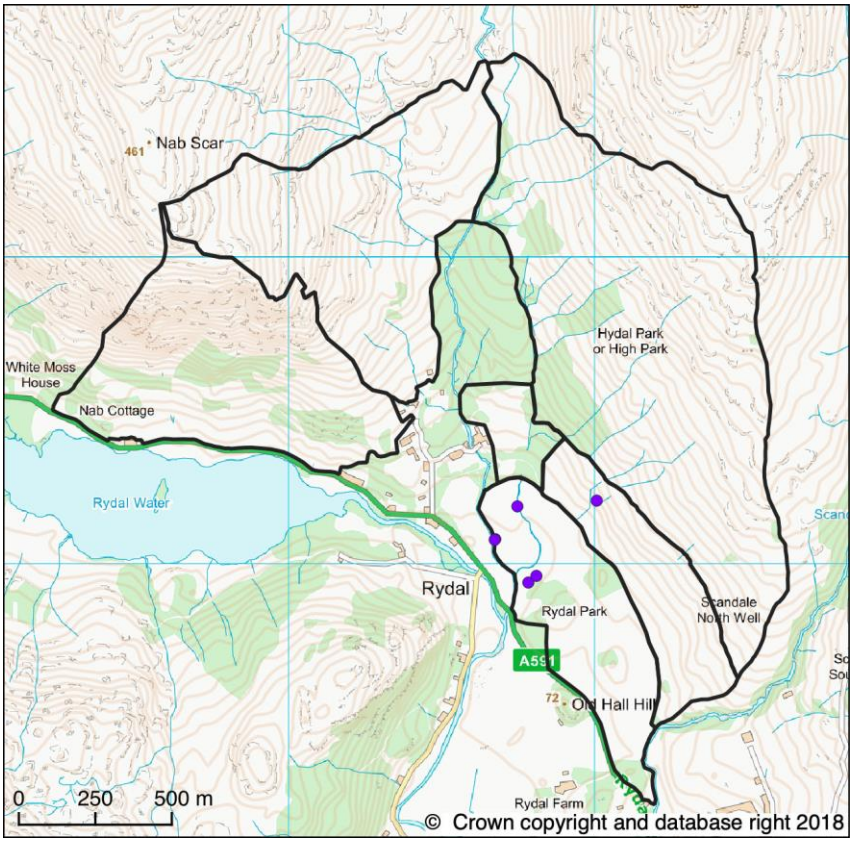
**MAP 5**
**Rydal Park 2019 Acid Bark Diversity**




Coincidence map, 18 species used

**Mature Mesic Bark Assemblage (*Pertusarietum amarae*)**: found on mature and less acidic bark on the wet side of mature trees in sheltered conditions. The basic community is composed of widespread lichen species, especially *Pertusaria* species. *Pertusaria flavida* is particularly characteristic of the more species rich variants. 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.

**MAP 7**
**Rydal Park 2019 Parkland Mesic Bark Assemblage**



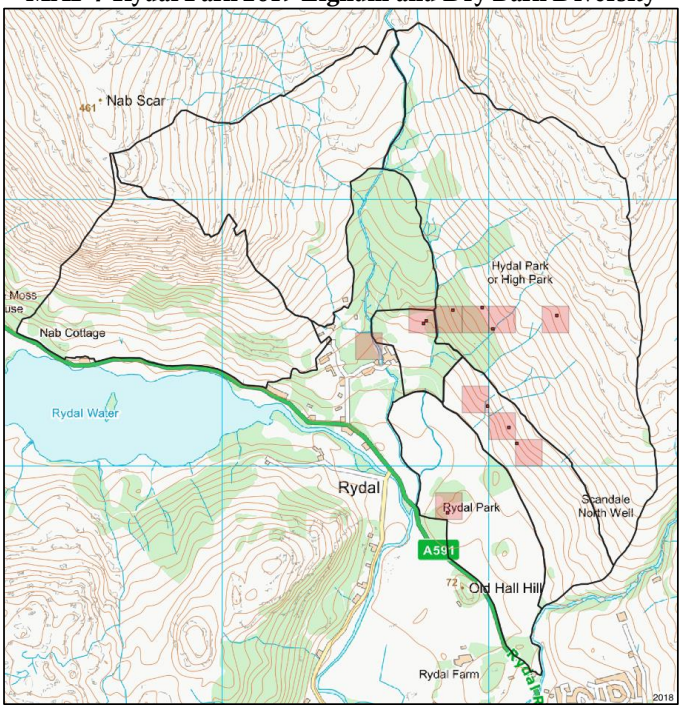

Location of trees with two Threatened Species

A total of seven species of conservation interest were recorded from this habitat in 2019. The total is lower than the two main habitats of conservation interest but it does include some significant species. Rare species characteristic of the Mature Mesic Bark Assemblage include a well-defined assemblage of southern sub-oceanic species, which were a significant feature here. 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).

Two particular important species were found at Rydal Park the Vulnerable *Caloplaca herbidella* and the Vulnerable *Lecanora quercicola*. The former is now very rare in England and only two trees supporting the species were refound by Sanderson (2014) in England, it having crashed in its main site in Savernake Forest due to increasing shade. In 2019, it was found new to Westmorland, on five oaks in the north of Lower Park. This is the only large population known in England at present. *Lecanora quercicola* is also very rare with few recent records from England and only a single recent record from Northern England. This had been recorded by Francis Rose in Rydal Park on oak in the late 20th century. It was refound on a single giant maiden oak in Middle Park. Other species found in this habitat are more widespread species including *Arthonia vinosa*, *Sphinctrina turbinata* and *Thelotrema lepadinum*. Associated habitats included wound tracks running through the *Pertusarietum* on sycamore with *Porina byssophila* and *Strigula taylorii*.

**Lignum and Bark Assemblages (*Calicietum abietinae*, *Calicietum hyperelli* and *Cladonietum coniocraeae*)**: a variety of fairly species poor specialist communities develop on bare wood (lignum) and very dry bark. 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.

**MAP 7 Rydal Park 2019 Lignum and Dry Bark Diversity**



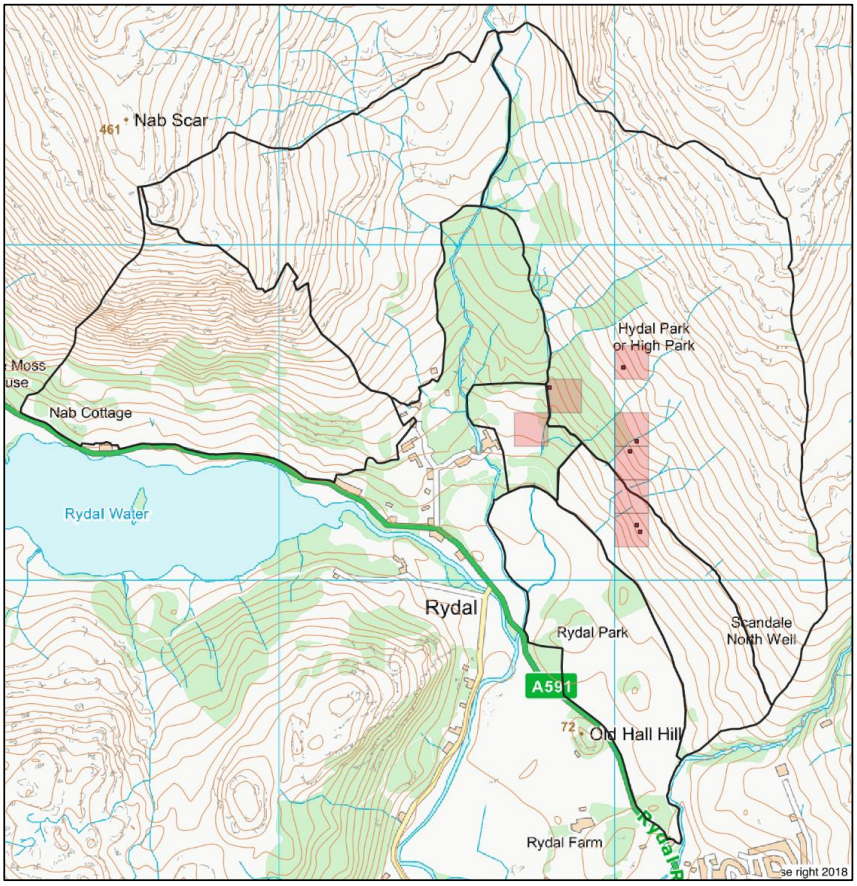

Distribution of seven species

There was limited dead wood in the Lower Park and probably no really old oaks, but the Middle Park, the Campsite and High Park do have some large piece of dead wood and very old oaks supporting lichen interest (**Map 7**). Fallen damp wood includes *Cladonia parasitica* and *Imshaugia aleurites*. 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. Rich examples of this habitat were only seen in Middle Park and the Campsite on fallen or partly fallen oaks and on lignum exposed on ancient hollies. These supported, *Chaenothecopsis nigra*, *Microcalicium ahlneri* and *Chaenotheca brunneola*. Older oaks can support species poor communities, which include old woodland species on the oldest trees. Lichen interest in this habitat was only found on very old oaks in the lower part of High Park, where *Chaenotheca brunneola*, *Chaenotheca chrysocephala* and *Chaenotheca trichialis* were found.

**Smooth Bark Assemblages (*Graphidion: Graphidetum scriptae & Arthpyrenietum punctiformis*)**: communities on smooth bark of shrubs, especially hazel, rowan and holly, and smooth barked trees in sheltered woodland conditions. The basic community is composed of widespread species, especially on young vigorous trees or bushes. On ancient hazels and holly, and slow growing suppressed young trees, however, ancient woodland and uncommon species can occur.
At Rydal Park common place smooth bark communities were found on hazel in Lower Park, and only higher up were assemblages of interest found on hollies in Middle Park, the Campsite and Higher Park, along with some interest on hazel in Higher Park (**Map 8**). The ancient holly in both Middle Park and Higher Park is particularly important, with the rare *Mycoporum lacteum* found on three old hollies. These hollies also support *Mycoporum antecellens*, *Stenocybe septata*, and *Taeniolella toruloides* parasitising *Thelotrema lepadinum*. Hazel is rare in the High Park but includes long undisturbed bushes, which supported *Eopyrenula avellanae* and *Porina byssophila*.

**Other Habitats**: other habitats contribute a great deal to the species diversity of the site, but have few species of conservation interest. In particular these include the canopy communities on twigs and branches, and other trunk communities not described above. There are, however, many under recorded species, which were new to Westmorland such as *Lecanora hybocarpa*. The impressive lichenicolous fungus assemblage recorded by Vince Giavarini, in particular contributed numerous new vice-county records. One twig species *Caloplaca asserigena* is regarded as a Notable species. In addition, the twig assemblages are a good guide to the current level of air pollution, as they have not been influenced by different past air pollution concentrations. Oak twigs were intensively recorded in three locations, two in the Lower Park and one in the lower section of High Park. The APIS website gave the background ammonia concentrations as 0.59µg $m^3$, well below the critical level for lichens as 1.0µg $m^3$ and the acid deposition above the critical load for the habitat. This matches the data from High Park collected from an oak in lightly grazed pasture woodland with unimproved grassland. There are very few nitrogen tolerant species here and these only occurred on damaged bark. In Lower Park, the sward is

**MAP 8**
**Rydal Park 2019 Smooth Bark Diversity**




Distribution of six species

improved but has reverted to permanent pasture in the north but looks more productive and more fertilised to the south. The assemblage in the Lower Park has
more nitrogen tolerant species than the Higher Park sample and fewer nitrogen sensitive lichens but sensitive species such as *Evernia prunastri* and *Hypogymnia physodes* are still present. Also, very nitrogen tolerant species such as *Xanthoria parietina* are rare and confined to damaged or dead twigs low down as well. The twig assemblage in Lower Park does not indicate very high ammonia levels but does indicate mild enrichment as would be expected in a lowland park.

The rocks also add to the lichen diversity, but the rock assemblage is an ordinary one of siliceous rocks, and lacks any species of special interest.

## Nature Conservation Value & Management

**Value of Lichen Assemblage**: our survey demonstrated Rydal Park was an exceptional lichen rich site and a site of international significance for epiphytic lichens:

- The parkland scores 34 using the Southern Oceanic Woodland Index (SOWI) for the 2019 data. The threshold for SSSI quality in this index in this area is 20 (Sanderson et al, 2018), so the SOWI score is well over this threshold. It also scores 14 in the Upland Rainforest Index (URI), so also above the regional threshold for SSSI quality, which is 10 for this area. The combined Middle Park and the Campsite area and also High Park all pass the SSSI thresholds individually. Lower Park does not pass the thresholds in either index, but is rich in Threatened species.

- Seven of the epiphytic species recorded in 2019 could be assessed as having populations that qualify for SSSI site selection in their own right as Threatened lichens in Britain. Of these, *Caloplaca herbidella* s. str. as the largest known population in England, certainly qualifies, while *Lecanora quercicola*, *Ramonia dictyospora* and *Rinodina isidioides* are the largest known, or only extant populations in the SSSI Area of Search the National Character Area "8 Cumbria High Fells".

**Rydal Park is an important site of international significance for epiphytic lichens**. This interest is associated with the veteran trees in parkland and pasture wood. The interest includes well developed Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae* & *Agonimion octosporae*) throughout and Acid Bark Woodland Assemblages (*Parmelion laevigatae*) higher up. Very significant species also occur in *Mature Mesic Bark Assemblage* (*Pertusarietum amarae*) in the Lower Park while Lignum & Bark Assemblages (*Calicietum abietinae* & *Calicietum hyperelli*) and Smooth Bark Assemblages (*Graphidetum scriptae*) add to the diversity in the mid slope habitats.

**Management of the lichen rich habitats at Rydal Park**: the current structure of the parkland and pasture woodland is in good condition for the lichen assemblage. The most significant current or potential damaging impacts are from external threats such as acid rain and ash dieback. Some long term adjustments of the management would, however, be beneficial. These include reducing the intensity of the grassland management in the Lower Park. Carry out some tree planting, especially oak and sycamore, in the Lower Park, Middle Park and Campsite. In the future retain dead wood as it develops in all areas. In High Park the pasture woodland is in very good condition but will need long-term variations in the grazing pressure to allow patchy tree regeneration.

Acid rain caused by external pollution has had a serious impact on the Park, especially higher up, and the site is still modelled as being in exceedance for acid deposition by the APIS website. Acid deposition has been declining and long term recovery should

occur as long as national policy to reduce pollution is maintained. Nitrogen air pollution from agriculture, however, is not decreasing to the extent that sulphur pollution has, and long distant dispersal from this source contributes to acidification. This may slow down recovery unless this is tackled as effectively as industrial and transport sources of acidifying pollution have been.

Ash is locally very significant in High Park, especially the highest woodland where all trees of high interest are ash. This means that ash dieback could seriously impact the interest of the site, but will leave the lower woodland and parkland still of high interest. *Pannaria conoplea* had more than 50% of the recorded populations on ash, while the crustose species *Bacidia subincompta* (Vulnerable) and *Mycobilimbia pilularis* were only found on single ash trees. Half of the populations of *Cetrelia cetrarioides* and *Hypotrachyna taylorensis* were recorded from ash, while *Parmeliella triptophylla*, *Phyllopsora rosei*, *Rinodina roboris*, and *Rinodina isidioides* had some colonies on ash, but had more than half their population on other tree species. As with much of the Lake District, mitigation will be difficult here as the main faster maturing shrubs suitable for colonisation, sallow and hazel are still too acidified to support these species. Translocation of leafy lichens to base rich oak and sycamore lower down in the wood may be the only short-term mitigation measure. In the long-term, promoting any ash dieback tolerant regeneration of ash or planting tolerant ash will allow the recovery of veteran ash in the landscape in 200 years time.

## References


Milligan, K. & Preston, D. (2018) *Rydal Park Veteran Tree Survey 2018*. A report for Natural England.

Sanderson, N. A. (2014) Geranium Firedot *Caloplaca herbidella* Dossier. A report by Botanical Survey & Assessment 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>

Sanderson, N. A. (2020) BLS lichen survey meeting at Moccas Park 16th to 17th May 2018 *Bull. British Lichen Society* **126**: 60-75.



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# British Lichen Society
# Field Meetings & Workshops Programme 2022/23

**Field Meetings Secretary**:
Graham Boswell: Base Lodge 16 The Parks, Minehead TA24 8BS
Email togooutdoors@hotmail.com

Note: *most 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 the event.*
*COVID19 – All dates below are subject to COVID19 restrictions.*

## BLS Summer Meeting 2022 – Aberdare, Rhondda Cynon Taf, Wales
**Saturday July 9th – Saturday July 18th 2022**

**Meeting cancelled**

I am very sorry to those of you who have paid a deposit. Dare Valley Country Park who were providing accommodation have gone into "liquidation". We have been informed that the accommodation is no longer available.
Members who have paid a deposit will be reimbursed by the BLS treasurer.
We are in the process of trying to reconstitute a meeting in some form and will inform participants when we have certainty.

## BLS Autumn Meeting 2022 – St. Breward, Cornwall
**Saturday 8th to 15th October 2022**
**Local contact: Nicola Bacciu**
This meeting gives the opportunity to visit some of the most under recorded sites in the county. There is good access to the granite tors of Bodmin, steep valley woodlands of the rivers Camel and Allen and the coastal communities between Tintagel and Newquay and some old mine sites.

**Meeting Base**
The meeting base is St. Brewards village hall, PL30 4PP grid ref SW 097763, a very well appointed facility: a large hall with 15 tables, ample power sockets, built in projector and screen with good wifi and heating. The modern kitchen caters for large groups on site. There are 2 toilets and adequate parking. The village pub and shop are very close. The village hall is booked for a week.

**Accommodation**
For this meeting arrange your own accommodation. There are several pubs in the area, B&Bs in Bodmin, Wadebridge and Camelford and lots of self-catering outlets in St.Breward, St. Tudy and Blisand. There is a backpackers hostel in Tintagel and several camp sites within a short drive. People are free to cook and eat at the village hall.
The cost for this meeting is £5 payable as a deposit which will cover the cost of the meeting base.

