British Lichen Society *Bulletin* no. 114 Summer 2014

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Welcome to the Summer 2014 Bulletin. Many of you will already be aware that Peter James, one of the most prominent specialists of lichenology in Britain, died in Birmingham on 13 February. Peter was an Honorary Member of the BLS, and played a very important role in its development. A formal obituary will appear in the *Lichenologist*, and we shall also publish a series of more personal reminiscences in the Winter 2014 issue of the *Bulletin.*

Changes in lichen distribution feature in this issue of the Bulletin, including studies on *Lobaria pulmonaria* colonisation in Wales, and a surprising extension of the range of *Roccella phycopsis*. A consensus has been reached that one of the major drivers of distributional change is global warming, and our colleagues at the Royal Botanic Garden, Edinburgh have developed a tool for predicting the impact of increased levels of greenhouse gases on our lichen biota. In Britain, arctic-montane species in Scotland are particularly at risk as their preferred habitats become warmer.

David Galloway continues his tour through the lichenological archives, with articles on the Hungarian lichen specialist Hugo Lojka and on communications between Churchill Babington and his colleagues. We like to think that we are operating in hard times, but they had it tough in the nineteenth century too, with many working largely in isolation and with uncertain funding. No instant communication systems, of course – and when you did receive letters you needed to decipher the handwriting!

The field meeting accounts continue in this Bulletin, documenting well-attended events in Somerset and Derbyshire. Without exception, our field meetings contribute new and valuable data to our knowledge of lichens in Britain. If you are involved in local events or field meetings abroad, do please consider sending summaries to the Bulletin.

Finally, the first article in this issue advertises the 2014 BLS photography competition, giving you the opportunity to introduce your favourite lichen-related images to a wider audience, and perhaps basking the glory when your winning images are displayed at the 2015 AGM meeting and featured in the *Bulletin* – maybe even on the front page! Do enter, and download the form from the BLS website if you can't face ripping it out of this issue.

Front cover: Ornamental Azaleas don't get more ornamental than this one! It was photographed on the island of Sao Miguel in the Azores. Branches are festooned with lichens, almost over-growing the entire plant. Most of what you see is *Ramalina* cf. *subgeniculata*, with orange thalli of *Teloschistes flavicans*. *T. chrysophthalmus* is also present. There is an excellent website for lichens of the Azores – visit http://www.azoresbioportal.angra.uac.pt/

Grand BLS Photography Competition!

This year, the British Lichen Society is to hold its very own photography competition! We hope to showcase the beauty and wonder of lichens by encouraging people of all ages, backgrounds and experience levels to enter their photographs. The competition comprises three categories:

A. **Lichens in the Landscape:** a lichen related habitat/landscape shot.
B. **Lichen Portrait:** a lichen portrait, either singly or part of a community. Images taken through a dissecting microscope are allowed.
C. **Abstract: a**n artistic or expressionistic photograph – what do lichens mean to you?

There will be one winning entry per category, and up to twelve specially commended entries. The awards will be made at the next British Lichen Society AGM meeting, to be held in London in January 2015, where the winning and commended entries will be displayed. The winning entries will later be published in the BLS Bulletin, on the BLS website as well as in other natural history publications/websites, for example those of the British Mycological Society.

Entry forms and competition rules can be found on the following pages and on our website: *http://www.britishlichensociety.org.uk/activities/lichen-photography-competition*
We look forward to receiving your entries, good luck!

BLS Photography Competition Entry Form

Contact details

Name:……

Email:……

Telephone:……

Address:……

……

Photograph details

Submission Category:……

Title or Caption:……

Location:……

Lichen species included, substrate, and any other details:……

……

Membership

I am a member of The British Lichen Society: Yes / No

I am interested in becoming a member of the British Lichen Society and would like to receive information from the BLS about becoming a member: Yes / No

Terms & Conditions

I agree to the Conditions of Entry

Signature:……

Your contact details will be used to get in touch with you if any of your photographs are short-listed as potential prize winners. They will not be used by any of the competition organisers for any purposes not connected with the competition, and will not be passed to any third parties.

Please ensure you have read and understood the rules of entry. Photographs which do not comply will be excluded from the competition.

Conditions of Entry

1. One winning entry per category will be awarded.
2. Up to twelve specially commended entries will be awarded from the pool of entries.
3. Entries will be accepted between 31st July and 30th November 2014.
4. Each entrant may submit up to three photographs per category.
5. The competition is open to all amateur and professional photographers, from any country. Entrants do not have to be members of the Society. Members of the panel of judges are excluded.
6. Photographs must be the original work of the entrant.
7. The winners will be chosen by a panel of judges appointed by the BLS.
8. The judges' decision is final.
9. Photographs must be submitted as prints only. Digital image entries will not be accepted.
10. The photographs may be taken on any type of camera, however we will require the winning and commended entries to be supplied to us by 30th January 2015 in digital form so they can be published.
11. Prints must be submitted on A4 or 10" x 8" paper, with appropriate margins but un-mounted.
12. Images may be cropped, but digitally enhanced entries are only accepted in the Abstract category.
13. Prints may be in landscape or portrait format, and if it is not obvious the word Top should be written on the back to indicate which way up the picture should be viewed.
14. The back of each print must carry:
    - the name, address, telephone number and email address of the entrant
    - an appropriate caption
    - the names of any featured lichens
15. We regret that prints cannot be returned.
16. Each entry should be accompanied by an entry form stating the category for which the photo is entered, its caption and where it was taken. The names of featured lichens should be given if available.
17. Entries should be posted to: BLS Photography Competition, 24 Avondale Place, Edinburgh, EH3 5HX.
18. Although copyright in these images remains with the entrant, in entering this competition the entrant is giving the British Lichen Society full rights to publish the images in its publications, website, and other materials. The copyright holder will always be acknowledged when this is done.

Hugo Lojka (1845-1887) and the New Zealand lichens in *Lichenotheca Universalis III* (1886)

Thirty years ago when I was actively researching names and collections of *Pseudocyphellaria s. lat.* from New Zealand, I visited the Herbarium of Vienna's Natural History Museum (W) to check New Zealand material that Dr H.H.B. Allan (1882-1957) sent to Zahlbruckner in the 1930s for naming. Besides finding much of this material that was eventually recorded in *Lichenes Novae Zealandiae* (Zahlbruckner 1941), I came across 19th century specimens of *Pseudocyphellaria*, collected by the Auditor-General, Charles Knight (1808-1891) (Galloway 1985, 1990, 1998, 2013a, 2013b, 2013d) and sent to Prof. Hugo Lojka in Budapest for circulation in the third fascicle of his exsiccata, *Lichenotheca Universalis* (Lojka 1886; Sayre 1969). Knight contributed 21 of the 50 numbers (101-150) distributed in this set (see below). A very large (25 cm diam.) and well-preserved specimen of *Pseudocyphellaria coronata*, [No 117 in Lojka's exsiccata as *Sticta orygmaea*], was labelled by Knight "For Prof. Lojka's Herbarium C. K." and I used it as an illustration in my monograph on the New Zealand species (Galloway 1998: 106 – see also Fig. 1). Additional searching disclosed collections made by Richard Helms (1842-1914) from near Greymouth, the specimens being marked with a purple stamp "Herbarium Lojkanum". Knight (Wellington) and Helms (Greymouth) specimens are scattered throughout the Vienna lichen collections of *Sticta* and *Pseudocyphellaria*, comprising material that Knight sent to Lojka, and also material that Lojka purchased from Richard Helms's brother, Alwin in Hamburg (Galloway & Vitikainen 2013). Zahlbruckner records many of these collections, plus a few also from Arnold's exsiccatae (Arnold 1886) in his account of New Zealand *Lobariaceae* (Zahlbruckner 1941: 279-293).

Fig. 1. *Pseudocyphellaria coronata*. Wellington, New Zealand, *Charles Knight* (W).

Prior to this, I had seen other examples of this New Zealand material from Lojka's exsiccata in lichen herbaria in Helsinki, Uppsala, Stockholm Geneva and Munich as well as in London at the BM. A persistent question remained. Who was Hugo Lojka? How did he come to possess such handsome specimens of New Zealand lichens? It has taken me a long time to piece together scattered information about him. Here is the story so far.

Biographical details of Lojka are given in Wittrock (1905) [with his portrait – a *carte de visite* taken by K. Koller in Budapest in 1882 when Lojka was 38 years

old (Fig. 2)]; von Degen (1932) [with portrait]; Szatala (1932); Verseghy (1963), Grumman 1974 [with portrait], and Stafleu & Cowan (1981). Of these sources, the biographical account of von Degen, is by far the most personal, and is a warm remembrance of Lojka by a friend and colleague who had known him from shared fieldwork 45 years earlier. Szatala too includes many insights into Lojka's life and accomplishments in lichenology, achieved at considerable personal cost and in relative isolation.

Fig. 2. Hugo Lojka (1845-1887), courtesy L. Lőkös (Budapest).

Hugo Lojka was born in Galicia (the northernmost province of the old Austro-Hungarian Empire) on 6 January 1845 in the small town of Gelsendorf near Stryj, now Zahirne in present-day Ukraine. There is some confusion in the literature as to the year of Lojka's birth; 1845 is given by his friend von Degen (1932), by Szatala (1932) by Stafleu & Cowan (1981) and by the Hungarian National Museum website. Klara Verseghy (1963) gives 1844, which may be a slip of the pen and Vitus Grumman (1974) hedges his bets by giving 1844 (1845)! I am assuming, until it is proved otherwise, that the correct year of Lojka's birth is 1845.

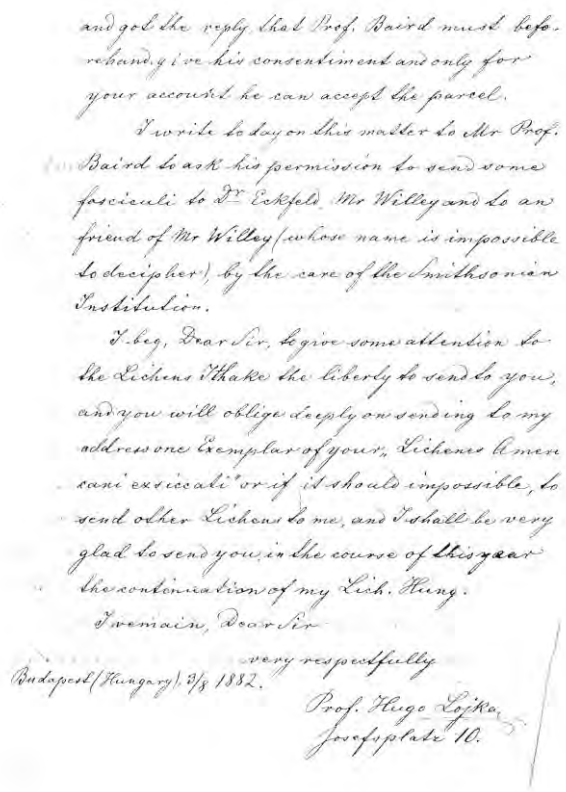
Lojka's father, a Protestant clergyman, came from Sternberg in Mähren in Moravia (now in the eastern part of the Czech Republic), but spent his student years in Pressburg (now Bratislava in Slovakia) and from that time became an ardent supporter of Hungary. He stimulated and nurtured this love in his children as well. His relation to Hungary became even closer as a result of his first marriage, his wife belonging to an Esperjeser family. After her death he married a native of Prussian Silesia and from this marriage was born Hugo Lojka the botanist (Szatala 1932).

Lojka was at primary school in Stryj (now in Ukraine), followed by four years in the Middle School in Lemberg (now Lvov in Ukraine). From 1858 until 1862 he attended the Gymnasium (secondary school) in Eperjes (now Prešov in Slovakia) where his teacher and botanical mentor was Frigyes (Friederich August) Hazslinszky

(1818-1896). Then followed seven years of study in medicine and philosophy at the University of Vienna, where he continued his botanical collecting and made many collecting trips for lichens in the environs of Vienna. However, financial hardship forced him to abandon medical studies in favour of returning to Hungary to Pest (now Budapest) to train as a teacher, and in 1869 he received a teaching diploma in chemistry, physics and mathematics. At this time Lojka was already actively interested in lichens, a friend and correspondent of the German lichenologist Ferdinand Arnold, and writing of his lichen excursions in Austria (Lojka 1868a, 1868b). A detailed report of a trip from Vienna to northern Hungary (Lojka 1869) records his wide appreciation of lichen habitats and his helpful association with the mycologist Hazslinszky who was one of Hungary's most distinguished 19th century natural history scholars (Lizoň 1997).

Lojka was a very keen collector of lichens, starting his collections while still at intermediate school and becoming in due course, Hungary's most notable lichenologist. His teacher, Hazslinszky commended him thus: "… in researches into the lichens of our homeland I was helped almost solely by my students. Of them, I was helped most by Hugo Lojka, who dedicated almost all of his attention to lichens in recent years. Hugo Loka has all the qualities necessary for a good field naturalist. A strong constitution, persevering in adversity, and a good eye for recognizing suitable habitats, and the variation of species…" (www.nhmus.hu/tarak/novenytar.gyujtemenyek/zuzmo/lojka... Accessed 27 September 2013)

On a recent visit to Uppsala (August 2013) I spent a week searching files of correspondence in the Manuscripts Room of the University Library (Carolina Rediviva). Amongst other things, I found there great riches in the inwards correspondence of Theodore Magnus Fries (1832-1913) Professor of Botany at Uppsala University from 1877 to 1899 (Jørgensen 2001). His extensive inwards correspondence includes: 7 letters from Charles Knight (Galloway 2013a); 102 letters (often very long and friendly)



and got the reply that Prof. Baird must beforehand give his consentiment and only for your account he can accept the parcel.

I write today on this matter to Mr Prof. Baird to ask his permission to send some fascicoli to Dr Eckfeldt Mr Willey and to an friend of Mr Willey (whose name is impossible to decipher) by the care of the Smithsonian Institution.

I beg, Dear Sir, to give some attention to the Lichens I take the liberty to send to you, and you will oblige deeply on sending to my address one Exemplar of your, Lichenes Americani exsiccati" or if it should impossible, to send other Lichens to me, and I shall be very glad to send you in the course of this year the continuation of my Lich. Hung.

I remain, Dear Sir

very respectfully

Budapest (Hungary) 3/8 1882.

Prof. Hugo Lojka
Josefsplatz 10.

Fig. 3. Signed letter of Hugo Lojka. Archives, Amherst College.

from August von Krempelhuber; 18 from William Leighton; and 33 from Hugo Lojka (22 letters of 1-4 pages, plus 11 postcards). The Lojka-Fries correspondence begins on the 14 March 1868 from Vienna when Lojka was a medical student aged 24, and ends on the 24 March 1887 from Budapest, just 6 months before he died at age 42.

Lojka's letters are mainly on very thin, onionskin paper, and when written on both sides, as they sometimes were, reading them today is not especially easy. His writing is unfailingly well-formed, neat and legible (both in German and English). He habitually used a very fine nib, and pale-purple, or black ink, and generally signed himself as Prof. Hugo Lojka (Fig. 3, above).

Writing to Fries on the 14 March 1868, Lojka, aged 23, and living at Taubstummengasse No. 6 in the inner city locality of Wieden, signed himself as "Hugo Lojka med. stud." The composers Johannes Brahms and Johann Strauss II also lived in Wieden around that time. In his letter, Lojka told Fries that he was interested in lichens and already corresponding with Körber, Ferdinand Arnold, Heinrich L.F. Rehm (1828-1916), Jacob A. Metzler (1812-1883), Ignaz S. Poetsch (1823-1884), Halzinger, Hazslinszky, Kalchbrenner, Schellweise and Julius Tauscher (1832-1882). Lojka's three initial letters to Fries from Vienna (1868-1869) are revealing of his personal circumstances, of his keen interest in lichens, fostered initially by his teacher and mentor Hazslinszky, and of his growing support network of European lichenologists. They are transcribed here:

"**(1)**… Vienna 14 March 1868
Esteemed Herr Professor,

Permit me, please, as a beginner in lichenology, to commend myself to your goodwill. I was fortunate enough to make the acquaintance of your brother here [Oscar Robert Fries (he was known as Robert) (1840-1908), the youngest son of Elias Fries. Interested in fungi as a boy, he made a career in medicine and became a distinguished physician in Göteborg], and now allow myself to trade on his goodwill by enclosing this letter of mine. I am the son of a Galician evangelical pastor, and in the years 1858-62 was instructed in lichenology by Mr Hazslinszky in Eperjes, and collected extensively in Hungary, and to some extent also in Galicia. Then I moved to Vienna to study medicine but lack of resources forced me to abandon my studies after completing the third year. Naturally I had to neglect the lichens during that time, but whenever the opportunity came up, I resumed my favourite field of study. For example in 1867 when I was in Ischl as a tutor and gathered lichens whenever possible. The result was rather favourable and Dr Poetsch will publish my findings in his Enumeratio lichenum Austriae superioris. I am so bold as to send you from there a *Calycium hospitans* Th. Fr.? [= *Chaenothecopsis hospitans*] requesting your judgement on it. Please retain this specimen. Of late I have been in correspondence once more with Messrs Körber, Arnold, Rehm, Metzler, Poetsch, Holzinger, Hazslinszky and am exchanging lichens also with Kalchbrenner. As my herbarium up to now largely consisted of lichens from myself and Hazslinszky I have taken great pains to fill the gaps in order to get to know the many new species, and to collect them myself as the opportunity arises. The area around Vienna, however, is unfortunately very sterile for lichens with the exception of the chalk mountains of Brühl near Mödling, and I am the only person here who is gathering lichens. I have not the resources for expeditions further afield; nor have I the time; as I have to earn my living by tutoring.

But in the summer of this year I will spend 3-4 months in the Central Alps of Austria, and as so far very little is known of the lichen flora there I am hopeful of a rich harvest. But I will not proceed in a haphazard manner, as I believe this will not achieve the desired result, but will choose a suitable location to stay, and make daily excursions into the immediate and more distant areas. Provisionally I have made the upper Drau Valley in Carinthia my goal for this excursion; I will decide on the starting point for my excursions once I have reached there. Through the good offices of the local Botanical Society I have been granted free passage on the train and in addition I believe will cover the costs of the journey through subscriptions for the lichens I will be collecting. I have yet to hear from Messrs Rehm and Arnold, whom I have consulted about the way of setting up this subscription; if Messrs Rehm and Arnold were able to give me advice and help in this matter I would indeed be obliged to them.

I am armed with good references from all the above-mentioned gentlemen, especially from Mr Körber. I have collected for Mr Körber's "Lich. sel." [*Lichenes Selecti Germanici* (1856-1873) comprising 14 fascicles and 420 numbers (Sayre 1969: 136)] *Arthothelium flotowianum, Crateridium campestre* Krhb nov. gen. in litt ad Lojka, *Psora testacea, Dermatocarpon schaereri*, and *Toninia imbricata* Hepp 735: I have still to send him *Secoliga leucapsis*. All these matters are to appear in the next issue, which Mr Körber has promised me.

Perhaps I may ask whether your "Lich. exss." [*Lichenes Scandinaviae rariores et critici Exsiccati*, 1859-1865 in three fascicles containing 75 numbers (Sayre 1969: 126)] is still available and whether you would permit me to acquire it in exchange for these lichens. If you are kind enough to honour my letter with a reply I would ask you, as German is perhaps not so well-known to you, to make use of Latin; I would have written this letter in Latin myself, but must admit that your classical Latin style, which I had occasion to admire in your articles, would put my Latin to shame. I would ask that my good wishes be transmitted to your respected Father, the Nestor of today's botanists, and also please convey the thanks of Mr Kalchbrenner for the parcel he has so eagerly anticipated; I conclude with the repeated entreaty for your kindly support of my lichenological endeavours.

With the highest respect
Hugo Lojka, med. Stud.
Vienna, Wieden, Taubstummengasse Nr. 6…"

"**(2)**… Vienna 16 December 1868
Esteemed Sir!

I enclose the first hundred of my harvest from the Carpathians. My journey was hardly that brilliant, because Mr Hazslinszky did not join me and the subscription was only a limited success. I have not yet finished putting the material into some order. When that is complete the second hundred will follow as soon as feasible. Unfortunately I don't yet possess a microscope and so was unable to examine everything, and would humbly beg you, if time permits, to classify some specimens from the first hundred. I would ask you to note the classifications and amendments on the enclosed sheet of paper. Even if this cannot be done at once I would ask you at least to refrain from putting any number in your herbarium, until you have written in the name for me on the catalogue. A report on my journey will appear in the Verhandl. zool. bot. Ges. Next year I will repeat the journey with more resources, by launching a subscription and I will receive a subvention of 100 fl. from the Hungarian Academy.

May I also ask you to set aside a copy of your Lichen Exsicc. until I am in a position to secure a copy from you by exchange, as your esteemed brother, Robert, has suggested. For much as I would like to have it now, my pile of doubloons is at present insufficient to acquire your precious Exsiccata.

Where is your esteemed brother, Robert, at present? I would like to send him my photograph in the New Year and would also like to follow up another kindness with him. He promised to look out for Celles' Hierobotanik and a manuscript of Linné for me and put them at my disposal to gain the favour of Archbishop Haynald.

Would you also be so kind as to send me a photograph? It would then give me the greatest pleasure to send you one of me. As I express my gratitude and beg your indulgence, if the first hundred is not up to your expectations, I would ask you to offer your esteemed father my devoted regards and conclude.

With highest respect
Your most devoted
Hugo Lojka
Vienna, Wieden, Dannhauser Alley Nr 9 parterre Door 4…"

"**(3)** ...Vienna 30 April 1869
Esteemed Sir,

On 23.12.1868 I sent off the preliminary hundreds of lichens, but unfortunately failed to consider that the postage costs were thereby considerably increased. Moreover I had not realized that Arnold would shortly afterwards send off to you a chest, for I could have sent off the second hundred with that. But since my harvest was a relatively meagre one in terms of rare species, I am uncertain whether to prepare for you a second hundred from the material collected so far. Especially in view of my intention to repeat the expedition this coming year. So would you be so kind as to write me as to whether you are agreeable to me sending you the hundred from this year's harvest of Carpathian lichens.

I will open a subscription again this year because it was only the lack of money which limited my researches last year. The report on last year's expedition is now in print. I will spend three months in the Carpathians and send to the subscribers by January 1780 a list of the species I have collected, so that they can choose the ones which they desire to have. In addition I will at an earlier point make several excursions from Vienna, with the financial support of Messrs Solnis-Laubach, Arnold, Rehm and Kayser, as I am unfortunately not in a position to put up the money for such excursions. Hence I will travel to Ischl in Upper Austria to collect for Arnold's Exsiccata, *Sagedia Lojkaeana* Poetsch and *Acolium viridulum* DN [De Not.] which I have already found there in 1867, as well as some other rarities: *Arthothelium flotowianum* and *fuscocinereum*, *Calicium sphinctroides* Krhbr. n.sp. etc. In addition I will collect in Lower Austria on the Glimmerschiefer and the Schneeberg at 6000 ft.

I will send you the report on last year's journey and the prospectus for this one, and would ask you to commend my plan to your friends as much as possible. Attached are some amendments to the Hundred which I despatched; much still remains to be clarified. Any amendments from yourself would be most welcome. Would you please be so kind as to inform me of the address of your brother Robert. I conclude with my most cordial thanks, and my request that you excuse me.

With utmost respect,
Your most devoted,
Hugo Lojka phil. Stud.
Vienna, Wieden, Dannhauser Alley Nr 9 Door 4…"

1. Amphoridium foveolatum Mass., 3.) Biatorina turicensis Hepp, 3b.) Lecidea egena Nyl ? 55.) Verrucaria concinna Kbr. 90.) Ver. Dufourei f., 95) V. muralis Ach. β confluens Mass. 97. Verrucaria anziana Garov. 105) Thelid. (inter Borreri – Ungeri) 126 & 127 Verr. aethioloba Garov ? 145. Arthonia astroidea v. Swartziana 147. Rinodina amnicola Kbr. 150.

Bacidia violacea Arn? 186. Catapyrenium cinereum Pers. 194. Opegrapha gyrocarpa Fw. A. 199. Thalloidima conglomeratum Mass? 201. Imbricaria alpicola Th. Fr. 203. Amphiloma decipiens Arn. 210. Sagedia abictina Kbr. 216. Thelid. Absconditum Arn. 219. Verrucaria muralis β confluens 220. Amphiloma murorum v. miniatum Anzi? 223. Verr. Chlorotica 226. Lecidella … (non goniophila!) 227. Epicoccum…? (in Aspicilia) 243. Biatorina lenticularis 244. Rinodina teichophila 250. Buellia rivularis Fw. 266. Biatora miscella Th. Fr. (= Poetschiana Kbr = Berengereiana Mass.) 270. Sphaeromphale fissa Tayl. 45. Polyblastia … (non caesia ? sec. cl. Arnold!)

Lojka made a career as a secondary school teacher and tutor, becoming a Professor at the State High School for Girls in Budapest where he was resident by 1873 and deeply interested in, and committed to, lichens (Lojka 1873). He collected widely in greater Hungary and its environs: the Tatra Mountains (1860, 1868, 1872), Prešov (1858-1862); Transsylvania (1872, 1873, 1886); Galicia; Tyrol (1884); the Caucasus (1885), with geographer and mountaineer Mór Déchy (1854-1917), and in Bosnia (1886). Many of his local collecting trips Lojka made in the company of Sandor Feichtinger, Frigyes Hazslinszky and Lajos Simonkai. On his collecting trips he gathered sufficient of the interesting and rare lichens as duplicates for his exsiccatae. From his Tatra, Transsylvanian, Caucasus and Hungarian lichen material Lojka initiated two exsiccata series: (1) *Lichenes Regni Hungarici Exsiccati*, issued between 1882 and 1884 in 4 fascicles and comprising 200 numbers; and (2) *Lichenotheca Universalis* issued between 1885 and 1886, in 5 fascicles and comprising 248 numbers (Sayre 1969: 141). According to the American lichenologist Henry Willey (1824-1907), Lojka:

"… had projected the issue of a series of specimens illustrating the lichen flora of the earth. He had enlisted as contributors a large number of botanists and collectors, and had issued five fascicles of fifty numbers each, and had others in preparation, when his death, which occurred on Sept 7th of this year, after a painful illness, has, it is to be feared, put an end to this important undertaking. The parts of the world chiefly represented in the fascicles already issued are: Europe, Southern Africa, North America, New Holland and New Zealand… The classification and nomenclature of this collection is that of Nylander… At least three sets of this collection, of which we suppose that only from twenty five to thirty have been issued, have been sent to this country, one of them to the Smithsonian Institution, while the others are in private hands…" (Willey 1887).

Circulation of his exsiccatae brought Lojka into correspondence with the leading lichenologists of the day (Anzi, Arnold, Körber, Lahm, Massalongo, Nylander, Rabenhorst, Rehm and Stizenberger) and from whom he received valuable additions to his own growing herbarium. His friend Árpád von Degen (1866-1934) writes of Lojka's arrangements in Budapest:

"… He achieved a reasonable standard of living in Budapest mainly by giving private tutoring. He owned a comfortable flat on the second floor of the since restored house in Josefsplatz No. 10, where he had his library and herbarium. He was able to live comfortably and he knew and appreciated quality. His income allowed him to accumulate an extensive library and a large herbarium rich in the major exsiccatae of the day, all housed in superbly made cabinets. His herbarium paper was specially

manufactured by the paper factory in Hermanec… his collecting tools, chisels and hammers were the best that money could buy… He owned a waterproof tent designed by the great mountaineer Edward Whymper, was aware of the value of good English and American equipment…and also of the comfort and contentment offered by a good Virginia cigar, of which he smoked 10-12 daily, at the close of the day round the campfire…His knowledge of many languages, his serene temperament and economy of words made him the best imaginable companion on a journey…" (von Degen 1932).

On 3 August 1882, Lojka wrote to the distinguished North American lichenologist, Edward Tuckerman (1817-1886) enclosing his handwritten contents of the three fascicles (each of 50 numbers) of his *Lichenes Regni Hungarici exsiccati* published in 1882, together with a handwritten list of the recipients of this exsiccata. A transcription of Lojka's letter follows and then the list of recipients as he sent them to Tuckerman (Edward Tuckerman Correspondence, Archives, Amherst College):

"…Dear Sir!

Long ago it has been a keen desire with me to have lichenological relations with you. My honorable friend, Dr Arnold, is animated by the like feeling and has already witten [sic] to you some lines on the same subject. I have thaken [sic] the liberty to send to you and to Mr Willey one Exemplar of my "Lichenes Regni Hungarici exsiccati" (fasc I-III, n.n. 1-150), care of the Smithsonian Institution through Dr Flügel of Leipsic. To avoid any mistake I beg to remark, that this parcel is for Your kind acceptance, and not for Dr Eckfeldt. I asked Dr Flügel if it is permitted to send to Dr Eckfeldt and Mr Willey some fascicules [sic] by the Smithsonian Institution, and got the reply, that Prof. Baird must beforehand give his consentiment and only for your account can he accept the parcel.

I write today on this matter to Prof. Baird to ask his permission to send to send some fasciculi to Dr Eckfeld, Mr Willey and to a friend of Mr Willey (whose name is impossible to decipher), by the care of the Smithsonian Institution.

I beg, Dear Sir, to give some attention to the Lichens. I thake [sic] the liberty to send to you, and you will oblige deeply on sending to my address one Exemplar of your "Lichenes Americani exsiccati" or if it should [be] impossible, to send other Lichens to me, and I shall be very glad to send you, in the course of this year, the continuation of my Lich. Hung.

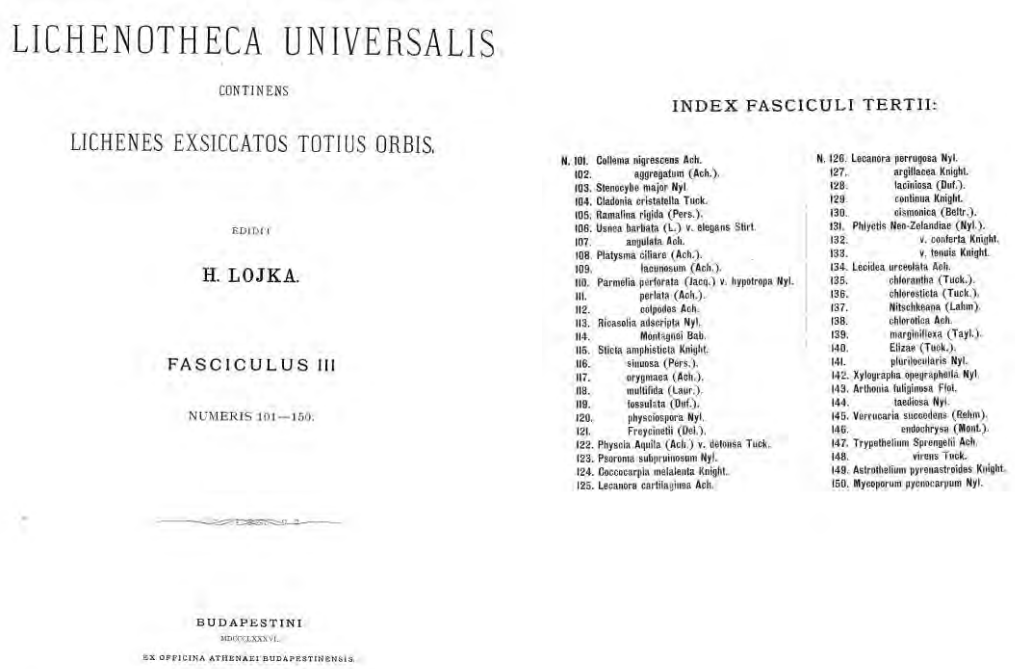
I remain dear Sir
Very respectfully
Prof. Hugo Lojka
Josefsplatz 10.
Budapest (Hungary), 3/8 1882…"

Lojka's list of 45 subscribers to his exsiccatae makes fascinating reading, as it is only rarely that a complete set of subscribers is known in such detail. It is transcribed here:

"…Index herbariorum in quibus inveniendur mei, Lichenes Regni Hungarici exsiccati

Rev. Martino Anzi, Como /Italia/.
D. Fr. Arnold, Sonnerstrasse 7, München/Baiern/.
Dr Francesco Baglietto, Voltri/Italia/.
Rev. J. Barth, Hossnilesso/Transsylvania/.
Dom. Ludovico Caldsesi, Faenza/Italia/.
Cape Colony Herbarium/Prof. Dr MacOwan, Cape Town, Africa/.
Rev. O.G. Blomberg, Pastor, PS Sundby/Suecia/.
Hortus botanicus regius Budapestinensis
Museum nationale Hungaricum /Budapest/.
Dr J. Eckfeldt n. 6320 Vine Street, Philadelphia/Mass/ U. St. Amer.
Carl Eggerth jun. stud. Med. Wien, Mariahilf, Dürer Gasse 14.
Dr. K.J.B. Forsell, Upsala/Suecia/.
Dr Ludovicus Haynald, Archebiscopus, Cardinalis etc. Kalocsa/Hungaria.
Med. Dr P. Hegelschweiler, Riffersweil /Zürich, Helvetia/.
Dr P.J. Hellbom, Örebro /Suecia/.
Jur. Dr J.B. Holzinger, Graz /Styria/, Realschiel Gasse 6.
Dr Antonio Jatta, Rubo di Puglia /Italia/
W. Joshua Cirencester /Anglia/.
Prof. Dr A Kerner de Marilaun /Austria, Vindobonae/, Rennweg 14.
Hortus botanicus regius Kolosvarensis / Klausenburg/, Prof. Dr A. Kanita
Dr Charles Knight, Wellington /Nova Zelandia/.
Rev. Dr G. Lahm, Münster in Guestphalia.
E. Lamy de la Chapelle, Limoges /Gallia/.
A. Malbranche, 26 rue de Joyeuse, Rouen /Gallia/.
Dr med. A. Minks, Stettin/ Pomerania/.
Prof. Dr J. Mueller (Argoviensis), 8, Boulevard des Philosophes Genève /Helvetia/.
Dr Isaac Newton, Oporta /Portugalia/.
J.M. Norman, forstmeister Laurvig /Norvegia/.
Med. Dr H. Rehm. Regensburg /Bavaria/.
Prof. Dr William Nylander, 67 passage des Thermopyles Paris
Jules Richard, ancien magistrat, La Roche sur Yon /Gallia/
A. Schule Halle, Konigsstrasse 40
Prof. Dr Julius Steiner, Klagenfurt
Dr Stirton, 15, Newton Street, Glasgow /Scotia/.
Med. Dr Ernestus Stizenberger, Constanza /Baden/.
Academia Scientiarum / Prof. Dr Wittrock/ Stockholm /Suecia/.
W. Lucksdorf, White Salmon, Clickitat Co., Washington Tor. U. St. America.
Dr Frederico Tremols, Prof. Univ. Barcelona /Hispania/.
Prof. Dr Edw. Tuckerman, Amherst College, Amherst, Mass. U. St. America.
Herbarium Upsaliense / Prof. Dr Th. M. Fries/, Upsala /Suecica/.
Dr E. Wainio Custos herbaria in Museo fennica Helsingfors /finland/.
Hortus botanicus caesareus Vindobonensis
Henry Willey, New Bedford /Mass. / U. St. America.
von Zwackh, Rittmeister à la suite, Heidelberg.…"

New Zealand lichens in *Lichenotheca Universalis III* (1886)



LICHENOTHECA UNIVERSALIS

CONTINENS

LICHENES EXSICCATOS TOTIUS ORBIS.

EDIDIT

H. LOJKA.

FASCICULUS III

NUMERIS 101—150.

BUDAPESTINI

MDCCCLXXXVI.

EX OFFICINA ATHENAEI BUDAPESTINENSIS.

INDEX FASCICULI TERTII:

N. 101. Collema nigrescens Ach.
102. aggregatum (Ach.).
103. Stenocybe major Nyl.
104. Cladonia cristatella Tuck.
105. Ramalina rigida (Pers.).
106. Usnea barbata (L.) v. elegans Stirt.
107. angulata Ach.
108. Platysma ciliare (Ach.).
109. lacunosum (Ach.).
110. Parmelia perforata (Jacq.) v. hypotropa Nyl.
111. perlata (Ach.).
112. colpodes Ach.
113. Ricasolia adscripta Nyl.
114. Montagnei Bab.
115. Sticta amphisticta Knight.
116. sinuosa (Pers.).
117. orygmaea (Ach.).
118. multifida (Laur.).
119. tessulata (Duf.).
120. physciospora Nyl.
121. Freycinetii (Del.).
122. Physcia Aquila (Ach.) v. detonsa Tuck.
123. Psoroma subpruinosum Nyl.
124. Coccocarpia melalenta Knight.
125. Lecanora cartilaginea Ach.

N. 126. Lecanora perrugosa Nyl.
127. argillacea Knight.
128. laciniosa (Duf.).
129 continua Knight.
130. cismonica (Beltr.).
131. Phlyctis Neo-Zelandiae (Nyl.).
132. v. conferta Knight.
133. v. tenuis Knight.
134. Lecidea urceolata Ach.
135. chlorantha (Tuck.).
136. chloresticta (Tuck.).
137. Nitschkeana (Lahm).
138. chlorotica Ach.
139. marginiflexa (Tayl.).
140. Elizae (Tuck.).
141. plurilocularis Nyl.
142. Xylographa opegraphella Nyl.
143. Arthonia fuliginosa Flot.
144. taediosa Nyl.
145. Verrucaria succedens (Rehm).
146. endochrysa (Mont.).
147. Trypethelium Sprengelii Ach.
148. virens Tuck.
149. Astrothelium pyrenastroides Knight.
150. Mycoporum pyenocarpum Nyl.

Fig. 4. Scheda of *Lichenotheca Universalis*, Fasc. III. (UPS). Title page and list of species.