**Booking**
Attendees should book with the Field Meetings Secretary, Graham Boswell email togooutdoors@hotmail.com or by post to Base Lodge 16 The Parks, Minehead TA24 8BS. Please pay the deposit of £5 direct to the British Lichen Society ( not the BLS) at CAF Bank Sort code 40-52-40 A/C No. 00012363.

**Timetable**
The meeting will run Saturday to Saturday. Introductions and an introductory talk will take place at 7 pm on Saturday 8th October at the village hall. The local leader and I will arrange sites for the first 4 days of the meeting, after which individuals/groups are free to explore other sites within the region.
Further details of the field programme will be sent to attendees nearer the time of the meeting.

**Maps**
The Landranger 1:50000 200 Newquay, Bodmin and surrounding area covers St. Breward, part of Bodmin and the coast. Landranger 201 Plymouth and Launceston covers the inland section. Other maps might be beneficial once the detailed itinerary is known.

## BLS Winter Workshop 2022 – Cloughton Scarborough
## Bring your problems
**Workshop facilitators: to be confirmed**
**Friday 24th to Monday 27th February 2023**
The winter workshop will run on a similar basis to previous years. Currently we do not have prices for the meeting but anticipate that they will be similar to last year. The field meeting will be a woodland not previously visited by the BLS.

## BLS Spring Meeting 2023 Southern Uplands (Based in Moffat)
**Sunday 23rd to 30th April 2023**
**Local contact: John Douglass**

**Meeting Base**
The meeting and residential provision is at The Well Road Centre, Moffat DG10 9BT.

**Accommodation and cost**
The BLS have booked the whole centre for the duration of the meeting. The meeting is self-catering. There are 13 bedrooms which we anticipate using as twin rooms depending on the level of interest in the meeting. The cost is £80 per person for the week.

**Booking**
Attendees should book with the field meetings secretary, Graham Boswell, email togooutdoors@hotmail.com or by post to Base Lodge 16 The Parks, Minehead TA24 8BS and pay a deposit of £30 in to the BLS account, CAF Bank sort code 40-52-40 Account No. 00012363 and reference it Southern Uplands, if you are making the payment on behalf of an attendee, please include the attendee's name.

**Microscope Work**
There are several large rooms at the centre that can be used for microscope work and meetings. The BLS microscopes will be available for communal use. Please bring your own extension leads.

# Literature pertaining to British lichens – 70

*Lichenologist* **53**(6) was published on 8 December 2021, **54**(1) on 16 February 2022, and **54**(2) on 31 March 2022.
Taxa prefixed by * are additions to the checklists of lichens and lichenicolous fungi for Britain and Ireland. Aside comments in square brackets are by the author of this compilation.
The parts of the series *Revisions of British and Irish Lichens* are freely available online from the BLS web-site: https://www.britishlichensociety.org.uk/content/lgbi3.

ATIENZA, V., HAWKSWORTH, D.L. & PÉREZ-ORTEGA, S. 2021. *Verrucoccum (*Dothideomycetes, Dictyosporiaceae), a new genus of lichenicolous fungi on *Lobaria* s. lat. for the *Dothidea hymeniicola* species complex. *Mycologia* **113:** 1233–1252. The new genus *Verrucoccum* V. Atienza, D. Hawksw. & Pérez-Ort. is introduced for *Polycoccum hymeniicola* and two related species. The species previously reported from Scotland as *P. hymeniicola*, occurring on *Lobaria pulmonaria*, should now be referred to the newly described *Verrucoccum coppinsii* V. Atienza, D. Hawksw. & Pérez-Ort.

CANNON, P., COPPINS, B., FLETCHER, A., SANDERSON, N., SIMKIN, J. & VAN DEN BOOM, P. (2022). Caliciales: Leprocaulaceae, including the genera *Halecania* and *Leprocaulon*. *Revisions of British and Irish Lichens* **23:** 1–8.

CANNON, P., COPPINS, B., ORANGE, A., SANDERSON, N. & SIMKIN, J. 2021. Candelariales: Candelariaceae, including the genera *Candelaria* and *Candelariella*. *Revisions of British and Irish Lichens* **21:** 1–8.

CANNON, P., MAGAIN, N., SÉRUSIAUX, E., YAHR, R., COPPINS, B., SANDERSON, N. & SIMKIN, J. 2021. Peltigerales: Peltigeraceae, including the genera *Crocodia*, *Lobaria*, *Lobarina*, *Nephroma*, *Peltigera*, *Pseudocyphellaria*, *Ricasolia*, *Solorina* and *Sticta*. *Revisions of British and Irish Lichens* **20:** 1–34.

CANNON, P., ORANGE, A., APTROOT, A., COPPINS, B., FLETCHER, A., FRYDAY, A., SANDERSON, N., SIMKIN, J. & VAN DEN BOOM, P. (2022). Caliciales: Catillariaceae, including the genera *Catillaria* and *Solenopsora*. *Revisions of British and Irish Lichens* **22:** 1–13. A new combination is made: *Catillaria baliola* (Nyl.) Orange (syn. *Lecidea baliola* Nyl., *Catillaria chalybeia* var. *chloropoliza*).

COPPINS, B.J. 2021. Somerset lichens and lichenicolous fungi 2018–21. *Proceedings of the Somerset Archaeological and Natural History Society* **164:** 332–334. Recent additional records for the county.

DIEDERICH, P., MILLANES, A.M., ETAYO, J., VAN DEN BOOM, P.P.G. & WEDIN, M. 2022. Finding the needle in the haystack: a revision of *Crittendenia*, a surprisingly diverse lichenicolous genus of *Agaricostilbomycetes*, *Pucciniomycotina*. *Bryologist* **125:** 248–293. Further studies on this lichenicolous genus resulted in the description of 16 new species, including two from the British Isles: **Crittendenia absistentis* Diederich, Coppins & Millanes on *Bacidia absistens* (from Ulva in Mid Ebudes, Argyll and West Ross) and **C. lecidellae* Diederich, Etayo & Millanes on *Lecidella elaeochroma* (from Kintyre, West Ross and West Sutherland).

HOFMEISTER, J., VONDRÁK, J., ELLIS, C., COPPINS, B., SANDERSON, N., MALÍČEK, J., PALICE, Z., SVOBODA, S. & GLOOR, R. 2022. High and balanced contribution of regional biodiversity hotspots to epiphytic and epixylic lichen species diversity in Great Britain. *Biological Conservation* **266,** article 109443. Results from a survey of eleven 1-hectare plots in four diverse regions of Great Britain.

HOLIEN, H. & FRISCH, A. 2022. *Microcalicium loraasii*, a new calicioid fungus from old-growth boreal forest in Norway. *Graphis Scripta* **34:** 42–50. Includes a world-wide key to *Microcalicium*.

HOLLINGER, J.P. & LENDEMER, J.C. 2021. *Capronia harrisiana* (Ascomycota, Chaetothyriales), a new lichenicolous species on *Crocodia aurata* from the southern Appalachian Mountains of southeastern North America. *Bryologist* **124:** 522–532. Includes a key to lichenicolous *Capronia* species.

KONDRATYUK, S.Y., LŐKÖS, L., KÄRNEFELT, I., THELL, A., JEONG, M.-E., OH, S.-O., KONDRATIUK, A.S., FARKAS, E. & HUR, J.-S. 2021. Contributions to molecular phylogeny of lichen-forming fungi 2. Review of current monophyletic branches of the family *Physciaceae*. *Acta Botanica Hungarica* **63:** 351–390. Phylogenetic analyses result in the introduction of 6 newly described genera

and 56 new combinations. The following nomenclatural novelties affect British taxa. The new genus *Helmutiopsis* S.Y. Kondr., L. Lőkös & Hur, includes *H. aspersa* (Borrer) S.Y. Kondr., L. Lőkös & Hur (syn. *Rinodina aspersa*) and *H. atrocinerea* (Hook.) S.Y. Kondr., L. Lőkös & Hur (syn. *Rinodina atrocinerea*) [*Parmelia atrocinerea* Fr. is used as basionym, but this is an illegitimate name]. The new genus *Johnsheardia* S.Y. Kondr., I. Kärnefelt & A. Thell includes *J. cinnamomea* (Th. Fr.) S. Y. Kondr., I. Kärnefelt & A. Thell (syn. *Rinodina cinnamomea*). The new genus *Klauskalbia* S.Y. Kondr., L. Lőkös, E. Farkas & Hur includes *Klauskalbia obscurata* (Nyl.) S.Y. Kondr., L. Lőkös, E. Farkas & Hur (syn. *Heterodermia obscurata*). The new genus *Kurokawia* S.Y. Kondr., L. Lőkös & Hur includes *K. runcinata* (With.) S. Y. Kondr., L. Lőkös & Hur (syn. *Anaptychia runcinata*). The genus *Poeltonia* S.Y. Kondr., Lőkös & Hur is introduced for *P. grisea* (Lam.) S.Y. Kondr., L. Lőkös & Hur (syn. *Physconia grisea*) and also includes *P. perisidiosa* (Erichsen) S.Y. Kondr., L. Lőkös & Hur (syn. *Physconia perisidiosa*). *Phaeophyscia nigricans* is transferred to the genus *Physciella* as *Physciella nigricans* (Flörke) S.Y. Kondr., L. Lőkös & Hur.

KOŠUTHOVÁ, A., WESTBERG, M. & WEDIN, M. 2022. A revision of the *Rostania occultata* (*Collemataceae*) complex in Fennoscandia. *Lichenologist* **54:** 13–24. The newly described **Rostania effusa* A. Košuth., M. Westb. & Wedin is reported from Scotland. [British specimens of *R. occultata* need to be checked for this new species].

MISHRA, G.K., UPRETI, D.K., NAYAKA, S., THELL, A., LŐKÖS, L., HUR, J.-S. SINHA, G.P. & KONDRATYUK, S.Y. 2020. Current taxonomy of the lichen family Teloschistaceae from India with descriptions of new species. *Acta Botanica Hungarica* **62:** 309–391. Two new combinations involve species from the British Isles: "*Olegblumia demissa* (Flot.) S.Y. Kondr. *et al*." [probably invalid] (syn. *Caloplaca demissa*); *Opeltia flavorubescens* (Huds.) S.Y. Kondr. & Hur (syn. *Caloplaca flavorubescens*).

PINO-BODAS, R., SANDERSON, N., CANNON, P., APTROOT, A., COPPINS, B., ORANGE, A., & SIMKIN, J. 2021. Lecanorales: Cladoniaceae, including the genera *Cladonia*, *Pilophorus* and *Pycnothelia*. *Revisions of British and Irish Lichens* **19:** 1–45.

SIERRA, R. & MOLINARI-NOVOA, E.A. 2020. *Neoechinodiscus*, a new name for *Echinodiscus* Etayo & Diederich (lichenicolous Helotiales). *Opusculum Philolichenum* **19:** 172–173. The generic name *Echinodiscus* has previously been used as *Echinodiscus* Benth. (1838) in the *Leguminosae*. The new combination *Neoechinodiscus lesdainii* (Vouaux) Molinari & R. Sierra (syn. *Echinodiscus lesdainii*) is made.

VAN DEN BOOM, P.P.G. & ALVARADO, P. 2021. *Catillaria flexuosa* (*Catillariaceae*), a new lichen species described from the Netherlands. *Lichenologist* **53:** 193–202. The new species *Catillaria flexuosa* van den Boom & P. Alvarado has since been recorded in Wales.

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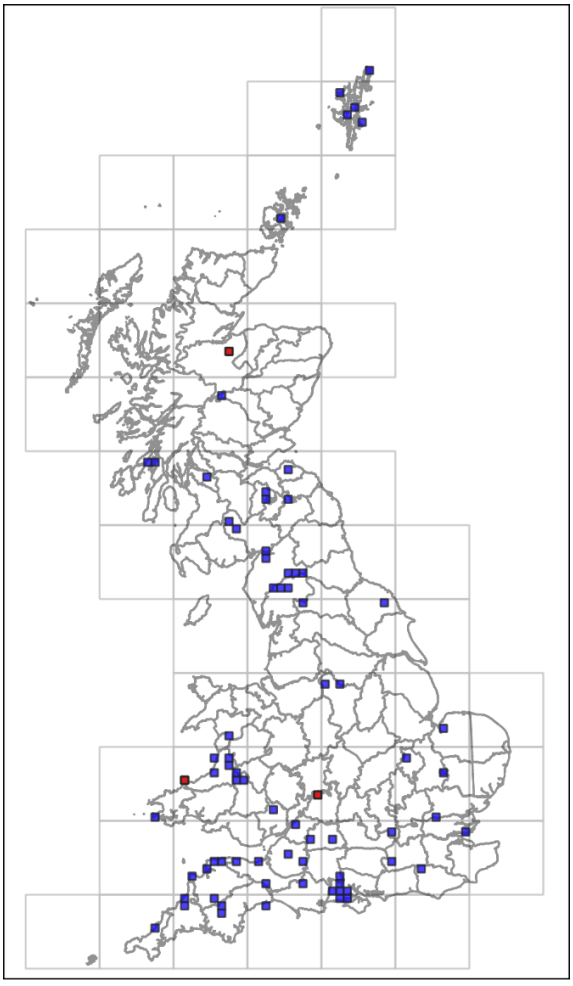
# New, rare and interesting lichens

Contributions to this section are always welcome. Submit entries, at least a fortnight before the Bulletin deadline to Andy M. Cross <andycross@epr.uk.com>
Records of lichens listed in the RDB are particularly welcome, even from previously known localities.



Map of records; red = new species, blue = other records

## Notes

**Species** written in italics and bold. When new to the British Isles, add the authority and date of publication
**Habitat** under what conditions the lichen is growing
**Locality** site name
**VC Number** and VC Name follows that given in BLS Bulletin **79**, or use the website https://www.cucaera.co.uk/grp
**Grid Reference** in the following format, AB1234 and AB1234.5678, AB12345.23456, etc. using letters for the 100 kilometre squares
**Altitude** given as alt. 10m
**Date** as month and year, though days can be added if particularly important,
**Herbarium** data given where housed, (if an institution, use bold (**E**) or **K**(M)) etc, photographs, or field record
**Confirmation** either Determined by or Confirmed by
**Comments** as important facts related to the lichen
**Status** as either New to the Vice-county, county or Wales.
**Recorder/s** either A. Friend or P.M. England & F.R. Ireland in italics.

## New To the British Isles

***Catillaria flexuosa*** van den Boom & P. Alvarado (2021): on north-facing side of a weathered softwood fencepost on sea cliff above rocky shore opposite Cardigan Island, c. 500m north of Clyn-yr-ynys, Gwbert, VC46, Cardiganshire, SN163.513, alt. 20m, October 2021. Confirmed by P.P.G. v.d. Boom. Hb. SPC (specimen in **herb. v.d. Boom**). Like the common *C. chalybeia,* but deviating in having a markedly thicker, dark greenish-brown subsquamulose thallus with knobbly granules, relatively larger apothecia (to c. 0.9 mm diam.) with often flexuose proper margins, and slightly smaller ascospores, c. (6–) 7–10 (–11) x 2.5–3.5 (–4) µm. Recently described from The Netherlands growing corticolously on roadside *Fraxinus excelsior*, but possibly overlooked for expressions of the variable *C. chalybeia* and perhaps also *C. nigroclavata.* For full description and further details see P.P.G. v.d. Boom & P. Alvarado in *Lichenologist* **53**: 193-202. **BLS No. 2813**. *S.P. Chambers & D.M. Lamacraft*

***Rostania effusa*** A. Košuth.,m, Westb. & Wedin (2022): on trunk of *Acer campestre*, on W side of B9154, 1 km SE of Meallmore Lodge, Moy, VC96, Easterness, NH754.373, alt. 290m, May 2016, Coppins 25042 (**E**) and November 2017, Coppins 25250 (**S** – DNA voucher). See Kosuthová *et al*. in *Lichenologis*t **54**: 13–24 (2022). Differs from *R. occultata* in its more finely granular thallus. Some other British collections of *R. occultata* will probably prove to be *R. effusa*. **BLS No. 2814**. *B.J. Coppins*

***Weddellomyces aspiciliicola*** Alstrup (1992): on degraded squamules of *Aspicilia* (*Circinaria*) *contorta*, on a limestone pebble in railway ballast, Stanley Pontlarge, Winchcombe, VC33, E. Gloucestershire, SO999.303, 9 Mar. 2020, coll. J.A. Bailey,

Herb. K(M) [Cannon P5002]. In common with other species of the genus, *W. aspiciliicola* has large conspicuous perithecia that appear to fragment in the ostiolar region to release spores, and is clearly a necrotroph. It is characterized largely by ascospores (21–) 23–28.5 (–30) x (9–) 9.5-12 (–13) µm in size [21.5–25.5 x 11–12.5 µm in our material] that are dark brown to almost black and verrucose when mature, uniseriate in ± cylindrical asci that are mostly 130–180 µm in length. This is a new host record; it has previously been reported from *Aspicilia* (*Lobothallia*) *radiosa* in central Europe and New Zealand. Several other species of *Weddellomyces* have been described from *Aspicilia* s. lat.; *W. pachyosporicola* Nav.-Ros. & Cl. Roux 1995 (not yet recorded from GBI) has narrower, paler brown ascospores that are biseriate in the ascus, and is known from *A. contorta*. *W. macrosporus* D. Hawksw., Renobales & Coppins 1995 (reported once from VC42) has far larger ascospores, averaging around 60 µm in length. Apart from *W. epicallopisma* (Wedd.) D. Hawksw. 1986 which is frequently recorded from *Caloplaca flavescens*, all species seem to be rare. More information can be found in Navarro-Rosinés & Roux (*Mycotaxon* **53**: 161–187, 1995), and in https://fungi.myspecies.info/. **BLS No. 2812**. *P. Cannon & J. Bailey*

## Other Records

***Agonimia globulifera***: on bryophyte on limestone at Fell End Clouds, VC69, Westmorland, SD740.997, alt. 447m, September 2021. Herb. Walker. Confirmed by Neil Sanderson. Second record for Vice-county (prev. 2014).
*C. Walker & Cumbria Lichen and Bryophyte Group*

***Allantoparmelia alpicola***: Little Dun Fell, VC69, Westmorland, NY703.332, alt. 825m, June 2021. Third record for VC69 Westmorland (prev. 1979). *C. Walker & C. Cant*

***Andreiomyces obtusaticus***: deep in crevices in dry bark dominated by *Lecanactis abietina* on an older mature *Quercus* in pasture woodland, Hollands Wood, New Forest, VC11, S. Hampshire, SU3031.0388, alt. 15m, December 2021. Herb. Sanderson 2890. Confirmed by sequencing and TLC by A. Orange. This taxon was well known in cervices in older trees and was assigned to *Lepraria ecorticata*, but it has become apparent that it not conspecific with that taxon, which is now known as *Lithocalla ecorticata* and is an obligate saxicolous species. *Andreiomyces obtusaticus* has a fully leprose thallus, with a distinctive pale yellow-green colour and no obvious spot tests. It can be mistaken for *Lecanora expallens*, which can grow in similar habitat, but this is brighter yellower and usually C+ orange and always K/UV (wet)+ bright mint-yellow. Most records of "*Lepraria ecorticta*" from bark are probably of *Andreiomyces obtusaticus*.
*N.A. Sanderson*

Commented [BC1]:

***Arthonia anglica***: on ten trees or bushes, including five *Ilex*, three *Quercus*, one *Sorbus aucuparia* and one *Acer pseudoplatanus*, in dwarfed oceanic woodland on coastal slope and under cliff, Dizzard Point, VC2, East Cornwall, SX165.991, SX164.990, SX163.991, SX169.991, SX169.992, SX167.992 & SX166.992, alt. 50 – 90m, October

2021. Herb. Sanderson 2865, 2866, 2867 & 2868. A new site for this lichen, which is very rare in Europe, and the first recent records from the south west of England. This famous, if difficult to access, woodland was found to be in much better condition than the known coastal woodland sites for *Arthonia anglica* in North Devon, where it has not been refound recently, and the woods now look too shaded for this light-demanding lichen. The better conditions at The Dizzard were due to significant levels of browsing by red deer. This has resulted in The Dizzard being much less shaded than the Devon woods. *N.A. Sanderson & D. Lamacraft*

***Arthonia fuscopurpurea***: parasitising *Peltigera hymenina* on a *Salix* branch, Priddy Mineries, VC6, North Somerset, ST5468.5108, alt. 255m, March 2022. Field record. New to the Vice-county. *N.G. Bacciu*

***Arthonia graphidicola***: on thallus of *Graphis scripta* on *Corylus*, Craignee, Scaur Water, Penpont, VC72, Dumfries, NX8230.9501, alt. 82m, March 2022. Specimen not retained. Det. B.J. Coppins. The host thallus was also infected by *Stigmidium microspilum*. Also collected from Woodend Wood, Chanlockfoot, NS793.001, alt. 230m, March 2022. New to Vice-county. *R. Lamb*

***Arthonia graphidicola***: parasitising *Graphis scripta*, Bradley Woods SSSI, VC8, South Wiltshire, ST7894.4149, alt. 121m, November 2021. Specimen not retained. New to the Vice-county. *N.G. Bacciu*

***Arthonia ilicinella***: on an old *Ilex* in dwarfed coastal *Quercus* wood, Dizzard Point, VC2, East Cornwall, SX1657.9913, October 2021. Herb. Sanderson 2864. Second Cornish and fourth English record for this rare oceanic species. *N.A. Sanderson & D. Lamacraft*

***Arthonia ligniaria***: growing on *Evernia prunastri* with *Unguiculariopsis lettaui*, on *Prunus spinosa* adjacent to Eyeworth Lodge, Eyeworth Wood, New Forest, VC11 South Hampshire, SU225.145, alt. 75m, January 2022; also again on *Evernia prunastri*, on *Fraxinus*, Mark Ash Wood, New Forest, VC11 South Hampshire, SU24325.07736, alt. 90m, March 2022. A new addition to the Forest list. Retained in Herb. LF Giavarini. *V. Giavarini*

***Arthonia punctella***: on *Diplotomma chlorophaeum* on well-lit face of greywacke layer in Silurian mudstone sea-cliff, c. 300m southwest of Brynrodyn, Upper Borth, VC46, Cardiganshire, SN599.881, alt. 10m, September 2021. Herb. SPC. The second Vice-county & Welsh record. *S.P. Chambers & D.M. Lamacraft*

***Arthonia thelotrematis***: on thallus of *Thelotrema lepadinum* on stem of *Corylus avellana* in fragment of upland Celtic rainforest, Allt Dihanog, Hafod, VC46, Cardiganshire, SN762.727, alt. 240m, December 2021. Herb. SPC. The first Vice-county and second Welsh record. *S.P. Chambers & J.R. Douglass*

***Arthrorhaphis grisea***: parasitising *Baeomyces rufus* under a sandstone outcrop, Robber's Bridge, VC5, South Somerset, SS8852.4635, alt. 91m, 2022. Specimen not retained. Determined by N.G. Bacciu. New to Somerset. *J. McGill*

***Bacidina caligans***: on alder twig at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the county. *M. Putnam*

***Bacidina neosquamulosa***: on fallen ash branch at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the Vice-county. *M. Putnam*

***Bacidina squamellosa***: Naddle Forest, Haweswater, VC69, Westmorland, NY49643.15156, alt. 328m, September 2021. Herb. Walker. Determined by Neil Sanderson. New to the Vice-county. *C. Walker*

***Bellicidia incompta***: in minute amount, on nutrient-rich bark under torn bough on trunk of old Quercus petraea in relic fragment of upland Celtic rainforest, Allt Dihanog, Hafod, VC46, Cardiganshire, SN762.727, alt. 250m, December 2021. Confirmed by B.J. Coppins. Herb. SPC. The first Vice-county record. *S.P. Chambers & J.R. Douglass*

***Biatora chrysantha***: on mildly base-rich bark on a veteran *Quercus* in *Quercus – Fagus* old growth woodland, Burley Old Inclosure, New Forest, VC11, S. Hampshire, SU2475.0412, alt. 35m, December 2021. Herb. Sanderson 2879. An unexpected find of an upland species resembling *Mycobilimbia epixanthoides*, but with a fleeting C+ red spot test. New to lowland England. *N.A. Sanderson*

***Biatora vernalis***: on seven old *Quercus* in old growth upland pasture woodland, Allt-y-gest SSSI (one tree) & Llwyn Madoc (six trees), Beulah, VC42 Breconshire, SN8952, SN9052, & SN9053, alt. 290 – 370m, December 2021 & March 2022. A new strong colony for a species rare in Wales. *N.A. Sanderson*

***Bryobilimbia sanguineoatra***: on moss on a shady rock outcrop, in dwarfed coastal *Quercus* wood, Dizzard Point, VC2, East Cornwall, SX1652.9906, alt. 100m, October 2021. Herb. Sanderson 2869. First recent record from Cornwall. *N.A. Sanderson & D. Lamacraft*

***Buellia abstracta***: on a small stone, c. 3 x 1 cm, lying loose on southeast-facing slope of maritime grassland, above Pen yr Hwbyn, c. 1 km west of Mwnt, VC46, Cardiganshire, SN181.517, alt. 25m, October 2021. Herb. SPC. The fourth Vice-county record and a new hectad. *S.P. Chambers & D.M. Lamacraft*

***Byssoloma marginatum***: in small amount, c. 8 ft up on the mossy, southeast-facing side of bough of old *Quercus petraea* on field bank in wet pasture adjacent to old woodland, c. 700m northeast of Tabor, Cross Foxes, VC48, Merionethshire, SH760.176, alt. 170m, March 2022. Field record. The 1st Vice-county record. *S.P. Chambers*

***Caloplaca alstrupii***: growing on base-rich bark of a dying *Quercus*, Stock Gaylard Deer Park, Blackmore Vale Commons & Moors SSSI, VC9, Dorset, ST7239.1296, alt. 75m, January 2022. Herb. Windle. Confirmed by N.A. Sanderson. New to Dorset.
*N.G. Bacciu & A. Windle*

***Caloplaca alstrupii***: growing on *Fraxinus* trunk, Hartland Abbey, VC4, North Devon, SS2392.2500, alt. 57m, February 2022. Specimen not retained. New to Devon.
*N.G. Bacciu & A. Windle*

***Caloplaca alstrupii***: recorded growing on *Alnus* trunk, Chippenham Fen SSSI, VC29, Cambridgeshire, TL6509.6922, alt. 19m, February 2022. Field record. New to the Vice-county. *N.G. Bacciu*

***Caloplaca lucifuga***: on two old *Quercus* in old growth upland pasture woodland, Llwyn Madoc, Beulah, VC42 Breconshire, SN902.526, alt. 260m, March 2022. A new site for this Vulnerable Section 7 species. *N.A. Sanderson*

***Caloplaca lucifuga***: on two veteran *Quercus*, frequent on one, in pasture woodland under restoration, Out Wood, Langley Wood NNR, VC8 South Wiltshire, SU2213.2049 & SU2255.2093, alt. 55 – 60m, October 2021. Second record for South Wiltshire for this Section 41 species and new to the New Forest area. Both trees had been recorded in 2010, before the pasture woodland restoration, when they were both more shaded, and the species was not seen. Potentially the lichen was present on these trees in 2010 but in poor condition and had recovered with the opening up of the trees. *N.A. Sanderson*

***Caloplaca pyracea***: on *Populus* branch, Monks Wood NNR, VC31, Huntingdonshire, TL1996.8043, alt. 16m, February 2022. Herb. Bacciu. New to the Vice-county.
*N.G. Bacciu*

***Calvitimela aglaea***: on greywacke sandstone on S side of drystone wall, Cademuir Hill, Peebles, VC78, NT218.371, alt. 230m, April 2022. Coppins 26048 (**E**). LISS meeting. New to Vice-county. *B.J. Coppins*

***Carbonea supersparsa***: commensal on *Lecanora polytropa* on siliceous rock at Heddons Mouth, VC4, North Devon, SS654.495, alt. 30m, September 2021. New to England. Herb. Putnam *M. Putnam*

***Catapyrenium cinereum***: in short turf on the clifftop on Skokholm Island, VC45, Pembrokeshire, SM7305, alt. 30m, September 2019. First record for the island.
*M. Putnam*

***Catillaria fungoides***: on fallen ash branch at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the county.
*M. Putnam & J. Skinner*

***Cetrariella commixta***: Little Dun Fell, VC69, Westmorland, NY703.332, alt. 825m, June 2021. Fourth record for Vice-county (prev. 1981). *C. Walker & C. Cant*

***Chaenothecopsis parasitaster***: on discoloured, pale fawn squamules of *Cladonia macilenta*, on thick drape of bryophytes atop northwest-facing rockface in old woodland, Gentleman's Walk, near the Nant Bwlchgwallter below Allt Dihanog, Hafod, VC46, Cardiganshire, SN761.728, alt. 180m, December 2021. Herb. SPC & Herb. Douglass. New to Wales. *S.P. Chambers & J.R. Douglass*

***Cladonia callosa***: in paths and seasonal runnels through wet heath, in grouse moor, Low Moor, Goathland, North York Moors, VC62, North-east Yorkshire, SE8524. 9839, SE8530.9868, February 2022. First modern record for the North York Moors.
*N.A. Sanderson*

***Cladonia callosa***: on the edges of deer paths in browsed wet heath, Pass of Drumochter, VC89, East Perthshire, NN632.760, NN632.759, alt. 470m, September 2021. New to the Vice-county, but given the habitat, probably widespread in the central Highlands.
*N.A. Sanderson*

***Cladonia conista***: on semi-vegetated central strip of trackway in *Picea sitchensis* plantation forestry, east end of Esgair Saeson, c. 1 km south of Moel-prysgau, VC46, Cardiganshire, SN807.601, alt. 400m, September 2021. Herb. SPC. The second Vice-county record. *S.P. Chambers*

***Cladonia firma***: very locally abundant on open, short-grazed heathland in pans in shallow 19th century quarry, White Moor, Lyndhurst, New Forest, VC11, S. Hampshire, SU3127.0820, alt. 35m, November 2019. Confirmed by sequencing as being conspecific with Mediterranean material. Subsequent reinvestigation of material from the New Forest collected as *Cladonia* "brown *subcervicornis*", rechecking records of *Cladonia subcervicornis* on anomalously dry habitats, and searching new potential sites, have shown *C. firma* to be widespread, if scarce, in the New Forest heaths, especially on the higher terraces to the north. It has been now recorded from 29 1km squares in the New Forest. It is found in acid but more productive short-grazed, grassy heaths, especially where disturbed in the past, ranging from mediaeval hollow ways to WWII airfields. The species should be searched for in other inland heaths, see https://www.britishlichensociety.org.uk/resources/species-accounts/Cladonia%20firma for more details and photographs.
*N.A. Sanderson & R. Pino-Bodas*

***Cladonia incrassata***: on damp, sandy cutting bank of the main vehicle track, Dersingham Bog SSSI, VC28, West Norfolk, TF6781.2924, alt. 8m, February 2022. Frequent along c.10m of bank, sparsely fertile. New to Norfolk. *A.M. Cross*

***Cladonia incrassata***: on old peat cuttings in raised bog, most frequent where the old cuttings had not been reprofiled as part of the restoration of wetter bog communities, Glasson Moss and Whitrigg Common, Bowness, VC70, Cumberland, NY2311.6014, NY2323.5995 & NY2325.5989, alt. 15m, February 2022. New to Cumbria.
*N.A. Sanderson*

***Cladonia peziziformis***: on hummocks, mounds or hollow way sides, in short, open, grassy and damp herb-rich heath (M16b, M24c, H3 & H2) on more productive soils, on either slightly base rich clays (Barton Clay and Headon beds) or, on poorer soils, in Herb-rich heathland developed on former medieval farmland, in 12 1km squares within the extensively grazed heathland of the New Forest; two sites in herb-rich heath on a pillow mound and a scuffed area, King's Garden, SU2009, alt. 85m, February 2022; on 11 hummocks in short grazed tussock heath, Milkham Bottom SU2109, alt.75–85m, February 2022; two low well grazed hummocks in tussock heath, Picket Bottom, SU1906 alt. 90m, February 2022; seven patches on the sides of shallow hollow ways in damp short grazed heath, east of Brook Wood, SU2614, alt. 75m, March 2022; one patch in mower scuff in herb-rich bracken developed on former medieval farmland, Matley Wood, SU3307, 25m, March 2022; on three mounds in herb-rich heath developed on former medieval farmland, west of Pigbush, SU3604 & SU3504, March 2022; three mounds in marl grassland, Wootton, SZ2598, March 2022; one hummock in short grazed tussock heath, Amberslade Bottom, SU2010, April 2022; clay on stream bank in grassy heath, Brook Common, SU2613, April 2022; on one old anthill in short grazed tussock heath, east of Shutters Inclosure, SU2310, April 2022; on three mounds in wet grassland, Bramble Hill, Bramshaw, SU2615, alt. 85m, April 2022; all, New Forest, VC11, S. Hampshire. A remarkable and unexpected find and now the most extensive known population of this rare lichen in Britain. It grows in quite productive grassy heaths, which are otherwise not lichen rich, so had not previously been at looked much. It is light demanding and requires short swards, so is mainly dependant on quite hard grazing to survive. Some stands are occasionally control burned as part of a heather burning programme, but fire is not the important factor for the ecology of this species as was assumed in the past, at least in this site. See https://www.britishlichensociety.org.uk/resources/species-accounts/cladonia-peziziformis> for more details and pictures. *N.A. Sanderson & A.M. Cross*

***Cladonia pulvinata***: in four locations in very open short heaths, one in the base of an old gravel pit and three being in or on the edges of trampled paths in heaths; base of gravel pit; Black Bush Plain, SU2503.1594, alt. 125m, December 2021. Herb, Sanderson 2880; on the edge of path in hollow way, Rushy Flat, SU2165 1732, alt. 120m, January 2022; on trampled ironstone slab on floor of hollow way, Rock Hills, SU2395.0303, alt. 30m, January 2022; in a little used path, Stony Cross, SU2666.1215,

alt. 95m March 2022; VC11, S. Hampshire. New to the New Forest (earlier records were transcription errors) and lowland England. A difficult to spot lichen, as it often consists of sterile squamule mats, but these have a distinct look, and it can be confirmed by the Pd+ yellow spot test. Certainly overlooked but still likely to be uncommon. See https://www.britishlichensociety.org.uk/resources/species-accounts/Cladonia%20pulvinata for more details and photographs. *N.A. Sanderson*

***Cladonia strepsilis***: in a lichen rich patch in heather moor, regenerating after a recent controlled burn, Wan Fell, Penrith, VC70, Cumberland, NY5199.3652, alt. 190m, February 2022. First recent record for Northern England outside of the Lake District. *N.A. Sanderson*

***Cladophialophora parmeliae***: parasitising *Hypotrachyna afrorevoluta*, Ruttersleigh SSSI, VC5, South Somerset, ST2510.1630, alt. 253m, November 2021. Herb. Bacciu. New to Somerset. *N.G. Bacciu*

***Clauzadea metzleri***: on metamorphic limestone, South Filla Runnie, Delting, Shetland Mainland, VC112, Shetland, HU419.615, July 1999. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*.