Nineteen lichens from New Zealand lichens were circulated in Lojka's third fascicle of *Lichenotheca Universalis* (Lojka 1886; Stizenberger 1889) (Fig. 4), all supplied to him by Dr Charles Knight (Fig. 5), New Zealand's longest-serving Auditor-General (Galloway 1985, 1990, 1998, 2013a, 2013b, 2013d). The numbers and names listed below are from Lojka's Scheda of fascicle III (Lojka 1886) together with locality data from the printed labels (UPS). Current names, in square brackets follow Galloway (2007) or other authors who are appropriately referenced. For the same exsiccata, Knight sent Lojka two Australian lichens collected on Thursday Island in the Torres Straits by his friend and correspondent, Carl Heinrich Hartmann (1806-1891) from Toowoomba. These are: No. 124 Coccocarpia melalenta Knight "Super corticem arborum in "Thursday Island" Torres Straits leg. Dr. C.H. Hartmann comm. Dr. C. Knight" [= *Coccocarpia erythroxyli* (Arvidsson 1983: 57)]; and No. 129

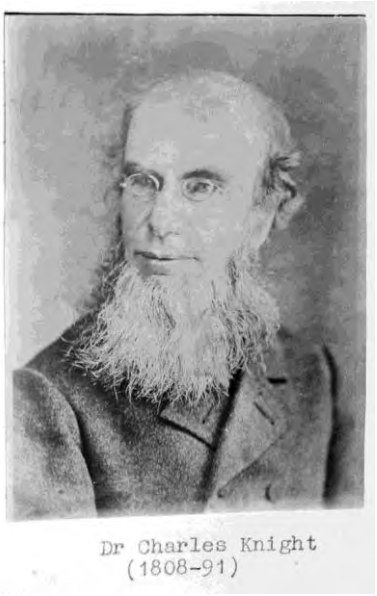


Fig. 5. Charles Knight (1808-1891) FLS, FRCS. Alexander Turnbull Library, Wellington, New Zealand.

Lecanora continua Knight "Super saxa granitica aliaque duriora in "Thursday Island" Torres Straits leg. C.H. Hartmann comm. Dr. C. Knight" [= *Lecanora margarodes* (Lumbsch & Elix 2004: 42)].

No. 111 Parmelia perlata (Ach.) "Super arborum cortices et saxa prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Parmotrema perlatum* + *P. reticulatum*]

No. 113 Ricasolia adscripta Nyl. "Super truncos ramosque variorum arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Lobaria adscripta*]

No. 114 Ricasolia Montagnei Bab. "Super cortices arborum et ligna vetusta prope Wellington in Nova Zelandia. Dr C. Knight" [= *Pseudocyphellaria montagnei*]

Fig. 6. *Pseudocyphellaria rufovirescens*. Wellington, New Zealand, *Charles Knight* (BM).

No. 115 Sticta amphisticta Knight "Super tuncos et ramos arborum prope Welllington in Nova Zealandia. Dr. C. Knight" [= *Pseudocyphellaria lividofusca*]

No. 116 Sticta sinuosa (Pers.) Super tuncos et ramos arborum prope Welllington in Nova Zealandia. Dr. C. Knight" [= *Sticta subcaperata*]

No. 117 Sticta orygmaea (Ach.) "Super truncos et ramos arborum prope Wellington in Nova Zealandia. Dr. C. Knight" [= *Pseudocyphellaria coronata* (Fig. 1)]

No. 118 Sticta multifida (Laur.) "Super truncos ramosque variorum arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pseudocyphellaria multifida* + *Ps. montagnei*]

No. 119 Sticta fossulata (Duf.) "Super cortices arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pseudocyphellaria billardieret*] (Fig. 6)

No. 120 Sticta physciospora Nyl. In truncis ramulisque variorum arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pseudocyphellaria carpoloma*]

No. 121 Sticta Freycinetii (Del.) "Super truncos ramosque arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pseudocyphellaria glabra*]

No. 123 Psoroma subpruinosum Nyl. Super corticem arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pannaria araneosa*]

No. 126 Lecanora perrugosa Nyl. "Super saxa solitaria lapidesque secus littoral in Nova Zelandia. Dr. C. Knight" [= *Placopsis perrugosa* (Galloway 2013c: 123-135)

No. 127 Lecanora argillacea Knight "Super terram argillaceam nudam oprope Wellington in Nova Zealandia. Dr. C. Knight" [= *Placopsis argillacea* (Galloway 2013c: 33-37)]

No. 131 Phlyctis Neo-Zelandiae (Nyl.) "Locus umbrosis, super corticem arborum prope Wellington in Nova Zelandiae. Dr. C. Knight" [= *Phlyctis uncinata*]

No. 132 Phlyctis Neo-Zelandiae v. conferta Knight "Super corticem arborum prope Wellington in Nova Zelandiae. Dr. C. Knight" [= *Phlyctis uncinata*]
No. 133 Phlyctis Neo-Zelandiae v. tenuis Knight "Locus umbrosis, super corticem arborum prope Wellington in Nova Zelandiae. Dr. C. Knight" [= *Phlyctis uncinata*]
No. 139 Lecidea margini flexa (Tayl.) "Super corticem arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Megaloblastenia margini flexa*]
No. 146 Verrucaria endochrysa (Mont.) "Super corticem arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Porina exocha*]
No. 149 Astrothelium pyrenastroides Knight "Super corticem arborum prope Wellington in Nova Zelandia. Dr. C. Knight" [= *Pyrenula ravenelii* (Aptroot 2009: 474)]

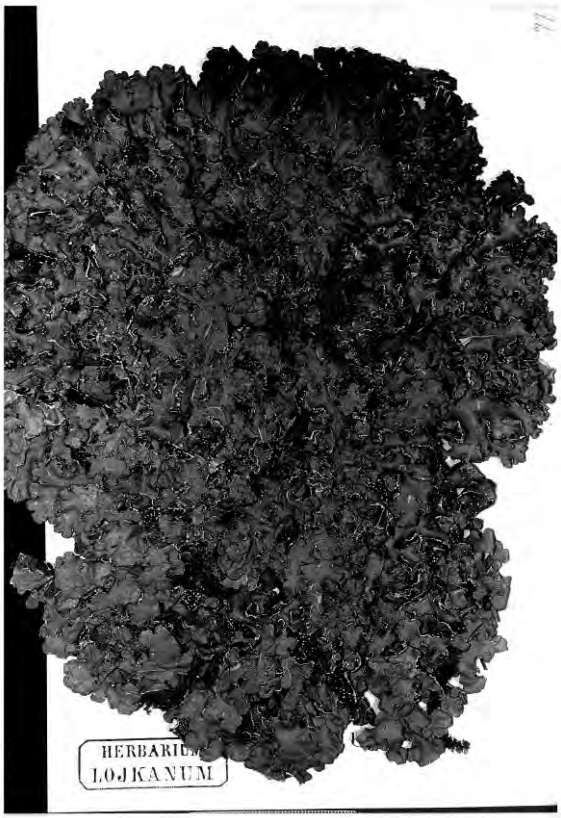


Fig. 7. *Pseudocyphellaria glabra*. Wellington, New Zealand, *Charles Knight* (W).

With 45 subscribers to the exsiccata, Knight needed to provide Lokja with nearly 50 collections of each named species, which itself was no mean undertaking. His collection of No. 121 (*Pseudocyphellaria glabra*) for Lojka's personal herbarium is an especially well-developed specimen (Fig. 7).

In Charles Knight's herbarium, in the Botany Department at the Museum of New Zealand Te Papa Tongarewa in Wellington (WELT), there is a volume labelled "Foreign Lichen Inventory". It is a venerable, 19th century Letts scrap book, containing, *inter alia*, detailed lists of the foreign lichens in Knight's herbarium received from European lichenologists either through purchase or exchange, together with an alphabetical listing of his own New Zealand collections. In this volume there is a letter from Hugo Lojka to Knight (see below) together with Lojka's hand-written list of subscribers to his *Lichenes Regni Hungarici exsiccati* plus a detailed contents list of the three published volumes of these exsiccatae, exactly the same as those sent to Edward Tuckerman (see above), and carefully and neatly written on the fragile, onionskin paper that he customarily used. Lojka's letter to Knight is as follows:

"…Budapest 13 June 1883

Dear Sir!

In conformity to your favour of 17th July 1882 I send to day to Messrs Henry S. King & Co. London one box containing No. 1-173 of my Lichenes Regni Hungarici exsiccata, but the

numbers 158, 164, 168, 169, 170, 171, 175, 177 are failing now and I reserve [sic] to send them with the continuation of my collection. Besides I took the liberty, to send you too 95 numbers of Lichens of Switzerland, Hungaria, Sweden and France in very well choiced [sic] and prepared specimens. I shall be very much obliged to you, if you will have the kindness, to send me in exchange a party of Lichens from your country. Our mutual friend Mr Dr. Arnold presents you his respects, he has still not received the box you had the kindness to forward him last September. During the paking [sic] of this box I observed to my greatest regret, that it was so large and for profiting of the blank space, I took the liberty to inclose a packet from Med. Dr Hartmann in Toowoomba/Queensland. Kindly therefore is free of charges to him. I shall restitute to you with my best thanks the expenses you have in this matter also the corresponding part of the freights of that box. – I shall be much indebted to you by you bringing me in relation with your lichenological friends for the purpose of exchange. Myself I can but accept Lichens for my collection, but some of my friends wood [sic] accept with great pleasure exotic mosses/ furnished with names/. – In exchange I should furnish European specially Hungarian Lichens and if desired Ascomycetes too.

I remain Dear Sir
Your most obedient
Prof. Hugo Lojka
Josefsplatz 10, Budapest…"

Lojka also wrote to Baron Ferdinand von Mueller (1825-1896) in Melbourne asking for Australian lichens for his exsiccatae as a somewhat gushing letter from Mueller to Müller Argoviensis on 5 March 1886 shows (Home et al. 2006: 429-431):

"…Best thanks, noble friend, for the kindness, in having devoted so much of your time to my last lichens! May Divine Providence preserve your strength and health for many years yet, so that you can finish your great work to the good of all times! ... Professor Lojka, who has asked me for lichens, received a trifle from me. But because you continue working so vigorously, all shall go to you again in the future, with the exception of the most common of all from the neighbourhood…"

During his last collecting trip to the mountains in Transsylvania, Lojka over-extended himself and in his exhaustion contracted a severe cold which turned to pneumonia from which he died on 7 September 1887, at the young age of 42. In March of that year Lojka contacted William Nylander in Paris, asking him, for a fee of 100 francs, to name the splendid New Zealand lichen material (more than 100 numbers) that had come from Richard Helms in Greymouth (Galloway & Vitikainen 2013: 14-15). This material, supplemented by many Wellington collections made by Charles Knight (see Fig. 8 below) was the exciting basis for Lojka's next projected fascicle of *Lichenotheca Universalis*, a fascicle that was, alas, never to appear. However, it provided Nylander with ample material for much of his own book, *Lichens Novae Zelandiae* (Nylander 1888). In June and July 1887, Lojka wrote to Nylander about succumbing to illness and that he would hope to recuperate at Kissebes in Transsylvania. But by 11 August, 1887 he was too ill to write to Nylander unaided (Galloway & Vitikainen 2013: 16), and a few weeks later he was dead. Hungary, and Europe, had lost one of its brightest lichenological stars.

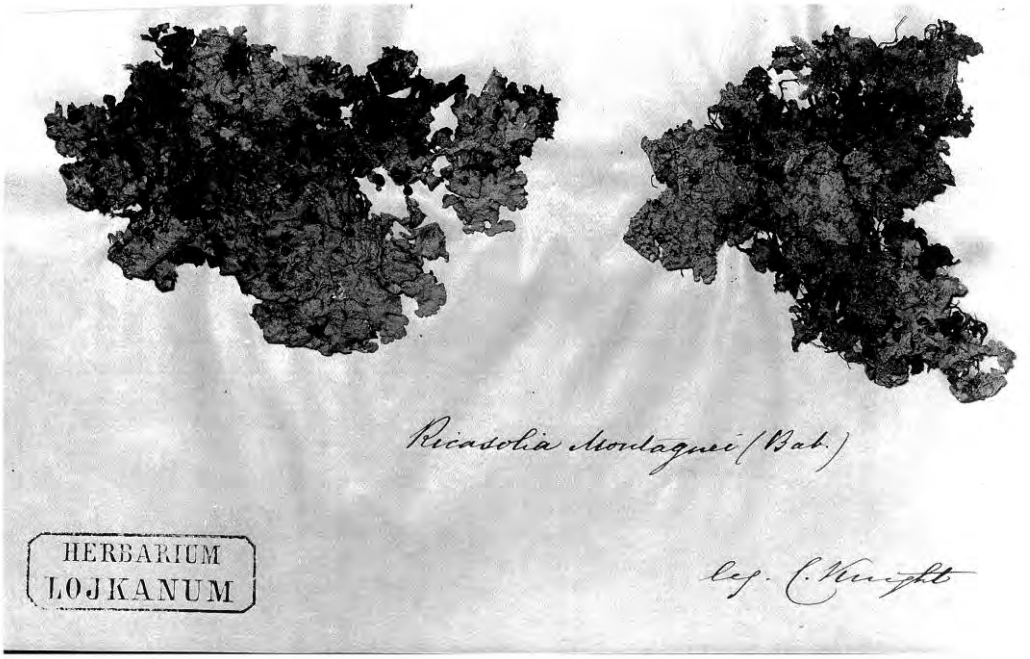


Fig. 8. *Pseudocyphellaria montagnei*. Wellington, New Zealand, *Charles Knight* (W).

Besides being a diligent, fastidious and extremely competent lichenologist, Hugo Lojka had a strong and sympathetic personality that moved his friend Árpád von Degen to write in his thoughtful recollection of Lojka:
"…personal memories have remained vivid, even after 45 years. The unforgettable impressions of my first botanical research expedition, and my learning about the art of travelling are for me inseparable from this in every way exemplary man… if I now, after almost 50 years reflect on all the men whom I have known, there are very few who have left behind such an abiding memory…One gets to know people best when travelling. Tricky problems tend to test one's patience and character. I had ample opportunity to observe Lojka in such situations, but also in his contact with various authorities, with locals, foreigners, gentlemen and peasants; he seems to have made the same impression on all of them; he was in every respect a distinguished personality, who commanded respect on all sides. Was it due to his Polish descent, his imposing appearance, or the combination of these qualities? Generally it is the strength of will, seen in self-control which forges such characteristics. That he had. The privations of his youth, a disappointed love affair and many other disappointments may have contributed to him maturing so quickly and enduing his whole being with such earnestness. I got to know him as a man who never spoke an untrue word, never did anything wrong, and who presented himself as he really was; this always sufficed for him to get his way…" (von Degen 1932).

The publication and distribution of his two sets of exsiccatae made Lojka an international reputation in lichenology. As von Degen observed:

"… I often saw large, heavy crates which arrived at his place from foreign lands filled with lichen material, but before displaying the contents among his exsiccatae he always arranged them in his personal style of presentation. This painstaking work took up much time, but account for the reputation of his collections. He was especially fastidious in the preparation and care of his own herbarium, which was among the most attractive anywhere…" (von Degen 1932).

Lojka's friend, and trustee of his estate, was the young Viennese lichenologist Car Eggerth Jr (1861-1888) who, in his own brief life, amassed a notable collection of lichen exsiccatae, including many specimens from Lojka, in total amounting to some 35,000 specimens (von Wettstein 1889; Svojtka 2009, 2010). Eggerth valued Lojka's herbarium at 6000 forints [equal in today's currency to 38,000 euros or 49,000 US dollars]. After Lojka's death, his two surviving sisters, Mathilde and Josephine, found that the rent on the apartment where Lojka's library and herbarium were kept, was too great a financial burden for them to bear (Galloway & Vitikainen 2013: 16), and so they made attempts to sell both their brother's books and his great lichen collection. Von Degen writes poignantly of this:

"… The disposal of this collection posed his two old sisters the greatest problems after his death in 1887. Although it would have been our obligation to keep the collection in our country there was absolutely no interest in doing so, The Ministry and the National Museum refused to buy it, despite the modest price of 2000 forints. Our sole patron. Cardinal Dr Ludwig Haynald [Stephan Franz Ludwig Haynald (1816-1891), Cardinal, Archbishop of Kalocsa-Bács and botanist] was gravely ill. Lojka's heirs, after three years in which they could not rent out the apartment because of the herbarium, could not hold on to it any longer and at the very last moment it was purchased by the Imperial Museum in Vienna in 1890. Hence at least this collection, which formed the basis of the Hungarian lichen flora was kept for the old monarchy… According to the then Director of the Botanical Department, Dr Alex. Zahlbruckner, one could have raised enough to buy it just by selling off the duplicates. Friedlander in Berlin bought the library of books on lichens [according to Stafleu & Cowan (1981: 152) Lojka's lichen books were acquired by Zahlbruckner]. So in a very short time what this man (Lojka) had gathered together with such industry and application was scattered to the four winds…" (von Degen 1932).

Lojka's lichen collection is now in Vienna (W) where specimens are stamped "Herbarium Lojkanum" (Fig. 8). Duplicates are held in BP. The Hungarian lichenologist Ödön Szatala (1889-1958) discussed Lojka's lichen collection as follows:

"… Dr A. Zahlbruckner, former Director of the Natural History Museum in Vienna has often spoken to Hungarian botanists about the desirability of this [Lojka's] material being studied by a Hungarian lichenologist. About five years ago this wish advanced towards fulfilment when Herr Dr Keissler, the Director of the Vienna Natural History Museum, acting on the insistence of Herr Dr F. Filarszky the retired Director of the Botanical Division of the Hungarian National Musem, assigned to me responsibility for this material. It became my endeavour to carry out this honourable task with enthusiasm and determination, all the more so, as I was of the view that on the one hand it would substantially extend our knowledge of the lichens

of Hungary, and on the other show in a good light the inestimable value of Lojka's work…" (Szatala 1932).

These, and other prefatory words accompanied Szatala's detailed catalogue of Lojka's lichen collections, totalling 406 species and 236 forms (Szatala 1932). Although Lojka described 19 new lichen species, and proposed 8 varietal names, and 14 form names (www.nhmus.hu.tarak/noveytar/gyujtemenyek/zuzmo.lojka) (accessed 27 September 2013), it is his carefully curated collections and his exsiccatae which speak most eloquently of him today, and constitute a splendid memorial to a lichenologist who, had he lived, would undoubtedly have become one of Europe's leading lichenologists.

Acknowledgements

I am grateful to my friend Prof. Lars Arvidsson (Göteborg), to Mag. Matthias Svojtka (Vienna) and to Pam Byrne (Landcare Library, Lincoln) for help with literature; to Prof. Roland Moberg (Uppsala) for facilitating access to the specimens and schedae of Lojka's *Lichenotheca Universalis* held in UPS; to Maria Berggren, Curator of Manuscripts, Carolina Rediviva, Uppsala University for access to the T.M. Fries Correspondence; to Christina E. Barber, Archives and Special Collections Specialist, Amherst College for access to the Edward Tuckerman Correspondence; to my friends Dr Edit Farkas (Vacratót) and Mr Laci Lőkös (Budapest) for providing the portrait image of Hugo Lojka and for their kind help with literature; to Derek Adams (BM Photographic Unit) for photographic assistance; to Dr Leon Perry and Mr Anthony Kusabs (Te Papa (WELT), Wellington) for access to the Charles Knight collections held in their care; to Linda McGregor, Alexander Turnbull Library (Wellington) for help with the portrait of Charles Knight; to Laszlo Peter (Dunedin) for his kind translation of Hungarian; and to my good friend the Rev. Prof. Peter Matheson (Doctor's Point) for his prompt and helpful German translations. Warmest thanks to you all.

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Lichens and war graves – from Kew's Archives to the modern day

A recent guide to the management of war memorials (English Nature 2014) stated that "*War memorials are at the heart of community commemoration and it is not surprising that the cleanliness of a memorial is associated with the degree of respect to those commemorated*." With this, and the fortuitous topical contribution to the last issue of the *Bulletin* by Blatchley (2013) in mind, we describe below an interesting historical perspective of 'menacing' lichens on war graves and place this dilemma in a modern context.

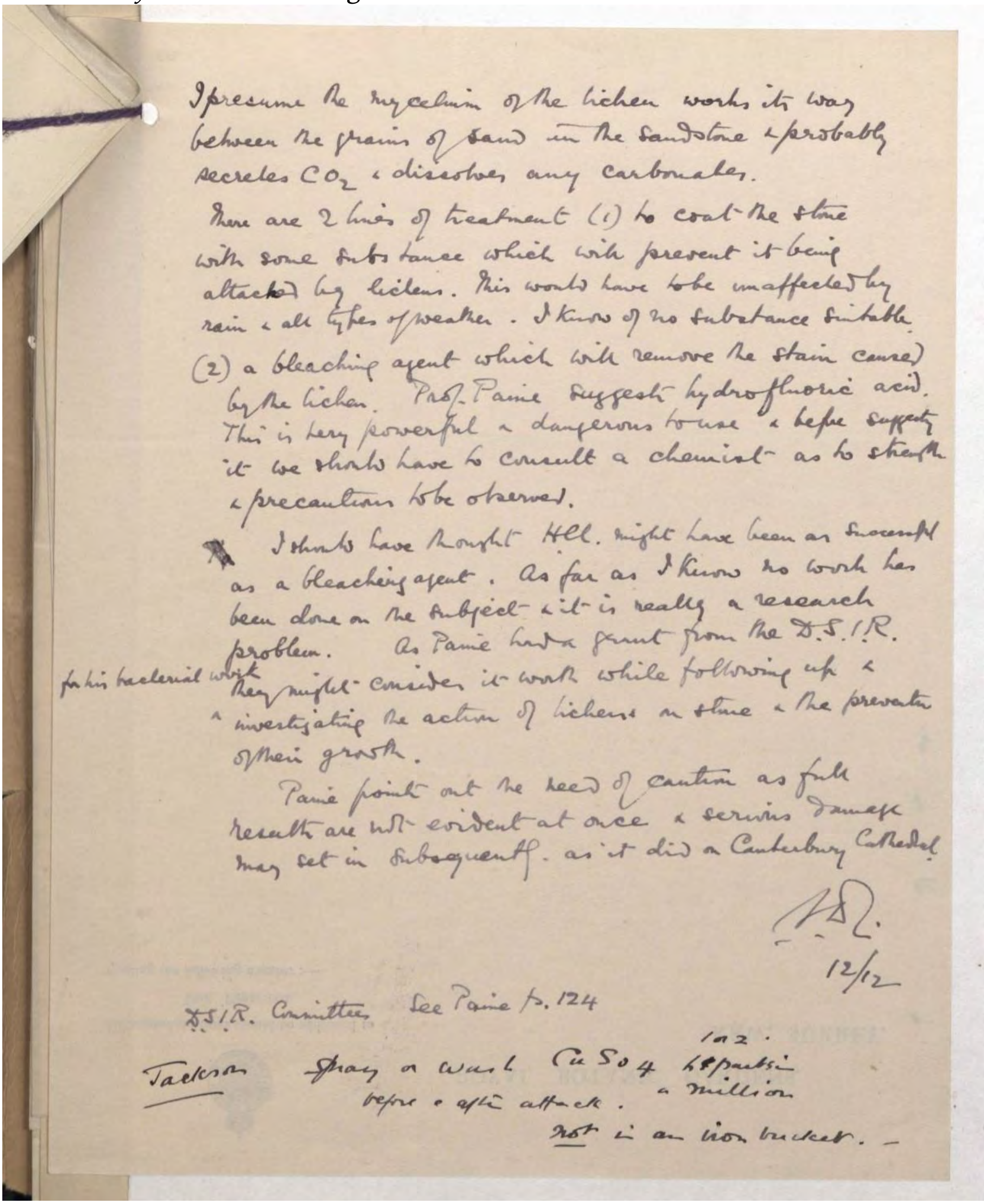
As part of a First World War Centenary commemoration project at the Royal Botanic Gardens Kew, we have been delving into our rich and diverse collections, unearthing long-forgotten and intriguing stories – some lichenological. Our contribution here is based on correspondence between Lieutenant-Colonel Sir Heaton Robinson of the Imperial (now Commonwealth) War Graves Commission and Kew's Director (1922-1941) Sir Arthur Hill, who together sought advice from bacteriologist Professor S.G. Paine (Imperial College) and chemist Dr Alexander Scott (who had previously aided Dr Howard Carter in Luxor) on the removal and prevention of lichen growth on headstones at war grave sites.

It all began in early 1916 when Kew's then Director Sir David Prain was contacted by Major Arthur Messer of the newly created Graves Registration Commission of the British Expeditionary Force (on behalf of the organisation's creator Sir Fabian Ware), with a view to gaining Kew's horticultural expertise for advising on the development, landscaping, planting and onward management of war cemeteries. Inevitably, the huge numbers of casualties already produced by the war had dictated that this would be no small undertaking.

Arthur Hill (then Assistant Director of Kew, with the military rank of Honorary Lieutenant and, later, Captain) was sent forth almost immediately: initially to assess 37 sites in France and Belgium in 1916, and then several in Italy in 1918. Hill was to be conferred with the title of Horticultural Adviser, a role he would assiduously carry out until his death in 1941. He did not, however, work alone. Other Kew men (such as Frank Grinham and Alfred Melles) would go on to contribute to this enormous but solemn task – some having been sent home after being declared 'unfit for frontline service' following injuries, while others returned after demobilisation in 1919 (see Grinham 1924). Kew's consultancy role to the IWGC would continue into the post-war period and throughout the Second World War.

In December 1933 (seventeen years after the first contact) a letter was received by Hill regarding the "*particular growth on headstones…which varies from anything between ½" up to as much as 4" in diameter…exceedingly minute as far as any vegetable substance that can be got hold of is concerned*". A particular source of anxiety was the fact that the lichen's growth was affecting the legibility of inscriptions. The sender, Sir Heaton Robinson lamented that nobody had paid attention to these gradual growths and it had been supposed that they would be easy to clean off – which was not so!

Although knowing very little about lichen ecology, Robinson was clearly perceptive of their growth, writing that lichens flourished on the south and south-west faces of the headstones and were much reduced where shaded. Further, Hill correctly hypothesised that "*the mycelium of the lichen works its way between the grains*" and "*dissolves any carbonates*" through interaction with sandstone and limestone.



I presume the mycelium of the lichen works its way between the grains of sand in the sandstone & probably secretes CO_2 & dissolves any carbonates.

There are 2 lines of treatment (1) to coat the stone with some substance which will prevent it being attacked by lichens. This would have to be unaffected by rain & all types of weather. I know of no substance suitable.

(2) a bleaching agent which will remove the stain caused by the lichen. Prof. Paine suggests hydrofluoric acid. This is very powerful & dangerous to use & before suggesting it we should have to consult a chemist as to strength & precautions to be observed.

I should have thought HCl. might have been as successful as a bleaching agent. As far as I know no work has been done on the subject & it is really a research problem. As Paine had a grant from the D.S.I.R. for his bacterial work they might consider it worth while following up & investigating the action of lichens on stone & the prevention of their growth.

Paine points out the need of caution as full results are not evident at once & serious damage may set in subsequently, as it did in Canterbury Cathedral.

12/12

D.S.I.R. Committee See Paine p. 124

Jackson Spray or wash $CuSO_4$ 1 or 2 parts in a million before & after attack. not in an iron bucket. –

Handwritten notes on the prevention of lichen growth by Sir Arthur Hill, 12 December 1933 (Courtesy of the Royal Botanic Gardens, Kew).

In this time before lichen conservation activities, there were strong suggestions in the correspondence for research into "*the prevention of their growth*" and the potential to involve the Department of Scientific and Industrial Research (or DSIR, a body newly created in 1915 to reduce dependence on foreign industries and finance advanced research). An array of cleaning and preventative measures (from the mundane to the extreme) were suggested: from rubbing with carbonundum to washing with copper sulphate or ammonia solutions, coating the surface of the stone, or even bleaching with hydrofluoric acid! Antiseptics to prevent further lichen growth were suggested by Dr Scott in the form of mercuric chloride and sodium fluorosilicate at some strength. Ammonium arsenate was ruled out as dangerous (but clearly the highly toxic mercury salt was considered acceptable).

The final letter in the series, from Robinson to Hill, captured their mood unequivocally: "*so what with yourself and Dr. Alexander Scott, Desch and Howe, it will be surprising if the lichen succeeds in thriving much longer. We will certainly attack him from all points and I have no doubt we shall be successful in the long run. This is an interesting subject.*" Along with Scott, Professor C.H. Desch and Mr J.A. Howe were members of the DSIR, and sat on a special Committee for the Preservation of Stone Work. Hill's handwritten notes (see image) also mention 'Jackson', which was probably Sir Herbert Jackson (yet another member of this committee), showing that help was sought from most of the experts of the period.

Recent graveyard and monument management publications (by the British Lichen Society, English Heritage, etc.) show that the outlook with respect to the value of lichens and their presence in cemeteries has changed positively. Nevertheless, biodeterioration of war grave stones remains a major concern due to their regional, national and international significance. Today the Commonwealth War Graves Commission (CWGC) uses a combination of biocidal washes and mechanical removal techniques (Allsopp *et al.* 2004).

There is now a move to look beyond traditional abrasive and chemical methods for preservation of war graves. A recent study at Brookwood Military Cemetery in Surrey found that image analysis as a tool for monitoring patterns of algal colonization on World War I and II headstones was a highly effective tool, (May *et al*. 2011). Such monitoring techniques could also be extended to lichens. Moreover, the researchers found that as an alternative to traditional methods it may be possible to control algal presence on the headstones by viruses, though it is not clear what such a system would mean for lichens.

Of course, removal of lichens may not reduce erosion of the stone. For example, Hawksworth (2001) commented: "*Conservationists anxious to preserve our architectural heritage by vigorously removing lichen cover could be accelerating erosion…*" Though stripping them from where they obscure text is a different matter. The worldwide responsibility of the CWGC to retain commemorative information on monuments and headstones dictates that cleaning (in some form) is necessary. Thus, there is still an important trade-off between lichen preservation and 'community commemoration'.

Acknowledgment
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Lobaria pulmonaria colonisation events in Breconshire, Mid Wales

On a road verge by Beulah Church SN912521 a large veteran Common Oak supports an enormous population of *Lobaria pulmonaria*. Though lacking apothecia many of the lobes are covered in rod-like isidia. In the thirty odd years that I have observed this colony there appeared to be two colonisation events of other nearby trees. A large rapidly growing colony became obvious on a veteran oak trunk some 60m to the SE. The majority of this colony disappeared after the gales of the winter of 2013-14. A small colony was also seen over a decade ago on a mature Norway maple approximately 20m to the NW. This colony was lost when the tree was pollarded.
No other colonies were noted despite the presence of adjacent large hazel clumps and young oaks and in nearby fields mature and veteran oak, sycamore and Norway

maple trees. On the 9th March 2014 I re-examined for the first time in c10 years the *Lobaria* tree and those trees adjacent to it. I was pleasantly surprised to discover a number of *Lobaria pulmonaria* colonies on young (c 15 to less than 100 years old) oak trees adjacent to the veteran oak supporting the large *Lobaria* population. In total 43 young colonies were noted on 5 oak trees. All lay in a direction ranging from E to SE of the probable source tree and all colonies but one were on the sides of the trees in a direct line to the probable source tree. It appeared most likely that the prevailing wind carried isidia from the adjacent large oak tree. Most colonies were between 2 and 5cm in diam. But there was one individual of 15cm diameter and another of 17cm diameter. The following statistics for trees with young colonies of *Lobaria* were noted.

Distance from veteran *Lobaria*-bearing tree (m.)	Number of *Lobaria* colonies	Diameter of trunk (cm.)
4.5	20	17
5	3	6
6.5	10	20
7	9	31
10.5	1	26

Recent colonisation of a young oak with *Lobaria pulmonaria*

All the colonisation events took place within 10.5m of the probable source tree. Beyond this distance there were apparently suitable host trees but no evidence of colonisation was found. Within 10.5m of the probable source tree five out of thirteen oak trees had been colonised. With the exception of the small (6cm diam) tree the number of colonies per tree declined with distance from the probable source tree. There were no signs of colonisation of one large coppice stool of hazel within this zone.

The presence of *Lobaria* species on oak that is so young is unprecedented in central Wales. The associated species were typical of smooth, somewhat acidic bark and included *Pertusaria amara, P. leioplaca, P. pertusa, P. hymenina, Lecanora chlarotera agg., Lecidella elaeochroma, Ramalina farinacea, Pyrrospora quernea, Phlyctis argena, Graphis elegans, Arthonia didyma, Melanohalia fuliginosa glabratula, Parmelia sulcata, Hypnum andoi, H. resupinatum,. H.* sp., *Isothecium myosuroides, Ulota crispa agg., Frullania dilatata* and *Metgeria furcata.* A tiny amount of *Normandina pulchella* and what could have been a small colony of *Thelotrema lepadinum* were the only somewhat notable species. The colonies were dispersed between the following heights in cm measured from the ground up. The upper limits are somewhat estimated:-
62-350, 75-105, 130-250, 55-175 and a tree with a single colony at 155 cm.

The *Lobaria pulmonaria* oak and adjacent young oak trees, near Beulah Church.

Does this apparently new colonisation event mark a change in the fortunes of *Lobaria pulmonaria* perhaps occasioned by a more favourable atmospheric pollutant regime? Or might it be due to favourable growing conditions increasing the propagule rain? Observation on similar sites elsewhere would be valuable. Unfortunately there are no other sites known to me in Mid Wales where such a potentially large number of vegetative propagules are in such close proximity to young oak trees.

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Effect of meteorological conditions on growth in the lichen *Diploicia canescens*

Summary
Monthly increase in size of *Diploicia canescens* thalli was measured from photographs and the values used to calculate the Aplin-Hill growth coefficient. Those with increases in thallus radius were tested with linear regressions against meteorological variables expressed as daily means between the dates of the photographs. Growth was positively correlated with humidity and negatively with hours of daily sunshine. No correlation was observed with rainfall or temperature. These results are consistent with the dry habitat preference of the species. Growth was much more rapid between the months October to February than between March to September. Growth coefficient was less variable than increase in radius and provided better correlations.

Lichens grow slowly and their growth can only be observed over relatively long periods, usually over several months or years. This means that associating the rate of growth with meteorological variables which vary over shorter time periods has been little studied. The patterns of growth differ among the various growth forms of lichens. Fruticose lichens branch in three dimensions, whilst foliose and crustose lichens grow mainly in two dimensions. Nevertheless, all lichens are fungi which behave as autotrophic organisms and there are features (such as physiological responses) which all lichens share. Armstrong & Bradwell (2011) have reviewed lichen growth of foliose lichens including the effects of climate. Rainfall, temperature, proportion of cloudy days, frequency of rainy days, average wind speed and frequency of ground frosts were all found to account for variation in growth rate by one or more authors, but rainfall has been the most commonly found factor to influence growth rate. The diversity in ecology of the lichens concerned has apparently been given little consideration. Indeed, air humidity was not apparently considered by authors, although the importance of a peak in physiological activity at

intermediate water contents is well recognised and air humidity is regarded to be an important factor by field observation. In their study of *Cladonia* growth in the forest, Boudreault *et al*. (2013) concluded that increased growth over a 4 month period in canopy openings was due to the combination of increased morning light and humidity measurements.

The purpose of this paper is report briefly some research done over 25 years ago but which was not published at the time. It explores the relationship of growth rate of *Diploicia canescens* with a number of meteorological variables on a monthly basis by using the Aplin Hill model to calculate the growth coefficient and then relate the findings to the ecology of the species and to consider the benefit of using a calculated growth coefficient over simple increase in thallus size (radius).

Diploicia canescens, growing on bark of *Acer pseudoplatanus* in Bossington, Somerset – photographed during the Somerset field meeting (see account in this *Bulletin*).

The Aplin Hill (Aplin & Hill 1979, see also Childress & Keller 1979 and Hill 1981) growth model was an attempt to quantify growth rates within a mathematical equation which could be manipulated to find out more about the rate of growth than simply the rate of increase in radius. The starting point for the development of the model was Trinci's analysis of the growth of fungal colonies on agar (Trinci 1971). In fungal hyphae on agar, Trinci showed that the rate of growth is proportional to the length of the terminal cell in the hypha, but in lichens no such structural analysis is possible. And instead of gaining nutrients (especially carbohydrates for wall synthesis) from the agar medium, lichens gain carbohydrate from photobiont cells. Thus, instead of transport of absorbed nutrients along the terminal cell of the growing

hypha in fungal colonies, for lichens Aplin & Hill (1979) and Childress & Keller (1979) used a diffusion function to represent the movement of carbohydrate from the photobiont cells to the growing mycobiont cells. Fisher & Proctor (1978) had already demonstrated that growth in two species of the *Parmeliaceae* was terminal with most at the lobe tips and progressively less towards the centre and Proctor (1977) showed in *D. canescens* that "growth rate is proportional to the area of thallus in an annulus of constant width within the growing margin". The Aplin Hill model, like the Trinci model, expressed growth in terms of two quantities: the growth rate coefficient (dimensions t^{-1}) and a distance parameter (dimensions l).

Materials and Methods

Black and white photographs of *Diploicia canescens* thalli growing on a wall on Prince of Wales Road Exeter were taken approximately monthly by Michael Proctor from August 1977 to August 1978. Meteorological records were accessed from Exeter Meteorological Station (at Exeter International Airport) about 8 km away. The size of 18 lichen thalli of a wide range of sizes (total number available on photograph) was measured on photographic prints (enlarged 3 times life size) with Vernier callipers to the nearest 0.1mm. For all possible thalli the minimum and maximum diameters were measured, summed and divided by four to obtain the radius estimate. The radii of large thalli which were not completely included in the photograph were estimated from the curvature of the thallus perimeter. Printouts of the daily meteorological records were used to calculate the means of the variables considered between the dates the photographs were taken.

The increase in radius (r) of the thalli was plotted against thallus size for each monthly time period (See Figure 1 below for examples) and the values for the Aplin Hill growth coefficient α and the distance parameter s as defined by Hill (1981) were calculated using the Method A in Hill (2002) – i.e.

$$dr/dt = (\alpha.s.r)/(r+2s) \quad (1)$$

where α = growth coefficient, s = distance function.