***Clypeococcum hypocenomycis***: parasitising *Hypocenomyce scalaris* on an upright fence post, Stock Gaylard Deer Park, Blackmore Vale Commons & Moors SSSI, VC9, Dorset, ST7264.1347, alt. 77m, January 2022. New to Dorset. *N.G. Bacciu & A. Windle*

***Coniocarpon cinnabarinum*** (*Arthonia cinnabarina*): single 15mm diameter thallus on smooth bark of sycamore multi-stem coppice regrowth at Bugsworth Canal Basin, VC57, Derbyshire, SK0234.8203, alt. 170m, February 2022. First located record for the county, there are two pre-1959 10km dots on the distribution map, for which there is no supporting data, both 10km squares straddle Vice-county boundaries. *S.G. Price & N. Bamforth*

***Coniocarpon cinnabarinum*** (*Arthonia cinnabarina*): single 15mm diameter thallus on smooth bark of sycamore multi-stem coppice regrowth at Bugsworth Canal Basin, VC57, Derbyshire, SK02348203, alt. 170m, February 2022. First located record for the county, there are two pre-1959 10km dots on the distribution map, for which there is no supporting data, both 10km squares straddle Vice-county boundaries. *S.G. Price & N. Bamforth*

***Corticifraga fuckelii***: on *Peltigera* in Glencoyne wood pasture, Ullswater, VC70, Cumberland, NY37890.18716, alt. 230m, November 2021. New to Vice-county. Det. John Douglass. *C. Walker, P. Martin, C. Cant & P. Nightingale*

***Cresponea premnea***: on two trees by beck on north side facing Haweswater beck, VC69, Westmorland, NY5116.1601, alt. 208m, June 2021. Herb. Walker. Second record for Vice-county (prev. 2010). *C. Walker & C. Cant*

***Didymocyrtis cladoniicola***: the *Phoma*-state anamorph, on basal squamules and lower podetia of *Cladonia subulata* in open, metalliferous *Calluna vulgaris*-lichen heath on former lead-zinc mine, Frongoch mine, near Trisant, VC46, Cardiganshire, SN723.741, alt. 240m, October 2021. Herb. SPC. New to Wales.
*S.P. Chambers & B. Stewart*

***Epicladonia sandstedei***: parasitising *Cladonia furcata*, Penhale Dunes, VC1, West Cornwall, SW7748.5739, alt. 24m, January 2021. Specimen not retained. New to Cornwall. *N.G. Bacciu*

***Frutidella caesioatra***: Cross Fell, VC70, Cumberland, NY69609.34836, alt. 847m, September 2021. Confirmed by Allan Pentecost. Herb. Walker. Fourth record for VC70 Cumberland (prev. 1981). *C. Walker & C. Cant*

***Heterocephalacria bachmannii***: several new records from the New Forest mostly on *Cladonia parasitica*: Wood Crates (west) SU 2608 January 2020; Queen Bower SU 2804 October 2020; Great Early Wood SU 2204 SU2204 October 2020; Ivy Wood SU 3102 April 2021, Spanyard Hole SU 3005 April 2021, Redshoot Wood SU 1808 June 2021, Bratley Wood SU 2208 July 2021, Woosons Hill SU 2507 August 2021, Howen Bushes SU 2314 September 2021, Sloden Wood SU 2112 October 2021, Knightwood Oak SU 2606 November 2021. Selected specimens retained in Herb. LF Giavarini.
*V. Giavarini*

***Hydropunctaria orae***: on stone in retaining wall to garden [near the sea], Busta House, Shetland Mainland, VC112, Shetland, HU346.668, August 1997. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Shetland Mainland. *B.J. Coppins*

***Intralichen lichenum***: in the apothecia of *Catillaria flexuosa* on north-side of softwood fencepost in fenceline on edge of sea cliff, c. ½ km north-northwest of Clyn-yr-ynys, opposite Cardigan Island, VC46, Cardiganshire, SN163.513, alt. 20m, October 2021. Herb. v.d. Boom. New to Wales. *S.P. Chambers & D.M. Lamacraft*

***Laetisaria lichenicola***: parasitising *Physcia tenella*, Ruttersleigh SSSI, VC5, South Somerset, ST2508.1645, alt. 244m, November 2021. Field record. New to the Vice-county. *N.G. Bacciu*

***Lambiella insularis***: forming small, rounded patches within thalli of *Lecanora rupicola*, on SW-facing greywacke outcrops, Cademuir Hill, Peebles, VC78, NT2136, alt. *c.* 250m, April 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins*

***Lasallia pustulata***: on small greywacke outcrop on steep, S-facing slope, Cademuir Hill, Peebles, VC78, NT2191.3683, alt. 240m, April 2022. Field record. LISS meeting. New to Vice-county. *D.G. Pyatt*

***Lasiosphaeriopsis salisburyi***: parasitising *Peltigera rufescens*, Braunton Burrows, VC4, North Devon, SS4527.3310, alt. 5m, March 2022. Herb. Bacciu. New to the Vice-county. *N.G. Bacciu*

***Lecania atrynoides***: on north-facing rockface on top of sea cliff, above Ogof Filiast, between Pen yr Hwbyn and Traeth y Mwnt, VC46, Cardiganshire, SN184.517, alt. 40m, October 2021. Herb. Lamacraft. The first Vice-county record. *D.M. Lamacraft & S.P. Chambers*

***Lecania baeomma***: locally frequent and occasionally fertile, on sheltered, north-facing rockfaces on top of sea cliff, above Ogof Filiast, between Pen yr Hwbyn and Traeth y Mwnt, VC46, Cardiganshire, SN184.517, alt. 40m, October 2021. Herb. SPC. The first Vice-county record. *S.P. Chambers & D.M. Lamacraft*

***Lecania sylvestris***: calcareous rocks a short distance above shore, E coast of Builly promontory, Vementry, Shetland Mainland, VC112, Shetland, HU306.598, August 1999. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*

***Lecanora hybocarpa***: on branches of *Prunus spinosa* and *Quercus petraea* in field hedgerow, Gwelfro, Pennant, VC46, Cardiganshire, SN512.637, alt. 160m, March 2022. Herb. Newbery FN22/168. The first Vice-county record. *F. Newbery*

***Lecanora sublivescens***: on four veteran *Quercus* in parkland, Hampton Park, VC17, Surrey, SU9066.4684, SU9050.4700, SU9047.4702 & SU9079.4701, alt. 70 – 80m, October 2021. First record for Surrey for this Section 41 species. *N.A. Sanderson & A.M. Cross*

***Lecanora sublivescens***: recorded on 31 *Quercus* trunks during survey of Stock Gaylard Deer Park, Blackmore Vale Commons & Moors SSSI, VC9, Dorset, ST71. December 2021 – January 2022. Currently the largest known population of this lichen in England. *N.G. Bacciu & A. Windle*

***Lecanora variolascens***: recorded on *Quercus* trunk, Stock Gaylard Deer Park, Blackmore Vale Commons & Moors SSSI, VC9, Dorset, ST7261.1339, alt. 75m, January 2022. Herb. Windle. New to Dorset. Determined by N.A. Sanderson. This species was present as a bluish-grey sorediate crust and was recorded in close association with *Rinodina exigua*, *Pertusaria coronata*, and *Lecanora sublivescens*. Stock Gaylard Park is the second site in Britain. *N.G. Bacciu & A. Windle*

***Lecidea lapicida***: on greywacke sandstone on S side of drystone wall, Cademuir Hill, Peebles, VC78, NT218.371, alt. 230m, April 2022. Specimen not retained. LISS meeting. New to Vice-county. *B.J. Coppins*

***Lempholemma polyanthes***: on edge of sloping rock outcrop, Ysgyryd Fawr, VC35, Carmarthenshire, GR SO328.173, alt.378 m, October 2021. First record for the Vice-county. *J. Skinner*

***Lepra melanochlora***: Rough Crag, Haweswater, VC69, Westmorland, NY46317.11201, alt. 501m, October 2021. Herb. Walker. Confirmed by Neil Sanderson and Nicola Bacciu. New to the Vice-county and the North of England. *C. Walker & C. Cant*

***Lepra melanochlora***: Swindale, VC69, Westmorland, NY51738.14833, alt. 342m, February 2022. Second record for Vice-county. *C. Walker and C. Cant*

***Lichenochora obscuroides***: parasitising *Phaeophyscia orbicularis* on ash twig at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the county. *M. Putnam*
***Lichenochora physciicola***: parasitising *Physcia tenella* on ash twig at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the Vice-county. *M. Putnam*

***Lichenochora physciicola***: parasitising *Physcia tenella* on a fallen *Fraxinus* twig, Bradley Woods SSSI, VC8, South Wiltshire, ST787.404, alt. 141m, November 2021. Specimen not retained. New to the Vice-county. *N.G. Bacciu*

***Lichenopeltella peltigericola***: parasitising *Peltigera hymenina* growing on a rock at the bottom of a disused quarry, West Quantoxhead Quarry, VC5, South Somerset, ST1125.4150, alt. 161m, April 2022. Herb. Bacciu. Determined by N.G. Bacciu. New to Somerset. *J. McGill*

***Lichenosticta alcicornaria***: growing on old herbarium specimen of *Trapeliopsis flexuosa* attached to podetium of a *Cladonia* spp. on *Fagus*, Mark Ash Wood, New Forest, VC11 South Hampshire, SU2407, alt. 70m, February 1984. In some abundance on underside of squamules of *Cladonia caespiticia*, on decaying *Fagus*, Great Early Wood, New Forest, VC11 South Hampshire, SU228.048, alt. 50m, October 2020; and on squamules and podetia of *Cladonia* spp. at foot of mature *Quercus* by roadside, Wood Crates/Millyford Green, New Forest, VC11 South Hampshire, SU27237.07953, alt. 35m, October 2021. Also under squamules of *Cladonia coniocraea* on root plate of veteran *Quercus*, Wormstall Wood, New Forest, VC11 South Hampshire, SZ35983.98604, alt. 25m, December 2021. Additional site details for this rare Forest species. Selected specimens retained in Herb. LF Giavarini. *V. Giavarini*

***Lichenostigma alpinum***: parasitising *Pertusaria aspergilla* on sarsen stone, Fyfield Down SSSI, VC7, North Wiltshire, SU1333.7093, alt. 206m, December 2021. Specimen not retained. New to Wiltshire. *N.G. Bacciu*

***Lichenostigma alpinum***: parasitising *Ochrolechia frigida* f. *frigida* in short turf on the slower slopes of the Hill of Clibberswick, Unst, VC112, Shetland, HP6413, alt. <5m, July 2015. New to Shetland and the Vice-county. *M. Putnam*

***Lichenotubeufia heterodermiae***: parasitising *Physcia leptalea* on *Malus* twig in garden at Hele Bay, Ilfracombe, VC4, North Devon, SS535477, alt. 19m, January 2022. First for the Vice-county. *M. Putnam*

***Llimonaea sorediata***: Keills peninsula, VC101, Kintyre, NR69414.81942, alt. 11m, March 2022. New to Vice-county. *C. Walker and C. Cant*

***Lobaria pulmonaria***: a strongly grown healthy patch on an old *Salix cinerea* in small mire, adjacent to a known population on an ancient *Fagus*, Mark Ash Wood, New Forest, VC11, S. Hampshire, SU2484.0759, alt. 60m, November 2021. The first record from *Salix* in southern England east of Devon, and apparently not present on this *Salix* in 2009. Until recently *Salix* in the New Forest area was too acidic to support species such as *Lobaria pulmonaria*, but in the last few years crustose base-demanding woodland lichens have increasingly been found on *Salix*. This is the first record of a sensitive large foliose species colonising *Salix* in the area. *N.A. Sanderson*

***Megaspora verrucosa***: on soil at limestone outcrop, Knipe Scar, VC69, Westmorland, NY54090.18160, alt. 318m, May 2021. Herb. Walker. Confirmed by Allan Pentecost. Fourth record for Vice-county (prev. 1978). *C. Walker & C. Cant*

***Melanelia hepatizon***: Little Dun Fell, VC69, Westmorland, NY703.332, alt. 825m, June 2021. Second record for Vice-county (prev. 1990). *C. Walker & C. Cant*

***Micarea subviridescens***: frequent on acid loamy soil on boundary bank between old woodland and heathland, boundary between Stoke Common and Frame Wood, Stoke Poges, VC24, Buckinghamshire, SU9985, SU9885, & SU9884, alt. 75m, February & April, 2021. Herb. Sanderson 2825. New to Buckinghamshire. *N.A. Sanderson*

***Micarea subviridescens***: on acid loamy soil on boundary bank between an old woodland and common land, Penn Common, Bramshaw, New Forest, VC8, South Wiltshire, SU283.164, alt. 40m, March 2021. New to Wiltshire. *N.A. Sanderson*

***Micarea subviridescens***: on acid loamy soil on boundary bank in old woodland, Holly Hatch Inclosure, New Forest, VC11, S. Hampshire, SU218.122, alt. 70m, January 2021. Herb. Sanderson 2811, det. A. Orange, prasinic acid found by TLC. New to Hampshire and this lichen has proved to be widespread on banks on mildly acidic

loamy soils in old woodland in the New Forest area. It can be spotted by the distinctive UV+ bright blue-white fluoresces, which appears to be produced by the prasinic acid. This fluorescence has not been reported previously. See the thread for more details and pictures https://www.fungi.org.uk/viewtopic.php?t=3252. *N.A. Sanderson*

***Micarea subviridescens***: on thin humus on ledge on sandrock boulder, in ancient woodland in gill, Wakehurst & Chiddingly Woods SSSI, Tillgate Wood, Wakehurst Place, VC14, East Sussex, TQ3303.3107, alt. 75m, December 2021. Herb. Sanderson 2825. New to Sussex. *N.A. Sanderson*

***Microcalicium arenarium***: on thallus of *Psilolechia clavulifera* on soil impregnated mat of fine roots of upended root plate of *Quercus*, South Park Wood, Peebles, VC78, Peebles, NT2360.4016, alt. 240m, March 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins*

***Minutoexcipula tephromelae***: parasitising *Tephromela atra*, St. Arilda's Church, Oldbury-on-Severn, VC34, West Gloucestershire, ST608.919, alt. 30m, December 2021. Specimen not retained. New to Gloucestershire. *N.G. Bacciu*

***Montanelia disjuncta***: on a siliceous south-facing exposed outcrop at Birkhouse Hill, Haweswater, VC69, Westmorland, NY49222.16117, alt. 353m, April 2021. Herb. Walker. Confirmed by John Douglass and Brian Coppins. New to the Vice-county. *C. Walker & C. Cant*

***Multiclavula vernalis***: a fertile patch 15cm across, plus smaller patches within 5m, in bare patches in short-grazed, *Carex panicea*-dominated *Molinia* grassland on a clay slope in heathland, south of Long Beech Inclosure, New Forest, VC11, S. Hampshire, SU2568.1219, alt. 80m, April 2022. The second record from the New Forest and third English record for this rare and beautiful lichenised basidiomycete. (See photo overleaf). *N.A. Sanderson*

***Mycoblastus affinis***: on rock outcrop on Rough Crag, Haweswater, VC69, Westmorland, NY46326.11198, alt. 501m, October 2021. Herb. Walker. Confirmed by Neil Sanderson. New to the Vice-county. *C. Walker & C. Cant*

***Mycoblastus caesius***: fertile, on trunk of dead *Pinus* in highly modified mixed woodland, lower flank of Allt Dihanog, Hafod, VC46, Cardiganshire, SN762.728, alt. 170m, December 2021. Herb. Douglass. The first fertile Vice-county record. *J.R. Douglass & S.P. Chambers*

***Multiclavula vernalis***: a rare lichenised basidiomycete of bare moist acid soils, although certainly rare, it is also seasonal, with the basidiomata present only in spring, so it is easy to overlook . Photo © *N.A. Sanderson*

***Mycoglaena myricae***: on *Myrica gale* in wet heath, in grouse moor, Low Moor, Goathland, North York Moors, VC62, North-east Yorkshire, SE852.985, alt.190m, February 2022. New to Yorkshire. *N.A. Sanderson*

***Nectriopsis physciicola***: parasitising *Xanthoria parietina* on *Fraxinus* branch, Piggledene SSSI, VC7, North Wiltshire, SU1420.6975, alt. 152m, December 2021. Herb. Bacciu. New for the Vice-county. *N.G. Bacciu*

***Nesolechia oxyspora***: on *Parmelia saxatilis*, on *Quercus*, Anses Wood, New Forest, VC11 South Hampshire, SU224.125, January 2020; also on same host Coalmeer Gutter, New Forest, South Hampshire, SU26219.12601, November 2020. Second and third records of this lichenicolous fungus from the Vice-county. Selected specimens retained in Herb. LF Giavarini. *V. Giavarini*

***Nectriopsis physiicola***: on thallus of *Physcia tenella* on rowan, woodland edge, Gleniffer Braes Country Park, VC76, Renfrewshire, NS447.603, alt. 215m, October 2021. Material in Herb. Newbery 21/751. New to Scotland. *C. Postlethwaite & F. Newbery*

***Ochrolechia arborea***: a single thallus on top rail of wooden bridge over River Tyne, Hailes Mill, East Linton, VC82, East Lothian, NT576.760, alt. 37m, November 2021. Field record. New to southern Scotland. *B.J. Coppins*

***Ochrolechia inaequatula***: in short turf on the slower slopes of the Hill of Clibberswick, Unst, VC112, Shetland, HP6413, alt. <5m, July 2015. New to Shetland and the Vice-county. *M. Putnam*

***Opegrapha areniseda***: low on outcrop of volcanic lava, Turka Dale, Hamnavoe, Shetland Mainland, VC112, Shetland, HU239.812, July 1997. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. With pycnidia only. New to Shetland Mainland. *B.J. Coppins*

***Opegrapha fumosa***: on eight old *Quercus* in old growth upland pasture woodland, Allt-y-gest SSSI (three trees) and Llwyn Madoc (five trees), Beulah, VC42 Breconshire, SN895.529, SN895.530 & SN903.526, alt. 270 – 310m, December 2021 and March 2022. A new site for a species rare in Wales. *N.A. Sanderson*

***Opegrapha ochrocheila***: on trunk of dead beech, Fulwood Lane Car Park, Porter Valley, VC63, South-West Yorkshire, SK285.840, alt. 340m, January 2022. First record for VC63. Herb. SG Price. *S.G. Price, C. Levy, Sorby NHS Outing*

***Opegrapha opaca***: parasitising *Verrucaria nigrescens* on base of limestone tomb in Standon Massey churchyard, VC18, South Essex, TL572.016, alt. 75m, September 2021. First for the county and East Anglia.
*J. Skinner & M. Putnam*

***Opegrapha sphaerophoricola***: parasitising *Sphaerophorus globosus* growing on granite boulder, near Scorhill, Dartmoor, SX6546.8709, alt. 363m, January 2022. Herb. Bacciu. New for the Vice-county. *J. McGill*

***Opegrapha thelotrematis***: on *Thelotrema lepadinum* on north side of old *Fagus sylvatica*, between Cae Gwartheg and Allt Dihanog, Hafod, VC46, Cardiganshire, SN760.727, alt. 250m, December 2021. Herb. SPC. The first Vice-county record.
*S.P. Chambers & J.R. Douglass*

***Paranectria oropensis* subsp. *oropensis***: parasitising *Physcia tenella* on fallen ash branch at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the county. *M. Putnam*

***Parmelia submontana***: records from VC46, Cardiganshire; (i) single thallus, c. 9 x 6 cm, on mossy upperside of branch of open grown, young *Quercus petraea* planted as a sapling c. 1998, below track on the mansion field, Hafod, SN7579.7315, alt. 160m, October 2021. Herb. SPC. S.D.S. Bosanquet, SPC & D. Parry; (ii) thallus c. 15 x 6 cm, on branch of similar young, planted *Quercus petraea* on southwest-side of Middle Hill,

Hafod, SN7597.7309, alt. 165m, December 2021. Field record. SPC & J.R. Douglass. The first and second Vice-county and second and third Welsh records. *S.P. Chambers*

***Pectenia cyanoloma***: on mosses and liverworts on serpentine, open stony ground above shore, Haroldswick, Unst, VC112, Shetland, HP6311, May 1979. Leg. C. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. Previously determined and reported (NRI 74) as *Degelia plumbea,* before *P. cyanoloma* was distinguished from *D. plumbea* s. str. *B.J. Coppins*

***Pertusaria coronata***: growing on well-lit *Quercus* trunks in Blackmore Vale Commons & Moors SSSI, VC9, Dorset; (i) Deadmoor Copse, ST7488.1043, alt. 76m; (ii) Stock Gaylard Deer Park, ST7261.1336, alt. 79m, January 2022. Herb. Windle. Lichen recognised by its K+ yellow to orange reaction and strong orange fluorescence in UV light. New to Dorset. *N.G. Bacciu & A. Windle*

***Pertusaria pustulata***: on a veteran *Fagus* by a glade, in pasture woodland under restoration, Out Wood, Langley Wood NNR, VC8 South Wiltshire, SU2266.2099, alt. 60m, October 2021. New to the NNR and second record for Wiltshire. *N.A. Sanderson*

***Phacothecium varium***: scarce in the Forest away from the coast, on *Xanthoria parietina* on *Fagus* branch, Ivy Wood, New Forest, VC11 South Hampshire, SU3102 April 2021, and on the same host on fallen *Fagus* twigs, Wood Crates, New Forest, VC11 South Hampshire, SU26963.08272, March 2022. *V. Giavarini*

***Phaeographis lyellii***: on a mature *Fagus*, in pasture woodland under restoration, Out Wood, Langley Wood NNR, VC8 South Wiltshire, SU2238.2081, alt. 60m, October 2021. New to Wiltshire. *N.A. Sanderson*

***Phaeographis smithii***: single thallus on beech trunk in Porter Clough, Porter Valley, VC63, South-West Yorkshire, SK2899.8427, alt. 300m, January 2022. First record for VC63. Herb. SG Price. *S.G. Price, C. Levy, Sorby NHS Outing*

***Phaeographis smithii***: on fallen ash branch at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record since before 1959 for the county. *M. Putnam*

***Phaeospora parasitica***: parasitising *Rhizocarpon petraeum*, Penhale Dunes, VC1, West Cornwall, SW7657.5721, alt. 61m, January 2021. Herb. Bacciu. New to Cornwall. *N.G. Bacciu*

***Placidium lachneum***: above Blea Water, Haweswater, VC69, Westmorland, NY4460.1109, alt. 602m, October 2021. Third record for Vice-county (prev. 1993). *C. Walker and C. Cant*

***Placynthium tantaleum***: Mardale Banks, VC69, Westmorland, NY48147.12693, alt. 342m, July 2021. Herb. Walker. Confirmed by John Douglass and Brian Coppins. Second record for Vice-county (prev. 1999). *C. Walker*

***Polyblastia melaspora***: weathered sandstone surfaces in old quarry, S side of Hill of Setter, Bressay, VC112, Shetland, HU505.417, July 1999. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*

***Polyblastia philaea***: growing in mossy hollow in dune system, Penhale Dunes, VC1, West Cornwall, SW7651.5719, alt. 49m, January 2021. Specimen not retained. New to Cornwall. *N.G. Bacciu*

***Polychidium muscicola***: Dudderwick, Haweswater, VC69, Westmorland, NY46643.10961NY46643.10961, alt. 308m, April 2022. Second record for Vice-county. *C. Walker and C. Cant*

***Polycoccum microsticticum***: parasitising *Acarospora fuscata* on a granite boulder, Rough Tor, Bodmin Moor, VC2, East Cornwall, SX1432.8120, alt. 304m, January 2022. New to the Vice-county. *N.G. Bacciu*

***Polycoccum minutulum***: parasitising *Trapelia placodioides* on a granite drystone wall near Okehampton Camp, VC4, North Devon, SX5893.9269, alt. 354m, February 2022. Specimen not retained. New to the Vice-county. *N.G. Bacciu*

***Polycoccum ventosicola***: parasitising *Ophioparma ventosa*, East Mill Tor, VC4, North Devon, SX5985.9014, alt. 474m, January 2022. Herb. Bacciu. Determined by N.G. Bacciu. New to North Devon. *J. McGill*

***Porpidia flavocruenta***: on SW-facing greywacke scree, Cademuir Hill, Peebles, VC78, NT2136, alt. c. 250m, April 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins & D.G. Pyatt*

***Porpidia melinodes***: on SW-facing greywacke scree, Cademuir Hill, Peebles, VC78, NT2136, alt. c. 250m, April 2022. Field record. LISS meeting. New to Vice-county. *D.G. Pyatt*

***Pronectria pertusariicola***: parasitising *Pertusaria pertusa*, Bradley Woods SSSI, VC8, South Wiltshire, ST7929.4132, alt. 120m, November 2021. Specimen not retained. New to the Vice-county. *N.G. Bacciu*

***Pseudocyphellaria citrina*** (*Pseudocyphellaria crocata*): frequent on a twisted dwarf *Quercus* along with a colonising thallus on a *Salix cinerea* bush, in dwarfed oceanic woodland on a coastal slope, Dizzard Point, VC2, East Cornwall, SX1699, October 2022. First recent record from England of this attractive and regionally threatened oceanic lichen. *N.A. Sanderson & D. Lamacraft*

***Psilolechia clavulifera***: on soil impregnated mat of fine roots of upended root plate of *Quercus*, South Park Wood, Peebles, VC78, Peebles, NT2360.4016, alt. 240m, March 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins*

***Ramalina subfarinacea***: forming swards on vertical surface of SW-facing greywacke outcrop on steep slope, Cademuir Hill, Peebles, VC78, NT2198.3687, alt. 270m, April 2022. Field record. LISS meeting. New to Vice-county. *D.G. Pyatt*

***Ramonia chrysophaea***: on five old *Quercus* in old growth upland pasture woodland, Allt-y-gest SSSI (one tree) & Llwyn Madoc (four trees), Beulah, VC42 Breconshire, SN895.529, SN895.530 & SN903.526, alt. 290 – 330m, December 2021 & March 2022. A second site for Radnorshire for this Section 7 species. *N.A. Sanderson*

***Reichlingia anombrophila*** (*Arthonia anombrophila*): on an old *Quercus* in old growth upland pasture woodland, Allt-y-gest SSSI, Beulah, VC42 Breconshire, SN895.526, alt. 290m, March 2022. New to Radnorshire. *N.A. Sanderson*

***Rhizocarpon geminatum***: on boulder on Bampton Common near Haweswater, VC69, Westmorland, NY4904716465, alt. 428m, September 2021. Herb. Walker. Confirmed by Alan Fryday. New to the Vice-county. *C. Walker & C. Cant*

***Rimularia intercedens***: on low SW-facing greywacke outcrop on steep slope, Cademuir Hill, Peebles, VC78, NT2196.3687, alt. 270m, April 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins*

***Rinodina exigua***: present on two *Quercus* trunks, Stock Gaylard Deer Park, Blackmore Vale Commons & Moors SSSI, VC9, Dorset, ST7261.1339 & ST7270.1333, alt. 79 – 84m, January 2022. Herb. Bacciu. Confirmed by N.A. Sanderson.
*N.G. Bacciu & A. Windle*

***Rinodina sophodes***: on fallen ash branch at Leigh Delamere service station, VC7, North Wiltshire, ST890.791, alt. 110m, February 2022. First record for the Vice-county.
*M. Putnam*

***Roselliniella atlantica***: on *Hypogymnia tubulosa* growing on branches of old *Larix*, Mark Ash Wood, New Forest, VC11 South Hampshire, SU25053.07488, March 2022. New and unexpected addition to the Forest. New Vice-county record. *V. Giavarini*

***Roselliniella atlantica***: on *Melanohalea exasperatula* on *Quercus*, a short distance downstream from Dartmeet (Combestone Wood), VC3, South Devon, SX672.726, July 2020. Specimen retained in Herb. LF Giavarini. *V. Giavarini*

***Sagediopsis lomnitzensis***: on thallus of *Verrucaria margacea* on siliceous boulder at edge of river channel, Afon Ystwyth, Hafod, VC46, Cardiganshire, SN767.731, alt. 160m,

December 2021. Herb. Douglass. The second Vice-county record.
*J.R. Douglass & S.P. Chambers*

***Sagiolechia protuberans***: Knipe Scar, VC69, Westmorland, NY52959.19102, alt. 336m, August 2021. Confirmed by Allan Pentecost. Herb. Walker. Third record for Vice-county, first in Lake District National Park. *C. Walker & C. Cant*

***Schaereria fuscocinerea***: on greywacke sandstone on S side of drystone wall, Cademuir Hill, Peebles, VC78, NT218.371, alt. 230m, April 2022. Specimen in Herb. Pyatt, LISS meeting. New to Vice-county. *D.G. Pyatt & B.J. Coppins*

***Schismatomma umbrinum***: Great How, Thirlmere, VC70, Cumberland, NY31095.18957, alt. 218m, December 2021. New to Vice-county. Confirmed by John Douglass. *P. Martin, C. Walker, C. Cant & J. Allinson*

***Schizotrema quercicola***: on an old *Quercus* in old growth upland pasture woodland, Llwyn Madoc, Beulah, VC42 Breconshire, SN903.525, alt. 250m, March 2022. A second site for Radnorshire. *N.A. Sanderson*

***Sclerococcum* (*Dactylospora*) *parellarium***: two apothecia, on thallus of *Ochrolechia parella* on coastal rock outcrop, c. 200m east of Carreg Lydan opposite Cardigan Island, VC46, Cardiganshire, SN163.513, alt. 25m, October 2021. Field record. The second Vice-county record. *S.P. Chambers & D.M. Lamacraft*

***Scutula circumspecta*** (*Bacidia circumspecta*): on four old *Quercus* in old growth upland pasture woodland, Allt-y-gest SSSI (one tree) and Llwyn Madoc (three trees), Beulah, VC42 Breconshire, SN895.526, SN902.526 & SN903.526, alt. 270 – 300m, December 2021 and March 2022. The largest single extant population in Wales for this Section 7 species. *N.A. Sanderson*

***Scytinium fragrans***: a large population in wound track on an old *Quercus* in old growth upland pasture woodland, Llwyn Madoc, Beulah, VC42 Breconshire, SN904.526, alt. 290m, March 2022. First recent record form Wales for a highly threatened species that was assessed as potentially extinct in Wales in 2010. *N.A. Sanderson*

***Skyttea buelliae***: parasitising *Amandinea pelidna* on timber at Thorpe Bay, Southend on Sea, VC18, South Essex, TQ9184, alt. <5m, January 2022. First for the county and second modern record for England. *J. Skinner*

***Skyttea caesii***: on *Mycoblastus caesius* on trunk of *Quercus petraea* in old oakwood, above the Devil's Punch Bowl, Afon Mynach, Devil's Bridge/Pontarfynach, VC46, Cardiganshire, SN742.770, alt. 200m, January 2022. Herb. SPC. New to Wales.
*S.P. Chambers & A. Orange*

***Sphinctrina tubiformis***: on *Pertusaria pseudocorallina* on sloping, south-southeast-facing rock outcrop at ground level in maritime grassland, coast opposite Cardigan Island, c. ½ km north-northwest of Clyn-yr-ynys, VC46, Cardiganshire, SN163.513, alt. 14m, October 2021. Herb. SPC. The first Vice-county record.

*S.P. Chambers & D.M. Lamacraft*

***Spirographa fusisporella***: parasitising *Pertusaria corallina* on a granite boulder, Rough Tor, Bodmin Moor, VC2, East Cornwall, SX1432.8120, alt. 304m, January 2022. New to Cornwall. *N.G. Bacciu*

***Spirographa pyramidalis***: on *Hypotrachyna afrorevoluta* occupying low *Fagus* branch, Knightwood Oak, New Forest, VC11 South Hampshire, SU26571.06482, November 2021. Second British record. *V. Giavarini*

***Sporodictyon terrestre***: in small amount between rock crystal cleavages on fragment of ferruginous quartz-rich spoil on west-facing side of rusty tip on disused metal mine, Esgairlle mine, Cwmergyr, VC46, Cardiganshire, SN790.828, alt. 320m, October 2020. Confirmed by A. Orange. Herb.SPC. The second Vice-county record.

*S.P. Chambers*

***Stictographa lentiginosa***: parasitic on *Phaeographis dendritica* on a small post mature pedunculate *Quercus* by glade, in pasture woodland under restoration, Out Wood, Langley Wood NNR, VC8 South Wiltshire, SU2273.2091, alt.60m, October 2021. New to the NNR and second record for Wiltshire. Neither species were recorded when the same tree was surveyed in 2010. *N.A. Sanderson*

***Taeniolella cladinicola***: on *Cladonia uncialis* ssp. *biuncialis* ascending through wet bryophyte mounds in *Calluna vulgaris–Molinia caerulea* vegetation on southeast-facing slope at edge of conifer plantation, Tywi Fechan, by the Nant Gwyn c. 1 km south of Moel-prysgau, VC46, Cardiganshire, SN809.602, alt. 370m, September 2021. Herb. SPC. New to Wales. *S.P. Chambers*

***Taeniolella pertusariicola***: growing on the thallus of *Pertusaria corallina* on gritstone outcrop at Highveer Point, Heddon Estate, VC4, North Devon, SS6549, alt. 60m, November 2021. First for the Vice-county and the first occurrence in the British Isles on *P. corallina.* *M. Putnam & J Skinner*

***Taeniolella phaeophysciae***: on *Phaeophyscia orbicularis* on branch of *Acer pseudoplatanus* in parkland, Carolside, VC81, Berwickshire, NT5639, alt. 120m, November 2021. Specimen not retained. New to Vice-county. *B.J. Coppins*

***Taeniolella phaeophysciae***: on thallus of grey morph (skyrin absent) of *Phaeophyscia orbicularis,* on smooth bark on east-northeast side of trunks of two *Fraxinus excelsior*,

Plas-crug avenue, Aberystwyth, VC46, Cardiganshire, SN587.813, alt. 14m, September 2021. Herb. SPC. The first Vice-county and second Welsh record.
*S.P. Chambers*

***Taeniolella punctata***: on thallus of *Graphis scripta* on *Corylus*, Woodend Wood, Chanlockfoot, VC72, Dumfries, NS793.001, alt. 230m, March 2022. Specimen not retained. Det. B.J. Coppins. New to Vice-county. *R. Lamb*

***Taeniolella toruloides***: on *Thelotrema lepadinum* on upperside of decumbent *Corylus avellana* stem in remnant fragment of upland Celtic rainforest, Allt Dihanog, Hafod, VC46, Cardiganshire, SN762.727, alt. 240m, December 2021. Herb. SPC. The first Vice-county and second Welsh record. *S.P. Chambers & J.R. Douglass*

***Teloschistes chrysophthalmos***: as small tufts on *Crataegus monogyna*, Anses Wood, New Forest, VC11 South Hampshire, SU231.123, alt. 105m, December 2019; on *Malus sylvestris*, Picket Plain, New Forest, VC11 South Hampshire, SU1946.0557, alt. 90m, March 2021; on *Malus sylvestris*, Appleslade Lawn-Redshoot Inn, New Forest, VC11 South Hampshire, SU18511.09286, alt. 50m, October 2021; and on branches of *Prunus spinosa*, part of the Wormstall Wood complex, New Forest, VC11 South Hampshire, SZ35969.98720, alt. 25m, December 2021; large tuft on *Rosa canina*, Pigsty Hill/Devils Den, New Forest, VC11 South Hampshire, SZ20861.99417, alt. 65m, February 2022; low branch of *Fraxinus excelsior*, between Anses Wood and Holly Hatch Cottage, New Forest, VC11 South Hampshire, SU21774.12238, alt. 65m, March 2022. *V. Giavarini*

***Tephromela pertusarioides***: two thalli on ±vertical side of low SW-facing greywacke outcrop on steep slope, Cademuir Hill, Peebles, VC78, NT2196.3687, alt. 270m, April 2022. Field record. LISS meeting. New to Vice-county. *B.J. Coppins*

***Thelidium fontigenum***: on soil in a seepage in the cliff at Seaton Hole, VC3, South Devon, SY236.896, alt. 17m, February 2022. New to the county. *B. Benfield*

***Thelidium pyrenophorum***: South of Carsaig, VC101, Kintyre, NR71802.85842, alt. 37m, March 2022. Second record for Vice-county (prev. record 1972).
*C. Walker and C. Cant*

***Tremella phaeographidis***: parasitising *Phaeographis smithii*, Ruttersleigh SSSI, VC5, South Somerset, ST2643.1632, alt. 171m, November 2021. Field record. New to the Vice-county. *N.G. Bacciu & A. Windle*

***Umbilicaria hyperborea***: Cross Fell, VC70, Cumberland, NY68998.34838, alt. 853m, August 2021. Confirmed by Alan Fryday. Herb. Walker. Re-find of only record in England in 1979. *C. Walker & C. Cant*

***Usnea glabrata***: on *Salix* twigs in carr, Caldale, Orkney Mainland, VC111, Orkney, HY416.100, June 2000. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*

***Verrucaria bryoctona***: recorded growing on exposed chalky soil in a tree root plate, Chippenham Fen SSSI, VC29, Cambridgeshire, TL6511.6914, alt. 19m, February 2022. New to the Vice-county. *N.G. Bacciu*

***Verrucaria dufourii***: on metamorphic limestone, South Filla Runnie, Delting, Shetland Mainland, VC112, Shetland, HU419.615, July 1999. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*.