Linear regressions between both α and s and the mean of meteorological variables were performed using MS Excel. Linear regression gradient probability was taken as a measure of the strength of correlation.

Results

Growth was found to be most rapid in the winter when the temperature was lowest (Figure 2 below). However there was no significant correlation between rate of growth and mean daily temperature. There was also no significant correlation between growth rate coefficient and mean daily rainfall (or number of wet days). There was a positive correlation between growth rate coefficient and mean daily humidity and a negative one between growth rate and mean daily sunshine (Figure 3). Also shown in Figure 3 is the plot of these variables with mean daily increase in radius of the thalli. The probability of correlation between the increase in radius and the meteorological variables was less with the increase in radius than with the growth

coefficient indicating that the calculation of the growth rate coefficient did reduce the variability of the growth data (Figure 3). The distance parameter was not significantly correlated with the growth rate coefficient or any of the meteorological variables. The relationship between growth rate and the meteorological variables, e.g. humidity, is probably not linear (Figure 3) but with the considerable unexplained variability of the growth rate, it is not possible to determine what the relationship might be. The variation in the growth rate during the year is set out in Figure 4. This indicates that growth was more rapid during October through to January (when there is damper but still warm weather with shorter days) than during February through to September (when there are drier longer days in spring and summer).

Discussion

Use of the Aplin Hill model

Armstrong & Bradwell (2011) questioned the assumption made in the construction of the Aplin Hill model that growth was dependent on the diffusion of photosynthate (ribitol in this species) from the point of production by the photobiont to the growing fungal hyphae at the end of the thalline lobes. They used evidence based on the C14/C12 ratios in different parts of the thallus of *Caloplaca trachyphylla*, which has a similar growth form to *D. canescens* (Bench et al 2002). These authors report that the carbon ratios did not indicate any turnover of the carbon across the thallus but their analysis included the polysaccharide walls of the mycobiont and photobiont and may have excluded the soluble polyols because the thallus samples were washed in 1N HCl to remove inorganic carbonate debris. Thus their results are not necessarily directly relevant to the growth process. As further evidence Armstrong & Bradwell (2011) cited Armstrong & Smith (1996), who found that the ribitol content at the tips of lobes in large thalli was greater than in the tips of smaller thalli, which they considered incompatible with the model. It is possible that larger thalli grow faster and may therefore be expected to contain higher concentrations of metabolising polyols.

Use of the Aplin Hill model was not therefore considered invalid, especially as it seems to be closely consistent with measurement data produced independently by Armstrong and others. The advantage in using the model is to enable the calculation of a growth rate coefficient that reduces measurement variability and represents growth rate better than increase in radius because increase in thallus size (e.g. radius in mm per time) has a length dimension as well as a time dimension. Being independent of thallus size, the preference of the growth coefficient over radial increase is the same as relative growth rate over increase in size or mass per time with growth measurements in higher plants.

The meteorological variables

Many meteorological variables are interlinked as, for example, are rainfall, temperature, sunshine and humidity. The association of growth rate with one of these does not preclude the effect and importance of others. The interpretation of association of growth with one variable where only one is tested could be misleading. When relating growth rate with meteorological variables how many and which ones

should be considered is difficult to determine. Here in the growth rate of *D. canescens* we can see a strong positive correlation with humidity. The absence of any significant correlation with rainfall may be a question of sample size and growth rate variability, as with the absence of one with temperature. At present as far as the presented data go, it seems that growth rate is faster when there is higher humidity and less sunshine.

A derivative of the basic meteorological data which records drying potential and termed Evaporation Over Grass (Penman 1948, Berry 1964) was also available. This was strongly and negatively associated with growth rate (Figure 4).

The ecology of Diploicia canescens

D. canescens is an unusual lichen in that it has one of the widest range of substrates, growing on limestone and acid rocks, trees, wood, walls, and man-made materials. But its presence is restricted by the environment the substrate is in. The communities with *D. canescens* are usually nitrophilic. The community alliance *Xanthorion parietinae* (James *et al*. 1977) includes the community *Physcietum adscendentis* which has *D. canescens* as a constant component. It also occurs in several other communities in this alliance, for example *Physcietum caesiae* which is typical of nutrient enriched limestones. *D. canescens* is also a component of *Arthonietum impolitae* which is a xerophytic community on tree trunks (James *et al*. 1977) and worked timber. It also occurs in other communities occurring on dry tree trunks e.g. *Lecanidetum premneae*. Its range also extends to calcifuge communities such as *Candelarielletum corallizae*, characteristic of nitrogen enriched siliceous rocks. Its range include maritime supralittoral xerophytic communities including the *Ramalinetum scopularis* on coastal rocks. It is not common in upland communities but Orange (2008) has found it as part of a *Dirina massiliensis-Caloplaca saxicola* community in North Wales, Northern England and the Lake District on south facing calcareous rocks. In summary it is found in lowland dry nutrient-enriched (especially nitrogen) substrates. In the field it is nearly always on vertical surfaces away from direct rainfall.

The cells of the photobiont and the mycobiont of lichens in general contain high concentrations of small molecular-weight polyhydric alcohols which absorb moisture from humid air and enable lichens to function physiologically (Palmqvist *et al*. 2008). As a result some lichens are found in dry habitats sheltered from rain. This appears to be the first time that growth has been measured of such a species and shown that high humidity and lack of sunshine are more important factors than rainfall or temperature.

Acknowledgements

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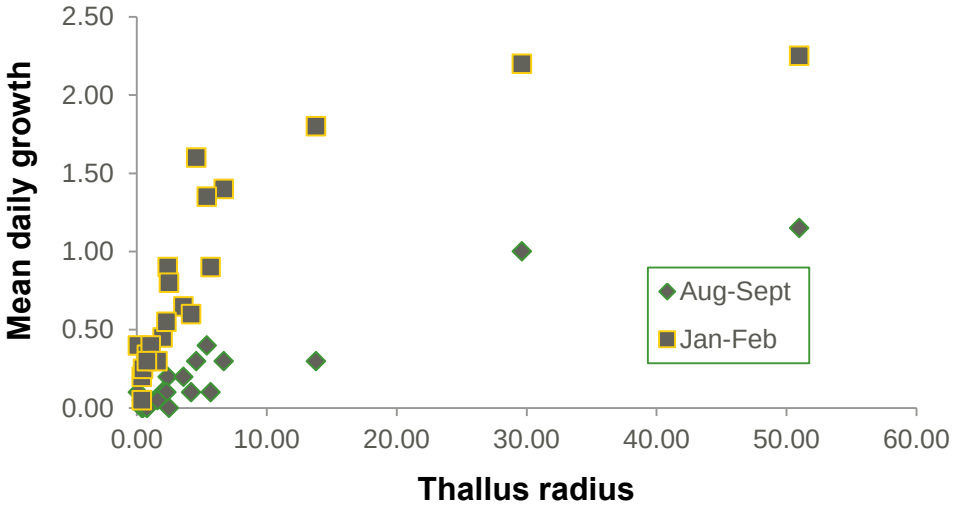


Figure 1. Growth of the *Diploicia canescens* thalli during August-September 1977 (diamonds) and January-February 1978 (squares) plotted against thallus size (radius).

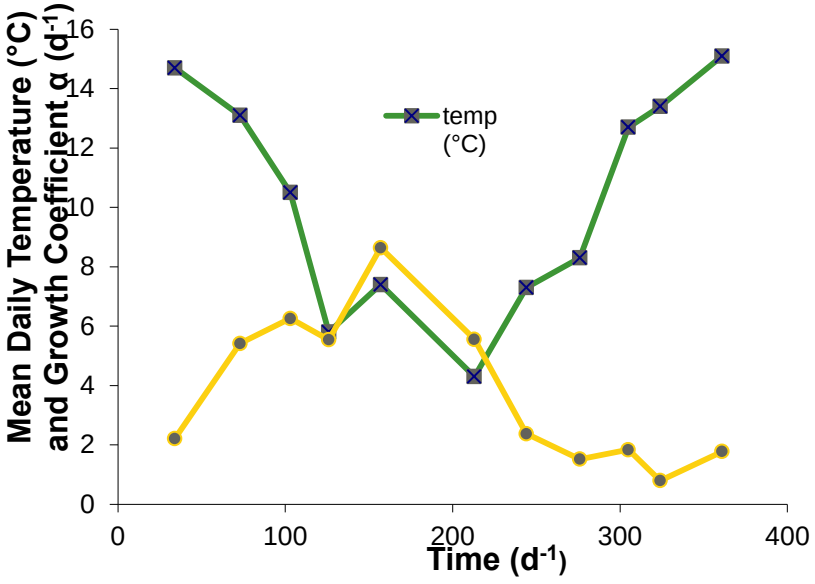
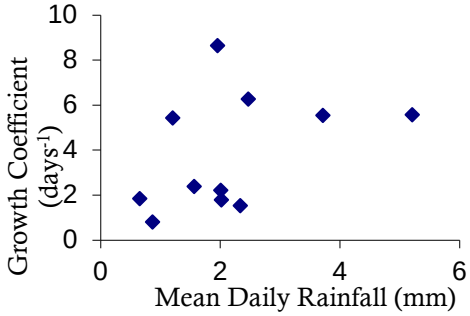
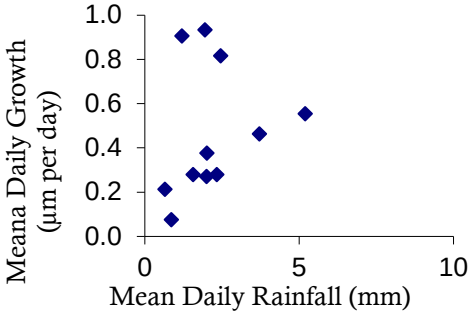
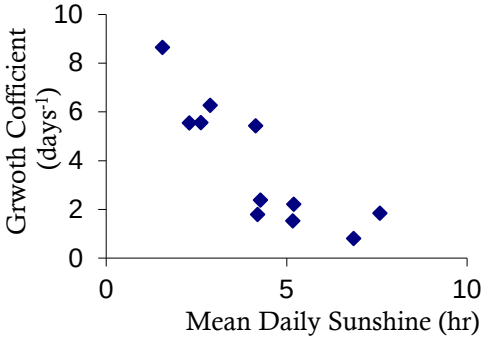
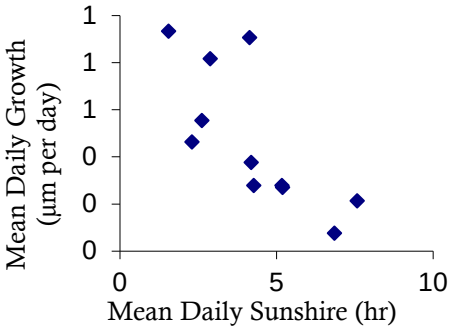


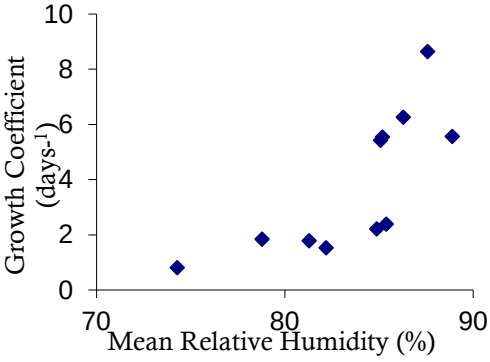
Figure 2. Temperature (squares) and growth rate coefficient (dots) though the year plotted as days from start (8 August 1977).

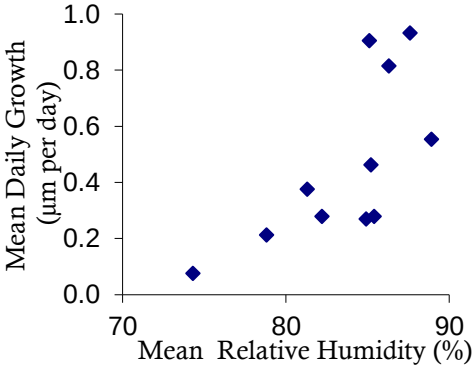

Growth Coefficient (days-1)
Mean Daily Rainfall (mm)

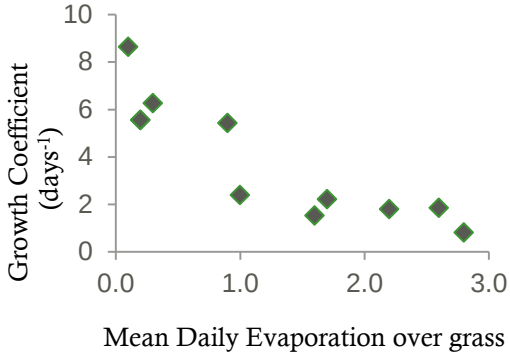

Meana Daily Growth (µm per day)
Mean Daily Rainfall (mm)


Grwoth Cofficient (days-1)
Mean Daily Sunshine (hr)


Mean Daily Growth (µm per day)
Mean Daily Sunshire (hr)


Growth Coefficient (days-1)
Mean Relative Humidity (%)


Mean Daily Growth (µm per day)
Mean Relative Humidity (%)


Growth Coefficient (days-1)
Mean Daily Evaporation over grass

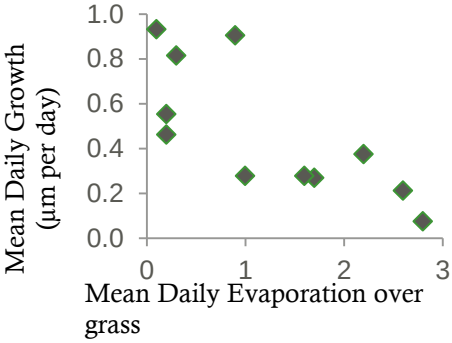

Mean Daily Growth (µm per day)
Mean Daily Evaporation over grass

Figure 3 (see previous page). Growth rate coefficient (graphs on left) and growth as mean redial increase (graphs on right) of *Diploicia canescens* plotted against mean daily rainfall, mean daily hours of sunshine, mean daily relative humidity and mean daily "evaporation over grass".

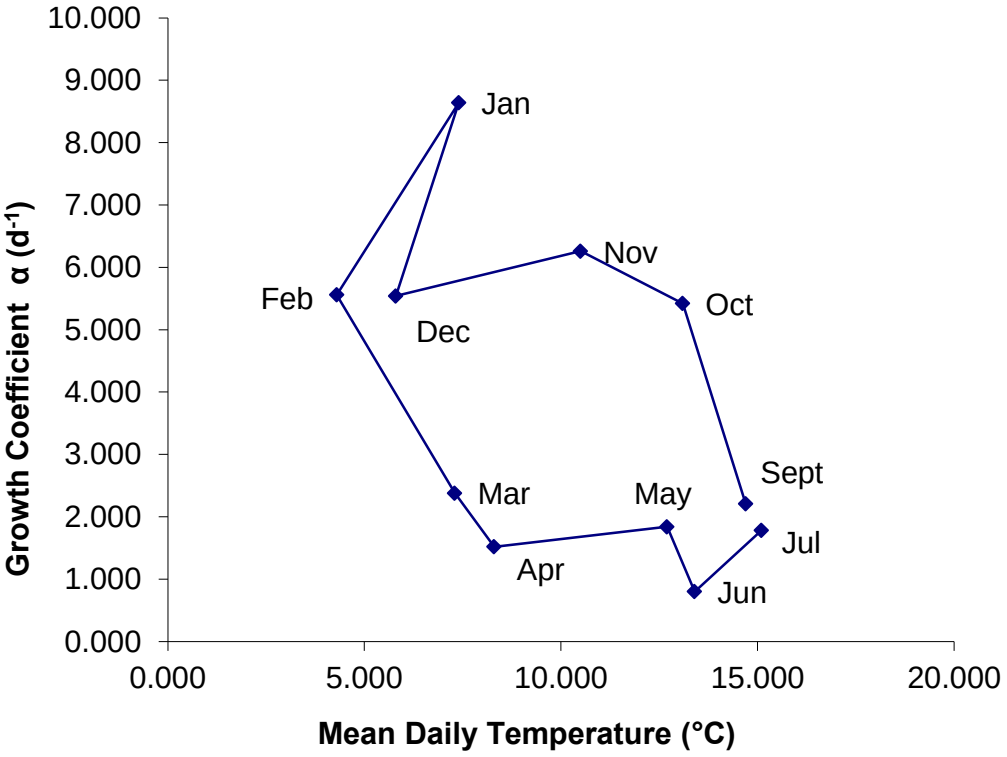


Figure 4. Growth rate coefficient of *Diploicia canescens* plotted against mean daily temperature. The month of the year is the month when most of the period of growth occurred.

Ramalina fraxinea – an interesting find, and a cautionary tale

At Leighton Moss RSPB Reserve in North Lancashire, a *Ramalina* caught my eye recently. It was large enough to flap in the breeze, with some thalli up to 8 cm long. As there was only one colony, I took a photograph and no voucher specimen. My local contact, Dr Rod Corner, was happy that it was *R. fraxinea*, in fine condition. Later, I felt moved to mention it to the Reserve staff, since its pathside location was vulnerable to routine management operations. In their friendly acknowledgment, my attention was drawn to that online fount of all knowledge, *Wikipedia*. There they, and now I, read in the key first section that the species is 'widespread in the United

Kingdom …' - which at face value is still true. It sounds reassuring, if with slight connotations of being 'common', or worse, 'not of conservation interest'. A superscript takes the readers of such detail to the 'References' section, which reveals that the source of that statement was Alvin's *Observers Book of Lichens,* 1977!

As NBN Gateway maps clearly reveal, *R. fraxinea* has declined considerably since the later 20th century. I therefore provided an update to the RSPB in map form. The 'Wiki' entry has now also been updated, making reference to the current NBN data (to which BLS contributes considerably), and citing 'Dobson' (6th edn) as another reference to the decline.

Levels of SO_2 are of course now lower than they would have been when Alvin's book was written - though there are now other pollution concerns ('Dobson' mentions fertilizers as one such). As the species has been recently recorded elsewhere in that general vicinity, hopefully there is more of it at Leighton Moss than I saw - though a good walk-about failed to reveal any more at the time. My lichen was on a *Salix* sp., the small tree having its roots in water at a fairly open lakeside location. Although the tree was some 20 cm diameter near the base, the vertical limb on which the *Ramalina* was growing was smooth-barked and only about 4 cm across – a relatively young growth, and the lichen itself must therefore have been of no great age. Perhaps there is a chance it may even be on the increase at this splendid site: I have done my best to ensure its tree is not 'managed' before that happens.

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A surprising discovery in Norfolk

Discoveries all start somewhere and in this case it was in Nottingham at the poster session of the BLS AGM. I was confronted by a map showing mapping of UK lichens with site locality data at a 5 km. coverage, worryingly for me there were significant gaps in Norfolk. As vice county recorder for both East & West Norfolk I vowed to fill in as many of the spaces as possible in the next year or so. There is nothing quite like entering a virgin square where any record is new. So gradually during the winter months I have been working 5km squares looking at churches, wayside trees and any other likely lichen habitats. Although I think I know Norfolk well, it has still been a voyage of discovery.

It was therefore on a very warm sunny day in March that I had to go to King's Lynn for a Coastal Biodiversity meeting. The morning passed quite slowly and when it finished at lunch time I thought I had just time to record a 'virgin' square. This is why I set off for the Church of St Mary at South Wootton (TF640227, Lat. 52° 77' N. Long.0° 43' E.). It is set in a suburban area, but when I stepped in to the churchyard it seemed to have retained a rather rural feel and looked quite promising.

I began recording on the south wall and worked anti clockwise as is my usual *modus operandi*. It was when I was examining and listing lichens on the north wall that I suddenly came to a halt. In front of me was a familiar lichen but I could not quite believe my eyes. My mind raced through all possible alternatives, but it could only be a species I knew well from Cornwall - *Roccella phycopsis*. It simply should not be here on the east coast. I counted some 15 thalli and after some deliberation took one as a voucher specimen. Though I tried continuing to record I had problems concentrating after this discovery, so I arranged to revisit the church some weeks later when Mark Powell and Robin Stevenson (the vice-county bryophyte recorder who is also an expert on the local geology) were able to join me.

This is as far as I can discover the first east coast record and the furthest north site in the British Isles and quite probably in Europe. Its distribution in the British Isles centres on the south west coast of England (See Fig.1) reaching as far east as South Hayling and Porchester Castle Churches in Hampshire, Church Norton on the Selsey Penninsula in West Sussex, and as far north as Ceredigion on the Welsh coast. It is curiously absent from Ireland. Elsewhere in Europe it is a species of the Atlantic coasts of France, Spain, Portugal, Macronesia and in the Mediterranean. In Britain it is almost always on coastal rocks or within a kilometre or two of the sea on walls or churches where it grows in xeric habitats under overhangs and in sheltered situations facing north or east.

At South Wootton Mark Powell and I counted c.34 thalli of various sizes growing between one to four metres up on a relatively small stretch of the wall. In addition one thallus was growing further along on an extension probably built in the nineteenth century. The church is in part saxon and the north wall is constructed with a mix of flint, ferrocrete (an iron conglomerate) carrstone and a fine grained local sandstone – silver carr. The latter two are from the lower greensand , Cretaceous in age. The material is all of local origin. As far as we could ascertain most of the *Roccella* was growing on the binding mortar though some were on the ferrocrete. We did not see any on the other building materials. Inevitably there has to be a debate on whether it is a recent coloniser or has been present for a long time. The only pointers are that the church tower was rebuilt in the 1890s following a lightning strike which split the tower and it supports no *Roccella.* The upper part of the north wall appear also to have been rebuilt as there is brick work and this probably happened about the same time. The adjacent sloping buttress is considered by Pevsner and others to be of Saxon age. There were no *Roccella* growing on it but it is probably not dry and sheltered enough. The church itself is now about 4km from the eastern shore of the Wash, though in the early nineteenth century it would have been within 2km before reclamation took place. There are other churches in the area in similar situations but as yet it has not been found on them. There may be a parallel with a site at Nailsea in Somerset, where *Roccella phycopsis* is known on a wall some 6km from the Bristol Channel, but again the sea may have been closer in the nineteenth century. Also the inland church of Godshill on the Isle of Wight is built of upper greensand (Sheila Street *pers. comm.*).

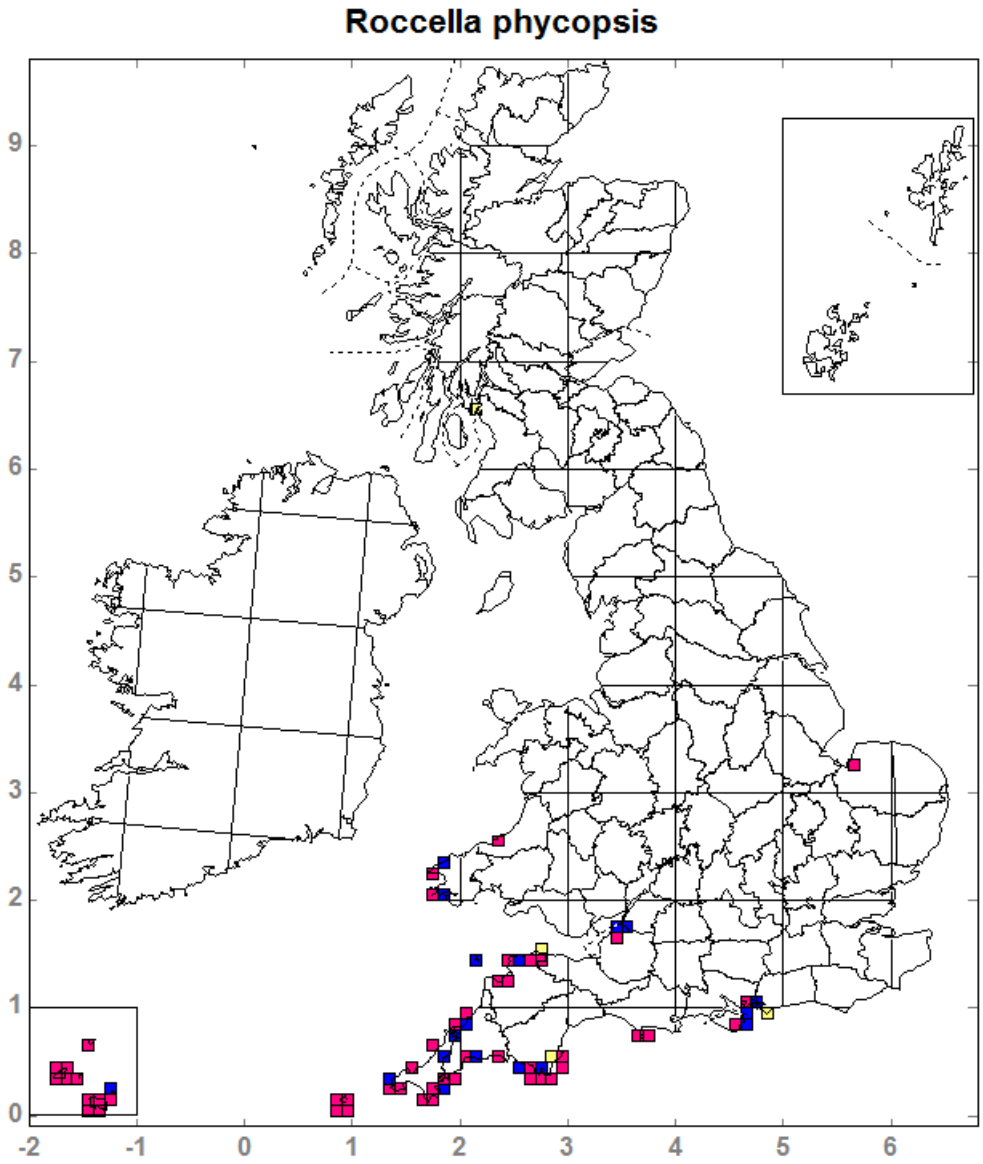

Fig. 1. Distribution map of *Roccella phycopsis* in the British Isles

A discovery like this poses all sorts of questions – how does a species of vertical xeric habitats disperse. What does it say about its climate tolerances and its apparent requirement to be coastal. Is it a relict population or one that is spreading? Interestingly, there is a tantalising piece of evidence that it might have been elsewhere on the east coast, as one of the pigments used in the Lindisfarne Gospels has been shown to be derived from *Roccella*. It has been argued that all the materials for this were locally sourced (Janet Simkin, *pers.comm.*). However lichens are very easy to store and transport, so that must remain just a possibility.

A slightly bizarre coincidence is that within 2km of the church there was a long established colony of *Cetraria islandica* until the mid 1990s. There can be few if any places on the earth where these two species could have been so close together.

South Wootton Church is a highly rated lichen site for other reasons as on Thursdays the church hosts a coffee morning open to visitors. Naturally Mark, Robin and I took advantage of this splendid social event and it also gave us a chance to enthuse some local people over the discovery. They were a really nice group of people so I am hoping that the lichen will be in safe stewardship. This one discovery encapsulates for me all that makes lichenology such a fascinating study. The exhilaration of the discovery, the questions it poses on its autecology, the links between the natural and the historic environment, and the good companionship and sharing of ideas with others. My final thought is that two days earlier when I attended the funeral service for Peter James I recalled a lovely day spent with him on The Lizard discussing and exploring one of his favourite communities – those under overhanging rocks where *Roccella* lurks . Peter I know would have enjoyed this find.

Acknowledgemts
Janet Simkin for supplying the map and data, Sheila Street for information on Godshill Church and Mark Powell for help in the survey.

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[Ed. note: the area of this new discovery has a long mycological (if not lichenological) history. Charles Plowright (1849 – 1910) lived at North Wootton; he was one of the most illustrious British mycologists of the nineteenth century, a pioneer in the understanding of rust life cycles and author of a list of 800 species for Norfolk. His daughter married Tom Petch (1870 – 1948) who lived in the same house after Plowright's death. Petch worked extensively on the fungi of Sri Lanka, and was also an expert on fungal parasites of insects.]

Entomology for lichenologists - No. 2 in an occasional series

The Bristly Millipede *Polyxenus lagurus* - one for churchyard lichenologists

The bristly millipede is unlike any other British millipede species and quite unmistakeable. It has no hardened exoskeleton but is instead furnished with rows and tufts of filamentous "bristles". Being a mere 2-3mm in length and amber brown in colour it could be taken for a small beetle larva but for the tufts at the rear end which almost always seem to shine as they reflect the light. The current known distribution of *P. lagurus* is predominantly south-east of the Humber to Severn Estuary line and coastal locations. The distribution map is very patchy. Often being found on church walls and being easily identified this is a species that lichenologists

Polyxenus lagurus – image copyright J.P. Richards

can help record. Records should include the normal information that will already have been collected for your lichen records i.e.: site name; grid reference to at least 1km resolution; date; recorders name; habitat information (the aspect of the church wall would be useful in this respect). Submit records to Paul Lee (email *arachne2222@aol.com*) the Millipede Recording Scheme Organiser for the British Myriapod and Isopod Group (http://www.bmig.org.uk).

Paul Richards (University of Sheffield, Dept. of Animal & Plant Sciences) and Steve Price: email *lichenrecords@sorby.org.uk*

The ultimate fashion statement: David Richardson (L) and Mark Seaward (R) kitted out for hell (black flies and mosquitoes) and high water (bogs) in their quest for *Anzia colpodes*, a species selected for a status report by COSEWIC (Committee on the Status of Endangered Wildlife in Canada). Their elaborate vestments (including waders) proved to be necessary and their endeavours were crowned with success, the party, including Frances Anderson (in equally exotic garb), locating numerous thalli on a few trees in wooded areas either side of a stream in Kejimkujik National Park, Nova Scotia. [Photo: Frances Anderson]

Two letters from Churchill Babington: to Miles Joseph Berkeley (1854) and Edward Tuckerman (1882)

In an earlier *BLS Bulletin* account (Galloway 1991), I sketched out something of the life, work and interests of the Victorian lichenologist, archaeologist, theologian and rector, Churchill Babington (1821-1889). Holding the Disney Chair of Archaeology in the University, Babington's reputation was high for his work on the orations of Hyperides (Babington 1850, 1853). Although Babington's handwriting is mainly quite awful, being throughout his life an undisciplined, untidy scrawl (Fig. 1), he was a lively and sympathetic correspondent and he wrote to most of the important lichenologists of the day including Nylander, Montagne, Massalongo, Müller Argoviensis, Leighton, Borrer, Bloxham, W.J. Hooker and J.D. Hooker, and also to the mycologist Miles Joseph Berkeley (1803-1889). There are several fascinating letters from Babington in the Berkeley correspondence at BM, written between 1851 and 1854. At this time (the mid 1850s), Berkeley was engaged in writing, and preparing illustrations for, a general book on cryptogams (Berkeley 1857), for which he solicited Babington's help with notes on lichen distribution. This was a field in which Babington had considerable knowledge, having researched widely for his important essay on New Zealand lichens in the second volume of Joseph Hooker's *Flora Novae Zealandiae* (Babington 1855b). His letter to Berkeley is transcribed here:

"…St John's Coll.
Cambr.
Novbr 21, 1854

Dear Sir,
I have written out some notes for you to the best of my ability, wh. will I hope answer your purpose. For the distribution of species I must refer you to my labours in Hooker's Fl. N.Z. [Babington 1855b]; wh. have given me such a surfeit of lichens that I shall not take to them just yet very readily again, having moreover a vast deal of philological & other labour before me.

Perhaps you will be good enough to let me see a proof of what you write on lichens; I may perhaps see something to modify. The truth is the family is so universally diffused that it is venturesome to say of any genus that it is absent of the world.

I am now engaged on a most interesting work [Babington 1855a] of wh. I send you a rough proof; you wd oblige me much by mentioning it in any quarters, where it is likely to sell, as the printing is very expensive. Mr Bell thinks the price must be 7/6, but this is not quite settled yet.

You will find a few remarks on the habits of lichens in Montagne's Aperçu (from which I have been quoting) & in Humboldt's Views of Nature. Besides of course the introduction of Fries.

I am very glad to hear that you have such satisfactory news of your son.
With very kind regards to all your family.
Believe me
Yours ever
C. B.

P.S. If you wish for more information on any point, I shall be happy to tell you all I know, which is but little I fear…"

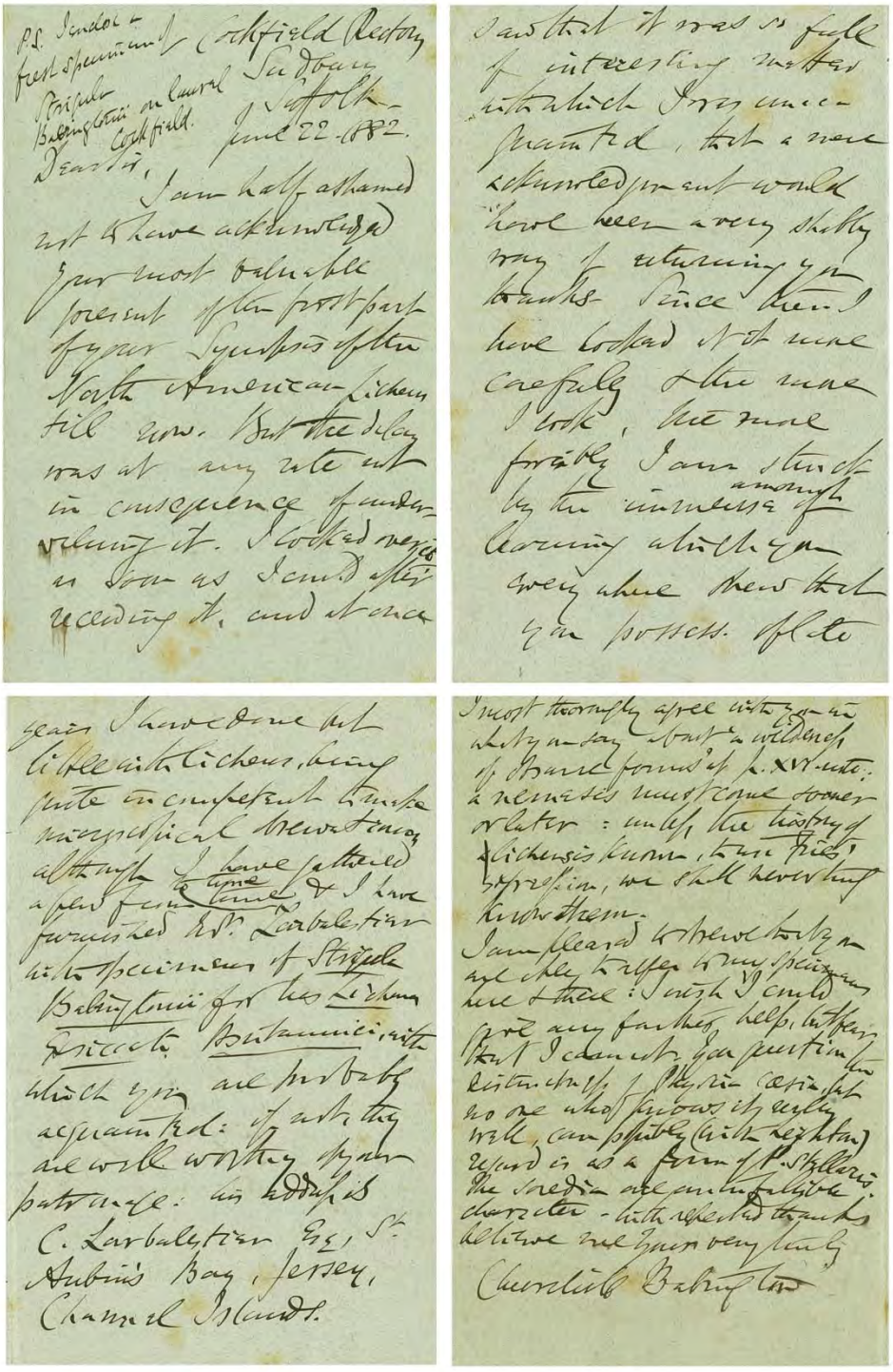

Fig. 1. Churchill Babington's 1882 letter to Edward Tuckerman (Amherst College Archives).

Berkeley spent a great deal of time on this introductory work on cryptogams, sensing a real need for an up to date book in English which his volume amply supplied. In his Preface he describes his own work and is also warmly appreciative of the help given him by Babington and the Hookers (Berkeley 1857: viii):

> "…An incredible amount of labour has been bestowed upon its preparation, in the examination of herbaria, the consultation of authorities, and the verification of facts. Nor has he rested on his own judgement, but has profited by the counsel of friends, who have in more than one instance contributed valuable notes on subjects in which they are the highest authorities. Sir W.J. Hooker not only opened his rich Herbarium and Library, but gave much oral information on Ferns, Mosses, and Jungermanniae; Dr. Hooker supplied some admirable notes on the geographical distribution of Ferns, besides giving much advice on a variety of subjects during the progress of the work; and Mr. Churchill Babington has contributed far the greater part of the information on the distribution of Lichens. The Author's most grateful thanks are due to these and other Botanists who have so readily acceded to his wishes, or have taken interest in his labours…"

In 1866, Babington resigned his St John's College Fellowship in Cambridge and accepted the Rectorship of Cockfield in Suffolk, the living being in the gift of St John's College since 1708. St Peter's Church Cockfield, in the deanery of Lavenham, dates from the 14th and 15th centuries and is a handsome building set off by a large, square flint tower. Here, Babington was to have a particularly happy and productive Rectorship for nearly 23 years. In 1869, he married Matilda (Maud) Whytt, daughter of Col John Alexander Wilson RA, and a favourite cousin of Robert Louis Stevenson's mother. In Suffolk, Babington took a lively interest in conchology building up an extensive collection of British and exotic shells and his knowledge of regional ornithology resulted in publication of his very thorough *Birds of Suffolk* (Babington 1886). At Cockfield Babington was an exemplary parish clergyman and a charming host to visitors. Sir Sidney Colvin (1845-1927), Slade Professor of Art at Cambridge and Director of the Fitzwilliam Museum, left a sympathetic picture of Babington as country Rector, when he described his first meeting with Robert Louis Stevenson at Cockfield. In the 1870s Stevenson, on confessing his atheism to his conservative parents in Edinburgh, was sent to stay at Cockfield with the Babingtons. Colvin takes up the story of this time as follows (Colvin 1921: 102-103):

> "…I had landed from a Great-Eastern train at a little country station in Suffolk, and was met on the platform by a stripling in a velvet jacket and straw hat, who walked up with me to the country rectory where he was staying and where I had come to stay. I had lately been appointed Slade Professor at Cambridge; the rectory was that at Cockfield, near Bury St. Edmunds; the host was my much older colleague Professor Churchill Babington, of amiable and learned memory; the hostess was his wife, a grand-daughter of the Rev. Lewis Balfour of Colinton, Midlothian; the youth was her first cousin by the mother's side. Louis Stevenson from Edinburgh. The first shyness over I realized in the course of that short walk how well I had done to follow the advice of a fellow-guest who had preceded me in the house – to wit Mrs. Sitwell, my wife as she came later to be. She had written to me about this youth, declaring that I should find him a real young genius and urging me to come if I could before he went away, I could not wonder at what I presently learnt – how within an hour of his

first appearance at the rectory, knapsack on back, a few days earlier, he had captivated the whole house-hold. To his cousin the hostess, a woman of a fine sympathetic nature and quick, humorous intelligence, he was of course well known beforehand, though she had never seen him in so charming a light as now. With her husband the Professor, a clergyman of solid antiquarian and ecclesiastical knowledge and an almost Pickwickian simplicity of character corresponding to his lovable rotund visage and innocently beaming spectacles – with the Professor, "Stivvy," as he called his wife's young cousin, was already something of a favourite…".