***Wadeana dendrographa***: on damp base rich bark on a veteran *Quercus petraea*, with *Porina hibernica*, in *Fagus – Quercus* pasture woodland, Bramshaw Wood, New Forest, VC11, S. Hampshire, SU25881.16474, alt. 70m, January 2022. First recent record of this Section 41 species from Bramshaw Wood, where it was recorded from *Quercus* in 1967 and 1976 in different locations by F. Rose. Populations on *Quercus* of this mainly *Fraxinus* species are likely to become important for its survival as ash dieback disease runs its course. *N.A. Sanderson*

***Xenonectriella physciacearum***: on *Physcia stellaris* on recently fallen twig of roadside *Aesculus*, Cademuir Hill, Peebles, VC78, NT2196.3687, alt. 270m, April 2022. Specimen not retained. LISS meeting. New to Vice-county. *B.J. Coppins*

***Xerotrema quercicola***: on a standing dead *Quercus* by glade, in pasture woodland under restoration restoration, Out Wood, Langley Wood NNR, VC8 South Wiltshire, SU2273.2097, alt. 60m, October 2021. New to Wiltshire. *N.A. Sanderson*

***Zwackhiomyces lecanorae***: on *Baglietoa* sp. on calcareous rocks a short distance above shore, E coast of Builly promontory, Vementry, Shetland Mainland, VC112, Shetland, HU306.598, August1999. Leg. D.H. Dalby (**E**). Det. B.J. Coppins. New to Vice-county. *B.J. Coppins*

# Minutes of the ANNUAL GENERAL MEETING

**Virtual by Zoom**
**Saturday 29th January 2022**

**Welcome** by the President: Dr Rebecca Yahr

**Members present**: Azian Abas; Catherina Abel; Andy Acton; Alison Adams; Ann Allen; Judith Allinson; Rod Ashwell; Violeta Atienza Tamarit; Juliet Bailey; Ryan Balkcom; Paul Beetham; Peter Bisset; Francesca Blatchley; Richard Brinklow; Paul Cannon; Chris Cant; Katherine Challis; Margaret Chapman; Nathan Chrismas; Isobel Clark; Ann Claypole; Heather Colls; Brian Coppins; Margaret Crittenden; Peter Crittenden; Andrew Cross; Amanda Davey; Simon Davey; John Douglass; Bryan Edwards; Chris Ellis; Ester Gaya; Fred Gibson; Allan Green; Theresa Greenaway; Raymond Griffiths; Terence Hackwill; Geoffrey Haigh; Diane Haughland; David Hawksworth; David Hill; Barbara Hilton; Robert Hodgson; Kaare Homble; Siljo Joseph; Joanne Kaar; Sue Knight; Scott La Greca; John Larman; Dave Lee; Mariagrazia Morando; Rachid Mouedden; Fay Newbery; Roshinikumar Ngangom; Heather Paul; Heleen Plaisier; Craig Postlethwaite; Gareth Powell; Steve Price; Maxine Putnam; David Richardson; Roger Rosentreter; Neil Sanderson; Peter Scholz; Janet Simkin; Mike Simms; John Skinner; Eluned Smith; Fiona Spence; Eric Steer; Mary Steer; Diane Thomas; Holger Thus; Petra Vergunst; Christian Vonarburg; Caz Walker; Dennis Waters; Gothamie Weerakoon; Paul Whelan; April Windle; Pat Wolseley; Ray Woods; Duncan Wright; Rebecca Yahr.

**Apologies for absence**: Mark Seaward

**Minutes of the AGM by Zoom on 30th Jan 2021** were published in the Summer Bulletin **128**. Adoption of the Minutes was proposed by Rebecca Yahr and seconded by Maxine Putnam and approved by a poll of the members present.

**Matters Arising**: The feedback from members from last year's virtual AGM was very positive, with over 300 people from over 50 countries attending. Until earlier this month it had been planned to hold a hybrid AGM and Symposium meeting but our venue at RBG Kew Gardens was cancelled due to covid restrictions. After much discussion it was reluctantly decided to postpone the Symposium and Field meeting from this weekend until the AGM in March 2023.

**The President's Report -** Rebecca Yahr
Officers and Council members were thanked for their service, along with members of all the committees who have worked hard despite covid restrictions, to support our charitable aims. Editors, authors, proof readers and reviewers of papers to the *Lichenologist* and the *Bulletin* contribute greatly to lichenological knowledge in the British Isles and overseas. Despite fewer field meetings and their entertaining accounts,

our *Bulletin* Editor produced two colourful and varied *Bulletins* last year. The website working group have been very busy, modernising and improving various features with the expert help of our Webmaster. Rebecca thanked contributors of lichen records to the BLS database and encouraged members to reach 2 million records this coming year; we currently hold 1.9 million. Rebecca thanked the joint Chairs of the Education and Promotions Committee who have undertaken many more tasks with a variety of working groups addressing issues such as online learning, social media and local groups. The Royal Society of Biology administer our membership finances efficiently, and numbers have risen, but not our subscriptions, which can now be organised easily every January via direct debit. Our Treasurer, John Skinner had a very busy year, winding up the finances of the old British Lichen Society at the end of the financial year in June 2021 and we are all now members of a Charitable Incorporated Organisation called the British Lichen Society, with a slightly different constitution and rules, of which more later. The academically important archives of the BLS are going to be catalogued and housed safely in the RBG Edinburgh during the next few months, and the digitisation and classification of our Grey Literature at the RBG Wales is well underway. So many thanks are due to all the volunteers who help with the Society and if you are interested in any of the activities described by the Committee chairs this morning, you are very welcome to get in touch.

Finally, the Society notes with great sorrow the deaths of a number of members, including Frank Dobson and, yesterday, Peter Lambley.

## Reports of Officers and Committee Chairs

***Treasurer*** - John Skinner

The Financial Year that ended on 30 June 2021 saw a decrease, for various reasons, in both our income and expenditure.

Dealing first with income, in the previous year we benefitted from a generous bequest from Sheila Reid but with no bequests this year, income from donations fell from £17,600 to £65. Income from sales of *The Lichenologist* fell significantly from £108,197 in the previous year to £79,705, reflecting a fall in subscription income from organisations around the world of almost £23,000. Field meeting and workshop receipts, as well as grant income, were all nil, the two former items being due to cancellation of meetings due to Coronavirus.

Turning to expenditure, there were some increases in costs. Bulletin costs (subsumed in the accounts under 'Membership Support') increased because three issues were paid for in the Financial Year. There was an increase in website costs (also included in 'Membership Support') reflecting regular payments for website support work. Administration costs, AGM costs, field meeting and workshop expenses all fell as a result of Coronavirus. Legal fees for CIO work were £4,809.

Overall, a net surplus of £9,890 was achieved compared to £53,315 in the previous Financial Year.

There are no significant changes in the Balance Sheet except that there were no large outstanding debtors at the close of the Financial Year.

At the close of the Financial Year all assets of the British Lichen Society Registered Charity no. 228850 were transferred to the new British Lichen Society Charitable Incorporated Organisation (CIO) Registered Charity no. 1194213.
The Treasurer thanked other Council members and CIO trustees for their support over the last year and welcomed Mr. Duncan Wright who takes over on 29 January as Treasurer of the British Lichen Society.

The Treasurer proposed the adoption, seconded by Maxine Putnam, of the Annual Report and Accounts for the year ending 30th June 2021 and this was unanimously approved by a poll of members present.
The full Annual Report and Accounts may be viewed on the Charity Commission website.
The President thanked John for his work in compiling the accounts for the BLS and paid tribute to his diligent and careful oversight of our finances during the past 17 years.

***Membership Report from the RSB -*** Eluned Smith

There has been an 11% increase in membership from 590 in Sept 2020 to 610 in Sept 2021. More members are subscribing to the print and online *Lichenologist* and more members are signing up to paying their membership subscriptions by direct debit. This welcome increase in members has arisen in no small part by the efforts of Simon and Amanda Davey who started our social media presence a few years ago. These Facebook, YouTube and Twitter accounts have been managed by volunteers of the EPC since April 2021, and Judith Allinson and others have encouraged dozens of beginners and improvers with their fortnightly Zoom meetings. The BLS Council and members thank Andy Stephens and his team at the RSB for their administrative help this past year and we welcome all the new members whose membership runs from January to December.

***Conservation Committee -*** Neil Sanderson & Bryan Edwards

Bryan reported that although the Conservation Committee had not met in person in 2021, plenty of 'virtual' work has been going on. There has also been survey, monitoring and contract work with the conservation agencies willing to pay for much of this. Threats to lichens in the UK are mostly habitat and pollution-based rather than from overcollection. Work continues especially on planning applications where important lichen communities may be affected. There has been concern about over-enthusiastic felling of diseased ash trees on some NT properties which Bryan and Neil have addressed. The recent increase in the reintroduction of beavers necessitates the monitoring of riparian woodlands. Many remote river valleys in areas of low air pollution have rare assemblages of lichens which could be adversely affected by beaver activity and so need surveying.

Following the publication of the Environment Bill at COP22 where local authorities are required to implement local Nature Recovery Strategies, lichenologists are invited to get involved with their local Wildlife Trusts and Councils to help inform them about any rare and threatened lichen species in their area.

The Conservation Pages on the website are being improved and if any members want to help draft material for adding to the website, please get in touch.
Bryan thanked Tim Wilkins from Natural England for all his work over the years as he is leaving. He also thanked the Committee for all their work and those Conservation agencies who support us: Plantlife, Natural England, Scottish Natural Heritage and Natural Resources Wales.
The President thanked Bryan and Neil for all the progress made during the past year, despite the covid restrictions.

***Data Committee -*** Paul Cannon
Paul presented a report detailing two main areas of activity during the year. The Lichens of GB & Ireland edition 3 is about one third completed and he thanked the thirty authors and editorial team worldwide who have enabled the publication of 19 family accounts, including 95 genera and 568 species, in 2021. These are available free from the website as pdf documents. The Taxon Dictionary has also regularly been updated online thanks to Brian Coppins.

Janet Simkin reported that many of the 64,000 records sent in to the database last year were 'older' because people were working through their collections during the lockdowns rather than going out and recording, but these older records also make a valuable contribution to the database. There are now 1.92 million georeferenced records (with location name, grid reference and date) and a further 654,400 less detailed records from the mapping scheme, source datasets and LichenIreland in the database.

Janet warned that while iRecord and iNaturalist apps are now both receiving lichen records, mostly from casual recorders, these are difficult and time-consuming to transfer into our database. We hope to find a volunteer to take on this task later in the year. There are fewer churchyard records being submitted now, which could be an opportunity for someone or some local groups to build on the earlier work of the churchyard group.
The President thanked Paul, Janet and the Data Committee warmly for their hard work.

***Education and Promotions Committee*** - April Windle and Raymond Griffiths
April Windle thanked the outgoing Chair, Fay Newbery, for the many achievements of the EPC up until she and Raymond Griffiths took over in April 2021. She described the new structure of the EPC; there are now working groups for online learning, species descriptions, website, social media, local groups, winter talks, arts, field meetings and 'lichens in the school curriculum'. EPC is supporting local groups to apply for grants for specialist training and equipment and asks that the membership gets involved.

There are now 20 self-guided lichen walks described on the Education page of the website and new pages on lichenicolous fungi keys and descriptions written by Fay Newbery. The fortnightly Lichen Chat & Improvement Groups (LCIG) Zoom meetings organised by Judith Allinson and others continue to be very successful and

more beginners are joining the BLS as a result. The updated website now also has over 100 species descriptions of common lichens and updated local contacts. To assist newcomers, modules of an online course "Learn the language" are ready. April paid tribute to the imaginative efforts of Simon and Amanda Davey who set our increasingly successful social media accounts a few years ago and who stepped down last April. She asks for volunteers to help run the Facebook, Twitter, BLS YouTube and Instagram pages, please get in touch. The BLS YouTube site shows the scientific talks from the virtual 2021 AGM and also many short informative videos recorded during the LCIG meetings. An evaluation form is in preparation for participants in field meetings in order to obtain accurate feedback on activities.

Finally, any secondary biology teachers among the membership are invited to help the EPC develop material for the new GCSE in natural history thereby ensuring that lichens are well represented to the teenagers of the UK. April and Ray thanked all the members of the various EPC working groups and were warmly thanked in turn by the President.

***Bulletin Editor*** - Maxine Putnam

Maxine's report praised the many regular and new contributors as well as the printers who work to obtain the best possible colour quality in the numerous images. The BLS membership is reminded that lichen stories and photographs are always welcome and to please submit them by May 1st 2022. The President thanked her warmly for producing two such varied and colourful *Bulletins* containing 35 feature articles, despite there only having been one field meeting report due to covid restrictions in 2021.

***The Lichenologist*** - Chris Ellis and Leena Myllis

In his report Chris Ellis said that the *Lichenologist* would probably continue being published by CUP for the next five years, subject to obtaining a satisfactory contract this coming Spring. He described a dynamic and successful year, publishing 115 authors' work detailing research in 133 different countries, with over 30% of the scientific content being 'open access'. This accounts for a drop in income as fewer libraries and institutions are buying subscriptions, preferring to pay the publisher for people to be able to read the articles electronically. However, the 11% rise in BLS members during the year has meant that 314 members now subscribe to both the print and the online *Lichenologist*, up from 279 in 2020.

Chris credited the good news that the impact factor of the *Lichenologist* rising from 1.3 in 2019 to 1.5 in 2020 was due in no small part to the strong global footing which the previous Editor, Peter Crittenden built up. Chris praised the Associate Editors who maintain high academic criteria when selecting and reviewing submitted articles. They are keen to endorse the work of young researchers and discussions are ongoing to give an annual £500 award and BLS branded certificate for the best paper submitted by underrepresented groups. A workshop for young lichenologists outside Europe and North America (in particular those working in institutions in South East Asia and South America) will be organised soon to facilitate routes to publication in the *Lichenologist*.

He thanked all the hard work done by their team of associate editors, reviewers and proof readers, and in turn was warmly thanked by the President on behalf of the whole membership.

***Website Editor -*** Janet Simkin & Juliet Bailey

In her report to Council, Janet Simkin stated that although the Council position of Website Editor remains vacant, the Website Working Group (WWG) which is chaired by Juliet Bailey has been working hard. She thanked our Webmaster Chris Cant for the many major revisions mentioned in the report, and said that the delayed upgrade to Drupal 9 might be completed during the next year. The Lichens of Wales website was updated in 2021 and already uses Drupal 9.

The President thanked Janet and Juliet for their ongoing work with the website which, with helpful input from an EPC subcommittee, has resulted in improved presentation, navigation and tabs.

***Field Meetings*** – Graham Boswell

Graham reported that although covid restrictions had decreased field meetings activity again in 2021, there had been two successful meetings, to Alladale Wilderness Reserve in Scotland and to Monmouthshire. The nine plus ten members (respectively) recorded many new lichens in both areas. The Winter Workshop will meet again at Cober Hill, Scarborough from 25th to 28th February 2022. The Spring Meeting is on North Harris, Outer Hebrides, from 23rd to 30th April 2022. The Summer Meeting in Aberdare, South Wales is from 9th to 18th July. A field meeting in October 2022 is in the advanced planning stage, and there will hopefully be a Spring 2023 Meeting in Scotland's Southern Uplands. Please check the website for availability and details of the forthcoming trips.

Graham thanked his predecessor Steve Price for all his advice and help in handing over the work last year. He also thanked the local organisers whose expertise and efficiency help so much to make these lichen meetings enjoyable and educational. He especially mentioned Brian Coppins, Neil Sanderson, Fay Newbery, Dave Minter, Tristan Rheinallt and Ray Woods. He also praised the active online groups in Bristol, Shropshire and the Lake District. The President thanked Graham for his energetic involvement in organising these important field meetings, which so many members enjoy.

***Archives*** - Mark Seaward and Rebecca Yahr

The President reported that important progress concerning the BLS archives has been made since the last Council meeting. The archives, amassed over decades, represent an academically valuable 'living' resource but which have little financial value. The Library at RBG Edinburgh is willing to accept the BLS archives held by Mark Seaward, our stalwart archivist, and plans are underway to drive a lorryload from his home and the University of Bradford to Edinburgh this Spring. A draft agreement concerning copyright, ownership and access has been circulated between the President, Vice-president, Treasurer, Chair of trustees (Paul Cannon) and the Archivist for

comment. This will then formalise the agreement between the Library at RBG Edinburgh and the BLS.
Rebecca thanked all those who have been involved in discussions about the archives and gave especial thanks to Mark Seaward for his continuing work with the archives.

***Herbarium Curator*** - Richard Brinklow
Richard reported that, sadly, the Herbarium at Dundee Museum has been inaccessible since March 2020. He is able to send out packets of some common corticolous macrolichens from his own collection to interested members by non-returnable post. The recent storms have enabled a good harvest of such lichens from fallen branches.
The President thanked Richard for offering this helpful service, particularly to beginners, and hoped that Dundee Museum would soon lift the restrictions as the pandemic ends.

***Librarian*** - Theresa Greenaway
In 2021, the BLS library at the Royal Botanic Garden of Wales in Carmarthenshire remained quiet with Covid-19 still imposing access restrictions. While discussing the digitisation of all the Grey Literature, it was decided to begin planning for the proper classification of all the library contents. The library contains one third of the total BLS archives – uncatalogued, mostly in boxes, published books alphabetically arranged on shelving, reprints, – uncatalogued but arranged alphabetically in accessible folders, all editions of the *Lichenologist* plus many duplicates, BLS Bulletins, Grey Literature and incomplete runs of a few other journals.
The President thanked Theresa for her detailed report on the Library contents.

## Adoption of the Rules of the Society – Paul Cannon

Paul explained that, with the change from a charity to a CIO , we had to make a new Constitution and that there are some Rules to adopt. These were published in the Winter 2021 Bulletin **129,** pages 135-139 and Paul asked if there were any questions . There were none and he proposed that the membership accept them. Rebecca Yahr seconded the proposal and the members voted unanimously to formally adopt the Rules.

## Election of Officers and Trustees

The President expressed her gratitude to all Officers of the Society for their support for the BLS over the past two years, and especially to the previous President, Paul Cannon, and the retiring Treasurer, John Skinner, for their wise counsel. She welcomed the incoming President, Neil Sanderson, and Vice President, Fay Newbery.
All Officers and Council members were elected unanimously by a membership poll of those attending the 2022 Annual General Meeting. They are as follows:

President: Neil Sanderson
Vice President: Fay Newbery

Archivist: Mark Seaward
Treasurer: Duncan Wright
Secretary (Council): Eluned Smith
Secretary (Communications): Sandy Coppins
Chair, Data committee: Paul Cannon
Chair, Conservation Committee: Bryan Edwards
Chairs, Education and Promotions Committee: April Windle & Raymond Griffiths
Senior Editors, *Lichenologist*, Chris Ellis and Leena Myllys
*Bulletin* Editor: Maxine Putnam
Field Meetings Secretary: Graham Boswell
Social Media coordinator: vacant
Website Editor: vacant
Membership Secretary: vacant

Members of the Council: Neil Sanderson, Fay Newbery, Duncan Wright, Eluned Smith, Sandy Coppins, Paul Cannon, Bryan Edwards, April Windle, Raymond Griffiths, Chris Ellis, Maxine Putnam, Judith Allinson, Graham Boswell, Andy Cross, Ester Gaya, Heleen Plasier, Janet Simkin, Gothamie Weerakoon and Rebecca Yahr.

The following are not members of Council and report via the Vice President. They are entitled to receive the Minutes of Council and make a personal report at the Council meeting immediately prior to the AGM:

Archivist: Mark Seaward
Database Manager: Janet Simkin
Librarian: Theresa Greenaway
Herbarium Curator: Richard Brinklow

**Trustees – Chair of Trustees Paul Cannon**

The trustees of the BLS may comprise from 3 to 8 persons. Their responsibilities are to oversee the governance of the Society in a way that is consistent with its Constitution, and to ensure that the Officers manage the Society's affairs appropriately. They can also act as a resource for Council and provide advice and strategic counsel where needed. The founding trustees listed in the Constitution as approved by the Charity Commission in 2021 are as follows: Judith Allinson, Paul Cannon (Chair), Ester Gaya, Heleen Plaisier, Janet Simkin, John Skinner, Gothamie Weerakoon and Rebecca Yahr.

Paul remarked that it had been a very busy year with the change from the old BLS charity to a Charitable Incorporated Organisation and that Rebecca had done a wonderful job during her Presidency. She thanked Paul and welcomed the new President, Neil Sanderson, who thanked them both and said that he was honoured to be chosen and would do his best.

## Awards

### Election of an Honorary Member

Council has agreed to propose an Honorary membership be awarded to the eminent lichenologist Chicita Culberson, from Duke University in North Carolina, whose ground-breaking research on thin layer chromatography has helped subsequent lichenologists to better understand lichen chemistry. Scott La Greca read a statement of support to the meeting and the proposal, seconded by Rebecca Yahr, was approved unanimously by poll from members present at the AGM.

### The Ursula Duncan Award

This award is given to a person who has rendered outstanding service to the Society. The worthy recipient this year has been proposed by a member of the BLS seconded by more than 5 other members and approved unanimously by Council. This year the award goes to Paul Cannon . Brian Coppins gave an entertaining and informative statement of support which was enjoyed by all present. Paul thanked everyone and said that it was an immense honour to receive the Ursula Duncan Award. He named the late Peter Lambley who was Bulletin Editor before Paul, as one of his mentors, and also said how much he had learnt from Frank Dobson, Steve Price, Brian Coppins and many others.

### Date and Place of AGM 2023

The AGM will be a hybrid meeting to be held at the Royal Botanic Gardens, Edinburgh in March 2023.

# NOTICE OF HYBRID ANNUAL GENERAL MEETING MARCH 2023

# BLS Grants

The British Lichen Society offers five different grants and one form of scholarship funding to further its aims to promote and advance the teaching and study of lichens and to encourage and actively support the conservation of lichens and their habitats. Details of all of these can be found on the Grants page of the BLS website at https://www.britishlichensociety.org.uk/the-society/membership/grants-scholarships

**Summer Vacation Scholarships** give researchers opportunities to apply for funding to enable a 2nd or 3rd year undergraduate student to take on a full-time supervised research project for up to ten weeks.

The **Overseas Members' Travel Fund** aims to help overseas members to travel to the UK to collaborate with UK researchers on laboratory or field research into lichens.

Suitable for all members is the **Wallace-Burnet-Gilbert Fund** which offers grants to assist members who wish to attend conferences, courses, workshops or field events in order to further their knowledge of lichens.

Tom Chester was a headteacher of a primary school as well as being the most prolific and enthusiastic churchyard recorder of his generation. The **Tom Chester Award** aims to assist schools or colleges to support individuals or groups that wish to undertake fieldwork involving lichens.

The **Small Ecological Projects** grant aims to support field work focused on habitats or species. The work undertaken is not limited to Britain and Ireland.

Larger projects that will advance knowledge of lichens can be supported by the **Peter James Research Award**. This award is aimed at rigorous work that can be reported through a paper submitted to the Lichenologist.

All of these grants are intended to support members of the British Lichen Society whether they are enthusiastic amateurs, students or employed academics. We are seeing a gratifying increase in grant applications and the society has, so far, never felt the need to put limits on any of the grants except for the Peter James Award (which, being larger, can only be awarded to one applicant per year). Please consider applying for a grant if you would like to undertake research or learning in lichenology and funding is limiting what you can achieve.

We would encourage academic supervisors of students and younger researchers to consider asking your students to join the society at an early stage in their studies. If applications continue to rise priority will be given to applicants who have been a member of the BLS for at least twelve months as laid out on the Grants and Scholarships webpage. In the past the society has been flexible for students undertaking a year of study and who wish to apply for travel support but students applying for membership later in their studies when simultaneously applying for grant funding are unlikely to be prioritised.

*Fay Newbery*
*fay.newbery@btopenworld.com*

# OBITUARIES

## .Frank Stuart Dobson - June 11th 1934 to December 19th 2021. A personal tribute

We have all met people in our lives who we immediately recognize as being exceptional. Frank Dobson was such a person.

In 1991 I had recently joined The Society and, taking a day off from a holiday in North Wales, drove over the mountains to Llandudno, that year's venue for the Autumn Field Meeting, to search out the Society's hotel.

I found Frank in the hotel garden, a bearded, bulky, ashen-faced man, with a large Elastoplast on his forehead; it was peeling and obviously self-affixed. It never crossed my mind that his pallor indicated illness and, on finding that he was a member of the Society, asked him to help me with the naming of several lichens collected from the Welsh coast (a shoe-box full!). We set to and for 10 minutes he suggested names and I annotated specimen packets. It became increasingly obvious that he was unwell, he had passed through my personal space and was using me for physical support. His pallor was that of pain, the Elastoplast covered an abscess, a "carbuncle" he called it, and I realized how thoughtless I had been not to have recognized his distress. I helped him back into the hotel and I left with my embarrassed thanks and hopes that he would be better soon. His generosity, his kindness to a stranger, and his remarkable resilience to discomfort remained with me throughout that day and through all the intervening years until his death.

Remarkably, I later found myself eating lunch beside him and surrounded by members of the Society on the slopes of The Great Orme, that "whale-back" of limestone extending north from the coast. He was much better - the abscess had been lanced, the pain was over and "the day was too good to waste". We struck up a conversation and, on finding that I was from Leicester admitted to becoming lost in the city many years before. I sympathized, having experienced the same misfortune, but his reason was interesting. He had been a member of the Renault Motor Works Team, heading for Scotland whilst attempting to "run in" a new Gordini saloon in the quickest possible time. Leicester had been his undoing. I inquired about his family and, on hearing that he had six daughters, could not resist saying that it indicated remarkable fecundity. He roared with laughter, a single loud staccato "Ah!", which was so surprising that it silenced all within earshot, and quickly replied that he, and his wife Mary, had been "trying to raise the intelligence of the UK population", he being convinced that girls were the more able sex - a reply which left all the ladies in earshot in tears of laughter.

We became firm friends. He could recognize me after a long absence which was remarkable as life had dealt him a hammer blow - he was "face-blind". The doctors call the condition prosopagnosia, a romantic sounding term for a particularly debilitating condition. For sufferers, living in a world of perpetual strangers, must be a

constant challenge. His daughter Wendy ("daughter number 5" as she was known) recalls that he would not recognize her in the street if he was not expecting her appearance, and his wife and soul-mate Mary would also be ignored if she was wearing clothes which were unusual. Frank had several ways of coping with his disability - remembering people's voices, their mannerisms etc. but even so some members of the Society, perhaps those who felt they should be remembered, thought him to be "distant". And yet despite this disability he was able to chair meetings with authority, direction and determination.

We also shared a hobby - pistol shooting. His scores indicated that he was a very able marksman but how able only became apparent some years later when, during a field meeting at Slapton, he appeared at breakfast wearing a tee shirt emblazoned with the interlocked Olympic Rings. In those days its meaning could easily have gone unnoticed, the logo being a subdued pastel colour. Initially he evaded my "Good heavens Frank, when did you get that!" with the comment that "It was the only clean shirt I could find", but on being pressed eventually admitted to having competed in the 1960 Olympics - 50 metres Free Pistol. By then the adjoining tables were silenced by the news and wanting more, but Frank, so typically Frank, was completely unaware of this; he was heading for the breakfast hatch and food!

The author (left) with Frank

He was born and lived his entire life in the same road in New Malden. He attended Tiffin School but underperformed - he was dyslexic and described his final attainment as "rubbish". This was a time when the effect of dyslexia on children's academic attainment was poorly understood, and the provision of special educational support was for the future. It had little detrimental effect on his later career - I suspect he did not consider it as a handicap; he never tried to hide it and it certainly did not diminish his confidence. At school he was inspired by botany, and his first book he dedicated to his teacher for awaking this lifelong interest. He also displayed the first hint of his future entrepreneurial ability by importing tortoises from the Mediterranean and

selling them to his school friends. And his father, the official team photographer for the Wembley Olympics in 1948, also seeing his potential, called upon his assistance during the Games. He was 14 at the time.

He joined the family photographic business in 1953 and soon exhibited the remarkable determination and drive which were his hallmarks, starting the firm's printing division in 1957, forming Kingprint Ltd. in 1960 and The Richmond Publishing Co. Ltd. in 1970. Such was the group's reputation and his ability that it secured many interesting commissions including a personal printing for "The Beatle" George Harrison, who Frank found to be a charming, thoughtful man; and a limited facsimile edition of the HMS Bounty's Logbook which entailed him constructing an apparatus comprising of angled reflecting mirrors to protect the fragile spine of the original log.

His detailed understanding of the printing industry and regular negotiation with the print unions propelled him on to the committees of many print organizations and government quangos (I counted 10 separate committees in a copy of "Who's who" of the printing trade), becoming chair and vice-chair of several.

Frank with Peter James (left) and Jeremy Gray

He enjoyed boating and was a part-time Thames River Policeman; "I always won the Boat Race" he would say - his being the first boat to cross the finishing line. But sailing was his true passion, mainly on the Norfolk Broads where he owned one of the remaining watermills, a magical 5 storey hideaway which he called "His greatest extravagance". Yes, it was "damp and smelly" (his family's opinion) but it was a complete joy to be invited to stay for a few days. Sitting round the log burner in the evening with the gabbling skeins of Pink- footed Geese flying overhead to roost in the marshes, and with our conversation drifting here and there, will always be remembered. He once told of being caught in a squall in the Channel and, taking on water in spite of Mary's best bailing efforts, entered Dover harbour by the ferry entrance which is strictly forbidden. The port authorities descended on his mooring looking apoplectic but left without further comment when the hatch was thrown open to reveal Mary trying to comfort her 6 daughters.

He played the clarinet; he flew gliders and was a talented painter - many of his local scenes have since been donated to the Kingston Museum. He was a "Freeman of London" and ran in The Mayor of London elections on a promise to resign if elected (he felt that the government was imposing the new assembly against the wishes of the people of London). Once the media (always looking for an amusing angle to politics) found out that the Labour Party applicant had the same name as Frank they were queuing outside in the road to interview him. Mary described the "jamboree" atmosphere of a lounge full of cameras and lights and with interviewers all agreeing in private that Frank (our Frank!) was the only candidate who seemed not to be a stranger to reason.

With his interest in natural history, coupled with his recognized photographic and publishing ability, it was natural for the media to ask his advice on up-and-coming natural history projects and to act as a freelance researcher. The productions he most enjoyed were for the Wildlife Unit of the BBC on series such as "The Life of Plants" and "The Living Isles".

His range of publication interests is best seen in the number and breadth of the "Naturalist Handbook" series, the printing of which he took over from the Cambridge University Press starting with volume 8.

As a photographer he was naturally drawn to lichens because of their remarkable beauty and diversity, and as a publisher he could see the opportunity which existed to make their study more accessible to the general public, previous publications being out of date, too academic and lacking good illustrations. He joined The Society and attended beginners' courses run by Peter James, David Hawksworth and others, and became a regular on all the Society's field meetings. His identification skills rapidly improved as a result of his remarkable memory for facts and an ability to focus on the essential differences between taxa rather than being lost in the "fog" of complex morphology. He was soon running his own courses for both the Society and for the Field Studies Council (FSC); he had a wonderful ability to bring amusement to support a beginner's recall of Latinized binomials - who can forget his mnemonic "Nora Batty's stockings" for Xanthoparmelia pulla! (For our younger members who may be

mystified this was to focus on the transverse wrinkles on the lobes). Such was his enthusiasm and "can-do" ability that he came to hold a variety of offices in FSC.

For The Council he was also responsible for several popular fold out aids to identification which included "Urban Lichens", "Churchyard Lichens", "Lichens on Heaths and Moors", "Lichens on Rocky Shores" and "Lichens on Twigs".

Within The British Lichen Society there were very few roles which he did not assume: becoming a Member of Council, The Education Committee, Treasurer, Vice-President and President (1992–1994). He was awarded our highest endowment, that of Honorary Member, in 1997 and The Ursula Duncan Award in 2008

But his greatest contribution to British Lichenology will be his many publications. His two essential attributes - brilliance as a photographer and an experienced publisher - made possible that which had not been before, awaking an awareness by the public of these fascinating organisms and the ability to name them. His "Lichens An Illustrated Guide" (later editions as "Lichens An Illustrated Guide to the British and Irish Species"), first edition in monochrome, later editions in full colour, was groundbreaking. With each new printing further species were added and it is the book's comprehensive nature which makes it such a wonderful support to both beginners and for those requiring a more extensive source. It is reassuring that the Society will now be taking over its update and printing, and that on field meetings, the call, "Has anyone got a Dobson handy", will not be lost! For "improving" lichenologists he wrote several more detailed, spiral bound, keys which included "A Field Key to Lichens on Trees", "A Field Key to Common Churchyard Lichens", and "A Field Key to Coastal and Seashore Lichens". His outpourings also entered the realm of the Compact Disc with "Parmelia" and "Lichen Identifier, a multi-access Key".

He was a deeply religious man, quite unshakable in his beliefs even following the death of his wife Mary, the rock which he moored by for 55 years of marriage. He was a believer who was quite prepared to put his beliefs into action by inviting the needy into his home and the homeless to stay. Prayer and his local church helped him to move on - writing, publishing, painting to the very end.

The only regret that I have ever experienced in knowing this fine man was being unable, as part of a group of Society members, to persuade the UK Honour's Committee to grant him an award for his services to the country. Someone who had represented his country in the Olympic Games, who had played such a leading role in the printing industry and the government's drive to improve training within it, who was greatly respected in his local community and church, and who had done so much to encourage the study of lichenology in this country, should not have been passed over so lightly.

It is inevitable at moments such as these to feel a sense of loss. It seems such a waste that all his knowledge, enthusiasm, and joy of life should no longer be with us but, as Frank often admitted, he was indebted to all the lichenologists who had influenced and encouraged him in his past and we, in our turn, will ride on his shoulders and move on.

Those who knew this remarkable person will miss his kindness and steady presence, his intelligence and wise council and we will remember and admire his resilience and courage during many years of failing health. As for myself - what a pleasure it was to have known him, what a privilege to have been his friend.

He leaves 6 daughters, 9 grandchildren and 6 great grandchildren to whom we offer our sincere condolences.

*Ivan Pedley*
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## Frank Dobson commemorative events

The BLS will be celebrating Frank Dobson's life and his exceptional contribution to field lichenology, recording and introducing so many new people to the study of lichens though his flora, field guides and training. The Society will be holding a commemorative day field meeting in Surrey in August and also locally organised field meetings, churchyard walks and the like across the country around the same time. Details can be found on the BLS website, https://bit.ly/3wHxlFi.