Although Babington's leisure time in Suffolk was devoted to shells and birds, he still kept up with lichenology through the published literature, though he was all too well aware that the lichenologists of the new generation, such as T.M. Fries and Massalongo for example, used microscopical characters in describing genera and species, something that he was quite unskilled at and resistant to attempting. In 1882 the American lichenologist Edward Tuckerman (1817-1886) sent Babington a copy of the first volume of his *Synopsis of North American Lichens* (Tuckerman 1882), a wide and synoptic compendium of data and opinions, some of which also struck a chord with Babington who penned his thanks and observations thus:

"... Cockfield Rectory
Sudbury
Suffolk June 22 1882.

Dear Sir,
I am half ashamed not to have acknowledged your most valuable present of the first part of your Synopsis of the North American Lichens till now. But the delay was at any rate not in consequence of undervaluing it. I looked over it as soon as I could after receiving it, and at once saw that it was so full of interesting matter with which I was unacquainted, that a mere acknowledgement would have been a very shabby way of returning you thanks. Since then I have looked at it more carefully & the more I look, the more forcibly I am struck by the immense amount of learning which you everywhere shew that you possess. Of late years I have done very little with lichens, being quite incompetent to make microscopical observations although I have gathered a few from time to time & I have furnished Mr. Labalestier with specimens of Strigula Babingtonii, for his Lichenes Exsiccati Britannici, with which you are probably acquainted: if not they are well worthy of your patronage: his address is C. Labelestier Esq, St Aubin's Bay, Jersey, Channel Islands. I most thoroughly agree with you in what you say about a wilderness of obscure forms at p. xvi intro: a nemesis must come sooner or later: unless the history of a lichen is known, to use Fries' expression, we shall never truly know them.

I am pleased to know that you are able to refer to my specimens here & there: I wish I could give any further help but I cannot. You question the distribution of Physcia caesia but no one who knows it really well can possibly (with Leighton) regard it as a form of P. stellaris. The soredia are an infallible character.

With repeated thanks
Believe me
Yours very truly
Churchill Babington…"

Acknowledgements
Special thanks to Christina E. Barber, Archives and Special Collections Specialist, Amherst College, Amherst, Mass., USA, for permission to publish the Churchill Babington letter from the Edward Tuckerman Botanical Papers. Babington's letter to M.J. Berkeley is in the Berkeley Correspondence, held in the Botany Library of the Natural History Museum (BM).

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The Native Woodlands Discussion Group (NWDG) Lichen Workshop 2013

The weekend of the 19th and 20th of October saw the Native Woodlands Discussion Group's annual lichen workshop, hosted by Andy Acton and Anna Griffith.

The course was aimed at beginners and improvers, and people with a wide range of levels of expertise were in attendance, from total beginners with an interest in the wonders of the West coast to specialists enjoying the day out.

The course kicked off on Saturday morning in Connel Village Hall with a talk by Anna, assisted by perhaps the world's youngest potential lichenologist. Being a little too young to pronounce the polysyllabic Linnaean names (or walk), he mostly helped out by imparting a sense of calm to anyone who might be starting to worry about the huge amount of information they were about to get bombarded with. For older listeners who were concerned about the Latin pronunciation, Andy and Anna helpfully provided us with some memorable names in English, such as "Posh lettuce" (*Platismatia glauca*), "Desperate Dan" (*Parmotrema crinitum*) and "Octopus suckers" (*Collema fasciculare*) during a quick run through of the lichens we were likely to encounter. There were also a variety of books, leaflets and posters to help with identifying and remembering species.

Figure 1. The 'lichen challenge' with (left to right) Anna, Toby, Alan (SNH), Ndurie (SNH).

The presentation covered the basic biology of lichens, identification tips and the distribution of some of the species we would encounter. This last topic demonstrated the importance of studying lichens in Argyll. The west coast of Britain and Ireland contains temperate rainforest with exceptionally high lichen diversity, and such habitats are found in only a few places in the world.

Figure 2. Ndurie and Alan being tested. Toby (just visible) supervising.

After the presentation and filling up on tea and biscuits, we donned waterproofs and headed to Shian Wood near Benderloch, a Scottish Wildlife Trust reserve. Even from the car park we could see the trees were festooned with pale strands of *Usnea*, and a short walk later we were immersed in the woodland. The plethora of lichens soon took its toll on our speed, and in true lichenologist fashion we made a total progression of about 15 meters between arriving on site and stopping for lunch. In ancient semi–natural woodland such as that found in Shian Wood, however, you don't need to move far to find something of interest. A single tree can have a dozen large leafy species growing on it, obvious to anyone who stops to look, and close examination reveals less showy "crustose" lichens, which grow flat against the bark for which they are frequently mistaken.

The species we discovered included the large and leaf-like tree lungwort (*Lobaria pulmonaria*) and the appropriately named "octopus suckers". When you come across these species you know you are in ancient woodland, because they are so slow growing and slow to spread to new trees. *Ochrolechia tartarea*, which looks a little like porridge that has been packed onto the side of a tree and then carefully covered in tiny peach tarts, is more common, and, along with several other lichens, was historically used in the dyeing industry.

We also encountered *Pertusaria amara*, and innocent-looking white crust unless you are unwise enough to let a passing lichenologist persuade you to taste some – the bitter medicinal flavour is hard to get rid of. As well as the variety of shapes and colours there are a range of interesting smells in the lichen world – brown leafy *Stictas*

smell of fish, *Parmeliella testacea* smells of TCP while *Fuscopannaria sampaiana,* despite being similar in appearance, smells of chewing gum.
In the evening we returned to the village hall, temporarily transformed into a lab, to examine specimens under the microscope. This was a good way of getting a closer look at tiny structures such as the powdery soredia and tiny outgrowths called isidia which lichens use to propagate themselves and which are often important in identifying them. We were also confronted with a test – using our new found skills to identify several lichens collected earlier in the day, and then it was off to the pub for dinner.

Figure 3. Some of the 'beginners/improvers' clearly attended under false pretences (Brian & Sandy Coppins).

On Sunday morning we travelled to Elleric oak wood in Glen Creran. Despite its plantation origins, there were plenty of lichens to see on the impressive trunks, including species we had not seen the day before such as coral lichen (*Sphaerophorus globosus*), tree flute (*Menegazzia terebrata*) and a very impressive patch of black-eyed Susan (*Bunodophoron melanocarpum*) growing as far as we could see up the trunk of one tree. We explored the woodland for a few hours looking for new lichens. We were then faced with another challenge – this time splitting into two groups to correctly label as many lichen species as we could find on a single tree trunk. After lunch the groups swapped trees to see if they could find anything that the others had

missed, but our lessons had sunk in and both groups had already found most of what was there.
The workshop ended early in the afternoon, and for a day and a half's worth of work we had seen and impressive number of species in some very pleasant woodlands, without ever having to travel very far from the cars. Everyone seemed to have thoroughly enjoyed the weekend, and I would heartily recommend next year's workshop, as well as encouraging everyone to take a closer look next time they are in the woods and see if you can spot any of the curious, colourful (and smelly!) lichens that decorate the trees.

Ndurie Abah
Scottish Natural Heritage

Lichen epiphyte scenarios – a toolkit for managing diversity and environmental change

Introduction

The science of lichen epiphyte diversity and conservation has well established tenets. First, it has been clearly demonstrated that lichens are sensitive to industrial air pollutants, and consequently they have been applied as indicators for ecosystem pollution by sulphur dioxide (Hawksworth & Rose, 1970), and nitrogen (van Herk, 1999). Broadly speaking, clean air is good for lichens. Second, the quality and variability of microhabitats explains and maintains lichen diversity. In terms of microhabitat quality, lichen epiphytes show preferences among different tree species (Thor *et al.*, 2010), and trees of different age (Ellis & Ellis, 2013), with certain epiphytes that are specialists of older (Ulickza & Angekstam, 1999) or wounded trees (Fritz & Heilmann-Clausen, 2010). At a site scale, the long-term stability of these microhabitats can allow the accumulation of additional species into an epiphyte community, the so-called indicators of ecological continuity (Coppins & Coppins, 2002). Lichen epiphytes thus benefit from the continued occurrence of diverse microhabitats, including examples of 'old-growth' structures such as might be found in ancient parklands and pasture woodlands.

These tenets serve us well in safeguarding the ecological processes to protect high diversity woodland for lichen epiphytes – prevent air pollution at all costs, and ensure habitat heterogeneity, including the continuity of mature and senescent trees. All else being equal, site-scale activity to provide sufficient microhabitat for conservation priority species or epiphyte communities could maintain their populations in perpetuity. Site-scale intervention is an approach that conservation has tended to adopt, and let us not forget that this site-based planning is a huge step forward. The distribution of lichen species in the British landscape is not designed,

but is inherited largely as a consequence of historical contingency. We have only recently made a conscious effort to conserve such things as lichens within landscape planning. However, we cannot continue now as previously in our efforts to conserve lichens; we cannot assume that clean air and the long-term suitability of microhabitats at a site within which a species occurs today, will secure its future. Why? Climate change.

A recent major review of global change science indicated that the magnitude of climate change through to 2100 is expected to be greater than anything experienced during the last 5 million years (Moritz & Agudo, 2013), with the rate of this change greater than anything experienced during the last 65 million years (Diffenbaugh & Field, 2013). These alarming projections are regionally variable, and areas such as the arctic will be at the frontline of ecological pressure. Nevertheless, the pathway of climate change is expected to impact on British biodiversity, and adds an important new dimension and significant uncertainty to lichen conservation in Britain.

Strategic decisions in an era of climate change

It is important that we begin now to embed climate change thinking within conservation strategy for lichens. Climate change is not the only or even the preeminent consideration for lichen conservation, but it is an important factor as part of the matrix of evidence which is brought to bear in developing recommendations for conservation strategy.

The standard approach in assessing the 'exposure' or sensitivity of a species to climate change is to develop a statistical model which describes its distribution as a response to climate variables, quantified as a measure of environmental suitability. Estimates of environmental suitability can then be projected for the present-day environment, and for future environments under realistic scenarios of climate change (Fig. 1). A comparison can then be made describing the shift in suitability for a given site, and whether this suitability value increases or decreases for a species of interest, i.e. whether the lichen is more or less likely to be found there.

An assessment of shifted environmental suitability can provide guidance in beginning to think about how lichen diversity might change into the future, and how one might respond to this dynamic biogeography in practical terms. Imagine for example that suitability is projected to decrease for a target species at a given site. Such a species may become a priority for population monitoring. One might also want to know whether microhabitat quality within the site is sufficient to maintain large and resilient populations. Larger populations tend to have greater genetic diversity to cope with a changing environment (cf. Leimu *et al.*, 2006), and may be less prone to extinction partly because of the buffering effect of locally suitable microclimate (Ellis 2013).

Alternatively, imagine that suitability is projected to increase for a species of national or international interest that is not present at a site. One might then ask whether the site is isolated from other suitable habitat, especially habitat which is already known to be occupied, as well as gathering information on the species' dispersal capacity. Dispersal-limited species may be less able to migrate to track their

suitable climate space between isolated sites, or adapt locally through gene flow. Solutions may include building habitat connectivity into our landscapes (Lawton *et al.*, 2010), or actively translocating threatened species into suitable climates (Thomas, 2011).

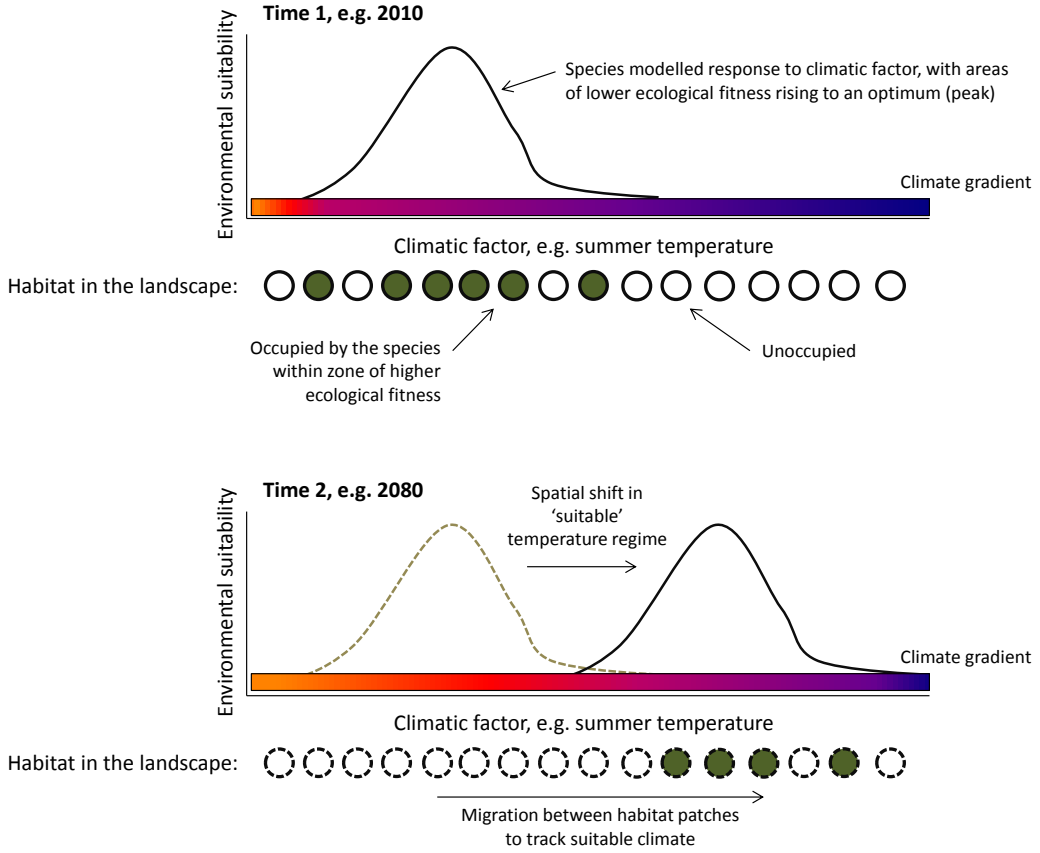


Figure 1. Schematic to show the relationship between the modelled response of a species along a climatic gradient, as its 'environmental suitability', and the occurrence of occupied and unoccupied habitat within the natural landscape. The comparison between time periods 1 and 2 in the upper and lower graphs, demonstrates how these 'bioclimatic' models can be used to project the response of a species to climate change scenarios. This is a simple one-dimensional example with a single climatic factor; in reality, species response models are often more complex.

Thinking about this process of change in lichen diversity provides insights into the types of decisions that we may be faced with: do we invest in direct action to protect threatened species that will be 'losers' under climate change, or do we invest in indirect options such as habitat connectivity across the landscape, to ensure the robustness of nature's own response to climate change?

Climate Change Uncertainty

One of the most significant challenges we face when starting to tackle climate change as a serious conservation issue is uncertainty. The climate may be changing, but the exact climate for a given place at a future time is unknown. This problem is compounded by other important factors over which we may have limited control, including shifts in the composition of our native woodlands in the future. These woodland compositional shifts may come about because of a climate change effect on the trees on which epiphytes fundamentally depend – such as the observed beech response to severe drought (Cavin *et al.*, 2013) – or the emergence of tree disease as a result of globalisation (Anderson *et al.*, 2004).

One method of constraining a potentially bewildering set of 'right' or 'wrong' decisions when faced with multiple layers of uncertainty is through the use of scenario planning (Peterson *et al.*, 2003). This approach seeks to implement a decision that maximises some gain – say the protection of lichens – when tested across a spectrum of potential future scenarios. This spread of outcomes may include for example the full range of different climates projected for a site based on Met Office climate models, or alternative scenarios of woodland composition from 'no change', through to a complete loss of one or more tree species to disease.

A Toolkit of Lichen Epiphyte Scenarios

Working alongside the British Lichen Society, the lichen team at the Royal Botanic Garden Edinburgh has recently made available a toolkit (Fig. 2) that allows lichenologists, conservationists and forest/woodland managers to explore how future scenarios can impact lichen epiphytes, and frame decision-making on this basis (Ellis *et al.*, 2014). This toolkit is accompanied by a user guide and technical guidance, and can be accessed at: *http://rbg-web2.rbge.org.uk/lichen/scenarios/index.php*

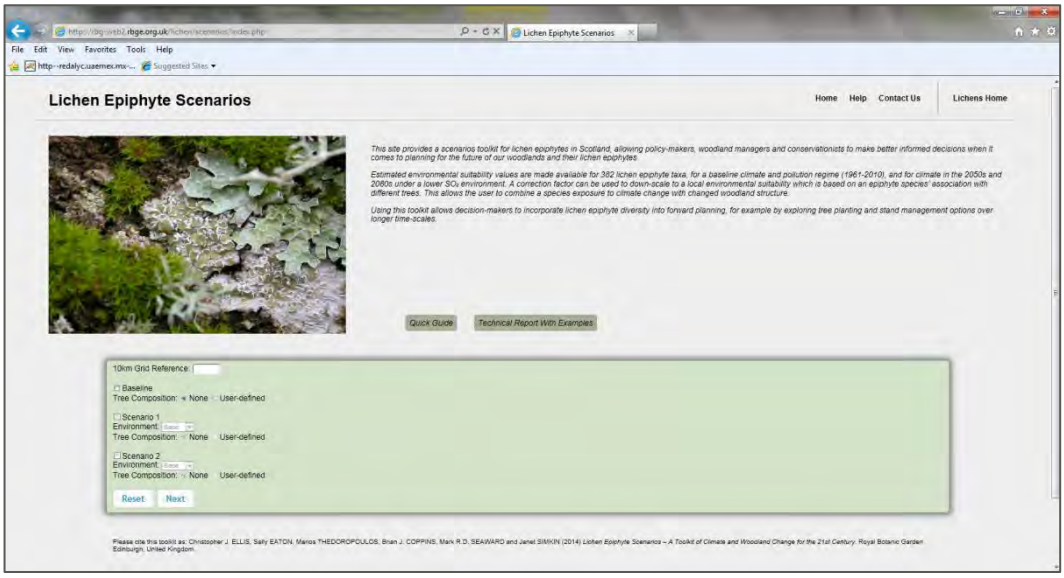


Figure 2. Screen shot for the Lichen Epiphyte Scenarios toolkit

The toolkit is simple to use:

1. For a site of interest, enter a four-figure grid-reference, e.g. NH88
2. Select the baseline 'present-day' environment, and then choose whether to modify the lichen species environmental suitability by the tree composition of the site, i.e. depending on the known lichen association with different trees.
3. Choose one or two scenarios with which to compare the baseline environment. This allows the possibility of selecting two boundaries of climate change, a lower boundary corresponding to a medium greenhouse gas emissions scenario through to the 2050s (2050M), and an upper boundary corresponding to a high emissions scenario through to the 2080s (2080), utilising scenarios developed by the Intergovernmental Panel on Climate Change.
4. Select from 382 epiphytes which have been statistically modelled. For a generic assessment of environmental impacts on epiphytes, it is possible to 'select all'. Alternatively, the selection can be narrowed down based on user-priorities, for example by cross-referencing with the Woods & Coppins conservation assessment for British lichens (Woods & Coppins, 2012).
5. If selected, then there are options to align woodland composition with the baseline and scenarios; for 15 different tree species their 'frequency' or 'constancy' values can be inputted, with these analogous to the constancy values used by the National Vegetation Classification: 5 = in 100% of plots, 4 = in 80% of plots, 3 = in 60% of plots, 2 = in 40% of plots, and 1 = in 20% of plots.
6. The output then provides a measure of environmental suitability scored between 0 (unsuitable) and 1 (highly suitable) for the selected epiphyte species, for the baseline environment and each of the user-defined scenarios. For climate change scenarios (2050M or 2080H), this includes an upper and lower range of suitability values, and the mean and standard deviation, accounting for a spread of uncertainty in the climate system.
7. Further output includes the shift in environmental suitability for each selected epiphyte species, between the baseline and scenario environments; noting whether this shift is an increase (positive value) or decrease (negative value) can be used to assess a species' exposure to the scenario.
8. A Bray-Curtis metric is also calculated to estimate the degree of epiphyte turnover, i.e. the extent to which suitability values shift across all epiphytes. This ranges between 1, signalling a potential complete shift in the epiphyte community, to 0 indicating no change. Following links associated with each species, it is possible to download in more detail the bioclimatic modelling which underpins the species response to climate change, and to critique the statistical modelling first-hand.

Caveats

There are a number of important caveats in using the scenarios tool-kit.

First, the geographic scope of the scenarios is restricted to 'northern Britain', principally Scotland. This reflects the fact that the species response models were developed using distributional data for Britain only, and it is not realistic to project a species response for southern England for example, for which the future climate in 2080 has no analogue within a species' current British distribution. This problem could potentially be overcome by modelling a species' entire European or global range, but at the expense of distributional accuracy (many other countries lack the high-resolution, accurate distributional data that is available for Britain). Users may wish to explore scenarios for areas of Britain outside Scotland (e.g. northern and midland England, or Wales), on the understanding that the further towards the south of England one goes, the less reliable the outcome.

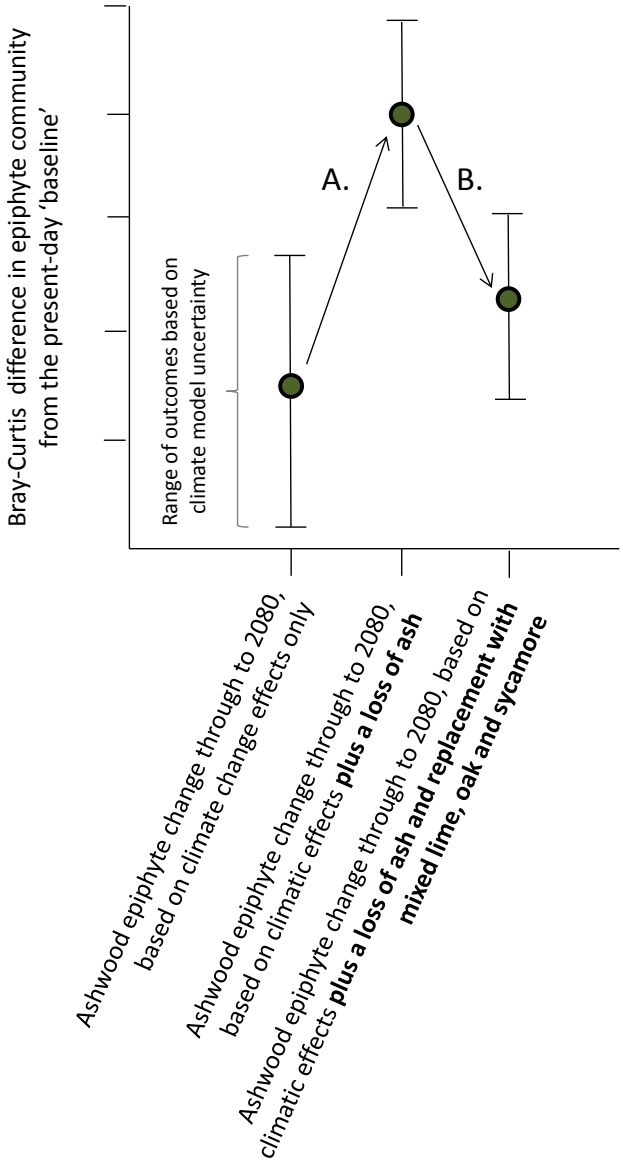
Second, the modelling is based on climatic values, and also a lower SO_2 environment. It therefore allows for potential lichen range-filling, as distributions achieve a new equilibrium with a lower pollution environment. It is well established that SO_2 has declined and continues to decline in Britain and that species distributions are responding to this change (Seaward, 1998). However, the pathway of future nitrogen pollutants is less certain (Dentener *et al.*, 2006), and the projections to climate scenarios assume constant values for nitrogen.

Third, the environmental suitability scores for epiphyte species are not 'forecasts'. They are not intended to provide an accurate prediction of the outcome for a species under precisely known pathways of environmental change. Rather, they are 'working estimates' given the best available evidence at the moment.

Applications

Given these caveats, the toolkit can be used to help identify lichen epiphyte species that may be threatened by climate change, in the **s**ense that the environment at a site may become more or less suitable when assessed against the spectrum of possible future climates provided by the Met Office. The actual risk to a species depends on developing an informed response to this potential sensitivity; optimising local habitat quality, facilitating migration etc. Similarly, it is also possible to incorporate changed woodland composition into the user's assessment, such as might occur under a tree disease scenario. Given that woodland management responses may take decades to be effected, it is sensible to combine scenarios of shifted tree composition with climate change, thereby searching for options which maximise the protection of lichen epiphytes through the 21st Century.

A simple ash dieback example might explore different options of woodland tree composition in order to reduce the shift in epiphyte turnover, i.e. minimise Bray-Curtis values, beyond the epiphyte response attributable to climate change alone (Fig. 3). This approach would prioritise the occurrence of tree species which have an epiphyte community that 'overlaps' with ash (Ellis et al., 2013), and for which the climate of northern Britain is expected to become more suitable in the future (Berry et al., 2012), such as lime (*Tilia* spp.) or including established 'non-natives' such as sycamore (*Acer pseudoplatanus*).



The ultimate aim of the toolkit is that lichens should be considered in site- and landscape-based management responses to climate change. Many different taxonomic groups have been the subject of climate modelling (Walmsley *et al.*, 2007), and this type of evidence is an important consideration in the development of conservation policy. The lichen epiphyte toolkit introduced here contributes to the evidence that lichenologists can draw upon to effect change, as climate-orientated conservation policy filters down to influence practical action on the ground.

That this data-intensive evidence can be achieved for lichens in Britain, is testament to the dedication and skill of all those involved in lichen field recording over many decades. The toolkit demonstrates a direct link between 'square-bashing' and climate preparedness, which is a link that seems too easily and too often overlooked. A wealth of evidence suggests that climate change will be a long-term problem, and meeting this challenge with robust solutions will depend in an important way

Figure 3. Graph to show how the results provided by the Lichen Epiphyte Scenarios toolkit can be used to explore responses to environmental change, including uncertainty within climate models. The shift labelled A., shows the additional effect of ash dieback in shifting the epiphyte community away from a baseline, having already accounted for the possible effects of climate change, while the shift at B. demonstrates the remedial effect of strategic tree planting to recover epiphyte environmental suitability. Different scenarios to explore shifts at A. and B. can be combined to explore a range of potential management options.

on sound taxonomy and constantly improving knowledge of species distributions. Recording is as relevant and valuable an activity in this period of environmental change and super computer modelling, as it was in the 19th Century when lichen diversity was first being discovered.

Please make use of the scenarios toolkit to further the British Lichen Society aim of '*Promoting the Study, Enjoyment and Conservation of Lichens*'. Any questions and comments on the Lichen Epiphyte Scenarios can be addressed to the author.

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Attempts to separate *Lecanora hagenii* from *L. persimilis*

These two species, both members of the *Lecanora dispersa* group, and both widespread on twigs, have been mistaken one with the other and also confused with unrelated lichens. Most of the material that I have examined has been collected in the East Midlands, East Anglia and the Home Counties where *L. hagenii* is much the more common of the two. There is much that can be learnt while getting to know these diminutive lichens. My observations are intended to inspire further investigation rather than claiming to be the last word on the matter. Laundon (2003) warns that "The *Lecanora dispersa* group is probably the most difficult for taxonomic study in this large genus" while Śliwa (2007) admits that "many problems remain" and that her revision "is intended as a contribution to the ongoing struggle with the taxonomy of this common yet so difficult species complex." We need not admit defeat with such difficult groups and we may be able to help with the struggle. I would be pleased to receive specimens for appraisal and examples from a wider geographical range would be valuable. As more observations are made and more images (including photomicrographs) are taken, these will be uploaded to the fungi.myspecies website.

L. hagenii is a common and widespread species and occurs frequently on twigs. It is especially common on elder where it grows in small colonies amongst *Lecania cyrtella* (which has a less prominent margin and septate spores). When *L. hagenii* is first shown to intermediate level lichenologists the admission is often made that such material has often either been overlooked or mistakenly thought to be immature *L. chlarotera*. It is useful to find a twig on which both *L. hagenii* and *L. chlarotera* are present (the twigs of ash trees are likely to be especially fruitful in this respect). When seen side by side it is clear that *L. chlarotera* forms a much thicker thallus before the fruits emerge. The thallus and thalline margins of *L. chlarotera* are K+ yellow while those of *L. hagenii* are K-. The margins of *L. hagenii* are thinner and the fruits considerably smaller than those of *L. chlarotera*. Microscopically they can be distinguished by the presence of massive crystals in the thalline margin of *L. chlarotera*, which are absent in *L. hagenii. L. hagenii* tends to colonise twigs at an early stage, gradually giving way to more robust crusts such as *L. chlarotera* and *Lecidella elaeochroma* as the twigs mature.

The hunt for *L. persimilis* may involve false leads. I have been sent labelled material of "*L. persimilis*" which turned out to be clusters of young fruits of *Lecania naegelii*. This is not such a surprising mistake as these two can look very similar. I don't intend to spend too long discussing the differences from species of *Lecania* as the two genera ought to be readily distinguished by the simple vs. septate spores (along with other microscopic features). Suffice it to say that the appearance of *Lecania cyrtella* can approach that of *Lecanora hagenii* while the appearance of *Lecania naegelii* can approach that of *Lecanora persimilis* and they could all possibly be confused with each other through a hand lens. To separate the genera there is a subtle morphological feature which can be used as a pointer in the field but

microscopic confirmation is still recommended. The fruits of the *Lecanora* species tend to be prominent from the thallus from an early stage of their development and often show raised margins resembling the crust of a pork pie. The fruits of the *Lecania* species, especially those of *L. naegelii*, appear as if to float up to the surface and emerge at a later stage of their development. There is a possible source of confusion when trying to ascertain whether the spores are simple or septate. Unless you are familiar with the differences, observations mounted in water can be misleading. K (or better still, N) will help to clear the contents of the spores and reveal the true septa of *Lecania*. The simple spores of *Lecanora* can have a protoplasmic strand transversely across the centre which can be mistaken for a septum. Any brown hymenial pigment in the genus *Lecania* tends to take on a purplish hue when mounted in K. This hint of purple is not seen in the *Lecanora* species but some people find the subtle colour differences difficult to perceive. Repeated observation appears to enhance colour perception.

L. persimilis appears to be much less common than *L. hagenii* in the East Midlands (but it is not rare). Whereas *L. hagenii* seems to have a preference for softer bark such as that of elder and poplar, *L. persimilis* is found on hard and smooth barked twigs, especially of ash trees but also occasionally apple, hawthorn and others.

Edwards *et al*. (2009) provide a key for the genus *Lecanora* which separates *L. hagenii* from *L. persimilis* at couplet 68 (page 471) in the following manner:

Thalline margin grey, disc yellow to brown or black; occasionally pruinose…. ***hagenii***
Thalline margin brown, concolorous with disc; never pruinose ……..***persimilis***

The presence or absence of pruina appears to be a reliable character (except for those specimens of *L. hagenii* in which it is lacking) whereas the other features used in the couplet can be misleading. The discs of both species are predominantly brown; those of *L. persimilis* are perhaps on average slightly darker in colour but the discs of both species vary from yellowish to dark brown. The thalline margin of both species is grey but in *L. hagenii* it is usually a very pale whitish grey that contrasts with the disc while the margin of *L. persimilis* is a dull, darker grey which, though a different colour from the disc, does not contrast starkly with it. An amended (though more cumbersome) couplet might be as follows:

Thalline margin whitish grey, contrasting in tone with the disc and forming a raised rim around it. Discs of young apothecia frequently pruinose ……. ***hagenii***
Thalline margin dull, dark grey, not contrasting in tone with the disc and forming a low frame around it. Discs never pruinose…… ***persimilis***

Even when using this enhanced couplet it may only be reliable when observing typical and well-developed specimens. Before the species become familiar it is difficult to know which ones are typical!

I have scrutinized the descriptions of the two species as stated in Edwards *et al*. (2009) page 487 and 493. It is inevitable that such descriptions, drawn from various

sources, do not always include the same character information for each species. There is a danger in over-analysing such descriptions as I will illustrate with a few examples.

The "grey or black hypothallus" mentioned for *L. persimilis* is frequently observed beneath thin portions of the thallus. This hypothallus consists of a very thin mat of pigmented hyphae, bluish-grey in colour. Sometimes similar pigmented hyphae are found beneath the thallus of *L. hagenii* too. The apothecia of *L. hagenii* are stated to be 0.3-0.6 (-0.9) mm diameter compared to 0.2-0.5 mm for *L. persimilis*. It is true that the fruits of the former grow bigger in well-developed colonies but apothecial diameter is not always reliable when comparing immature colonies and these colonists are often encountered in their early stages. I had hoped that the paraphyses might provide a means of separating the species. The paraphyses of *L. hagenii* are stated to be "c. 2 µm wide, sparsely branched, apices capitate, the terminal cell brown and swollen to about 3 µm wide". For *L. persimilis*: "paraphyses c. 1µm, with swollen apices to 2-4 µm wide". In practice, for those of us who work at home with mediocre equipment, it would be difficult to use these subtle differences to reliably identify the species. The difference in size of the ascospore sizes, even if it is as marked as stated in Edwards *et al*. (2009), does not allow simple discrimination of the species.

At this point it is worth making reference to the revision of the *L. dispersa* group by Śliwa (2007) who gives measurements for the ascospores which are almost completely overlapping. As regards the paraphyses, Śliwa does not give measurements but gives the following descriptions:

L. hagenii – Paraphyses simple, thick, slightly expanded or capitate, brown pigmented at tips, usually free in K.

L. persimilis – Paraphyses slender, simple or slightly branched, slightly expanded, brown pigmented, ± coherent in K.

The paraphyses of *L. persimilis* certainly tend to have a more slender and branched appearance but I would not yet trust my judgement based on this feature alone.

Śliwa's discussion of *L. persimilis* states that it is: "likely to be mistaken with slightly pruinose or epruinose forms of *L. hagenii*. However, the apothecia of *L. hagenii* are scattered, occurring singly, not clustered in groups of 2-3 as most often the apothecia of *L. persimilis* are. The apothecial margin is always white and lecanorine in *L. hagenii*, whereas it may be brownish and biatorine in *L. persimilis*." Note that the last sentence states that the margins of *L. persimilis* may be "brownish and biatorine". However the margins are usually dull grey and may sometimes be rather pale.

My observations suggest that the most easily observed microscopic features which seem to distinguish this pair of species are not mentioned in the cited literature. The thalline margin of *L. hagenii* tends to form a rim-like, low wall around the disc. In section the margin of *L. hagenii* usually stands up above the level of the disc and the algal layer within turns upwards near the edge to become rather erect. The margins of *L. persimilis* tend to be lower and more spreading, in section the slightly convex disc often rises above the margin whose algal layer is flatter and is not curled up conspicuously at the edges. If the algal layer of the thalline margin is followed outwards to its outer limit and the zone between the termination of the algal

layer and the outer edge of the margin is examined, *L. hagenii* is seen to have a dense cluster of minute crystals which obscures the hyphal structure. The outer edge of *L. persimilis* margins (almost entirely) lack crystals and has conspicuous hyphae with swollen ends and bluish-grey pigmentation. The minute crystals of *L. hagenii* give a bright white patch when a section is observed under the stereo microscope while the pigmented hyphae of *L. persimilis* may give an inky stain to the upper edge of the margin.

Laundon (2003) gives useful taxonomic and nomenclatural information about *L. hagenii* and discusses its separation from *L. dispersa*, stating that the former "differs from *L. dispersa* in having thin, neat, regular apothecial margins surrounding small brown discs; it grows on bark and wood. Unfortunately intermediate specimens are frequent; a fact which led Poelt & Leuckert to regard it as a corticolous form of *L. dispersa*." Śliwa (2007) reports that the solubility of the epithecial granules is an important taxonomic character and those of *L. hagenii* are soluble in K whereas those of *L. dispersa* are insoluble in K (best observed in polarized light).

Although *L. persimilis* is overlooked by many lichenologists, those that do record it may slightly over-record its presence. Some records are likely to be of young colonies of *Lecania naegelii* while others may be in error for immature or particularly small forms of *L. hagenii*. Well developed specimens of each species might be recognised in the field once the species are familiar but there will always be many specimens for which microscopic examination is required. *L. hagenii* is somewhat variable and small forms lacking pruina and with poorly formed or abraded thalline margins can resemble *L. persimilis*. Those specimens of *L. persimilis* which have paler margins than usual resemble *L. hagenii*.

References

Edwards, B., Aptroot, A., Hawksworth, D.L. & James, P.W. (2009) *Lecanora*. In *The Lichens of Great Britain and Ireland* (C.W. Smith, A. Aptroot, B.J. Coppins, A. Fletcher, O.L. Gilbert, P.W. James & P.A. Wolseley, eds): pp. 465-502. British Lichen Society.

Laundon, J.R. (2003). The status of *Lecanora zosterae* in the British Isles. *Lichenologist* **35**: 97-102.

Śliwa, L. (2007). A revision of the *Lecanora dispersa* complex in North America. *Polish Botanical Journal* **52**: 1-70.

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Fig. 1. *Lecanora hagenii*, well developed material on *Populus* twig, Bedfordshire (*Powell* 1370), showing thin, whitish margins, pruinose discs of young apothecia and black hypothallus visible at edge of thallus (0.5mm diameter red pencil lead for scale).

Fig. 2. *Lecanora persimilis*, on *Fraxinus* twig, apothecia growing in typical small clusters and showing dull grey, scarcely raised margins.

Fig. 3. *Lecanora persimilis*, on *Fraxinus* twig, Huntingdonshire (*Powell* 2273) showing the generally low, dull coloured margins (but note that the young margins may be white and "thalline". Also conspicuous is the dark hypothallus. Two apothecia of *L. dispersa* are present in upper part of the image while *L. hagenii* grows in the shaded right hand edge of the twig.

Literature pertaining to British lichens - 54

Lichenologist **45**(6) was published on 31 October 2013, **46**(1) on 21 January 2014, and **46**(2) on 11 February 2014.

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.

ALSTRUP, V. & OLECH, M. 1996. Lichenicolous fungi from the Polish Tatra Mountains. *Fragmenta Floristica et Geobotanica* **41**: 747–752. Includes the original description of *Arthonia lecanoricola* [orig as "*lecanoriicola*"] Alstrup & Olech (1996), which inhabits the hymenium of *Lecanora populicola* and is recently reported from Scotland [See 'New, Rare and Interesting' in this *Bulletin*].

BALOCH, E, LUMBSCH, H.T., LÜCKING, R. & WEDIN, M. 2013. New combinations and names in *Gyalecta* for former *Belonia* and *Pachyphiale* (Ascomycota, *Ostropales*) species. *Lichenologist* **45**: 723–727. *Belonia* and *Pachyphiale* have been shown to be nested within the genus *Gyalecta*. This revised treatment required some new combinations: *Gyalecta calcicola* (Walt. Watson) Baloch & Lücking (syn. *Belonia calcicola*); *G. incarnata* (Th. Fr. & Graewe) Baloch & Lücking (syn. *Belonia incarnata*); *G, nidarosiensis* (Kindt) Baloch & Lücking (syn. *Belonia nidarosiensis*); *G. russula* (Körb. ex Nyl.) Baloch, Lumbsch & Wedin (syn. *Belonia russula*). [This treatment has not yet been adopted for the British Isles, but all the relevant names within *Gyalecta* can be found in the Taxon Dictionary on the BLS web-site.]

BERGER, F. & BRACKEL, W. 2011. Eine weitere Art von *Phaeosporobolus* auf *Lecanora chlarotera*. *Herzogia* **24**: 351–356. Original description of *Phaeosporobolus chlaroterae* F. Berger & Brackel, now treated as *Lichenostigma chlaroterae* (F. Berger & Brackel) Ertz & Diederich. [See Ertz *et al*. below].

BENDIKSBY, M. & TIMDAL, E. 2013. Molecular phylogenetics and taxonomy of *Hypocenomyce* sensu lato (Ascomycota: Lecanoromycetes): Extreme polyphyly and morphological/ecological convergence. *Taxon* **62**: 940–956. Phylogenetic studies, supported by morphological traits, give rise to the splitting of *Hypocenomyce* into four genera, three of which occur in the British Isles: *Carbonicola* Bendiksby & Timdal, with C. *anthracophila* (Nyl.) Bendiksby & Timdal (syn. *Hypocenomyce anthracophila*); *Xylopsora* Bendiksby & Timdal, with *X. caradocensis* (Nyl.) Bendiksby & Timdal (syn. *H. caradocensis*), and *X. friesii* (Ach.) Bendiksby & Timdal (syn. *H. friesii*). The genus *Pycnora*, previously split off from *Hypocenomyce*, is further split, into *Pycnora* s. str., with *P. praestabilis*, *P. sorophora* and *P. xanthococca*, and *Toensbergia* Bendiksby &

Timdal, with *T. leucococca* (R. Sant.) Bendiksby & Timdal. *Hypocenomyce scalaris* is now the sole representative of the genus in the British Isles.

BLATCHLEY, I. 2013. Lichen report 2013. *Annual Report of the Orpington Field Club* **54**: 7–11. Report of finds and observations in the Orpington area of West Kent in SE England, mainly concerning churchyard surveys. Additional records include a the third British record of *Micarea globulosella* from a gate near Lenham. and more notes on the chestnuts posts and rails at Hever [see Lichen Report for Kent by Palmer below].

DIEDERICH, P. 2011. Description of *Abrothallus parmotrematis* sp. nov. (lichenicolous Ascomycota). *Bulletin de la Société des Naturalistes Luxembourgeois* **112**: 25–34. Formal description of *Abrothallus parmotrematis* Diederich (2011), a name used for several years as "in ed.", and sometimes considered conspecific with *A. microspermus*.

ERIKSSON, O. & SANTESSON, R. 1986. *Lasiosphaeriopsis stereocaulicola*. *Mycotaxon* **24**: 569–580. Gives description and illustrations of *Lasiosphaeriopsis stereocaulicola* (Th. Fr. ex Linds.) O.E. Erikss. & R. Sant. (1986), recently reported from Scotland [See 'New, Rare and Interesting' in this *Bulletin*].

ERTZ, D., LAWREY, J.D., COMMON, R.S & DIEDERICH, P. 2013. Molecular data resolve a new order of *Arthoniomycetes* sister to the primarily lichenized *Arthoniales* and composed of black yeasts, lichenicolous and rock-inhabiting species. *Fungal Diversity* [published on line 03 July 2013: DOI 10.1007/s13225-013-0250-9]. The type species (*L. maureri*) and its nearest relatives of the genus *Lichenostigma* are placed in the family *Phaeococcomycetaceae* within the new order *Lichenostigmatales*. "The new order is characterized by cells multiplying by budding, either representing black yeasts, or species in which conidiomata and ascomata are entirely made of an organised agglomeration of spherical yeast-like cells. This way of life is not only very different from all other Arthoniomycetes that exist only in the mycelial stage, but ascomata and conidiomata representing a dense and organised agglomeration of yeast cells might be unique amongst fungi. A further difference with the *Arthoniales* is the absence of paraphysoids." The conidial fungus, *Phaeosporobolus usneae* is shown to be the anamorph of *Lichenostigma maureri*. *Phaeosporobolus alpinus* and *P. chlaroterae* are shown to belong to *Lichenostigma*, and the combinations *Lichenostigma alpinum* (R. Sant., Alstrup & D. Hawksw.) Ertz & Diederich and *L. chlaroterae* (F. Berger & Brackel) Ertz & Diederich are made. Many other species of *Lichenostigma* (especially those of the subgenus *Lichenogramma*) are found to belong to, or closely related to, *Lichenothelia* in the Dothidiomycetes. *Lichenostigma rugosum* is transferred to *Lichenothelia* as *L. rugosa* (G. Thor) Ertz & Diederich. It is suggested that there may be some cryptic species involved in the species with a *Phaeosporobolus* anamorph.

ETAYO, J. & DIEDERICH, P. 2009. *Arthonia protoparmeliopseos*, a new lichenicolous fungus on *Protoparmeliopsis muralis* from Spain and Luxembourg. *Bulletin de la Société des Naturalistes Luxembourgeois* **110**: 93–96. The original description and illustrations of *Arthonia protoparmeliopseos* Etayo & Diederich (2009), recently reported from Scotland [See 'New, Rare and Interesting' in this *Bulletin*].

FRYDAY, A.M., PRINTZEN, C. & EKMAN, S. 2013. *Bryobilimbia*, a new generic name for *Lecidea hypnorum* and closely related species. *Lichenologist*: **46**: 25–37. The new genus includes the following British taxa: *Bryobilimbia ahlesii* (Körb.) Fryday, Printzen & S. Ekman (syn. *Lecidea ahlesii*); *B. hypnorum* (Lib.) Fryday, Printzen & S. Ekman; and *B. sanguineoatra* (Wulfen) Fryday, Printzen & S. Ekman. The basionym of last name, *Lichen sanguineoater* Wulfen, has been neotypified in such a way to maintain current usage of the specific epithet.

GRANT, D. 2014. In "Reports of outdoor meetings 2013". *Bull. Kent Field Club* **59**: 8–38: Nashenden Down (p. 25).

KNUDSEN, K., KOCOURKOVÁ, J. & WESTBERG, M. 2013. The identity of *Sarcogyne hypophaea* (Nyl.) Arnold. *Opuscula philolichenum* **12**: 23–26. The correct name of the lichen generally called *Sarcogyne privigna* is shown to be *S. hypophaea* (Nyl.) Arnold (1870), based on *Lecanora hypophaea* Nyl. (1870) from a collection by Crombie from Braemar. The type material of *Lecidea privigna* Ach. (1803) belongs to *Polysporina simplex* (Taylor) Vězda.

LEYSHORN, O. 2014. In "Reports of outdoor meetings 2013". *Bull. Kent Field Club* **59**: 8–38: Seasalter (p. 21).

OTÁLORA, M.A.G., JØRGENSEN, P.M. & WEDIN, M. 2013. A revised classification of the jelly lichens, *Collemataceae*. *Fungal Diversity* [published on line 12 October 2013: DOI 10.1007/s13225-013-0266-1]. Phylogenetic studies lead to a revised circumscription of genera within the *Collemataceae*. Six old generic names are resurrected, and two new genera are described, although only one of them is British. Firstly the new genus is:

Callome Otálora & Wedin, with *Callome multipartita* (Sm.) Otálora, P.M. Jørg. & Wedin (syn. *Collema multipartitum*).

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

Blennothallia Trevis. (1853) (*Collema crispum* group), with *Blennothallia crispa* Otálora, P.M. Jørg. & Wedin (syn. *Collema crispum*).

Enchylium (Ach.) Gray (1821) (*Collema tenax* group), with *Enchylium bachmanianum* (Fink) Otálora, P.M. Jørg. & Wedin (*Collema bachmanianum*), *E. confertum* (Hepp ex Arnold) Otálora, P.M. Jørg. & Wedin (syn. *Collema confertum*), *E. conglomeratum* (Hoffm.) Otálora, P.M. Jørg. & Wedin (syn. *Collema conglomeratum*), *E. limosum* (Ach.) Otálora, P.M. Jørg. & Wedin (syn. *Collema*

limosum), *E. polycarpon* (Hoffm.) Otálora, P.M. Jørg. & Wedin (syn. *Collema polycarpon*) and *E. tenax* (Sw.) Gray (1821) (syn. *Collema tenax*).

Lathagrium (Ach.) Gray (1821) (*Collema cristatum* group), with *Lathagrium auriforme* (With.) Otálora, P.M. Jørg. & Wedin (syn. *Collema auriforme*), *L. cristatum* (L.) Otálora, P.M. Jørg. & Wedin (syn. *Collema cristatum*), *L. dichotomum* (With.) Otálora, P.M. Jørg. & Wedin (syn. *Collema dichotomum*), *L. fuscovirens* (With.) Otálora, P.M. Jørg. & Wedin (syn. *Collema fuscovirens*), *L. latzelii* (Zahlbr.) Otálora, P.M. Jørg. & Wedin (syn. Collema latzelii) and *L. undulatum* (Laur. ex Flot.) Otálora, P.M. Jørg. & Wedin (syn. *Collema undulatum*).

Pseudoleptogium Müll. Arg. (1885) for the single species: *Pseudoleptogium diffractum* (Kremp. ex Körb.) Müll. Arg. (1885).

Rostania Trevis. (1880) (*Collema occultatum* group), with *Rostania occultata* (Bagl.) Otálora, P.M. Jørg. & Wedin (syn. *Collema occultatum*).

Scytinium (small *Leptogium* species), with *Scytinium biatorinum* (Nyl.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium biatorinum*), *S. callopismum* (A. Massal.) Otálora, P.M. Jørg. & Wedin (syn. *Collema callopismum*), *S. fragile* (Taylor) Otálora, P.M. Jørg. & Wedin (syn. *Collema fragile*), *S. fragrans* (Sm.) Otálora, P.M. Jørg. & Wedin (syn. *Collema fragrans*), *S. gelatinosum* (With.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium gelatinosum*), *S. imbricatum* (P.M. Jørg.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium imbricatum*), *S. intermedium* (Arnold) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium intermedium*), *S. lichenoides* (L.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium lichenoides*), *S. magnussonii* (Degel. & P.M. Jørg.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium magnussonii*), *S. massiliense* (Nyl.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium massiliense*), *S. palmatum* (Huds.) Gray (1821) (syn. *Leptogium palmatum*), *S. parvum* (Degel.) Otálora, P.M. Jørg. & Wedin (syn. *Collema parvum*), *S. plicatile* (Ach.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium plicatile*), *S. schraderi* (Bernh.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium schraderi*), *S. subtile* (Schrad.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium schraderi*), *S. subtorulosum* (Stizenb.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium subtorulosum*), *S. tenuissimum* (Dicks.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium tenuissimum*), *S. teretiusculum* (Wallr.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium teretiusculum*) and *S. turgidum* (Ach.) Otálora, P.M. Jørg. & Wedin (syn. *Leptogium turgidum*).

British species retained in *Collema* s. str. are: *C. flaccidum*, *C. furfuraceum*, *C. glebulentum, C. nigrescens, C. subflaccidum* and *C. subnigrescens*, [NB. *Collema fasciculare* has been previously referred to *Arctomia*, although another generic placement for this species is pending]. Those retained in *Leptogium* s. str. are *L. brebissonii, L. britannicum, L. burgessii, L. cochleatum, L. coralloideum, L. cyanescens, L. hibernicum, L. hildenbrandii, L. juressianum* and *L. saturninum*. [*Leptogium pulvinatum* is not treated in the paper - presumably an oversight.]

[As with the recent carve-up of *Caloplaca* and *Xanthoria*, this is a lot to take on board, and "the dust needs to settle"! So, changes will not be immediately made to the British checklist, although the 'new' names are included as synonyms in the on-line

Taxon Dictionary on the BLS website. Also the authors of this paper did not address some, often used infraspecific taxa. Doubtless some of these are of little merit, but others, e.g. *Collema cristatum* var. *marginale* and *C. tenax* var. *ceranoides* do seem worthy of some recognition. If such taxa are to be retained then new combinations will need to be published.]

PALMER, K. 2014. In "Reports of outdoor meetings 2013". *Bull. Kent Field Club* **59**: 8–38: Stowting (p. 8); Cranbrook Church, Biddenden Church (pp. 33–34).

PALMER, K. 2014. Lichen report 2013. *Bull. Kent Field Club* **59**: 48–50. A narrative account of the many new or interesting finds made in Kent in 2013. These include a second British record for *Diploschistes actinostomus* from Hever churchyard. At Hever Castle, away from the severe influence of agri-pollution, chestnut fence and rails were home to species such as *Lecanora farinaria*, *Parmeliopsis hyperopta*, *Protoparmelia oleagina* and *Thelomma ocellatum*.

QUELCH, P. 2012. *Historic Woods and Trees on Bute*. Rothesay: Bute Natural History Society. Pp 98. ISBN 978-0-905812-24-3. A copiously illustrated overview of the woodlands and trees on the island of Bute, including some woodland archaeology case studies. Lichens are considered throughout, and the Appendix II is a three-page account of the woodland lichens in the NW part of the island, including a list of 66 taxa recorded during a 'lichenology' day lead by Andy Acton in 2010.

ROONEY, L. 2014. In "Reports of outdoor meetings 2013". *Bull. Kent Field Club* **59**: 8–38: Seasalter (pp. 24–25).

SEAWARD, M.R.D. 2012. Mosses, liverworts and lichens. *Transactions of the Lincolnshire Naturalist Union* **28**: 43–45. Recent new or interesting records for the county (Lincolnshire), including three new county records. A marked decline is reported for the population of *Ramalina capitata* at its key site in the county, down to a single thallus. Its demise may be due to a combination of changes in churchyard management and over-collecting.

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New, rare and interesting lichens

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

New to the British Isles

Arthonia lecanoricola Alstrup & Olech (1996): in the hymenium of *Lecanora populicola*: (i) Invertromie Wood, VC 96, East Inverness-shire, GR 27(NN)/78-99-, May 2001, Coppins 19868 (**E**); (ii) same locality, GR 28(NH)/778.000, January 2014, Coppins 24343 (**E**); (iii) on aspen stand by River Spey, Street of Kincardine, VC 96, East Inverness-shire, GR 28(NH)/94-18-, May 2003, Coppins (20878) & Ellis (E); (iv) Kinrara, VC 96, East Inverness-shire, GR 28(NH)/86-08-, July 2003, Coppins (21052) & Ellis (**E**). Has (1–)2(–3)-septate ascospores, 11–13 × 4–4.5(–5) µm. **BLS No. 2630.** *B.J. Coppins & C.J. Ellis*

Arthonia protoparmeliopseos Etayo & Diederich (2009): on apothecia and thallus of *Lecanora* (*Protoparmeliopsis*) *muralis*, Kae Hueghs, Garleton Hills, VC 82, East Lothian, GR 36(NT)/51-76-, alt *c.* 100 m, November 2010, Coppins 23395 (**E**). Previously reported (*Bulletin* **108**: 56) as *A. varians*, from which it differs in its different host (not *Lecanora rupicola*) and shorter ascospores [10–14.5(–15) × (3.5–)4–5.5(–6.5) µm versus 13–18 × 4–7 µm]. A full description is given by Etayo & Diederich (2009). See entry in 'Literature Pertaining' in this *Bulletin.* **BLS No. 2631.**
B.J. Coppins & A.M. Fryday

Lichenostigma chlaroterae (F. Berger & Brackel) Ertz & Diederich (2013): as *Phaeosporobolus* anamorph on thallus of *Lecanora chlarotera*: (i) Coille na Glas-Leitire, Beinn Eighe NNR, VC 105, West Ross GR 18(NG)/99-65-, April 2001, Coppins 19727 (**E**); (ii) east of Dallauruach, Abriachan, VC 96, East Inverness-shire, GR 28(NH)/553.353, Coppins 24339 (**E**). Differs from *L. alpinum* (*Phaeosporobolus alpinus*) and *L. maureri* (*Phaeosporobolus usneae*) in its smaller conidia made up of fewer cells as seen in optical section [6–10 × 5.5–9 µm with 4–5(–8) cells versus 10–15 × 8.5–11 µm with 6–10 cells and 14–23 × 10–16 µm with 10–21 cells respectively]. Other British records of *P. alpinus* on corticolous *Lecanora* spp. probably belong to *L. chlaroterae*. Fuller descriptions and illustrations are given in Berger & Brackel (2011) and Ertz *et al*. (2013). See entries in 'Literature Pertaining' in this *Bulletin.* **BLS No. 2632.** *B.J. Coppins*

Lasiosphaeriopsis stereocaulicola (Th. Fr. ex Linds.) O.E. Erikss. & R. Sant. (1986): on *Stereocaulon* sp., Quiraing, Isle of Skye, VC 104, North Ebudes, GR 18(NG)/44-68-, 24 May 1987. Herb. Diederich 8201. The black perithecia are aggregated into 'blackberry-like' clusters on the pseudopodetia of the host. The asci are 4-spored, and the dark brown ascospores, *c*. 30–35 (–53) × 10–11(–13) µm, are (2–)4–5(–9) trans-septate, although some septa may be oblique. For a fuller description and illustrations see Eriksson & Santesson in *Mycotaxon* **25** (2): 569–580. **BLS No. 2628.** *P. Diederich & B.J. Coppins*

Protothelenella santessonii H. Mayrhofer (1987): on terricolous *Cladonia* sp., Loch Coir a' Ghrunnda, Sgùrr Alasdair, Isle of Skye, VC 104, North Ebudes, GR 18(NG)/45-20-, 28 May 1987, leg. Brian W. Fox s.n. (Herb. Diederich). Determined by Paul Diederich. This parasitic species grows on the squamules of *Cladonia* species, and has black, semi-immersed ovoid to subpyriform perithecia. The subcylindrical asci are 8-spored, with colourless, submuriform ascospores, 18–24 × 10–12 µm. **BLS No. 2629.** *P. Diederich & B.J. Coppins*

Tremella ramalinae Diederich (1996): on thallus of *Ramalina fraxinea* on bark of dead *Ulmus*, bordered by arable fields, roadside by Kincorth House, Forres, VC 95, Moray, GR 38(NJ)/0130.6132, alt 5 m, November 2012, (**E**). Determined by B.J. Coppins. Many further collections have subsequently been made in the Forres and Nairn area. Forming conspicuous pinkish basidiomata, which are constricted at the base and eventually become tuberculate. The basidia have two transverse septa, and the apical cell later develops a single longitudinal septum. *Tremella tuckerae*, which also grows on *Ramalina* spp. has basidia with a single longitudinal or oblique septum and no transverse septa. First recorded from Sweden and Mexico, and since from Estonia, France and Poland (Diederich pers. comm.). For full description and illustrations see Diederich in *Bibliotheca Lichenologica* **61**: 152–154 (1996). **BLS No. 2615.** *H. Paul & B J. Coppins*

Other Records

Anaptychia ciliaris: a single small tuft, *ca* 2 x 2 cm, on trunk of fastigiate *Quercus* planted 2009 in grounds of Welsh Government Office, Rhodfa Padarn, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/592.809, alt *c.* 5 m, December 2013. Field record. Digital photographs taken. Uncertainty surrounds the possible extra-British origin of the planting stock, but whatever the source a *prima facie* case exists for *A.ciliaris* having come in on the tree. Now the sole VC 46 site with the apparent loss of *A.ciliaris* from Parc Pont-faen SSSI. *S.P. Chambers*

Anisomeridium biforme: extensive at base of plantation *Fraxinus* trunk, Littless Wood, VC 31, Huntingdonshire, GR 52(TL)/12-67-, December 2013. Herb. Powell 3340. New to the Vice-county. *M. Powell*

Arthonia anombrophila: on old *Crataegus* in sheltered parkland, Dinefwr Park, VC 44, Carmarthenshire, GR 22(SN)/6136.2219, September, 2013. New to the Vice-county. *N.A. Sanderson*

Arthonia ilicinella: on old *Ilex* on creek edge in lichen rich old *Quercus petraea – Fagus* woodland, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1308.5680, December 2013. An oceanic species of western Ireland and Scotland, which is new to England. *N. A. Sanderson*

Arthonia invadens: parasitic on *Schismatomma quercicola* on *Quercus petraea* on five trees in small sampled area of mature *Quercus petraea – Fagus* woodland, potentially much more frequent, Ethy Park, VC 2, East Cornwall, between GR 20(SX)/130.572 and 20(SX)/131.572, December 2013. A new site, and potentially a very large population, for this Section 41 (BAP) species. *N.A. Sanderson*

Bacidia incompta: small colony in knot hole and large one in wound track of two *Aesculus hippocastanum* trees in open parkland, Dinefwr Park, VC 44, Carmarthenshire GR 22(SN)/6076.2277 & 22(SN)/6173.2198, September, 2013. This appears to be the first non-*Ulmus* colonies of this Welsh Critically Endangered Section 44 (BAP) species found in recent years in Wales. *N.A. Sanderson*

Bacidia incompta: on wound tracks of two trees, an *Aesculus* and an *Acer pseudoplatanus* in a landscaped park, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1344.5723, December 2013. A new site for this Section 41 (BAP) species. *N.A. Sanderson*

Biatoridium monasteriense: on two mature *Ulmus glabra*, Clais an Dunain woodland, Balnaclash, Grantown-on-Spey, VC 95, Moray, GR 38(NJ)/05334.31692, alt 230–260 m, March 2013, Coppins 24276 (E). *B.J. Coppins & S. Taylor*

Calicium lenticulare: on exposed lignum at base of an old Sessile Oak, in oceanic pasture woodland, Low Stile Wood, Seatoller Wood, Sourmilk Gill and Seathwaite Graphite Mine SSSI, VC70, Cumbria, GR35(NY)/2398.1311, alt. 230m, March, 2014. New to the county.

N.A. Sanderson, A.M. Cross, BLS Cumbrian *Lobarion* Meeting

Caloplaca albolutescens: frequent thalli, some weakly fertile, on flat concrete slabs of wall top, Victoria Dock, Menai Strait, Caernarfon, VC 49, Caernarfonshire, GR 23(SH)/477.630, alt *c.* 5 m, March 2014. Field record. New to the Vice-county.

S.P. Chambers & H.F. Clow

Caloplaca coralliza: on *Quercus* in parkland, in northwest corner of Mells Park, VC 6, North Somerset, GR 31(ST)/ 71.48, March 1972. Herb. F. Rose, Hampshire Museum Service Lichen Herbarium, 1972.46/.65. Originally identified by F. Rose as *Caloplaca herbidella* but not entered into national databases at the time. The specimen is sterile, with a dense crust of orange isidia along with red pycnidia. It represents the fourth record from England and Wales for this species and a new county record. *N.A. Sanderson*

Caloplaca dichroa: sterile thalli, growing with *Caloplaca oasis* on surface of *Verrucaria nigrescens* on Carboniferous Limestone blocks near Avon Way, Shoeburyness, VC 18, South Essex, GR 51(TQ)/930.848, April 2014. Herb. P.M. Earland-Bennett. An unusual substrate for this species. *P.M. Earland-Bennett*

Caloplaca herbidella *s. str.*: two thalli on trunk of old *Fraxinus* in pasture woodland of scattered old *Fraxinus* and *Quercus*, including patches of maturing *Fraxinus*, thickets of young *Crataegus* and *Ilex*, in narrow band of woodland by Highland Water, near Lucas Castle, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2462.1022, December 2012. One of only 2 trees refound in England with this Section 41 (BAP) species in a recent survey. *N.A. Sanderson*

Caloplaca herbidella *s. str.*: sterile thalli on trunk of sunny old *Quercus* x *rosacea* in large open glade in former pasture woodland, which has largely been replanted with dense *Quercus* and conifer plantations, Savernake Forest, VC 7 North Wiltshire, GR 41(SU)/2177.6676, May 2013. This appears to be the only surviving colony from what was once the largest population of *Caloplaca herbidella* s. lat. in Britain, and no *Caloplaca coralliza* appears to have survived. Increasing shade from Oak plantations planted close to the old trees appears to be the main cause of the large scale loss of this Section 41 (BAP) species at this site. *N.A. Sanderson*

Caloplaca luteoalba*:* on bark of *Acer pseudoplatanus* (girth 2.63 m); forming a 2 m high streak on the southwest side of the trunk, by B710, Crosslee, Bowland, VC 79, Selkirk, 36(NT)/45498.39515, alt 190 m, May 2013, Coppins 24302 (**E**).

B.J. Coppins

Catillaria usneicola*:* on *Usnea cornuta*, Barnluasgan Wood, Knapdale Woods SSSI, VC 101, Kintyre, GR 16(NR)/79-91-, alt *c.* 80 m, September 2013, Coppins 24308 (**E**). New to Kintyre and fourth British record for this species. *B.J. Coppins*

Chaenotheca chrysocephala: on dry bark on old *Quercus petraea* by river, Aira Force, Gowbarrow, VC 70, Cumbria, GR 35(NY)/3995.2064, alt 200 m, March, 2014. Second record from Cumbria and first from the Lake District, for this species.

N.A. Sanderson, BLS Cumbrian *Lobarion* Meeting

Chaenothecopsis pusilla: on lignum on two *Quercus*, one a moribund live tree and the second a fallen tree, in the west of the Deer Park, Dinefwr Park, VC 44,

Carmarthenshire GR 22(SN)/6076.2253 & 22(SN)/6088.2278, September, 2013. New to the Vice-county and Wales, *N.A. Sanderson*

Chaenothecopsis pusilla: on dry vertical lignum on fallen old *Quercus*, in landscaped park, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1362.5744, December 2013. New to the Vice-county. *N.A. Sanderson*

Cladonia cyathomorpha: abundant on large rotting fallen *Fagus* trunk in old growth *Fagus – Ilex* pasture woodland, within Berry Wood, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2154.0532, January 2014. First modern record for southern England. Subsequently found on other fallen *Fagus* trunks and the base of an old live *Fagus* in other old growth pasture woodlands in the New Forest, and should be looked for in other little disturbed woodlands away from its previously recorded upland range. Distinct from *Cladonia pyxidata* in having white veining on the underside of the large squamules, with the veining often orange at base, and in the podetia being corticate below and on the outer sides of the cup.

N.A. Sanderson & A.M. Cross

Clauzadea metzleri: on damp fragment of Cotswold Oolitic limestone, fallen and lying loose on a narrow ledge on capstone of ornamental gatepost, at cottage entrance, east of Hafod walled garden, VC 46, Cardiganshire, GR 22(SN)/757.729, alt *c.* 145 m, September 2013. Herb. SPC. The location is many miles from any natural limestone, *C. metzleri* possibly having travelled as a 'hitchhiking' ascospore on building stone imported to Hafod in the late 1700s. *S.P. Chambers & R.G. Woods*

Cyphelium notarisii: several large fertile patches, on south side of low wooden fence rail, beside road, Sherwood Way, Southchurch, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/902.869, April 2014. Herb. P.M. Earland-Bennett.

P. M. Earland-Bennett

Enterographa sorediata: on dry bark on single old *Quercus* in woodland, Castle Wood, Dinefwr Park, VC 44, Carmarthenshire GR 22(SN)/6153.2185, September, 2013. New to the Vice –county and second record from Wales for this Near Threatened BAP species. *N.A. Sanderson*

Enterographa sorediata: on the dry side of old *Quercus petraea* on creek edge, lichen rich old *Quercus petraea – Fagus* woodland, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1309.5681, December 2103. A new site for this Section 41 (BAP) species.

N.A. Sanderson

Epicladonia sandstedei: parasitic on *Cladonia coniocraea*, on lignum on fallen *Quercus* limb in relic pasture woodland, Savernake Forest, VC7 North Wiltshire, GR41(SU)/2295.6803, November 2013. New to the Vice-county. *N.A. Sanderson*

Gyalideopsis crenulata: locally frequent on flat fragments of mine spoil and on blocks of quartz and iron-rich pieces, Dylife Mine, VC 47, Montgomeryshire, GR 22(SN)/862.939, alt 370 m, November 2013. Herb. SPC. New to the Vice-county.

S.P. Chambers & A. Hotchkiss

Halecania viridescens: on wooden bench seat, in churchyard, Kempston VC 30, Bedfordshire, GR 52(TL)/015.480, September 2013. Herb. Powell 3299. The hard,

smooth, untreated lignum of such seats is proving to be a suitable substratum for this species with a recent scatter of such records across Eastern England. New to the Vice-county. *M. Powell, A. Harris & P. Shipway*

Halecania viridescens: fertile on twig of *Platanus* sp. in extension churchyard, Northaw, VC 20, Hertfordshire, GR 52(TL)/279.023, October 2013. Herb. Powell 3306. *A. Harris & M. Powell*

Halecania viridescens: on plantation *Fraxinus* trunk, Littless Wood, VC 31, Huntingdonshire, GR 52(TL)/13-67-, December 2013. Herb. Powell 3341. New to the Vice-county. *M. Powell* and Cambridge Lichen Group

Halecania viridescens: plentiful on back of hardwood bench seat, Victoria Avenue, Prittlewell, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/874.870, April 2014. Herb. P.M. Earland-Bennett. Determined by M. Powell. New to East Anglia.
P. M. Earland-Bennett

Hypotrachyna afrorevoluta: fertile, several thalli on a dead branch in scrub, Flatford, southeast of the mill, VC 25, East Suffolk, GR 62(TM)/0787.3302, February 2014. Herbs. J. Skinner (**STD**) and C.J.B. Hitch (A17). See photograph. *J. Skinner*

Fertile ***Hypotrachyna afrorevoluta*** on dead branch at Flatford, Suffolk. Photo J. Skinner.

Lecanactis latebrarum: on dry side of old *Quercus petraea* on creek edge, lichen rich old *Quercus petraea* – *Fagus* woodland, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1310.5678, December 2014. The lichen was being parasitised by a known,

but undescribed *Chaenothecopsis* species with simple spores, which parasitises *Trentepohlia* containing lichens on dry bark. New to the Vice-county. *N.A. Sanderson*

Lecania fructigena: on concrete block of sea wall, Two Tree Island, Leigh-on-Sea, VC 18, South Essex, GR 51(TQ)/821.848, March 2008. Herb. P.M. Earland-Bennett, Determined by P. P. G. van den Boom. New to the Vice-county. *P.M. Earland-Bennett*

Lecania fructigena: on wooden jetty piles at HWM, associated with Caloplaca marina, Southend Marine Activities Centre, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/898.847, October 2012. Herb. P. M. Earland-Bennett. Determined by B. J. Coppins and confirmed by P. P. G. van den Boom. *P.M. Earland-Bennett*

Lecania suavis: (i) on north wall of church (M.P.) and (ii) on outer wall of yard (B.B.), Stoodleigh, VC 4, North Devon, GR 21(SS)/922.188, January 2014. Herbs M. Putnam and B. Benfield. Material from site (i) determined by B.J. Coppins and confirmed by M. Powell. New to the county.

M. Putnam, B. Benfield and The Devon Lichen Group

Lecanora alboflavida: on ancient *Quercus* in pasture woodland in deer park, The Rookery, Dinefwr Park, VC 44, Carmarthenshire GR 22(SN)/ 6105.2262, September, 2013. New to the Vice-county and south Wales. *N.A. Sanderson*

Lecanora barkmaniana: fertile on *Fraxinus* branch, Barwick Wood, Sharnbrook, VC 30, Bedfordshire, GR 42(SP)/968.605, March 2014. Herb. Powell 3385. This species is now rather common on twigs and branches of various species of trees in the East Midlands. but is apparently very rarely fertile. *M. Powell*

Lecanora gisleriana: occasional on *L. handelii* and rare on *L. epanora*, on copper-mineralised spoil blocks of southwest-facing mine spoil heap, Dylife Mine, VC 47, Montgomeryshire, GR 22(SN)/857.939, alt 380 m, November 2013. Field record. New to the Vice-county. *S.P. Chambers & A. Hotchkiss*

Lecanora pruinosa. Growing on the south-facing window sill of church, Trunch VC 27, East Norfolk, GR 63(TG)/286.349, April 2014. Second record in the Vice-county for this uncommon species. *P.W. Lambley*

Leightoniomyces phillipsii: on thin young crust of *Thrombium epigaeum* on moist clayey soil of steep eroding stream bank face near southwest corner of Coed Wallog, VC 46, Cardiganshire, GR 22(SN)/594.857, alt 25 m, February 2014. Herb. SPC. Second Vice-county record for this species and possibly overlooked in this niche.