## Peter William Lambley MBE

Sadly Peter passed away on 27th January 2022, aged 75. He joined the BLS in 1970 (Bull. British Lichen Society **26**) and served the Society in many capacities. He was on Council 1974–75, and again in 1995–96. He was Assistant Treasurer 1976–1984, Bulletin Editor 1998–2007 and President 2008–2009. He was also a member of the Conservation Committee from the 1970s until his death.

Born 4th November 1946 in Hall Green, Birmingham, the family moved to Ifield, Crawley, West Sussex when Peter was 10 and he attended Ifield Grammar School. He then went to Leicester University, and there met his wife Gill who was at teacher training college. They married in 1970 and moved to Hellesdon in Norwich, when Peter had secured the position of Assistant Keeper of Botany at the Castle Museum. He was later promoted to Keeper of Natural History and remained there until 1984. It was on the south coast when quite young that he developed an interest in the wildlife of the Sussex woods and downs. His later mentors included Ted Ellis and Francis Rose whom he often mentioned. His adult life was spent entirely in Norfolk.

I first met him on BLS Council in 1974 and was later surprised when he walked into the Leicester Museums Herbarium with other students on the University of Leicester Museums Studies course. He kindly gave me a list of the lichens he had seen on the drive over from Norwich. In 1988 on his return from a 3 year sojourn in Papua New Guinea he obtained the post of Conservation Officer for English Nature, Norwich, where he remained until his retirement in 2006. While at the museum he recognised that looking after dead specimens was only part of the job and actively promoted fieldwork. At various times he joined an expedition to Algeria with the Norfolk Venture Scouts. He also helped in the national drive to establish local biological record centres.

Peter had a consistent, subtle sense of humour with a sense of irony. Tony Irwin provided the following item from the Biology Curator's Group Newsletter; "*The latest venture is a survey of churchyards with the help of the WI. The launching of this scheme, incidentally, gave the writer his one and only chance to appear on the stage of the Theatre Royal in front of an audience of 400 women*."

In 1984 he moved with his family, temporarily, to Papua New Guinea joining the University faculty as Senior Technical Officer at the Natural Sciences Resource Centre

at the University in Port Moresby with the aim to establish natural history collections for education and research. I questioned him about his impending move, gaining the reply "If I don't do it now I never will". His collections made over the three year stay included new species some becoming named after him, such as the lichen *Parmotrema lambleyi* Elix (1995) and a spider *Nihoa lambleyi* Raven (1984), both endemic to Papua New Guinea. I remember well his talk to the BLS winter meeting (1993) when he illustrated the custom of young local males decorating their hair with *Bryoria* and *Usnea*.

Peter was one of the small band of East Anglian lichenologists investigating the flora of Norfolk, Sussex and Essex. Regarding lichens as his main interest he had much wider concerns being particularly active in the Norfolk wildlife scene generally, especially for the Norfolk Wildlife and Naturalists' Trust where he was editor of the Transactions for 20 years, President in 1980 and 1981 and Vice President in 2007. His wide-ranging interests covered both species recording and habitat management. He contributed to English Nature's Research programmes, such as exploring the impact of agrichemicals on lower plants, metalliferous sites and co-ordinating work on Biodiversity Action Plan targets. Occasionally he branched out into shingle geology and archaeology. Peter was particularly interested in the Norfolk and Suffolk Breckland, and in the conservation of its ultra-rarities such as the possibly extinct *Buellia asterella*. His heathland experience led to his being invited onto the BLS Conservation Committee's "Heathland Lichens Working Party" and he co-edited its final report, which evaluated the lichen richness of the British heathlands. We recognised that there was a large gap in our knowledge of the maritime heaths of northern Scotland and he joined our mini-expedition in 1983, comprising Brian Coppins, Richard Brinklow and myself. It was on that initiative that we discovered the extraordinary *Cladonia*-rich Coul Links. Years later he recalled with amusement our final meal of that trip, opening the car boot after the Sands of Forvie and consuming in one session all the canned food left over.

BLS Bulletins were enlivened with his conversational accounts of lichen trips, especially in his series "*Country Diary from Norfolk*" and very recently "*A postcard from Lewis"* in Bull. British Lichen Society **129**:62–69 (2021). He was also responsible for much of the compilation "*Catalogue of BLS Field Meetings & Workshops*" by Peter Lambley & Steve Price (on the BLS website).

Peter was an affable character, always smiling, and kindly disposed to all he met. He was notably unworried and unflappable. Once on an outing to Scolt Head Island, we crossed in a small hired boat intending to walk back across the salt marshes at low tide. Our instructions were to identify the crossing point by looking for a 'tump' (hillock) on the horizon. Coastland North Norfolk however, is singularly devoid of tumps, but Peter said confidently "there it is" and we set off. Accompanied by his wife and two small children, we encountered several deep creeks, filled with ooze in which we got stuck, had to pull each other out and lost our boots. I was terrified at the prospect of us stuck in the mud and becoming submerged by the encroaching tide. But Peter was undeterred and we made it.

Peter was modest about his life outside natural history but was a devoted family man with wife Gill, and children Sheena and Stuart. He was a stalwart of the village community of Lyng where he lived, serving as a Parish Councillor, School Governor and supporter of the parish church of St Margaret's. He was also a keen supporter of Norwich City Football Club.

He received the UK Duncan Award in 2010 for outstanding contributions to British Lichenology and, in the Queen's New Year Honours List, an MBE on 30 Dec 2006 – *"Peter William Lambley, lately conservation officer for English Nature, for services to conservation in Norfolk."*

His portrait in action appears on the back cover of the BLS Members Handbook, 2018.

With his many wildlife interests, and social skills bringing together the lives of a great many people, both locally and nationally, Peter will be much missed.

The family have set up a tribute website https://t.co/x4xIBJD523 which includes this photograph reproduced by kind permission of his daughter, Sheena.

I am indebted to Dr A.G (Tony) Irwin of The Castle Museum Norwich for providing many details and to Peter Earland-Bennett.

**Some notable publications include**

Lambley, P.W. (1988 )The Lichen Flora of Norfolk. *Trans. Norfolk & Norwich Nat. Soc.* **28**:(1) 13–32.

Lambley, P.W. (1989) The Lichen Flora of Norfolk - Systematic list. *Trans. Norfolk & Norwich Nat. Soc.* **28**:(3) 183–220.

Lambley, P.W. (2000) International workshop on Lichen Monitoring (Limon*). Bull. British Lichen Society* **87**: 1–9.

Lambley, P.W. & [Hodgetts, N.G.] (2001) Lichens and Bryophytes of the British Coastal Shingle, pp 380-392. In: Packham, J. et al., eds. Ecology & geomorphology of coastal shingle. Westbury Press.

Lambley, P.W., & Larwood, J. (2000) Fifty years of Geological Conservation in Norfolk. In: Dixon, R. (ed.) Geological Society of Norfolk Fiftieth Anniversary Jubilee Volume.

Lambley, P. W. (2001) Management of Lowland Heaths for Lichens. In Fletcher, A. (ed.) Lichen Habitat Management, British Lichen Society. ch. 11, pp 1–4. [Now on BLS website]

Lambley, P. W. (2001) Management of Lowland Grassland for Lichens. In Fletcher, A. (ed), Lichen Habitat Management, British Lichen Society. ch. 12, pp 1–6. [Now on BLS website]

*Dr Anthony Fletcher*
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## Eagle Hill Institute's 2022 lichenology and related seminars

Eagle Hill is right on the coast of Eastern Maine, between Acadia National Park and Petit Manan National Wildlife Refuge, USA.
The centre runs week-long natural history training meetings each summer.

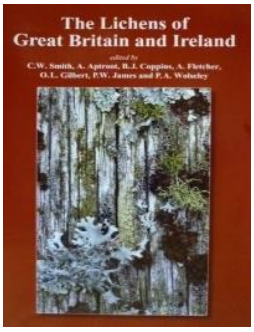
August 14–20 — Introduction to Lichens — Fred Olday. For general information, the registration form, seminar flyers, and a complete calendar:
https://eaglehill.us/programs/sems-weeklong/calendar-weeklong.shtml

If you have any questions about the content of the seminar, please reach out to the seminar instructor(s), whose contact info can be found on the seminar flyer. If a seminar you are interested in is full, and you would like to be put on the waitlist, please fill out the application form.
If you have any questions about registering for the seminar, please contact us at office@eaglehill.us.

# Closing Down Sale of Publications

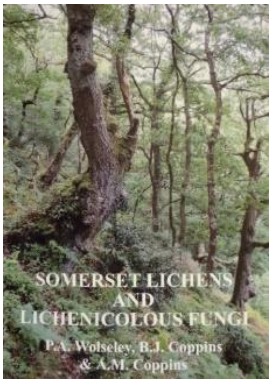
After 40 years of running Richmond Publishing, Sue Davie is taking a well earned rest and the company is finishing at the end of September 2022.
BLS Council is looking at options for the future operation of its sales and these will hopefully be in place by the time of the Winter 2022 *Bulletin*. However, in the meantime, in an effort to reduce stocks, our sales items are being offered at seriously reduced prices.
This offer only applies until 31 July 2022. We are afraid that it only applies to UK customers as, post-Brexit, the paperwork involved in overseas sales has become too involved and time-consuming.
Please contact The Richmond Publishing Co. Ltd, The Cottage, Allerds Road, Slough, SL2 3TJ, tel. (+44) 07905 888090, email rpc@richmond.co.uk to purchase these items. 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.



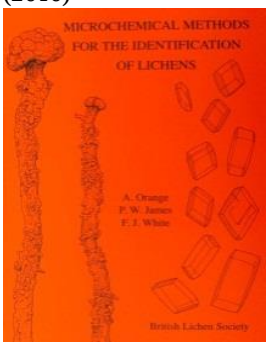

**Out of Print**
The third edition of this core reference work is being issued in parts as freely available downloads on the BLS website. Over twenty parts have now been produced.

**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. ***Special Price for a limited period*** £5.00. Postage & Packing £3.50 UK.

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



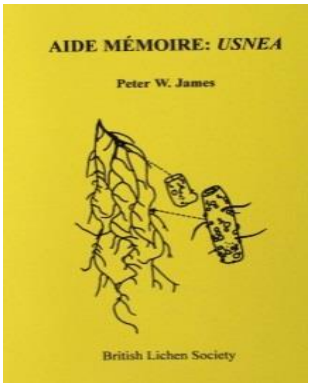

2nd edition, with two colour plates. Full of useful information on pigments, crystals, colour tests with reagents and TLC.

***Special Price for a limited period***
Price £5 members, £6 non-members.
Postage & Packing £4.00 UK.

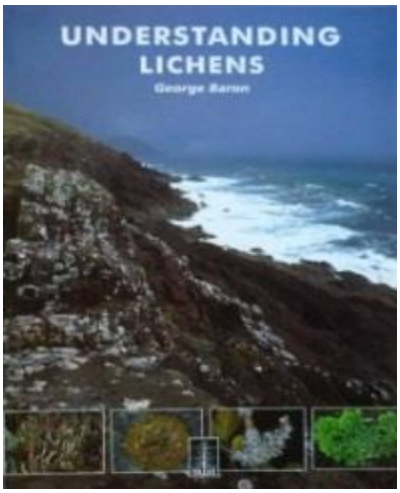
**Cat.9. Conservation Evaluation of British Lichens and Lichenicolous Fungi** by B.J. Coppins and R.G. Woods (2012)


An update and revision of the 2003 edition, now extended to include lichenicolous fungi. Provides a comprehensive catalogue of threat statuses. It is no. 13 of the JNCC's Species Status volume series. A4 paperback 155pp.

***Special Price for a limited period***
£3.00. Postage and Packing £5.00 UK.

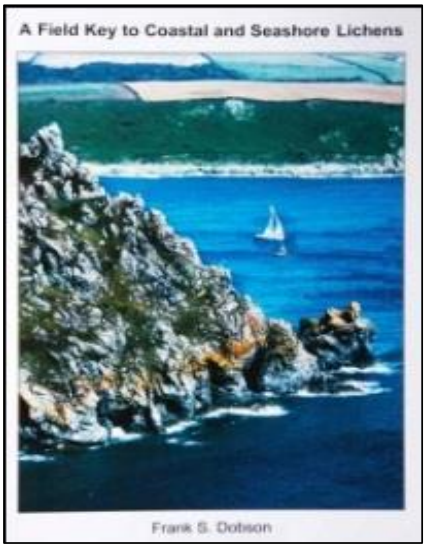



**Cat.13. Usnea 'Aide Memoire'** by P.W. James
A5 booklet with drawings and many useful tips for identifying the British species of this difficult genus.
***Special Price for a limited period***
£0.50. Postage & Packing £1.50 UK.




**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.

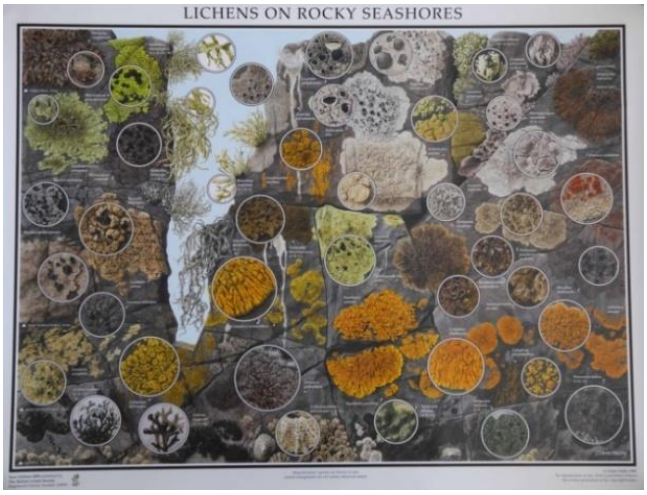
***Special Price for a limited period***
£1.00. Postage & Packing £2.50 UK.




**Cat. 17. A Field Key to Coastal and Seashore Lichens by Frank Dobson (2010)**
A superb guide to over 400 species. 96 colour photographs. Wire bound.

***Special Price for a limited period***
£5.00. Postage & Packing £2.50 UK.

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




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

***Special Price for a limited period***

£3.00 per poster, £2.00 per poster for purchases of 8 or more. Postage & Packing (for up to 8 posters) £7.50 UK.

**Cat.25. Greetings Cards/Notelets** by Claire Dalby

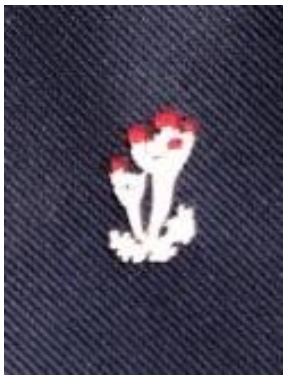
A set of five cards with envelopes, featuring five exquisite pen and ink illustrations of British lichens.

***Special Price for a limited period***
£0.50 per set. Postage & Packing £2.00 UK.

**Cat.26. BLS Postcards**
A set of 16 beautiful photographic postcards of British lichens.

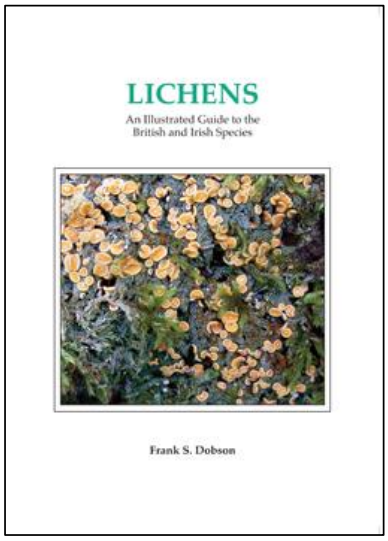
***Special Price for a limited period***
£0.50 per set. Postage & Packing £1.50 UK.

**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.



***Available Free! Pay for postage only***
Postage & Packing £1.50 UK.

**Cat.31 Lichens – An Illustrated Guide to the British and Irish Species 7th Edition**

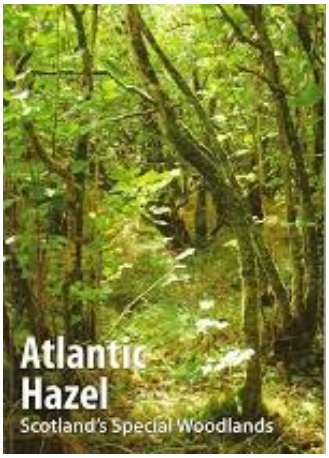



The new edition of this popular book provides an invaluable guide to identifying the British and Irish species, both for the beginner and the more advanced lichenologist. With detailed air pollution references and distribution maps, it offers the environmentalist and ecologist a concise work of reference, 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.

***Special Price for a limited period***
**Price**: Paperback £25. Postage & packing: £5.00 UK. *Free postage for three or more copies*
**Note** that the hardback version is now out of print.

**Cat. 32 – Atlantic Hazel - Scotland's Special Woodlands. Sandy and Brian Coppins (2012) 108pp.**




What is 'Atlantic hazel'? It is hazel that occurs in the oceanic areas of the western British Isles. But, it is more than that. Hazel occurs widely all down the west side of Britain and Ireland, but only in a very few places does it achieve particular characteristics that mark it out as a distinctive habitat of high biodiversity value. You know when you step into an Atlantic hazelwood in Argyll, that this is somehow 'different'; you are struck by the greenness, the lushness, the strangeness of a dwarf wood. This is part of the 'Celtic rainforest'. This book unashamedly promotes lichens, and really the whole story of the 'discovery' of the Atlantic hazelwoods is the discovery of its special lichen flora.

***Special Price for a limited period***
**Price:** Paperback £5.00
**Postage & packing:** £4.50 UK.

## Publication of the Winter 2022 Bulletin

**Copy for the Winter 2022 Bulletin should reach the editor (contact details on the inside front cover) by 1st October 2022**