S.P. Chambers

Lichenochora aipoliae: on *Physcia aipolia* on *Populus tremula*, Invertromie Wood, Insh Marshes NNR, VC 96, East Invererness-shire, GR 28(NH)/777.000, alt 250 m, January 2014, Coppins 24352 (*E*). Presumably this species, but asci are 8- not 4-spored. *B.J. Coppins & S. Taylor*

Lichenochora obscuroides: on *Physcia leptalea* on *Populus tremula*, Invertromie Wood, Insh Marshes NNR, VC 96, East Invererness-shire, GR 28(NH)/778.000, alt 240 m, January 2014. Herb. Coppins 24345 (**E**). First British record for this species, from this host. *B.J. Coppins & S. Taylor*

Melaspilea amota: on single old *Quercus* in humid conditions, in sheltered pasture woodland in deer park, Bog Wood, Dinefwr Park, VC 44, Carmarthenshire GR 22(SN)/6105.2219, September, 2013. New to the Vice-county and south Wales.
N.A. Sanderson

Melaspilea ochrothalamia: on ancient *Quercus* in avenue, in a landscape park, Levens Park, VC69, Westmorland, GR34(SD)/5039.8574, May 2013. New to the Vice-county and second record for this species for Northern England. *N.A. Sanderson*

Micarea erratica: fertile thalli on top of wooden fence rail around electricity sub-station, Sutton Road, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/883.873, March 2014. Herb. P. M. Earland-Bennett. First lignicolous record for this species in Essex. *P.M. Earland-Bennett.*

Micarea hedlundii: on three north west facing sandrock outcrops in woodland, Foxhole Gill, Nymans (Cow Wood and Harry's Wood SSSI), VC 14 East Sussex GR 51(TQ)/ 275.298, October 2013. A new oceanic species for the diverse assemblage of oceanic lower plants found on the Wealden sandrocks and the first record of this dead wood specialist lichen from rock. *N.A. Sanderson*

Mycoglaena myricae: growing on *Myrica gale*. Penhallow Common VC 1 West Cornwall GR 10(SW)/8300.5499. April 2014. New to the Vice-county. *P.W. Lambley*

Normandina pulchella: on mossy *Fraxinus* trunk, Monk's Wood, VC 31, Huntingdonshire, GR 52(TL)/19-79-, February 2014. Field record. Yet another discovery of this species in The Midlands by Catherine Tregaskes. New to the Vice-county. *M. Powell* and Cambridge Lichen Group

Opegrapha fumosa: on single old *Quercus* in humid conditions, in sheltered pasture woodland in deer park, Bog Wood, Dinefwr Park, VC 44, Carmarthenshire, GR 22(SN)/6105.2219, September, 2013. New to the Vice-county and south Wales.
N.A. Sanderson

Opegrapha mougeotii: on mortar, north wall of church, Totternhoe, VC 30, Bedfordshire, GR 42(SP)/988.209, November 2013. Herb. Powell 3332. Discovered by P. Shipway. New to the Vice-county.
A. Harris, M. Powell, P. Shipway & C. Tregaskes

Paranectria affinis: on 'biofilm' , including sterile *Micarea prasina* agg., on trunk of *Betula*, Barnluasgan Wood, Knapdale Woods SSSI, VC 101, Kintyre, 16(NR)/79-91-alt. *c.* 50 m, September 2013, Coppins 24313 (**E**). Spores 3-septate, 16.5–21.5 x 5 µm (excluding apical cilia). Apparently the first modern British record. This species was originally described from Appin in Argyll in 1825, where it was found on *Ephebe lanata*. The BMS database has a 19th century record from grid square 44(SE)/5--1--, in southwest Yorkshire, but this needs conformation. *B.J. Coppins*

Parmotrema pseudoreticulatum: strong colony on cliff-top outcrop above rocky shore, west of Porth y Wylfa, Cemaes Bay, VC 52, Anglesey, GR 23(SH)/360.939, alt *c.* 5 m, November 2013. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Pertusaria coronata: an extensive colony on well lit old *Fagus* trunk by large glade, with *Pertusaria flavida*, in ancient *Fagus – Quercus – Ilex* pasture woodland, within

Bramshaw Wood, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2582.1682, April 2013. First record since the 1990s for a lichen that is rare in the lowlands. *N.A. Sanderson*

Physconia perisidiosa: solitary *c.* 2 cm diameter thallus in *Xanthorion* nitrophile assemblage with, *inter alia*, *Hyperphyscia adglutinata, Phaeophyscia orbicularis* and *Physcia adscendens*, on trunk of planted fastigiate *Quercus* in the grounds of Welsh Government Office, Rhodfa Padarn, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/592.809, alt *c.* 5 m, December 2013. Field record. Digital photograph taken. As for *Anaptychia ciliaris* and probably brought in on the tree. First certain Vice-county record for this species, owing to doubt attached to the 1992 voucher-less report from Parc Pont-faen SSSI. *S.P. Chambers & D. Martyn*

Polycoccum arnoldii: speckling the surface of *Diploschistes scruposus* on the vertical northeast side of gritstone boulder, Creigiau Cau, north of Teifi Pools, VC 46, Cardiganshire, GR 22(SN)/795.690, alt 480 m, June 2011. Confirmed by A. Orange. Herb. SPC. New to the Vice-county, but since recorded from five additional Vice-county sites. *S.P. Chambers*

Polycoccum squamarioides: on *Placopsis lambii* on metalliferous spoil, Dylife Mine, VC 47, Montgomeryshire, GR 22(SN)/863.939, alt 360 m, November 2013. Herb. SPC. New to the Vice-county. *S.P. Chambers & A. Hotchkiss*

Polycoccum trypethelioides: on *Stereocaulon condensatum* in metalliferous grass-heathland, Dylife Mine, VC 47, Montgomeryshire, GR 22(SN)/858.939, alt 380 m, November 2013. Herb. SPC. New to the Vice-county. *S.P. Chambers & A. Hotchkiss*

Porina coralloidea: on three old *Quercus*, in south west of Deer Park, Dinefwr Park, VC 44, Carmarthenshire GR 22(SN)/6070.2268, 22(SN)/6087.2238 & 22(SN)/6084.2235, September, 2013. New to the Vice-county and south Wales. *N.A. Sanderson*

Pronectria echinulata: on *Physcia aipolia* on *Populus tremula*, Invertromie Wood, Insh Marshes NNR, VC 96, East Inverness-shire, GR 27(NN)/7798.9971, alt 250 m, January 2014, Coppins 24349 (**E**). New to Speyside. *B.J. Coppins & S. Taylor*

Pronectria oligospora: on *Punctelia subrudecta* on horizontal *Quercus* branch at woodland edge, Yarner Wood NNR, GR 20(SX)/786.788, alt 120 m, May 2013, Coppins 24257 (**E**). New to Devon and second record of this species for Great Britain. *B.J. Coppins & A.M. Coppins*

Punctelia subrudecta: fertile on *Magnolia stellata,* Plymtree, VC 3, South Devon GR 31(ST)/053.023, January 2013. Herb. extant in garden. See photograph on next page. *B. Benfield*

Pyrenula coryli: on *Corylus* in woodland on west-facing slope, The Perch, Mendips, VC 6, North Somerset, GR 31(ST)/450.558, 150 m, May 2013, Coppins 24260 **(E**). First modern record for England, though it is known from archaeological samples from southern England. *B.J. Coppins*

Ramonia chrysophaea: on spongy damp base rich bark on old *Quercus petraea*, by road, in oceanic woodland, Great Wood, Borrowdale, VC 70, Cumberland, GR

35(NY)/2698.2103, alt 90 m, March, 2014. First record from Cumbria and first recent record from northern England for this Section 41 (BAP) species.

N.A. Sanderson, BLS Cumbrian *Lobarion* Meeting

Ramonia nigra: on well lit flushed lignum inside hollow *Fraxinus pollard*, in open oceanic pasture woodland, Borrowdale Yews, within Seatoller Wood, Sourmilk Gill and Seathwaite Graphite Mine SSSI, VC 70, Cumberland, GR 35(NY)/2355.1256, 150 m, March, 2014. First record from this site and Northern England for this Section 41 (BAP) species since 1982.

N.A. Sanderson, BLS Cumbrian *Lobarion* Meeting

Rimularia insularis: single thallus*, c.* 3 mm diameter, on *Lecanora rupicola* on well-lit rock outcrop, in coastal valley, west of Porth y Wylfa, Cemaes Bay, VC 52, Anglesey, GR 23(SH)/360.938, alt 10 m, November 2013. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Fertile ***Punctelia subrudecta*** on *Magnolia stellata* at Plymtree, Devon. Photo B. Benfield.

Rinodina biloculata: on slightly roughened, nutrient-rich bark, *c.* 0.5 m above ground level at base of trunk of young *Quercus* in developing proto-woodland on upland heath, Nantyrarian Forestry Visitor Centre, VC 46, Cardiganshire, GR 22(SN)/ 718.813, alt *c.* 310 m, March 2014. Herb. SPC. The tree just *c.* 4 m from an un-surfaced mountain bike track and exposed to low level mineral dust deposition. New to the Vice-county and second for Wales. *S.P. Chambers*

Roccella fuciformis. *c.* 35 thalli, growing mostly on mortar but some on an iron conglomerate (ferrocrete), on the north wall of church , South Wootton, VC 28, West Norfolk, GR 53(TF)/6403.2275. March 2014. First record for this species from the east coast (c. 5 km inland from The Wash) and furthest north in the British Isles. *P.W. Lambley*

Schismatomma graphidioides: on smooth bark of small suppressed *Carpinus betulus*, in 19th century *Fagus* stand, Castlehead Wood, Borrowdale, VC 70, Cumberland, GR 35(NY)/2687.2276, alt 120 m, March, 2014. First modern record, from Northern England for this Section 41 (BAP) species.

N.A. Sanderson, BLS Cumbrian *Lobarion* Meeting

Sclerophora peronella: on dry bark of old Quercus, by stream in oceanic woodland, Cat Gill, Great Wood, Borrowdale, VC 70, Cumberland, GR 35(NY)/2709.2100, alt 120 m, March, 2014. First modern record from Northern England, for this boreal species. *N.A. Sanderson*, BLS Cumbrian *Lobarion* Meeting

Scoliciosporum pruinosum: on trunk of mature *Fraxinus*, Monk's Wood, VC 31, Huntingdonshire, GR 52(TL)/19-79-, February 2014. Herb. Powell 3357. New to the Vice-county. *M. Powell* and Cambridge Lichen Group

Stereocaulon nanodes: on south-facing spoil tip, Dylife Mine, VC 47, Montgomeryshire, GR 22(SN)/857.939, alt 380 m, November 2013. Field record. New to the Vice-county. *S.P. Chambers & A. Hotchkiss*

Stereocaulon vesuvianum var. ***nodulosum***: amongst *Stereocaulon* 'garden' on sandstone walling, forming inner surface of horizontal lead smelt mill flue, Eskeleth Bridge, Arkengarthdale, VC 65, North-west Yorkshire, GR 35(NY)/991.029, alt c 400 m, January 2014, Herb. Knight. Confirmed by B.J. Coppins. The first recent record of this species for Yorkshire and one of only a very small number of recent records in England. *S. Knight*

Strigula taylorii: on wound track of old *Acer pseudoplatanus*, in landscaped park, Levens Park, VC 69, Westmorland, GR 34(SD)/4964.8517, May 2013. New to the Vice-county and Northern England. *N.A. Sanderson*

Telogalla olivieri: on *Xanthoria parietina* on fallen *Fraxinus* branch, in woodland on west-facing slope, The Perch, Mendips, VC 6, North Somerset, GR 31(ST)/450.558, 150 m, May 2013, Coppins 24266 (**E**). New to the Vice-county. *B.J. Coppins*

Teloschistes chrysophthalmus: single thallus growing on *Prunus spinosa* alongside footpath with one thallus of *Teloschistes flav*icans nearby, north side of Helford River near Trebah Gardens, Mawnan Smith VC 1. West Cornwall, GR 10(SW)/7674.2685. October 2013. *I. Pedley*

Teloschistes chrysophthalmus: single thallus growing through *Physcia aipolia* on *Salix* in boggy field, Andrew's Wood, Devon Wildlife Trust Reserve, VC 3, South Devon, GR 20(SX)/704.516, November 2013. First recent Devon record for this species. *B. Benfield*

Teloschistes chrysophthalmus: single thallus growing on *Prunus spinosa* , north side of Helford River near Durgan, Mawnan Smith VC 1 West Cornwall, GR 10(SW)/ 7705.2716. April 2014. *P.W. Lambley*

Thelidium minutulum: on chalk rubble of scree below cliffs of old quarry, Totternhoe, VC 30, Bedfordshire, GR 42(SP)/987.218, November 2013. Herb. Powell 3329. New to the Vice-county. *A. Harris, M. Powell, P. Shipway, C. Tregaskes*

Thelopsis rubella: on flushed base-rich bark on nine old *Quercus* and one *Tilia*, in landscaped park, Levens Park, VC 69, Westmorland, GR 34(SD)/49-85-, 34(SD)/50-85- & 34(SD)/50-86-, May 2013. New to the Vice-county. *N.A. Sanderson*

Unguiculariopsis thallophila: two records from VC 46, Cardiganshire; (i) on partly moribund thalli of *Lecanora chlarotera* on southwest-facing side of small, 17 cm diameter trunk of roadside *Fraxinus excelsior*, Cwm Rheidol, GR 22(SN)/669.787, alt

30 m, February 2014; (ii) on *Lecanora chlarotera* on trunk of *Sorbus aucuparia* in upland heath, Nantyrarian, GR 22(SN)/718.813, alt c. 310 m, March 2014. Both Herb. SPC. New to the Vice-county. *S.P. Chambers*

Usnea ceratina: fertile, at Becka Falls, VC 3 South Devon GR 20(SX)/760.801, March 2014. *B. Benfield* and Devon Lichen Group [It appears that this taxon is not that unusual, fertile, in parts of Devon (pers. comm.)] *C.J.B. Hitch*

Usnea ceratina: fertile, on *Acer pseudoplatanus*, on sheltered west-facing slope at west side of lake, Stourhead (N.T.), Stourton, VC 8, South Wiltshire, GR 31(ST)/774.342, April 2014. *B. Benfield*

Usnea esperantiana: single thallus on trunk of young *Tilia* in parkland, Uppark, New Forest SSSI, VC13, West Sussex, GR 41(SU)/ 7803.1773, alt 280 m March 2014. New to the Vice-county and Sussex. *N.A. Sanderson*

Verrucaria ochrostoma: on north wall of church, Stoodleigh, VC 4, North Devon, GR 21(SS)/922.188, January 2014. Herb. M. Putnam. Determined by M. Powell. New to the county. *M. Putnam*

Verrucaria sphaerospora: in dry dusty crevices of Cambrian shale rocks in the sub-terrestrial zone at top of saltmarsh on sheltered shore, near the Cob on northwest side of Portmeirion promontory, VC 48, Merionethshire, GR 23(SH)58-.37-, alt c. 1 m, February 2004. Herb. SPC (two collections from the same area). The earliest known collections of this recent addition to the British list (see NRI, BLS Bull. No.113, Winter 2013) and new to Wales. *S.P. Chambers*

Wadeana dendrographa: (i) on two old *Quercus petraea* in creek edge lichen rich old *Quercus petraea – Fagus* woodland; (ii) on one *Fraxinus* in adjacent landscaped park, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1309.5681, 20(SX)/1307.5692 & 20(SX)/1335.5700, December 2014. Finding two colonies on *Quercus* of this Ash specialist Section 41 (BAP) lichen, is very significant in the light of the threat of Ash Die Back. *N.A. Sanderson*

Wadeana minuta: small colony on base rich bark of old *Quercus* in relict pasture woodland, Savernake Forest, VC 7 North Wiltshire, GR 41(SU)/2253.6577, May 2013. A new Section 41 (BAP) species for Savernake Forest and only the third English record for this species. *N.A. Sanderson*

Xenonectriella streimannii: on *Sticta sylvatica* on *Corylus*, Barnluasgan Wood, Knapdale Woods SSSI, VC 101, Kintyre, GR 16(NR)/79-91-, alt *c.* 50 m, September 2013, Coppins 24312 (**E**). New to Kintyre. *B.J. Coppins*

Xerotrema quercicola: (i) on fallen dead *Quercus lignum* in rocky *Quercus petraea* woodland and (ii) on fallen old Quercus, in a landscaped park, Ethy Park, VC 2, East Cornwall, GR 20(SX)/1310.5683 & 20(SX)/1362.5744, December 2013. New to Cornwall. *N.A. Sanderson*

Corrigendum: ***Caloplaca ceracea***: Further to the corrigendum in Bulletin 113, Winter 2013, p73, the original determination of this taxon for Essex is correct (Bulletin 101,Winter 2007, p. 74). However, subsequent collections thought to be *C. ceracea* on engineering bricks in the Southend-on-Sea area are all a possibly undescribed taxon, see Herb. P.M.Earland-Bennett (*Caloplaca* sp. C).

Exmoor & Quantock Field Meeting June 2013

Introduction

Exmoor is the remnant of an ancient royal hunting forest located in West Somerset and extending into the adjacent part of Devon. Much of Exmoor is designated as National Park. Most of the 'moor' is underlain by hard sandstones of Devonian age, although exposures are few except along the precipitous northern sea cliffs. The highest ground runs parallel to the north coast and reaches 520m at Dunkery Beacon, which is only 3 km from the coast. The result is that the western side of Exmoor is cut by short, deeply incised and wooded river valleys, while the southern side of the moor is cut into by the headwaters of the River Exe and Barle, forming yet more deep steep-sided wooded valleys. The Quantock Hills have a similar geology to Exmoor and was designated as Englands first Area of Outstanding Natural Beauty in 1956. The area is well known for its oak woods and parklands.

Communication has probably always been a problem in this area and still is. Be prepared to drive on lots of steep, twisting, single track roads, bounded by several metre high hedges and/or precipitous unprotected drops. A refresher course in reversing would be helpful! However the isolation has resulted in the preservation of unspoilt 'chocolate box' villages so that the whole area has a quintessentially English appearance. And it is not surprising that West Somerset is now one of the retirement capitals of England.

Minehead with its large Butlins holiday camp and typical seaside attractions stands in stark contrast to the rest of Exmoor but made an excellent base for the meeting. Most attendees stayed either at Foxes Hotel on the sea front or at the Base Lodge backpackers hostel on the western side of town. Both of these need some explanation. I run Base Lodge. The Foxes Hotel is part of Foxes Academy, which provides training and support for young adults with learning difficulties. The accommodation was excellent and the staff and 'learners' provided us with top quality service. If there was a criticism it was the bar. We finished off all their whisky on day two and each night we drank them out of the favourite tipple – Exmoor Gold. New supplies had to be provided from a local supermarket daily.

The mature deciduous woodlands were the principal target of the Field Meeting and yielded a rich and varied flora. Coastal rock outcrops and associated heaths were also rich, but surprisingly the open moor on Exmoor itself was much less rich, perhaps reflecting the use of frequent burning as a management strategy. Sites were selected not only with a rich lichen flora but also met the three T's criteria – toilets, tea rooms, and ticketed parking.

Attendees:

Ginnie Copsey, Margaret Earle, Matt Prince, Nicola Bacciu, Annalea Burghause, Frank Burghause, Juliettle Bailey, Barbra Benfield, Pat Wolseley, Brian Coppins, Catherine Tregasker, Maxine Putnam, Tony Holwill, Steve Price, Amanda

Waterfield, Pamala Jackson, Justin Smith, David Hill, Janet Sinkin, Les Knight, Sue Knight, Paula Shipway, Mary Breeds, Paul Cannon and Graham Boswell.

Group photo - BLS at Cuddycleave Wood, Lea Abbey, 26 June 2013

Standing, left to right: Paula Shipway, Steve Price, Juliette Bailey, Annelie Burghaus, Frank Burghause, Paul Cannon, Les Knight, Sue Knight, Barbara Benfield, Margaret Earle, Arthur Billet, Brian Coppins, David Hill, Graham Boswell.
Seated: Pat Wolseley, Janet Simkin, Maxine Putnam, Catherine Tregaskes, Pamela Jackson, Ginnie Copsey.

Physical Environment

The higher parts of Exmoor and the Quantocks are composed of similar geology; Devonian (Old Red Sandstone) dominates, this is a siliceous rock producing acid soils. Most of the rocky outcrops in these areas are of the hangman grit series. Much of Porlock Vale is composed of softer substrate, Triassic (New Red Sandstone) and Jurassic rocks, the latter do not outcrop except on the coast east of Blue Anchor. The Devonian rocks in the Barle valley include slates as well as sandstones. The Lynton Slate series exposed at Valley of the Rocks is mostly acid but with a few thin bands of calcareous material that enable *Caloplaca* species to take hold.

Geomorphological features are very prominent on Exmoor and make an important contribution to landscape features that encourage the development of lichen communities. Periglaciation has had a major impact. The melting of permafrost led to much hill slope instability resulting in major slips and the production of large boulder fields, which we encountered east of Hurlstone Point. The subsequent erosion of head deposits and their reworking by marine action has resulted in the Storm Beach at Porlock. The rapid melting of permafrost along with

heavy precipitation is thought to have given rise to the steep sided valleys that support the all-important oak and ash woodlands.

The climate on Exmoor and the Quantocks has a major influence on the lichen communities. The total precipitation on the Chains high on Exmoor is two meters a year, it is half that at Porlock on the north coast and less still on the south side of the moor. The Quantocks have up to 900mm of precipitation. The tropical maritime air flowing in from the Atlantic makes for climatic conditions where lichens listed in the New Index of Ecological Continuity and Eu-oceanic Calcifuge Woodland Index of Ecological Continuity are well represented. The westerly winds also lift salt laden moist air inland influencing lichen community structure.

History of Recording

The most recent survey carried out on Exmoor was by Neil Sanderson (Sanderson 2012); this work was carried out for the National Trust and based on the Western Combes in Horner Wood. Neil found 7 RDB & 33 notable species. Neil has also undertaken a number of site condition assessments on Exmoor. The most recent (Sanderson 2009) includes a bibliography of his other work for Natural England in the area and refers to previous work undertaken by Sandy & Brian Coppins. Pat Wolseley and I undertook the site condition assessment for Nettlecombe in 2010.

Vince Giavarini undertook a survey of the River Jelly Lichen *Collema dichotomum* for the Environment Agency in 2010 and Brian Edwards did a survey on the River Lyn for a proposed hydro scheme. Sandy Coppins undertook a survey of Porlock Storm Beach for Somerset Trust for Nature Conservation in 1986. Pat Wolseley and Sandy undertook the Exmoor Woodland survey for the same organisation in 1984/5; this document forms the baseline for Exmoor Woodlands Lichens. I have written the annual lichen report for the Exmoor Natural History Society for the past five years; these are published in the Exmoor Naturalist.

Lichen records for the Quantocks are sparse compared with those for Exmoor. Brian Coppins and others have recently produced a good list for Barford House Estate at the eastern end of the Quantocks. Francis Rose visited Holford Combe and the Alfoxton estate in the 1970's, and the Somerset group led by David Hill have re-visited Francis's sites. We did not however find the reported Lobarion community and our recent search probably confirms that it is lost. The Somerset group has also paid attention to Hurlstone Point and in July surveyed Dunster Castle which boosted our list for this meeting.

A further interesting aspect of lichenology on Exmoor is the work being undertaken by Rebecca Yahr, Chris Ellis and Brian Coppins from RBGE on the lichens preserved in roof timbers and wall wattles in six Exmoor buildings (Yahr et al. 2011).

Habitats

The habitats visited included woodlands, pasture woodland, parkland, grassland, heathland, shingle beach, rock outcrops, rivers, historic buildings and associated urban substrates.

The woodland communities at Horner, the Barle valley and at Holford on the Quantocks are designated as Nature Reserves and SSSI's. The woodlands are predominantly oak and oak/ash with ash mostly in the valley bottoms and alder on the stream sides. The understory shows considerable spatial variation in the quantities of hazel, holly, hawthorn and rowan along with willow in the damp/wet areas. In Horner the Lobarion was well represented but not so in the Barle valley and absent altogether from the Quantocks.

The parkland trees at Alfoxton on the Quantocks and Dunster Deer Park are predominantly veteran oak and ash and held excellent dry bark lichen communities but did not have the *Lobaria* species found on similar trees at Nettlecombe which is between our two sites.

The maritime grassland community at Hurlestone point provided 'rich pickings' for terricolous species and included 18 species of *Cladonia* and two of *Cetraria*. This grassland is interspersed with rock outcrops and boulders, hence saxicolous species were also well represented.

The heathland communities on Exmoor and the Quantocks did not prove rich for lichens except for where there is a strong maritime influence. Nevertheless important lists were made for Dunkery Beacon, Bossington Hill and Spire Cross close to Winsford Hill.

The shingle beach community at Porlock is extensive, the stability of the pebbles varies considerably from stable to those daily disturbed by wave action. The storm beach is important for land protection against inundation, but a large breach in 1986 led to the area inland of the beach being managed for the creation of a salt marsh. The managed retreat is locally controversial.

Sites

Sunday June 26th 2013. Horner Wood and Selworthy Combe.

Horner Wood is a National Nature Reserve and partly dedicated so for its lichen interests. Horner included several different sites; Cloutsham, Eastwater Valley & Aller Combe was our first stop. Here *Lobaria pulmonaria* was well represented including on one ash tree that Pat Wolseley and Sandy Coppins transplanted onto in 1986 which is now showing luxuriant growth. Other Lobarion species included *Sticta sylvatica* and *S. fuliginosa.* Four *Usnea* species were found at this site, *U. articulata, U. florida, U. subfloridana* and *U. wasmuthii.*

Our next stop was Wilmersham Bottom where we met up with Maxine Putnam and Tony Holwill investigating a fallen oak. Here the main group separated due to a lack of parking space, half stayed at Wilmersham Botton and the others drove on to Pool Bridge.

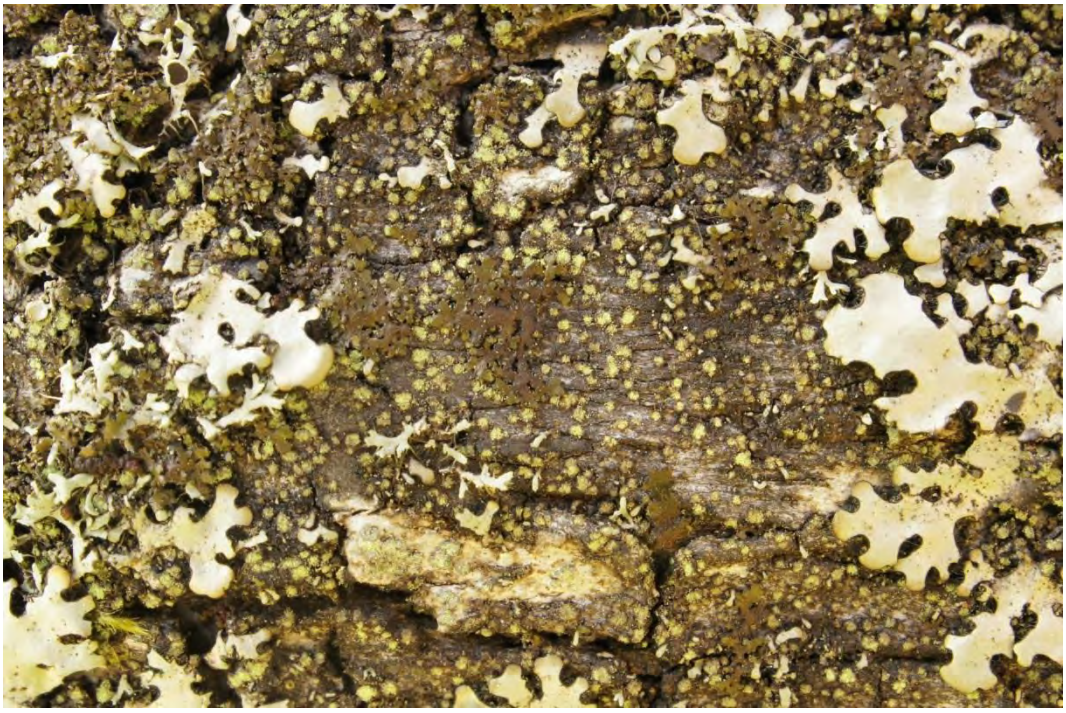
The Wilmersham and Pool Bridge sites proved richer than at Cloudsham. Finds included *Leptogium britanicum* (new to Somerset) and *Byssoloma marginatum* and *Phyllopsora rosei*, all Nationally Scarce species. Later in the afternoon we drove to the other side of the valley to Selworthy. The main party explored Selworthy Church while Ginne Copsey and I explored the plantation woodland at the bottom of Selworthy Combe. By now the weather had improved and the views looking south

from Selworthy back to Horner were excellent, showing the full extent of Horner woods and the heather-clad Dunkery Beacon above it.

Monday June 27th 2013. Tarr Steps Woodland and the River Barle.

On our way to Tarr Steps we stopped off on Draydon Knap to photograph the *Usnea articulata* festooning the hawthorn trees. On arrival at the car park the day's list quickly accumulated to 45 species; this I think impressed the owner of the River Barle, Mr Uelizelwega who joined us for the first hour of the day.

The woods visited at Tarr Steps included Great Wood, Lea Wood and Knaplock wood; these are oak woodlands with a good proportion of ash close to the river and a smattering of sycamore. The understory is mostly hazel. An ash sampled by Francis Rose in the 80's still retained *Pannaria conoplea, Phyllopsora rosei, Parmeliella triptophylla a*nd other indicator species. Lea Wood still retained *Lobaria scrobiculata* and *P. conoplea*; Pat and Brian observed that these species were now reduced in extent from the 1986 survey. Brian introduced many of us to *Antennulariella lichenisata*, informing us that while Nationally Scarce was probably very under-recorded.



Rinodina efflorescens on bark of a birch tree in the car park at Tarr Steps

Those of us who went as far as Bradley Wood had to bare our feet and ford the Barle to access the west bank; these east facing woods proved less rich than the other side of the river, nonetheless a few trees with *Lobaria pulmonaria* were encountered, one of which had been tagged the 'Lobarion Tree' by the National Park!

A breakaway group of Janet Simkin and Les and Sue Knight managed to take in Dunkery Beacon on their way back to Minehead. They managed to gather a good list of species from three little visited (by Lichenologists) 1km squares.

Tuesday June 28th Quantock Woodlands

Lecanactis abietina on a veteran oak, Alfoxton Park

Our base for the day was Holford village green, from here our first site was Alfoxton Park and its veteran trees. The site is of historic significance due to the fact that William Words-worth and his sister Dorothy lived here during the time of their friendship with William Taylor Coleridge. In lich-enological terms the site is better known for the lichens of the veteran trees. The site included many nationally Scarce species and species for which the UK have an international responsibility, including: *Chaenothecopsis nigra, C. pusilla, Micarea prasina, M. viridileprosa, Milospium graphideorum, Schismatomma cretaceum, S. decolorans, S. niveum, Scoliciosporum pruinosum, Stenocybe septata* and *Strigula taylorii.*

After lunch some of the group headed up in to Hodder's Combe, Somerton Combe and Slaughterhouse Combe in search of *Lobaria* found by Francis Rose 30 years ago. In the event the major Lobarion genera were not found, however associate species *Dimerella lutea, Normandina pulchella* and *Thelotrema lepadinum* were present. Dry bark species on some of the older trees were also well represented and included: *Cresponea premnea, Arthonia pruinata, Schismatomma cretaceum, S. decolorans* and *S.*

niveum. Parmelia ernstiae was recorded on the Quantocks for the first time and a large wind blown branch yielded *Usnea articulata*, these days a rarity in this location.

Throughout the whole day the shade of the trees offered us protection from the baking sun, that and the clear blue sky made for excellent working conditions. On our return from Somerton Combe to the village green we found some lichenologists had returned early and were basking in the sun.

Left: *Usnea articulata* on a fallen oak branch, Hodder's Combe. Right: *Parmelia ernstiae*, with its strongly pruinose thallus.

Wednesday June 29th Valley of the Rocks & Cuddycleave Wood

The Valley of the Rocks is both spectacular and unusual, unusual in that the valley runs parallel to the coast instead of down towards the sea. The curious rock-ribbed valley is now dry but was originally formed by waters of the East Lyn, which changed its direction through river capture/diversion. The solid geology is also distinctive; the hard Linton Slates includes bands of calcareous material, thus allowing calcicolous species to take hold in a landscape dominated by the hard siliceous rocks of the Hangman Grit Series.

We began in the area of Castle Rock, a well-known site for the most northerly location of *Roccella fuciformis* and where *R phycopsis* is abundant. This site also threw up a range of other interesting species. The shady overhangs produced an abundance of pale pink *Llimonaea sorediata.* The scarce species *Protoparmelia montagnei*, *Rimularia intercedens* and *Lecanographa grumulosa* were also present. Some thin bands of calcareous material gave rise to six species of *Caloplaca*. The group also managed to list 12 *Cladonia* species from this site.

For lunch most people elected to go to the grassy car park below Lea Abbey, this gave us easy access to the afternoon's objective of Cuddycleave Wood. This woodland is owned by the Lea Abbey Estate and is used in their holyday retreat

Roccella phycopsis (top) and *R. fuciformis* (bottom), Valley of the Rocks, Devon

programme. Some guest 'retreaters' were taken by surprise at the sudden influx of lichenologists; one lady in pink said 'Fantastic, how very interesting' so on that note we communicated some information about our activities!

Brian, Barbara and David quickly racked up the number of rare and scarce species, these included lichenicolous fungi as well as lichens. The more unusual and interesting included: *Abrothallus bertianus, Arthonia endlicheri, A. punctiformis, Arthopyrenia fraxini, Bacidia trachona, Dactylospora parasitica, Enterographa sorediata, Eopyrenula grandicula, Herteliana gagei, Lecanora praepostera, Micarea prasina, Opegrapha areniseda, O. saxigena* and *O. xerica.* In total this woodland yielded 116 species in 3 hours. Our recording was greatly helped by another day of clear blue sky and a light breeze.

Thursday 30th June Porlock Beach and Hurlstone Point

We met and parked at the National Trust car park in the pretty village of Bossington. The car park hosted many apple trees which hosted *Parmelina pastillifera*; this species was again abundant on mature, isolated trees in a field close to Bossington beach. These trees also had *Lecanora hagenii, Opegrapha niveoatra* and *Physcia stellaris;* while not rare these species had not been seen by many members of the group.

Lecidea lactea forming a mosaic on a pebble at the sheltered side of Bossington beach

Over the fence from the field trees we encountered a huge change. We were now standing on Bossington Beach composed of large pebbles, some stable, others constantly turned by waves. This beach was last surveyed by Sandy Coppins in 1987. We recorded 29 species on the shingle ridge, a similar number to those found by

Sandy during her previous survey. From the storm beach we progressed towards Hurlestone Point and began to pick up more maritime species including *Caloplaca britannica.* Hurlestone Point is a wonderful example of a maritime grassland interspersed with outcrops and boulders. The grassland proved rich picking for Cladonias, with 18 species in total including *Cladonia firma.* In and amongst the shady boulders we found *Opegrapha saxigena* along with *O. gyrocarpa,* the former proving very difficult to photograph! The site proved very valuable in terms of species richness and diversity; it was only a pity that we did not re-find *Teloschistes flavicans* and *Heterodermia obscurata.* The walk back was rather hasty due to an incoming frontal system, just as well that the coastal heath and Lynch Combe woodlands were not so interesting from a lichenological point of view. Brian did however record *Llimonaea sorediata.*

Llimonaea sorediata, with its distinctive pink thallus and black hypothallus, track N of Bossington village

Friday 1st July Dunster Deer Park

Dunster Deer Park is a SSSI. It was created by Henry Fownes Luttrell in 1755. The lichen interests are associated with the veteran trees, mostly oak & ash. The tree density throughout the wood pasture shows considerable variation, offering greater niche space for lichens. The total list amounted to over 120 species and included a good number of scarce and rare species and included six for which the UK has International Responsibility.The latter status category included *Schismatomma graphidoides* which is deemed Vulnerable and is a BAP priority species. Other rare and scarce species included *Strigula taylorii, Opegrapha prosodea, O. corticola, Micarea*

viridileprosa, Llimonaea sorediata and *Chaenothecopsis nigra.* This list was accompanied with a host of scarce lichenicolous fungi to which Brian introduced us. They included *Abrothallus bertianus, A. microspermus, Dactylospora parasitica, Pronectia oligospora, Syzygospora physciacearum and Unguiculariopsis thallophila.* Also present in the park were several healthy colonies of *Parmelina tiliacea.*

Other Site Visits

Throughout the week a number of other sites were visited. Maxine Putnam undertook Blagdon Woods by herself and produced a good list from this under-recorded site. Les & Sue Knight along with Annelea & Frank Burghause spread their wings and went further afield venturing as far as Dartmoor and were rewarded with masses of *Lasallia pustulata.* Janet Simkin managed a good list from her visit to Cleeve Abbey which included *Rinodina roboris.*

Beyond Lichenology

Throughout the meeting Frank Burghause and Matt Prince supplemented our lichenology with other natural history interests. Frank produced a list of *Coleoptera* for many of the sites visited and Matt a list of arachnids. Both will be added to the Exmoor fauna and will be published in the Exmoor Naturalist.

Acknowledgments

A very big thanks to Les Knight for pulling together the social and quirky aspects of the meeting. Janet Simkin as ever, efficiently converted record card data into Excel and advised me on how to convert this to tabular form. And Brian Coppins for the verification of many records and for quickly responding to my numerous requests for advice.

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Graham Boswell
email: togooutdoors@hotmail.com

Taxon name	Horner Wood	Selworthy Comb	Selworthy Church	R. Barle Woodlands	Tar Steps Car Park	Spire Cross	Dunkery Beacon	Alfoxton Park	Broad Wood	Hodders Combe	Holford Green CP	Valley of the Rocks	Cuddycleave wood	Bossington Beach	Hurlestone Point	Lynch Combe	Dunster Deer Park	Blagdon Wood
Abrothallus bertianus													●				●	
Abrothallus microspermus																	●	
Acarospora fuscata			●				●					●						
Acrocordia gemmata	●			●													●	
Amandinea lecideina												●						
Amanadinea punctata													●				●	
Anaptychia runcinata												●			●			
Anisomeridium biforme				●				●	●				●			●	●	
Anisomeridium polypori	●							●			●							
Anisomeridium ranunculosporum				●														
Arthonia anombrophila													●					
Arthonia cinnabarina	●			●				●	●									
Arthonia didyma	●			●				●	●	●	●						●	
Arthonia elegans									●				●					●
Arthonia endlicheri												●	●					
Arthonia pruinata								●	●	●		●	●	● *		●	●	
Arthonia punctiformis	●							●					●					
Arthonia radiata	●	●		●				●	●				●				●	●
Arthonia spadicea	●			●				●		●	●					●		
Arthonia vinosa	●			●														
Arthopyrenia analepta	●				●								●				●	
Arthopyrenia fraxini													●					
Arthopyrenia punctiformis				●													●	
Arthopyrenia salicis				●					●									
Aspicilia caesiocinerea												●	●		●	●		
Aspicilia laevata				●														
Bacidia biatorina	●			●				●										
Bacidia delicata								●										
Bacidia inundata				●														
Bacidia phacodes								●	●				●				●	
Bacidia rubella										●			●				●	

Taxon name	Horner Wood	Selworthy Comb	Selworthy Church	R. Barle Woodlands	Tar Steps Car Park	Spire Cross	Dunkery Beacon	Alfoxton Park	Broad Wood	Hodders Combe	Holford Green CP	Valley of the Rocks	Cuddycleave wood	Bossington Beach	Hurlestone Point	Lynch Combe	Dunster Deer Park	Blagdon Wood
Bacidia trachona													●					
Bacidia viridifarinosa	●								●									
Baeomyces rufus				●			●											
Belonia nidarosiensis												●						
Buellia aethalea			●				●					●		●	●			
Buellia griseovirens					●			●		●							●	
Buellia leptoclinoides												●						
Buellia ocellata												●						
Buellia stellulata												●	●	●				
Buellia subdisciformis												●	●		●			
Byssoloma marginatum										●								
Caloplaca arnoldii subsp. *obliterata*															●			
Caloplaca aurantia			●															
Caloplaca austrocitrina					●													
Caloplaca britannica															●			
Caloplaca cerinella														● *			●	
Caloplaca chlorina					●													
Caloplaca citrina s. lat.							●											
Caloplaca crenularia			●									●	●					
Caloplaca crenulatella							●											
Caloplaca dalmatica												●						
Caloplaca dichroa			●		●													
Caloplaca flavescens			●		●							●						
Caloplaca flavocitrina							●					●			●			
Caloplaca flavovirescens					●													
Caloplaca holocarpa					●							●						
Caloplaca maritima													●		●			
Caloplaca saxicola												●						
Candelaria concolor						●		●										
Candelariella aurella forma *aurella*			●				●											
Candelariella vitellina forma *vitellina*							●					●					●	

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Catillaria atomarioides														●				
Catillaria atropurpurea	●			●									●					
Catillaria chalybeia var. *chalybeia*					●		●					●						
Catillaria lenticularis												●						
Catinaria atropurpurea				●														
Cetraria aculeata															●			
Cetraria muricata															●			
Cetrelia olivetorum s. lat.																		
Chaenotheca brachypoda				●														
Chaenotheca brunneola				●														
Chaenotheca ferruginea										●							●	
Chaenotheca hispidula								●	●									
Chaenotheca trichialis								●		●								
Chaenothecopsis nigra								●									●	
Chaenothecopsis pusilla								●										
Chrysothrix candelaris	●	●		●				●		●		●	●			●	●	
Chrysothrix flavovirens								●		●							●	
Cladonia arbuscula subsp. *squarrosa*															●			
Cladonia cervicornis subsp. *cervicornis*															●			
Cladonia cervicornis subsp. *verticillata*							●								●			
Cladonia chlorophaea s. lat.				●			●			●					●			
Cladonia ciliata var. *ciliata*												●			●			
Cladonia ciliata var. *tenuis*															●			
Cladonia coccifera s. lat.							●					●	●					
Cladonia coniocraea	●	●		●						●		●	●		●		●	●

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Cladonia digitata								●										
Cladonia diversa							●								●			
Cladonia fimbriata												●	●		●		●	
Cladonia firma															●			
Cladonia floerkeana				●											●			
Cladonia foliacea												●						
Cladonia furcata subsp. *furcata*				●									●		●			
Cladonia gracilis												●						
Cladonia macilenta										●							●	
Cladonia parasitica	●			●						●							●	
Cladonia polydactyla var. *polydactyla*				●						●		●	●		●		●	
Cladonia portentosa				●			●					●			●			
Cladonia pyxidata	●			●			●					●	●		●			
Cladonia ramulosa				●													●	
Cladonia rangiformis				●								●			●			
Cladonia squamosa s. lat.				●								●						●
Cladonia squamosa var. *squamosa*	●																	
Cladonia subcervicornis				●											●			
Cladonia subulata								●										
Cladonia uncialis subsp. *biuncialis*												●			●			
Cliostomum griffithii				●				●		●	●		●			●	●	
Collema tenax var. *tenax*															●			
Collema crispum var. *crispum*			●															
Cresponea premnea	●							●	●	●			●				●	
Cyrtidula quercus	●			●														
Cystocoleus ebeneus				●								●	●					
Dactylospora parasitica													●				●	
Dermatocarpon luridum				●														
Dermatocarpon miniatum												●						

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Dibaeis baeomyces							●								●			
Dimerella lutea				●				●		●			●					●
Dimerella pineti				●				●		●						●		
Diploicia canescens			●									●	●	● *	●		●	
Diploschistes sp.												●						
Diplotomma alboatrum															●			
Diplotomma chlorophaeum													●					
Dirina massiliensis forma *sorediata*												●	●			●		
Enterographa crassa								●	●	●			●			●	●	
Enterographa hutchinsiae													●					
Enterographa sorediata													●					
Eopyrenula grandicula									●				●					
Evernia prunastri	●	●		●	●			●		●			●			●	●	●
Fellhaneropsis vezdae																	●	
Flavoparmelia caperata		●	●	●	●			●	●	●	●	●	●				●	●
Fuscidea lightfootii				●				●		●			●				●	●
Fuscidea cyathoides var. *cyathoides*							●					●		●	●	●		
Graphina anguina								●					●				●	
Graphina pauciloculata				●														
Graphina ruiziana				●														
Graphis elegans	●	●		●	●			●		●						●	●	
Graphis scripta	●			●		●		●	●	●			●				●	●
Haematomma ochroleucum var. *ochroleucum*												●						
Herteliana gagei													●					
Hyperphyscia adglutinata												●		● *			●	
Hypogymnia physodes	●	●	●	●	●	●		●	●	●					●		●	●
Hypogymnia tubulosa				●	●			●	●	●							●	

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Hypotrachyna afrorevoluta				●	●			●	●	●							●	●
Hypotrachyna laevigata	●			●														
Hypotrachyna revoluta s. str.				●	●			●		●							●	●
Hypotrachyna taylorensis				●														
Ionaspis lacustris				●														
Japewiella tavaresiana	●			●														
Laeviomyces opegraphae																	●	
Lecanactis abietina	●	●		●				●	●	●							●	●
Lecanactis subabietina								●		●						●	●	
Lecania cyrtella																	●	
Lecania naegelii																	●	
Lecania hutchinsiae													●					
Lecania turicensis			●															
Lecanographa grumulosa												●						
Lecanographa lyncea								●										
Lecanora albella					●													
Lecanora albescens				●	●													
Lecanora argentata													●					
Lecanora campestris subsp. *campestris*												●						
Lecanora chlarotera	●	●		●	●	●		●		●	●		●	● *		●	●	●
Lecanora confusa													●				●	
Lecanora conizaeoides																	●	
Lecanora dispersa			●									●						
Lecanora expallens	●	●		●				●	●	●	●		●			●	●	●
Lecanora gangaleoides			●									●	●	●	●	●		
Lecanora hagenii														● *			●	
Lecanora helicopis															●			
Lecanora muralis							●											
Lecanora ochroidea												●		●		●		
Lecanora orosthea												●		●	●			

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Lecanora polytropa							●					●		●	●			
Lecanora praepostera												●	●					
Lecanora pulicaris																	●	
Lecanora rupicola var. *rupicola*			●									●		●	●			
Lecanora saligna																	●	
Lecanora soralifera							●											
Lecanora symmicta																	●	
Lecanora sulphurea			●									●			●			
Lecidea fuscoatra s. lat.							●							●				
Lecidea grisella							●					●						
Lecidea lactea s. str.												●		●	●			
Lecidea lithophila							●											
Lecidea plana														●				
Lecidea sanguineoatra	●																	
Lecidella asema														●				
Lecidella elaeochroma forma *elaeochroma*	●			●	●	●		●				●	●	● *			●	
Lecidella elaeochroma forma *sorediata*													●					
Lecidella scabra							●					●		●				
Lecidella stigmatea					●		●						●					
Lepraria ecorticata												●						
Lepraria incana s . lat.				●				●	●			●	●			●	●	●
Lepraria lobificans	●			●													●	●
Lepraria membranacea				●														
Leprocaulon microscopicum															●			
Leptogium britannicum	●																	
Leptogium cyanescens												●						
Leptogium lichenoides	●																	
Leptogium turgidum															●			
Llimonaea sorediata													●			●	●	
Lobaria pulmonaria	●			●														
Lobaria scrobiculata				●														
Marchandiomyces aurantiacus																	●	

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Megalaria pulverea	●			●														
Melanelia exasperata														● *				
Melanelixia fuliginosa			●	●					●	●		●		●	●		●	
Melanelixia glabratula				●	●	●		●		●			●			●	●	
Melanelixia subaurifera	●	●											●				●	●
Melanohalea exasperata								●					●				●	
Melanohalea laciniatula				●	●			●									●	
Micarea bauschiana				●														
Micarea cinerea forma *cinerea*				●														
Micarea melaena																	●	
Micarea prasina	●			●				●					●				●	
Micarea viridileprosa								●									●	
Micarea xanthonica				●														
Milospium graphidiorum								●								●		
Mycobilimbia epixanthoides				●														
Mycobilimbia pilularis				●				●										
Mycoblastus caesius				●				●									●	●
Mycoporum antecellans				●														
Mycoporum lacteum								●										
Myriospora smaragdula													●	●	●			
Nephroma laevigatum				●								●						
Nephroma parile				●														
Normandina pulchella	●	●		●	●				●	●			●					
Ochrolechia androgyna	●			●	●							●						
Ochrolechia parella												●	●		●	●		
Ochrolechia subviridis	●			●									●				●	
Ochrolechia turneri s. str.													●			●	●	
Opegrapha areniseda													●					
Opegrapha atra	●			●				●	●	●			●			●	●	
Opegrapha calcarea													●					

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Opegrapha cesareensis													●					
Opegrapha corticola	●							●	●				●				●	
Opegrapha gyrocarpa				●									●	●	●			
Opegrapha herbarum								●	●		●							
Opeographa niveoatra																●		
Opegrapha ochrocheila	●			●				●	●									
Opegrapha prosodea																	●	
Opegrapha saxigena												●	●		●			
Opegrapha sorediifera				●				●					●			●		
Opeographa thelotrematis				●														
Opegrapha varia	●							●	●				●				●	
Opeographa viridipruinosa											●							
Opegrapha vermicellifera								●	●									
Opegrapha vulgata	●			●				●	●	●			●				●	
Opegrapha xerica								●					●					
Opegrapha zonata				●														
Ophioparma ventosa												●						
Pannaria conoplea				●														
Parmelia ernstiae								●		●	●							
Parmelia omphalodes							●											
Parmelia saxatilis		●	●	●	●			●	●	●		●			●	●	●	
Parmelia sulcata	●	●	●	●	●	●		●	●	●		●				●	●	●
Parmeliella triptophylla				●														
Parmelina pastilifera														● *		●		
Parmelina tiliacea					●												●	
Parmotrema perlatum		●		●	●		●	●		●		●	●			●	●	●
Peltigera collina				●														
Peltigera horizontalis	●			●														●
Peltigera hymenina	●			●			●			●		●	●		●	●	●	
Peltigera membranacea	●			●			●								●		●	
Peltigera praetextata	●			●					●									
Pertusaria albescens var. *albescens*	●	●		●	●			●		●							●	●

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Pertusaria albescens var. *corallina*								●		●		●	●				●	●
Pertusaria amara forma *amara*								●	●	●	●						●	
Pertusaria corallina		●		●														
Pertusaria excludens												●		●				
Pertusaria flavida																	●	
Pertusaria hemispherica				●				●		●							●	
Pertusaria hymenea	●	●		●				●	●	●			●				●	●
Pertusaria lactea				●								●		●				
Pertusaria lactescens							●					●		●				
Pertusaria leioplaca				●				●					●				●	●
Pertusaria multipuncta	●	●		●				●										●
Pertusaria pertusa	●	●		●	●			●		●	●		●			●	●	●
Pertusaria pseudocorallina												●	●	●	●			
Phaeographis dendritica									●									
Phaeographis smithii								●					●					
Phaeophyscia orbicularis														● *			●	
Phlyctis argena	●			●	●			●	●	●	●						●	●
Physcia adscendens			●												●			
Physcia aipolia				●				●					●	● *			●	●
Physcia caesia			●															
Phycsia stellaris														● *			●	
Physcia tenella	●		●		●		●	●					●	● *	●		●	
Physconia distorta													●				●	
Physconia grisea																	●	
Phylopsora rosei				●														
Piccolia ochrophora													●					
Placynthiella dasaea													●					
Placynthiella icmalea																	●	
Platismatia glauca	●	●		●	●					●								●
Porina aenea				●													●	

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Porina ahlesiana													●					
Porina chlorotica forma *chlorotica*				●				●					●					
Porina coralloidea								●		●								
Porina hibernica	●																	
Porina leptalea								●					●					
Porina linearis												●						
Porina rosei				●														
Porpidia cinereoatra				●			●								●			
Porpidia crustulata	●						●						●					
Porpidia hydrophila				●														
Porpidia macrocarpa forma *macrocarpa*				●			●							●				
Porpidia platycarpoides												●	●		●			
Porpidia soredizodes							●											
Porpidia tuberculosa				●			●					●		●	●			
Pronectria oligospora																	●	
Protoblastenia rupestris			●		●		●											
Protoparmelia montagnei												●						
Psilolechia lucida				●														
Punctelia jeckeri								●									●	
Punctelia subrudecta s. str.		●			●			●		●	●		●			●	●	
Punctelia subrudecta s. lat.																	●	●
Punctelia reddenda																	●	
Pseudevernia furfuracea var. *furfuracea*	●			●	●													
Pyrenula chlorospila									●				●			●	●	
Pyrenula macrospora																	●	
Pyrrhospora quernea		●						●		●			●			●	●	
Racodium rupestre				●														
Ramalina canariensis														● *			●	

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Ramalina cuspidata															●			
Ramalina farinacea	●			●	●			●	●	●	●		●		●		●	●
Ramalina fastigiata	●				●			●				●	●	● *			●	
Ramalina siliquosa												●	●	●	●			
Ramalina subfarinacea															●			
Rimularia intercedens												●						
Rinodina efflorescens					●													
Rinodina oleae															●		●	
Rinodina roboris var. *roboris*								●									●	
Rinodina sophodes														● *			●	
Roccella fuciformis												●						
Roccella phycopsis												●	●					
Roccellographa circumscripta												●	●					
Rhizocarpon distinctum														●				
Rhizocarpon geographicum												●	●	●	●			
Rhizocarpon lavatum				●														
Rhizocarpon reductum			●				●					●		●	●			
Rhizocarpon richardii														●	●			
Schaereria fuscocinerea var. *fuscocinerea*												●			●			
Schismatomma cretaceum								●	●	●								
Schismatomma decolorans								●	●	●							●	
Schismatomma graphidioides																	●	
Schismatomma niveum								●		●								
Schismatomma quercicola				●														
Scoliciosporum pruinosum								●										
Scoliciosporum umbonatum							●					●			●			

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Skyttea nitschkei								●										
Sphaerophorus globosus				●											●			
Stenocybe pullatula				●														
Stenocybe septata	●							●		●								
Sticta fuliginosa	●			●														
Sticta limbata				●														
Sticta sylvatica	●			●														
Stigmidium microspilum				●					●									
Strigula taylorii								●	●		●						●	
Syzygospora physiacearum																	●	
Tephromela atra var. *atra*			●	●			●								●	●	●	
Thelotrema lepadinum	●			●				●	●	●	●							●
Tomasellia gelatinosa				●					●									
Toninia aromatica												●	●					
Trapelia corticola	●			●								●						
Trapeliopsis flexuosa																	●	
Trapeliopsis granulosa	●									●					●			
Trapeliopsis pseudogranulosa				●											●			
Tylothallia biformigera												●						
Unguiculariopsis thallophila																	●	
Usnea articulata	●			●		●				●								
Usnea ceratina				●	●					●								
Usnea cornuta		●		●						●							●	
Usnea flammea																	●	
Usnea florida	●			●				●		●	●							
Usnea rubicunda				●				●										
Usnea subfloridana	●			●	●			●		●			●				●	●
Usnea wasmuthii	●																	
Vouauxiella lichenicola	●																●	
Verrucaria aquatilis										●								
Verrucaria baldensis			●				●											

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Verrucaria elaeina													●					
Verrucaria fusconigrescens												●	●	●	●			
Verrucaria maura												●	●					
Verrucaria muralis															●			
Verrucaria nigrescens var. nigrescens			●				●											
Verrucaria praetermissa				●														
Violella fucata				●	●													
Xanthoria calcicola			●															
Xanthoria parietina	●		●		●	●	●	●					●	● *	●		●	
Xanthoria polycarpa																	●	
Xanthoriicola physciae														● *				
Xanthoparmelia conspersa												●						
Xanthoparmelia pulla												●						

* Isolated field trees

Report of Field Outing to Calke Park, 12 January 2014

Calke Abbey, a house built near the site of a Cistercian abbey, was the home of the often eccentric Harper-Crewe family. The house, the parkland and the wider estate came into the ownership of the National Trust in 1985. The park covers 260ha of which 78ha is, because of the veteran trees and the associated deadwood invertebrate fauna, designated as a National Nature Reserve.

Calke Park is an historic parkland in the south of Derbyshire holding over 650 veteran trees of which about 350 are oaks with many other tree species including native lime, field maple, ash and beech. Many of these trees are in excess of 400 years old, with girths of up to 10m. 350 of the veterans are considered truly ancient exhibiting significant hollowing, large amounts of deadwood and other signs of senescence.

Talking of senescence [speak for yourself! – Ed.], 39 members attended this field outing which followed on from the AGM and symposium held at the University of Nottingham.

Prior to this visit by the BLS the only lichen records that could definitely be assigned to Calke were from a 1997 survey of the churchyard conducted by Ivan Pedley with 31 species recorded. There were a handful of other records assigned to the 10km square and noted as being near Calke.

Following an introduction to the Park by Ranger Tim Wright, the group split into several parties. One party concentrated initially on the interesting old wall behind the car park whilst others made their way directly to the trees – live, dead, standing and fallen. Given the short winters day, the size of the park and the number of trees we could only hope for a superficial look at the lichens the Park had to offer. But what an exiting superficial look it proved to be: 151 taxa were recorded of which four were new to the county (one of which was new to the region) and seven taxa provided 2nd or 3rd county records.

Studying lichens of the abundant dead wood at Calke Parke. Image courtesy Janet Simkin.

Peltigera species on the lignum and moss on fallen trees provided plenty of scope for exercised discussion and eventually six species were identified including a specimen of *P. degenii,* new to the county, found by Alica Košuthová. The *Cladonia* group proved as interesting as ever with three of the rarer species in the county being found:

C. digitata was on three different fallen trees; *C. parasitica* was on seven different stumps and a specimen taken away was confirmed by Neil Sanderson as *C. glauca*.

Ken Sandell and Ishpi Blatchley found a 2nd county record, the first being in Chatsworth, of the lichenicolous fungi *Illosporiopsis christiansenii*; this was on both *Physcia* and *Parmelia* species.

Given the high number of veteran trees on site pinhead species were to be expected: *Chaenotheca chlorella* was found on the recce visit for this meeting (this was a first for the county and for the region). On the same very large oak was found a good covering of *C. stemonea* (this being a 3rd site for the county). *C. trichialis* was found on a good number of trees as was *C. ferruginea*. *Chaenothecopsis nigra*, a species which is not common throughout its range, was found on both standing and fallen deadwood, making Calke the 3rd county site after Chatsworth and Haddon Parks.

Fertile *Cladonia digitata*. Image courtesy Steve Price

Andre Aptroot found another uncommon species, *Microcalicium ahlneri* on fallen deadwood, this now the 2nd site in the county after Chatsworth. Andre also added two other species to the county list: *Bacidia adastra* and *Micarea viridileprosa* and gave us 3rd county sites for *Micarea misella* and *Opegrapha niveoatra. Strangospora moriformis* was collected by John Douglass from standing deadwood and confirmed by Brian Coppins to provide a 2nd site in the VC for this species.

Not only were there some very interesting records but we were left with the overall impression is of a very rich lichenological site needing and worthy of further examination. Perhaps next time on a long summers day with the sun on ones back!

The BLS would like to thank the National Trust and Bill Cove, the Countryside Manager at Calke Abbey, for facilitating this visit.

Steve Price
email: lichenrecords@sorby.org.uk

Taxon name	**wall by car park sK3622**	**outside NNR SK3622**	**NNR SK3662**	**NNR SK3663**	**notes**
Acrocordia conoidea	●				
Acrocordia salweyi	●				
Amandinea punctata			●		
Arthonia radiata			●		
Arthopyrenia punctiformis ##			●		
Bacidia adastra			●		new for VC57, on both oak and lime
Bilimbia sabuletorum	●				
Buellia aethalea	●				
Buellia griseovirens			●		
Calicium viride			●		
Caloplaca albolutescens	●				
Caloplaca arcis	●				
Caloplaca cerinella			●		
Caloplaca chlorina	●				
Caloplaca citrina s. lat.	●				
Caloplaca crenulatella	●				
Caloplaca dichroa	●				
Caloplaca flavescens	●				
Caloplaca flavocitrina	●		●		
Caloplaca holocarpa s. str.	●				
Caloplaca limonia	●				
Caloplaca oasis	●				
Caloplaca xantholyta	●				
Candelariella aurella forma *aurella*	●				
Candelariella reflexa		●	●		
Candelariella vitellina forma *vitellina*	●		●		
Catillaria chalybeia var. *chalybeia*	●				
Catillaria nigroclavata			●		3rd VC57 record
Chaenotheca chlorella			●		new for VC57 and for region
Chaenotheca ferruginea			●		

Taxon name	wall by car park sK3622	outside NNR SK3622	NNR SK3662	NNR SK3663	notes
Chaenotheca stemonea			●		3rd site for VC 57
Chaenotheca trichialis			●		
Chaenothecopsis nigra			●		3rd site for VC 57, on fallen and standing deadwood
Chrysothrix candelaris			●		
Cladonia chlorophaea s. lat.			●		
Cladonia coniocraea			●		
Cladonia digitata			●	●	on 3 different fallen trunks
Cladonia diversa			●		
Cladonia fimbriata			●		
Cladonia glauca			●		
Cladonia macilenta			●		
Cladonia parasitica			●	●	on 7 different stumps
Cladonia polydactyla var. *polydactyla*			●	●	
Cladonia ramulosa			●		
Cladonia squamosa var. *squamosa*			●	●	
Collema crispum var. *crispum*	●				
Collema tenax var. *tenax*			●		
Dimerella pineti			●		
Diploicia canescens	●				
Diplotomma alboatrum	●				
Dirina massiliensis forma *sorediata*	●				
Evernia prunastri		●	●		
Flavoparmelia caperata			●		
Flavoparmelia soredians			●		
Fuscidea lightfootii		●	●		
Hyperphyscia adglutinata			●		
Hypocenomyce scalaris			●		
Hypogymnia physodes			●		
Hypogymnia tubulosa			●		
Hypotrachyna afrorevoluta			●		
Hypotrachyna revoluta s. lat.			●		
Hypotrachyna revoluta s. str.		●	●		
Illosporiopsis christiansenii #			●		2nd site for VC57, on *Physcia* & *Parmelia* species

Taxon name	wall by car park sK3622	outside NNR SK3622	NNR SK3662	NNR SK3663	notes
Jamesiella anastomosans			●		
Lecanactis abietina			●		
Lecania cyrtella			●		
Lecania erysibe s. lat.	●				
Lecania inundata	●				
Lecania naegelii			●		
Lecanora albescens	●				
Lecanora antiqua	●				
Lecanora campestris subsp. *campestris*	●		●		
Lecanora carpinea		●	●		
Lecanora chlarotera		●	●		
Lecanora conizaeoides forma *conizaeoides*			●		
Lecanora dispersa	●				
Lecanora expallens			●		
Lecanora hagenii			●		
Lecanora muralis	●				
Lecanora orosthea	●				
Lecanora persimilis			●		
Lecanora polytropa	●				
Lecanora polytropa			●		
Lecanora pulicaris			●		
Lecanora saligna			●		
Lecanora semipallida	●				
Lecanora symmicta			●		
Lecidella elaeochroma forma *elaeochroma*			●		
Lecidella scabra	●				
Lecidella stigmatea	●				
Lepraria incana s. str.	●		●		
Lepraria lobificans	●		●		
Lepraria vouauxii	●				
Melanelixia glabratula			●		
Melanelixia subaurifera		●	●		
Micarea denigrata			●		
Micarea melaena			●	●	
Micarea misella			●		3rd site in VC57
Micarea viridileprosa ##			●		new for VC57, probably overlooked

Taxon name	wall by car park sK3622	outside NNR SK3622	NNR SK3662	NNR SK3663	notes
Microcalicium ahlneri ##			●		2nd site in VC57
Opegrapha atra			●		
Opegrapha calcarea	●				
Opegrapha niveoatra		●			3rd site in VC57
Parmelia ernstiae			●		
Parmelia sulcata		●	●		
Parmeliopsis ambigua				●	
Parmotrema perlatum			●		
Peltigera degenii			●		new for VC57
Peltigera didactyla			●		
Peltigera hymenina			●		
Peltigera membranacea			●		
Peltigera neckeri			●		
Peltigera praetextata			●		
Phaeophyscia orbicularis			●		
Physcia adscendens			●		
Physcia aipolia		●	●		
Physcia stellaris			●		
Physcia tenella		●	●		
Placynthiella icmalea			●		
Porpidia soredizodes	●				
Porpidia tuberculosa	●				
Protoblastenia rupestris	●				
Pseudevernia furfuracea s. lat.			●		
Pseudevernia furfuracea var. ceratea			●		
Psilolechia lucida	●				
Punctelia jeckeri		●	●		
Punctelia subrudecta s. str.			●		
Ramalina farinacea			●		
Ramalina fastigiata			●		
Rhizocarpon reductum	●				
Rinodina oleae	●				
Sarcogyne regularis	●				
Scoliciosporum umbrinum	●				
Strangospora moriformis			●		2nd site for VC57
Tephromela atra var. *atra*	●				
Thelidium decipiens			●		

Taxon name	wall by car park sK3622	outside NNR SK3622	NNR SK3662	NNR SK3663	notes
Trapelia coarctata	●				
Trapelia placodioides	●				
Trapeliopsis flexuosa			●	●	
Trapeliopsis granulosa			●	●	
Usnea subfloridana			●		
Verrucaria baldensis			●		
Verrucaria elaeina	●				
Verrucaria muralis	●				
Verrucaria nigrescens forma *nigrescens*	●				
Verrucaria nigrescens forma *tectorum*	●				
Verrucaria viridula	●				
Xanthoria parietina	●	●	●		
Xanthoria polycarpa		●	●		
Xanthoria ucrainica			●		
Xanthoriicola physciae #			●		on *Xanthoria parietina*

British Lichen Society Field Meetings & Workshops Programme 2014 / 2015

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

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

BRITISH LICHEN SOCIETY MID-SUMMER 2014 MEETING - Iceland

Sunday 20th to Sunday 27th July 2014

Local Organisers - Silke Werth, Starri Heiðmarsson & Ólafur Andrésson

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

The meeting is to be based in the area near Borgarnes in SW Iceland, allowing for excursions to Snaefellsnes, Reykjanes and the western part of the highlands. It is planned that the excursions will be no more than 2 hours drive from the meeting base giving enough time to spend in the field and time in the evenings to look at collections. The sites will include the geologically most interesting areas of Iceland (Reykjanes, Snaefellsnes). offering a variety of geological backgrounds / substrates. The detailed programme of site visits is yet to be finalised.

Meeting base & accommodation

The meeting will be based in the 'Gamli Skóli', the old school, of the Agricultural University of Iceland, Hvanneyri, 311 Borgarnes, Iceland. Full board will cost approximately 10,000ISK per person per day (currently 1000ISK equals 5.10 GBP). The accommodation is paid for directly to the university at the time of the meeting. Credit cards can be used.

We will stay there for the 6 nights Sunday 20 to Saturday 26. On Saturday 26th we will travel back to stay over near the Reykjavik-Keflavik International Airport for departures on the morning of Sunday 27th. Hotels/hostels in that area will be recommended for which attendees will make their own bookings.

Booking

Bookings will be taken on a first come first served basis. There is a limit to the number of attendees. The accommodation is in a mix of 5 single rooms and 7 twin rooms and 1 six-bedded room. Some sharing of rooms by individuals will be necessary. There will be space in the accommodation for up to three attendees to bring non-member partners. This number will only be known when the mix of sexes and couples is known. Because of limited numbers non-member partners are welcome on the basis of non-participation in the field trips.

Book with the Field Meetings Secretary, Steve Price, by email to *fieldmeetings@britishlichensociety.org.uk* or by post to Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP. After a booking has been accepted it should be confirmed with a £30 deposit (cheque payable to 'The British Lichen Society' please) and sent to Steve Price at the address above.

Upon booking please advise the Field Meetings Secretary of:

- your willingness to hire and drive a hire a car (costs to be shared, see '*Travel & Transport*' below);

- if you would like to bring your spouse (of course, if your spouse is a member of the BLS then book them in as a full attendee);
- if you have any requirements for special diets.

Microscope work
A meeting room with university microscopes is available to us for the duration of the meeting.

Travel & Transport
Book flights to Reykjavik-Keflavik International Airport. Arrange flights to arrive in time for a 16.00 departure from the airport to the accommodation. Transport from the airport to the accommodation and during the meeting will be by the use of hire cars. Attendees are asked to get together to arrange to hire cars (and share the costs) for the duration of the meeting. A reasonably priced car hire company will be recommended.

When attendees flight arrival & departure times are known we will try to group drivers & passengers together for car hire. If any people are arriving early in the day then a short extra site visit may be organised before the 16.00 meeting time. Details for the car hire and of the meeting place will be provided to attendees later.

Outline Timetable
Sunday 20 July
Meet at the Reykjavik-Keflavik International Airport at 16.00 to drive to the accommodation (distance about 100 miles) calling off at a site on the Reykjanes peninsula en-route.
Monday 21 – Friday 25 July
Site visits (details of visits is yet to be finalised)
Saturday 26 July
Site visits en-route to accommodation near Reykjavik-Keflavik International Airport. Overnight stay in a hotel near the airport. Accommodation here is to be booked directly by attendees. Details of a recommended hotel will be provided.
Sunday 27 July
Depart from Reykjavik-Keflavik International Airport.

BLS SUMMER 2014 MEETING - Southern Lake District

Saturday 30th August to Saturday 6th September 2014
Local organiser: Allan Pentecost

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

Meeting base & accommodation

The meeting will be based in the **Castle Head Field Studies Centre, Grange over Sands, Cumbria**, LA11 6QT Tel: +44 (0)15395 38120 Fax: +44 (0)15395 36662. Note: bookings are to be made though the BLS and not directly with the Centre – see below).

Saturday 30th August - arrive 3.00 – 4.00pm, Saturday 6th September 2014 - depart 9.30am.

Full board accommodation has been reserved for 20 – 25 attendees in shared rooms with some limited single occupancy .

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

Cost

Accommodation, all meals (dinner, breakfast, packed lunch) and use of a workroom are included in the group price of £284.00 per person including VAT.

Booking

Book though the Field Meetings Secretary, Steve Price, email to fieldmeetings@britishlichensociety.org.uk and not directly with the Centre. Send a £50 deposit to Steve Price, Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP. Cheques to be made payable to 'The British Lichen Society' (not to 'BLS') please. This £50 is the amount of the per person deposit that the BLS has to pay 6 months prior to the meeting.

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

Microscope work

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

Travel

Castle Head has excellent road and rail links:

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

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

BLS AUTUMN 2014 MEETING - Kent

Thursday 16th October (evening) to Monday 20th October 2014 (lunchtime)
Local Organisers - Ishpi Blatchley & Keith Palmer

Although well-populated the county of Kent is blessed with a great diversity of habitats, from the calcareous North Downs to acid heathland and from shingle habitats to extensive parks and woodland. This long weekend will provide many opportunities to sample this diversity. Although there is a long history of lichenologists visiting Kent, in more recent years, apart from churchyards, the county has been somewhat neglected. In the 1960s and 1970s, Francis Rose and Brian Coppins did much work in Kent but huge changes in land management and increased infrastructure have left their mark on the lichen flora. So there is much to be discovered and unique habitats to explore.

Dungeness, the largest area of stabilised shingle in Britain, has an atmosphere all of its own. Covered with *Cladonia* species and foliose lichens usually found on trees, the shingle is interspersed with willow scrub and windswept prostrate blackthorn. Behind the foreland is the low-lying area of Romney Marsh with lovely old churches standing out in the flat landscape, sometimes known as the sixth continent ! North wall communities are well represented on these churches which have also produced a scattering of rarities, several within a short distance of our base. Even richer are churches within the Weald of Kent and visits there will be possible too.

It is hoped to visit representatives of typical Kent habitats - ancient woodlands of oak, hornbeam, ash and field maple, orchards (apple, pear and cherry), unimproved medieval deer parks, and old spoil heaps from the Kent coalfield. And, of course, churchyards.

This meeting will provide an opportunity to gather additional records for the proposed Atlas of Kent Lichens.

The meeting will run from 20.30 (after dinner) on Thursday 16th to welocome participant and give an introduction to the area and its habitats and lichens and will conclude at lunchtime on Monday 20th in the field. It will be based at the Dog and Bear Inn in the attractive village of Lenham situated between Ashford and Maidstone. The Dog and Bear (The Square, Lenham, Maidstone ME17 2PG tel 01622 858219 www.dogandbearlenham.co.uk) is a Shepherd Neame pub – the local Faversham brewery.

15 rooms have been booked – 1 single, 10 twins (which have zipped beds so can be doubles), and 4 doubles. The negotiated price for B&B is £60.00 per room/night for single occupancy, £70.00/room/night for a room with 2 occupants. When booking please mention the British Lichen Society.

A Function room suitable for setting up microscopes will be at our disposal from Thursday evening to Sunday evening inclusive. There is ample parking in the Inn's own car park at the rear of the building accessed from Faversham Rd **not** from The

Square. Lenham is easily accessible from the M20/A20. There is also a railway station on the Victoria to Ashford line.

Early booking is recommended as other accommodation in Lenham is very limited – There is another hotel with a few rooms and one B&B. There is a large Mercure hotel at Hollingbourne about 4 miles away. Additional accommodation is available in nearby Charing or Harrietsham.

Please notify Ishpi Blatchley and Steve Price, BLS Field Meetings Secretary of your intention to participate in the meeting and if you have booked accommodation in the Dog and Bear. Details of site visits will be sent out to those attending nearer the time of the meeting.

Contact details
Ishpi Blatchley, 3 Durham Avenue, Bromley, Kent BR2 0QA
email: *ishpi.blatchley@gmail.com*

BLS AGM Field Outing

Sunday 18th January 2015

A one day field outing will be organised to follow the AGM which is due to be held at the Royal Botanic Gardens, Kew. The location and details of this outing will be published in the next *Bulletin* and on the website.

BLS WINTER WORKSHOP - University of Nottingham

The lesser used stains, tests and techniques in lichen identification
Friday 20th to Sunday 22nd February 2015
Host **-** Peter Crittenden
Tutors **-** Brian Coppins, David Hill and Mark Powell

This workshop will be based on the less used stains, tests, features and techniques helpful in lichen identification. There are quite a few tests for features in apothecial sections like sedifolia grey, HNO_3 reactions, crystal tests for lecanoric/gyrophoric acids. Not all the colour changes in for example apothecial sections that are described in keys and descriptions are correctly observed, especially if one does not know exactly what to look for e.g. how much does the colour actually change. Additionally there are the less obvious spore characters and anatomical characters e.g. tissue types such as in cortex of *Physciaceae* and exciples of *Collema* and epinecral layers.

Costs
There is a charge of £50 per attendee to cover part of the cost of using the laboratory, the balance of the cost is being subsidised by the BLS.

Outline timetable
Friday 20th – 19.30 Introduction and evening tuition;
Saturday 21st morning – field trip to local site;
Saturday 21st afternoon – tuition and laboratory work;
Sunday 22nd to 16.00 – tuition and laboratory work.

Booking on the workshop
Places on the workshop are limited. Booking should be made through the Field Meetings Secretary, Steve Price (email *fieldmeetings@britishlichensociety.org.uk*) and send the workshop fee of £50 to him at Woodlands, Combs Road, Combs, High Peak, Derbyshire SK23 9UP. Cheques to be made payable to 'The British Lichen Society' (not 'BLS' please).

Hotel accommodation
A number of rooms have been pre-reserved in the De Vere Venues East Midlands Conference Centre & Orchard Hotel, The University of Nottingham, University Park, Nottingham, NG7 2RJ reservations tel: 0115 8760863. *Bookings are to be made directly with the hotel*. This hotel is on the University campus and is within easy walking distance of the School of Life Sciences.
Rooms have been reserved for the nights of Friday 20th and Saturday 21st and also, should anyone wish or need to stay over, for Sunday 23rd. The special room rate arranged for workshop attendees is £40 single occupancy and £49 double occupancy per night including breakfast and VAT. In order to obtain these rates please quote **'Lichen Society'** and the date of arrival. A credit/debit card will be needed to guarantee the bookings. Payment can then be made directly with the hotel on arrival. These rooms are bookable up until 19 January 2015 and after this time any further bookings will be subject to availability and the best available rates. There is plenty of other accommodation available in the area and in the City of Nottingham.

Further information
Maps, site plans and further details of the workshop will be sent out to attendees prior to the meting.

BLS SPRING MEETING 2015 – Snowdonia

Saturday 2th to Saturday 9th May 2015
Local organiser - Ray Woods

Snowdonia in the north of Wales has much to offer the lichenologist. Allan Pentecost in his Lichen Flora of Gwynedd published in the *Lichenologist* **19**(2) in 1987 pp. 97-166 lists the presence of over 850 taxa. Whilst Alan Orange and others have done a little work in the area subsequently, the lack of a resident lichenologist has meant the few new records have been made for almost a quarter of a century. We hope to examine a wide range of habitats from the Celtic rain forest through basic upland rocks to lakes and rivers.

The main objective of the meeting will be to explore the lesser recorded parts of the area. Opportunities will be provided for both the mountain goats and the valley lovers amongst the membership.

Meeting base & accommodation

The meeting will be based in Capel Curig at the Plas y Brenin Mountain Centre where the Bryn Engan Farmhouse (grid ref SH719576) has been rented for the week by the BLS. This offers accommodation in 12 single rooms and 1 twin room. All bedrooms are en-suite and bed-linen and towels are provided. It has a fully equipped kitchen. Meals will be available in the main house and can be purchased as required. See *http://www.pyb.co.uk/accommodation-master.php* for details.

Additional sleeping accommodation may become available in Plas-y-Brenin's main house. If demand for bed spaces in Bryn Engan Farmhouse exceeds the 14 spaces then this option will be pursued. Other accommodation: hotels, bed & breakfast and self catering cottages is available in the area of Capel Curig.

Per person costs for staying in Bryn Engan Farmhouse (excluding meals) for the week is: £160.80 This is the rental split 14 ways.

For information, details of the Centre are:
Plas y Brenin National Mountain Centre, Capel Curig, Conwy, LL24 0ET
01690 720214 *http://www.pyb.co.uk/*

Booking

Book through the Field Meetings Secretary, Steve Price, by email to *fieldmeetings@britishlichensociety.org.uk* or by post to Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP. Send a deposit of £30 (payable to The British Lichen Society). Note that the balance of the payment will be requested by the BLS prior to the meeting.

Microscope work

The a room for microscope work and for workshop sessions has been organised at the centre.

Travel

Capel Curig is on the A5 (London to Holyhead Road) and the Centre is about 400 metres from the village along the A4086. From the North take the M56, A55, A5 or A470. Traffic congestion is sometimes heavy on the roads in holiday periods.

For travel by train you need to get to Llandudno Junction Railway Station. The Centre will arrange a pick up once a day. See the Plas y Brenin website for details. There are also occasional trains during the day which run between Llandudno Junction and Betws-y-Coed, which is 6 miles from the Centre. From Betws-y-Coed, there is an infrequent bus service to Capel Curig. Please see www.traveline-cymru.info or phone 0871 200 22 33 for up to date bus times.

Useful Maps

- OS Explorer (1:25000) Outdoor Leisure map 17 - Snowdon & Conwy Valley
- OS Explorer (1:25000) Outdoor Leisure map 18 - Harlech, Porthmadog & Bala

BLS SUMMER MEETING 2015 – Unst, Shetland (including workshop sessions on the genus *Cladonia*)

Saturday 4th to Friday 10th July 2015

Local organiser: Rebecca Yahr
Cladonia tutor: Annelie Burghause

Unst is the northernmost island in the British Isles. Just 12 miles long by five miles wide it offers a variety of habitats including low, rocky shores, sheltered inlets, high cliffs, fellfield, sub-arctic stony deserts of serpentine, heathery hills, peat bogs and sandy shores but not many trees. During the week workshop sessions on the genus *Cladonia* will be tutored by Annelie Burghause.

Meeting base & accommodation

The meeting will be based in the north of the island at Saxa Vord where 5 fully-equipped self-catering houses at Nordabrake (grid ref HP664134) have been booked by the BLS. Each house has a double, a twin and a single room. Linen and towels are provided. See http://www.saxavord.com/ for details.

Per person costs: for use of a double or twin room £120 per person for the week; for use of a single room £165 for the week. Note that the houses are actually booked to Saturday 11th. So it is possible, should anyone wish, to stay on for the extra night. Meals will be available in the on-site restaurant as well as at the Baltasound Hotel. There are three general stores on the island

Booking

Book through the Field Meetings Secretary, Steve Price, by email to fieldmeetings@britishlichensociety.org.uk or by post to Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP. Send a deposit of £30 (payable to The British Lichen Society). Note that the balance of the payment will be requested by the BLS prior to the meeting.

Microscope work

The lounges of the houses will be 'requisitioned' by the organisers for microscope work and for workshop sessions.

Travel

The possibility of hiring a mini-bus from Edinburgh is being investigated. If you would be interested in using this option please inform the Field Meetings Secretary.

The Saturday to Friday duration of the meeting has been chosen to allow the following ferries to be taken to and from the Shetland:

Friday 3rd evening ferry from Aberdeen to arrive in Lerwick on Saturday 4th AM;
Friday 10th evening ferry from Lerwick to arrive in Aberdeen on Saturday 11th AM.

The ferries to and from Shetland are operated by NorthLink Ferries see http://www.northlinkferries.co.uk/. Public transport services will take attendees from the ferry to arrive in Unst by mid afternoon.

Flights to Shetland from various locations arrive at Sumburgh Airport in the South of Mainland.

The journey from Mainland Shetland to Unst involves two inter-island ferries (Mainland to Yell and Yell to Unst) and it is recommended to book vehicles onto ferries in advance on 01595 745804, timetables can be found on the Shetland Islands Council website. see *http://www.shetland.gov.uk/ferries/*

Before you go

- Useful map: OS Explorer map 470 (1:25000) Shetland - Unst, Yell & Fetlar
- Useful book: Shetland Lichens, Dalby, K., Dalby, C., published by Shetland Amenity Trust, Lerwick, 2005 (this book appears to be available from the Shetland Heritage Shop see: *http://www.shetlandheritageshop.com*)

BLS AUTUMN 2015 MEETING – Forest of Dean, Gloucestershire (advanced notice)

October 2015 - A long weekend meeting

Local Organiser – Juliet Bailey

The dates and details of the meeting will be published in the next Bulletin and on the BLS website.

Steve Price
BLS Field Meetings Secretary

Minutes of the ANNUAL GENERAL MEETING

UNIVERSITY OF NOTTINGHAM – 11TH JANUARY 2014

In Attendance: Rod Ashwell, Juliet Bailey, Ishpi Blatchley, Anthony Braithwaite, Richard Brinklow, Paul Cannon, Ginnie Copsey, Peter Crittenden, Heidi Doring, John Douglass, Sally Eaton, Duncan Grey, Cecile Guiedan, Terence Hackwill, David Hawksworth, Mary Hickmott, David Hill, Angela Jones, John Jones, Zoya Kauffmann, Les Knight, Peter Lambley, Jeff Malter, Silvana Munzi, Fay Newbery, Alan Orange, Ivan Pedley, Allan Pentecost, Oliver Pescott, Steve Price, William Purvis, Maxine Putnam, Sheila Quinn, Ken Sandell, Mark Seaward, Janet Simkin, Knut Asbjorn Solhaug, Eluned Smith, Laurans Sparrius, Catherine Tregaskes, Amanda Waterfield, Mats Wedin, Gothamie Weerakoon, Susan Will-Wolf, John Wolf, Vanessa Winchester, Pat Wolseley, Ray Woods & five others.

Apologies for Absence: Simon Davey, Frank Dobson, Bryan Edwards, Vince Giavarini, Teresa Greenaway, Chris Hitch, Peter James, Jack Laundon, Neil Sanderson, Alan Silverside, Rebecca Yahr

Communications:
A message of best wishes was communicated from David Galloway.
Deceased Members were reported as: Dr K. Dalby, Dr J.P. Dey, Mr F.G. Jones and Prof. R. Santesson.

2. Minutes of the Last AGM
Unanimously approved.

3. Matters Arising
None.

4.1 President's Report – ***Barbara Hilton***

The Annual General Meeting of the Society is a time to review events over the last 12 months and to think ahead. As a year ago, I am impressed by the vigour and variety of our activities that reflect on the individual and combined efforts of members, and at this event we give special thanks to Professor Peter Crittenden. Many thanks, Peter, for hosting the 2014 AGM of the BLS and the concurrent Symposium at the University of Nottingham, allowing us to benefit from professional facilities on this very pleasant campus. We marvel that Peter fits all this into his busy life – leading his team researching comparative ecophysiology; his role as senior editor of The Lichenologist and involvement with other journals; and international profile ranging from studies in remote environments to his recent presidency of the IAL. I am sure we are all delighted that his sterling efforts are recognised and earlier this year were rewarded by his University, resulting in full professorial status. Well done, Peter and congratulations!

My report focuses on the work of BLS Council and significant current developments. I leave to officers and key members of the Society the detail of specific aspects of our work.

Council has met three times since the last AGM: very recently here, at the University of Nottingham; in September in London (at the Natural History Museum); and in May in

Edinburgh (at the Royal Botanic Garden); and I am grateful to Christopher Ellis and Allan Pentecost for taking minutes at these meetings. Council generally has a full agenda so the work of committees is very important. Conservation, Education and Promotions (EPC), and Members' Services Committee (MSC) have been very ably led by Bryan Edwards, Sally Eaton and David Hill respectively. Throughout 2013 items on 'Data' have been considered by MSC (expertly, as David Hill chaired both committees until recently) and Janet Simkin has resolved specific issues very capably. The terms of reference for Data Committee are being revised so that we can better exploit the wide range of electronic resources available for the storage and communication of information. Smaller groups also have great impact, for example, on churchyard lichens (well led by Ivan Pedley, Ishpi Blatchley and Mark Powell) and on finance and membership (knowledgeably informed by John Skinner and Heidi Döring).

The redesigned BLS website shows regular and increased use that is especially high during winter months! Thanks are due to Alan Hale as Webmaster for its development and maintenance. We hope to develop the website further, to include the administration and payment of membership subscriptions. In addition to Alan Hale and Heidi Döring, we thank Janet Simkin and Les Knight for their significant and invaluable contributions.

While the pulse of the Society is in its membership, our collaboration with other organisations is invaluable, enabling us to share our knowledge and enjoyment of lichens in a wide range of contexts and I mention just a few. With the Field Studies Council we have a long-established and fruitful partnership. Several very experienced, enthusiastic members serve as tutors on their courses, extending our own training programme and introducing lichens to a yet wider audience. During 2013 we have collaborated with Plantlife in planning a project that is now accepted for funding by the Heritage Lottery Fund. This encompasses both outreach and consultancy across 'lower plants' and, led by EPC, we look forward to the project's launch in the south-west. We continue to work closely with the National Biodiversity Network (NBN) to mutual benefit, being very well represented by Janet Simkin at both their working groups and conferences.

The Society of Biology (SOB) has been very helpful in 2013, responding professionally to our request to find out about their electronic membership system, a preliminary to our embarking on our own in-house development. Through collaboration with the SOB we influence national policy and developments. I was privileged in September to attend a ceremony marking the accreditation of degree courses in biological sciences, a quality-assurance initiative to which we had contributed and through which, ultimately, we benefit through better trained and educated biologists. However, while several eminent BLS members fly the flag for the kingdom of fungi at SOB meetings, that organisation remains slow to recognise the uniqueness of this kingdom and continues to include lichens in 'plants'. Undeterred in our quest for recognition, when the Secretary of State for Education consulted on revision of the National Curriculum we advised Right Hon. Michael Gove on the merit of recognising the status of mycology, including lichens, as a kingdom. We must not lose heart! The Linnean Society grasps the point! In October a splendid one-day meeting sponsored by the British Mycological Society and ourselves was held at Burlington House on Fungi, Keystones of Evolution and Earth Processes, during which several of our distinguished members made excellent contributions: Paul Cannon (joint organiser), Peter Crittenden and Rebecca Yahr.

Natural Resources Wales, conservationists, wildlife and the general public benefit enormously through the efforts of several well-known BLS members. Ray Woods has had particular success this year (and deserves a halo, says Alan Orange) in seeing his long-term project – the creation of the new National Nature Reserve (NNR) at Gregynog (near

Newport, Powys) – become a reality. This NNR includes a Site of Special Scientific Interest with lichen treasures, notably *Lecanora sublivescens*. While for some of us Gregynog is a bit far for a day out, trees are within reach of us all and, assisted by Frank Dobson's latest new book: A Field Guide to Lichens on Trees, we can inform our understanding of their lichens. In British Wildlife the contributions of several experienced members, including Bryan Edwards, Mark Powell and John Douglass, inform and are much appreciated by BLS members and a wider readership. Our popular programme of field meetings, successfully coordinated by Steve Price, reminds us of the diversity and richness of habitats across our countries, with Iceland planned for 2014! Recent visits to Scotland have been rewarding and heighten awareness of habitats' vulnerability to change. The vigilance of Scottish lichenologists, both those based in Edinburgh and further afield, is much appreciated and we are glad to contribute to conservation programmes, including that of the Atlantic Hazel Action Group.

In recent years the Society has strengthened opportunities for beginners and general naturalists to find out about lichens. OPAL has been outstanding in this regard and it is good to know that its legacy encompasses Europe through a networking project and, closer at home, a new fold-out key to urban lichens (on which Pat Wolseley has led). A great strength of the Society has always been the ready communication and collaboration among lichenologists of all levels. For this reason the 2014 Symposium was planned and it has been truly gratifying over the last six months to receive applications and abstracts from young researchers in many countries, and also from several highly esteemed names in the lichen world, who are enthusiastic about encouraging the development of professional lichenologists. On behalf of the Society, warmest thanks to all contributors. The Society is very grateful to the Linnean Society and The New Phytologist Trust for their support and sponsorship for this event.

Overall, the Society is in fine shape. We are grateful to all who serve us by taking on roles, though inevitably an AGM brings resignations and this year both Allan Pentecost and Mark Powell reach the end of their terms as elected Council members. We thank them for the strong contributions they each have made in advising on Society matters, leading lichen courses and through their publications. We shall also miss Cécile Gueidan and thank her for the taxonomic expertise she has brought, her international connections and support for the Society over the last three years, including contributions as Council member and at the current Symposium. We wish her well in her significant new post at the Australian National Herbarium.

We must not forget, however, those officers who serve on a continuing basis and without whom the Society could not function, notably the Secretary, Treasurer, Assistant Treasurer and Membership Secretary, as well as the Librarian, Herbarium Curator and Field Meetings Secretary. Our regular publications are much appreciated, directly through enjoyment of their informative content and also through the communication they foster among members and the wider like-minded community. We thank the Senior Editor of The Lichenologist and his editorial team, and the Editor of the Bulletin, very sincerely. I hope no one has been left out. It is time, of course, for me to step down from the role of President. This is eased in the knowledge that my successor, Dr Janet Simkin, is so capable and already well known to you all. I thank you all for your support and the privilege that I have appreciated over the last two years and I wish you and the Society every success in future.

No comments or questions from the floor.

4.2. Secretary's Report – ***Chris Ellis***

A brief report from the Secretary summarised the broad range of communications received by the BLS, which span themes from student project enquiries to requests for professional survey and conservation advice. Such enquiries are often habitat specific (e.g. churchyards, woodlands) or regionally focussed, and are forwarded to BLS members who have an appropriate special interest. All members were warmly thanked for responding to these requests for information and help. It was noted that the Secretary has recently been processing fewer requests for information, as the new website appears to have streamlined these enquiries. Finally, the out-going President Barbara Hilton was warmly thanked for her service to the Society, especially in the area of promotions and education, which are critically important in maintaining BLS relevance in society, and for her recent leadership as President.

No comments or questions from the floor.

4.3 Treasurer's Report – ***John Skinner***

The Financial Statement was distributed at the meeting and presented by the Treasurer. Assets were reported as £348,727, with the accounts having been examined and approved by an independent body. The statement of accounts was proposed by John Skinner, seconded by Janet Simkin, and unanimously accepted.

No comments or questions from the floor.

4.4 Membership Secretary's Report – ***Heidi Döring***

Total membership now stands at approximately 690, with 54 new members for 2013. The exact figures can't be confirmed until this year's renewals have been processed. Les and Sue Knight were thanked for their help with sending out new members packs.

A new membership administration system is to be implemented. This is an online system, which will streamline parts of the Membership Secretary's job and improve reporting. It will also make it possible for us to maintain a list of email addresses and send out bulk emails to those members who wish to receive them. Potential issues of data security have been investigated and access to the data held will be closely restricted. A Data Protection statement will be issued and members will be asked to state their preferred method of contact,

No comments or questions from the floor.

4.5 Conservation Committee Report – ***Peter Lambley, from report provided by Bryan Edwards***

The Conservation Committee met twice, in Edinburgh and at the Natural History Museum, during 2013.

It remains busy with several important consultations and a number of enquiries. Of particular concern are the continuing applications for hydro-electric schemes in Scotland and Wales. Some of the largest populations of *Collema dichotomum* are potentially threatened by these schemes as well other uncommon riparian species. These species and communities may also be threatened on lochan shores in Scotland as there are proposals to impound water to protect water resources. We will be watching this closely.

More sites were visited as part of the *Lobarion* project with mixed results. In March 2014 members of the Committee will be re-surveying important sites in the Lake District many of which have not been visited since the 1980s. In that area the *Lobarion* is of course

highly dependent on old Ash trees. 2013 saw more cases of Ash dieback found in England, but as yet its threat to our trees and woodland remains unclear, but we must remain watchful.

Readers of the Bulletin will be aware that records of rare species continue to be added. The number of *Teloschistes chrysophthalmus* sites is growing and it is found now from Cornwall east to Kent. Its habitat is always vulnerable as scrub is too often seen as invasive, and of little value, and many of its sites receive little formal protection. It is good to report that several important lichen sites have recently been notified as Sites of Special Scientific Interest in Wales, including the parkland at Nannau near Dolgellau and an important metallophyte site in mid Wales.

I would like to thank the Committee for their work over the year. Thanks go to Peter Lambley for taking and distributing the minutes, Ray Woods for dealing with issues in Wales and Brian and Sandy Coppins and John Douglass in Scotland, and to Ishpi Blatchley representing the Churchyard Committee. We continue to work closely with the country agencies and I would like to thank Dave Genney of Scottish Natural Heritage, Mike Sutcliffe of Natural England and Alan Hale of Natural Resources Wales (formerly Countryside Council of Wales) for their support. Thanks also go to Tim Wilkins, Dave Lammacraft and Deborah Long of Plantlife.

Comments and questions were taken from the floor:

- Ray Woods noted a growing disparity in conservation strategy and priority between the nations (England, Wales, Scotland and Northern Ireland), and suggested that in the future separate meetings may be required to align better with the national conservation agencies and devolved policy.
- Barbara Hilton thanked the Conservation Committee for their essential groundwork in tactical response to key issues, but suggested that the BLS might benefit from an improved strategic overview.
- Ray Woods responded to say that the loss of lichenologist posts was a great concern, and there was a difficulty in the Society being expected to take on increasingly 'professional' tasks voluntarily, with an opportunity to organise around this key issue.
- Barbara Hilton suggested that the Lobarion project meeting might provide an opportunity to consider how the Conservation Committee can best respond to the issues raised by Ray Woods.
- Mark Seaward expressed concern over the increasingly fragmented nature of British institutions, as this political dimension doesn't properly reflect biogeography, and as an example expressed the need to include Ireland in species status assessments.

4.6 Churchyard Sub-Committee Report – ***Ishpi Blatchley***

The Churchyard sub-committee does most of its work via email but we meet up once a year for a weekend of churchyard recording in an under-recorded area. These meetings are convened to try to reach consensus about our understanding of difficult groups (*Caloplaca, Verrucaria*, etc). Last year we were in Cheshire.

Churchyard records provide a substantial number of the total lichen records in the BLS database. Although the amount of churchyard recording has fallen away somewhat, there are still many members actively involved in recording churchyards especially in Scotland, and in Devon, Wiltshire, East Anglia and Lincolnshire. The Hertfordshire churchyard surveys (by a small team led by Andrew Harris and Mark Powell) have provided some very interesting results. An article in the St Albans diocesan newspaper *SeeRound* has ensured that news of the activities of this small group is spreading and more parishes are requesting surveys. Mark has written about these surveys in British Wildlife (Vol. 24, no. 6, August 2013).

These in depth surveys have increased our knowledge in terms of the ecology and taxonomy of lichens. For example the work Mark has done on clarifying (or perhaps confusing!!!) the identification of species in the *Caloplaca citrina* group was prompted by his churchyard surveys. The finding of *Lecanora horiza* on tombstones in Bedford cemetery last year has made us realise that there is much confusion between this species and *Lecanora campestris*. Mark has also done work on the *Lecania* group which has paid off with the discovery of *Lecania coeruleorubella* in Herts, a lichen not seen since the 19th century. The second UK record of *Diploschistes actinostomus* was identified by Mark in Kent.

Thanks are due to all members who undertake talks and workshops on churchyard lichens; some of these are carried out for local 'God's Acre' projects and in association with the 'Cherishing Churchyards' week in June of each year.

The work of the Diocesan representatives must be praised. They provide an invaluable service for the conservation of lichens and provide the Dioceses with the name of a person they can call on for advice. You will have read in the latest Bulletin about the successful outcome of a request to Eluned Smith for advice on the cleaning and repair of a medieval chest tomb in an Evesham churchyard. The excellent report by Ivan Pedley following a survey of the tomb persuaded the Trustees to repair the chest sensitively thus protecting the lichen flora. There have been several other requests for advice over the past year.

We are involved in two projects at the moment.

1. Following a request from Bryan Edwards the status of two churchyard lichens – *Anaptychia ciliaris* and *Opegrapha prosodea* - is being assessed. Using the records in the BLS database provided by Janet Simkin, people are being asked to revisit churchyards where the species had previously been recorded to check whether the lichens are still present.

2. 'Churchyards for London' is a joint project of the Church of England Dioceses of London, Chelmsford and Southwark. The purpose of the project is to inspire churches and wider groups to appreciate wildlife and biodiversity on their doorstep. Thirty churches distributed around ten inner and outer London boroughs are to be studied in detail. Lichen surveys of 5 of these churchyards have been completed so far.

I would like to finish by thanking all those who survey churchyards and give advice to PCCs and especially to the members of the Churchyard sub-committee and the Diocesan representatives for their hard work and commitment to lichen conservation in churchyards.

Comments and questions were taken from the floor:

- Mark Seaward expressed support for churchyard resurvey given site-specific threats through local actions, with redundant churches also a concern.

4.7 Education and Promotions Committee – *Sally Eaton*

At last year's AGM, the Education and Promotions Committee reported that its primary focus was agreed to be encouraging our beginner and mid-level members to persevere in their lichen journeys and to try and retain them as members of the BLS. Therefore, this year has seen a flurry of activity within the EPC:

- We were keen that those beginning with lichen identification had a way of contacting each other to help them along. Along came the Open University asking if we would be interested in promoting the use of iSpot amongst our members. Although not an ideal

way of identifying lichens, EPC felt the use of this web based tool was useful in encouraging early stage lichen enthusiasts to help each other to learn more about lichen identification.

- We were keen to see more accessible articles in the *Bulletin* and Lichen Hearted Tales was born. These are bulletin items that explore the wonder of lichens e.g. Sheila Quinn wrote a lovely article on *Fuscidea lightfootii*.
- We were keen to make the miniature world of lichens come alive to more people and developed the Hand Lens Plan whereby the BLS has bought a significant number of x10 hand-lenses. These lenses have been distributed amongst those teaching courses/giving talks who are encouraged to hand out to those attending their events. The hand-lenses are then available to buy for £2.50 should attendees wish to keep the lens after the course/talk.
- We were keen to refresh the merchandise items of the BLS and to develop some promotional items that could be given away at events and to promote the society. New logo'd pin badges, sew on embroidered badges, and window stickers have been designed and made up as merchandise items, as well as stickers and pencils to be used as event freebies.

Other news:

- The Open University citizen science project Open Air Laboratories (OPAL) was due to come to a close this year but has gratefully been allowed to continue due to a new grant from the Big Lottery Fund.
- An urban lichens leaflet has been put together by Pat Wolseley in order to use as a public engagement tool in towns and cities.
- The BLS has been working in partnership with Plantlife on a public engagement project based in the SW of England called Making the Small Things Count described as 'a pioneering new project funded by a grant of £62,000 from the Heritage Lottery Fund (HLF), which throws the spotlight onto the South West's most diminutive group of wild plants'. The project will focus on bring more attention to lichens, ferns and bryophytes in the Mendip Hills, Quantocks, Exmoor and Dartmoor. Over two years the project hopes to enable thousands of people to learn more about bryophytes and lichens, to offer guidance and training to those who look after the South West's Atlantic woodlands through running woodland management workshops and putting together a management toolkit, to launch a "lichen apprenticeship scheme" and to offer children and families the opportunity to explore the hidden world of lichens, liverworts, ferns and mosses as part of a series of road shows. The BLS has signed a MOU with Plantlife worth £7000 setting out three key activities they will provide; namely training courses for the lichen apprentices, a series of lichen walks and project management of BLS input. In addition, an additional sum of money is being made available for expert led survey days to be carried out.

What does 2014 have to offer? 2014 will see the continuation of many of our existing activities as well as a proposed photography competition and the introduction of a BLS Lichen Identification Accreditation Scheme.

No comments or questions from the floor.

4.8 Member Services Committee – provided by David Hill.

This committee has been very active, meeting three times a year and dealing with those aspects of the society that provide direct benefits to the members.

The main concern we have had in the last two years or so, since the last report (Summer *Bulletin* 2011), has been the system by which the Society managed its membership administration. Heidi Doring (Membership Secretary and Assistant Treasurer) has been doing a great job using an outdated computer system that has been very time consuming and tedious to use. Juggling this with her full time job at Kew has not been easy and it has become urgent that we improve our arrangements for membership administration. The problem has been how best to do this. We considered contracting out the work to the Society of Biology, employing a paid staff member, and devising a new computer system all of which options had serious difficulties of one kind or another.

Another option was to use a membership module already available to us in the Drupal software that underlies the BLS website. Alan Hale and Janet Simkin have spent the last few months figuring out whether, and if so how, this can be tailored to our use. It looks promising and has now been set up with a test system so that we can customise it to produce the reports and displays that we need, and we are hoping to transfer the membership data to it and run it as a live new system from early 2014. We are indebted to Alan and thank him for spending so much time helping us with this.

The advantages of the new system will be that it will save a lot of time administering the membership, and also make it easier for people to join the society and renew their membership. We are also looking at Direct Debits and the recovery of Gift Aid from the Inland Revenue for the part of the British subscriptions which exclude the *Lichenologist*. Once members' contact details are held (securely) in this system we shall be developing some members-only features, such as online information and publications not available to the general public. All this has taken some time and we have felt that rather than do a rushed job it was much better to take time and create a good "fit-for-purpose" system that optimises the service we can offer members.

Janet Simkin has also been very busy with the database. The number of records has just passed 1.8 million, and this is enabling us to analyse the data and extract valuable information for conservation and research. Notably, Chris Ellis, Brian Coppins and Peter Hollingsworth published a letter in *Nature* on the potential devastating loss of lichen diversity if *Chalara fraxinea* kills all our ash trees. 30% of UK lichen species are recorded on ash and of these 87 are threatened species, and of these 7 species have half their records on ash. This information would not be possible without the work of numerous lichenologists sending in records to the database and for the way in which the database has been developed by the society under Janet's excellent management. This is just the start and as more advanced analytical techniques become available much more information about our lichen flora and its conservation will become possible.

The library is being very well looked after in the National Botanic Garden of Wales and we continue to work towards an online catalogue. The books can be borrowed and there is a very large collection of reprints going back to the 19th century – a source of publications which are unlikely to be found electronically online. There is also a developing body of archival material which has been transferred from Mark Seaward.

The Herbarium is also working well and this does have an online list on the BLS Website. The list also tells us what the Herbarium does NOT have so please make donations of these species if you can.

The *Bulletin* needs no comment as it is seen by us all, but thanks are due to the excellent editing and publication work that Paul Cannon has been doing. This is the best snap shot of the activity of the Society's members.

Steve Price has been pushing ahead with a great programme of field meetings and workshops and anyone who has been on these will testify to how well they are organised. We have dealt with H&S issues and the contentious law prohibiting the carrying of knives. These are still matters to bear in mind because field work with lichens, innocuous as it may seem has very real and attendant risks.

Local groups are a significant area of the Society's activity and gradually we hope to have more information about these on the website. Many of these are run in an ad hoc way. Anyone arranging local group meetings is encouraged to send details to Steve.

As the Data Committee (as it was originally constituted) has been suspended, data matters have tended to come into the Membership Services Committee's agenda. The plan is for a new Data Committee to be set up which have a much broader remit including not only the database but also developing new functions on the website, online recording, smartphone apps, and electronic publications. Smartphones and tablets are a great opportunity for disseminating information about lichens and the new committee will be considering what these can offer the Society. Paul Cannon is working on online species accounts, using the Scatchpads software developed by the Natural History Museum to produce the Fungi of Great Britain and Ireland, and we will have to look at how best to link this into our own website and also the future revision of the Flora. All these things take expertise and support which is what we plan the new Committee to provide.

If there are any ideas, suggestions and comments you feel should be considered by the Membership Services Committee, please contact David Hill (*d.j.hill@bris.ac.uk*).

No comments or questions from the floor.

4.9i Database Report – *Janet Simkin*

The database now includes more than 1.33 million records for 2,273 species, across 55,000 sites, plus another 500,000 10km square records from the Mapping Scheme. All this is publicly available on the NBN Gateway, but the ongoing performance problems with the Gateway make the data less easily accessible than we would like. During the next few months we hope to put distribution maps for all species on the BLS website, from where they can be downloaded. These will show records pre-1960, 1960-1999 and post-2000 in different colours. More detailed maps for regions or vice counties are available on request, and seeing the white space on such a map often encourages people to record in areas that have not been visited before.

Now that the database project is finished the infrastructure is in place, and we should consider how we can use it to encourage more people to record lichens and send their records in.

As Janet is now busy with other things, there is an urgent need for more people to get involved in the running of the database and share the workload. Brian Coppins already manages the Scottish database, and over the next two years will also take on parts of England and Wales while he adds data from his and Sandy's reports and notebooks. This will be done one or two vice counties at a time. Records for England and Wales should continue to be sent to Janet while this is being done. Technical support is also an issue as it is a risk to be dependant on just one person for support and maintenance. Les Knight now has a copy of the

database and is training himself up in reporting and other aspects, but this will take time. Brian and Les were both thanked for their efforts and support. Anyone else willing to help is asked to get in touch with Janet.

2014 is the 50th anniversary of the founding of the Mapping Scheme, and it is still operating and being run by Mark Seaward. This is a remarkable achievement, and one that the society should celebrate.

Comments and questions were taken from the floor:

- Mark Seaward congratulated Janet Simkin on the success of the database projected, and provided a reminder that the mapping scheme is still operational, and has the advantage of simplicity which in some circumstances remains preferable.
- Both David Hawksworth and David Richardson made the observation that in the future the database project may need to look to younger members of the Society to keep pace with information technology.
- Peter Lambley suggested that one way to encourage recording would be to set a target, to inventory a given number of unrecorded or under-recorded squares by a certain date? We could also publish maps for different parts of the country showing the number of species recorded since 2000, to highlight those areas that have not been recorded for some time.
- Steve Price asked whether data that is sent to Janet Simkin (database project) is sent also to Mark Seaward (mapping scheme); the answer was no, because the volume of the data is too large, although Mark confirmed that he still welcomes records for any given 10km grid-square and responds quickly to requests for data or maps.
- Amanda Waterfield asked whether lichen records are exchanged by the BLS and BMS, so that records supplied to one find their way to the other. Janet confirmed that they are not.

4.9ii Website Report – *Janet Simkin*

The new website has been well received, and now gets about 600 hits a week. A show of hands at the meeting indicated that almost everyone present had used the website, about 60% had used the events programme, and 30% had used the online taxon dictionary. Alan Hale was thanked for all his work so far.

Some areas of the website need further development, and the whole site needs to be kept up to date and topical. The Conservation and Education Committees have agreed to look at their areas, and everyone is encouraged to send news items to Alan Hale to include on the site.

Janet reluctantly took on the task of website editor during the development project, but it is time now for someone with fresh ideas to take this over. The task is not onerous as Alan Hale does all the technical work, but someone is needed who will work with contributors to develop new content and ensure that it is edited into a consistent style. The website is now the public face of the society, and this is a great opportunity for someone to improve and develop it. Anyone interested should get in touch with Janet.

No comments or questions from the floor.

4.10 Field Meeting's Secretary Report – *Steve Price*

4.10i Meetings held in 2013

Three field meetings and two workshops were held in 2013 and all were well attended. Thanks go to the local organisers for suggesting, offering or being persuaded to arrange, lead and tutor the meetings. The meetings were:

BLS AGM 2013 field trip - Wakehurst Place, West Sussex
Sunday 27 January 2013
Local organisers: Heidi Doring & Paul Cannon

BRISTOL UNIVERSITY WORKSHOP - Photobionts and Sterile Crusts
Friday 22nd to Sunday 24th February 2013
Tutors: Dr Brian Coppins and Dr David Hill

BLS SPRING MEETING 2013 - Kinlochewe, Wester Ross
Saturday 27 April to Saturday 4 May 2013
Local organiser: Oliver Moore

BLS SUMMER MEETING 2013 - Exmoor & The Quantocks
Saturday 22 to Saturday 29 June 2013
Local organiser: Graham Boswell

BLS AUTUMN WORKSHOP 2013 - The genus Usnea,
Saturday 21 to Friday 27 September 2013
Locations: Rothiemurchas & Knapdale
Tutor: Becky Yahr, Royal Botanic Garden Edinburgh

4.10ii Meetings arranged for 2014

Five field meetings and one workshop have been arranged for 2014 including an extra mid-summer meeting to Iceland. As usual, details appear in the Bulletin and on the BLS website.

BLS 2014 AGM Nottingham
Field outing - Calke Park NNR (National Trust)
Sunday 12 January 2013
Local organiser – Steve Price

BRISTOL UNIVERSITY WORKSHOP
Lichen Pycnidia and Conidia and their role in lichen identification
Friday 21 February (evening) – Sunday 23 February 2014
Tutors: Dr Brian J Coppins and Dr David J Hill

BLS SPRING 2014 MEETING - Beara Peninsula (West Cork) and Killarney
Saturday 26th April 2014 to Saturday 3rd May 2014
Local organiser: Vince Giaravini

BLS MID-SUMMER MEETING 2014 – South West Iceland
20 – 27 July 2014

Local organisers – Silke Wirth, Starri Heiðmarsson & Ólafur Andrésson

BLS LATE-SUMMER MEETING 2014 - Southern Lake District
Saturday 30 August to Saturday 6 September 2014
Local organiser - Allan Pentecost

BLS AUTUMN MEETING 2014 - Kent
Thursday 16 to Monday 20 October 2013
Local organisers - Ishpi Blatchley and Keith Palmer

4.10iii Meetings being planned for 2015

Outline plans are in place for meetings in 2015 and include:

Spring 2015 – Snowdonia
Local organiser – Ray Woods

Summer 2015 – Unst, Shetland (including workshop sessions on the genus *Cladonia*)
Local organiser – Becky Yahr & *Cladonia* tutor - Annelie Burghause

Autumn 2015 - Forest of Dean
Local organiser – Juliet Bailey

4.10iv Courses and Local Field Meetings

To encourage wider participation in lichen related activities details of meetings and courses of some local natural history societies, the Field Studies Council and other organisations are posted to the Events section of the BLS website. BLS Members are asked to submit details of such meetings to the Field Meetings Secretary for them to be added to the BLS Website.

No comments or questions from the floor.

4.11 Bulletin Editor's Report – *Paul Cannon*

Paul Cannon thanked all contributors to the 2013 issues of the *Bulletin*, and made a general request for material for 2014. Paul was thanked for his work in maintaining an excellent vehicle for the BLS.

No comments or questions from the floor.

4.12 Senior Editor's Report – *Peter Crittenden*

The 2013 issues of the *Lichenologist* accumulated to 856 pages – the highest in the Journal's history. To cope with the increasing workload new members had been recruited onto the Editorial Board, along with a new proof reader to maintain editorial standards. Peter thanked Tony Braithwaite for his essential managerial assistance, along with proof-readers and members of the Editorial Board for their tireless work in ensuring a high-quality product.

Peter reported on the survey of members which addressed the potential for switching to electronic-only journal access, and which found that members very highly valued the hard-copy of the Journal. It is therefore not a change likely to occur in the near future.

Comments and questions were taken from the floor:

- Susan Will-Wolf asked whether the wider body of lichenologists could be included in the survey about the future development of *The Lichenologist*. Peter will post the link on LichensL.

4.13 Librarian's Report

Ray Woods reminded the membership that the library is securely housed and well organised at the National Botanic Garden of Wales – it's there, use it! Theresa Greenaway was thanked for her help in organising the collection.

No comments or questions from the floor.

4.14 Herbarium Report – *provided by Richard Brinklow*

The Society's Herbarium has had a fairly typical year with only a relatively small number of loans being requested by members.

All the BLS Herbarium *Usnea* specimens were taken to the *Usnea* Workshop where they were both used and checked /re-determined by Rebecca Yahr. She also donated some additional specimens to fill some gaps. I am very grateful for this assistance.

I would like to remind members that they are welcome to borrow specimens from the Herbarium. Although not comprehensive, it does contain about 800 taxa of British Lichens. A list of contents can be found on the BLS website. The Herbarium is particularly useful for beginners wishing to get to know macro-lichens. Specimens (preferably in batches of not more than 20) can be borrowed by post by emailing requests to the Curator (herbarium @britishlichensociety.org.uk). With ever-increasing postal charges, I do pay particular attention to package dimensions and weight when despatching loans. Postage reimbursement (usually about £5) should be enclosed when the loan is returned.

As the Herbarium contains mainly bequest material, many crustose species which have only been recognised in the last few years are still poorly represented. I would therefore urge authors and others who have surplus non-cited specimens to consider donating them to the Society's Herbarium.

Comments and questions were taken from the floor:

- Mark Seaward provided an impromptu report on the BLS archives, with a plea for greater consideration as to how this resource is going to be secured in perpetuity. There are currently 1-2 requests per week for archive materials.

7. Proposed Changes to the Constitution

This item was removed for further consideration by Council in May.

5. Election of Officers

Barbara Hilton proposed that returning Officers be elected en bloc, this was seconded by Ivan Pedley and the Officers unanimously approved. Council then proposed the following new members:

Information Committee: Les Knight to Chair a revised Data Committee, with the proposal presented by Janet Simkin, seconded by David Hill, and unanimously approved.

Ordinary Council Members: There were two retiring members of Council (Allen Pentecost, and Mark Powell), with Cecile Guiedan resigning to take up a new post in Australia. Three new members of Council were proposed:

- Maxine Putnam, proposal presented by Pat Wolseley, seconded by Fay Goodwin, and unanimously approved.
- John Douglass, proposal presented by Christopher Ellis, seconded by Ivan Pedley, and unanimously approved.
- Catherine Tregaskes, proposal presented by Steve Price, seconded by Pat Wolseley, and unanimously approved.

President: A new President – Janet Simkin – was proposed by Barbara Hilton, seconded by Steve Price, and unanimously approved.

Vice-President: A new Vice-President – Allan Pentecost – was proposed by Janet Simkin, seconded by David Hill, and unanimously approved.

6. Ursula Duncan Award

Barbara Hilton introduced the UDA and its purpose of recognising extraordinary service to the Society. Peter Crittenden then spoke about the 2014 recipient – Tony Braithwaite – before he was presented with the award.

7. Any Other Business

None.

8. Notices

The new President, Janet Simkin, warmly thanked Barbara for her leadership of the Society over the previous two years. She then presented a forward look, with options for future AGM meetings, suggesting London (Kew) in 2015, and Newcastle in 2016, with a possible Extraordinary General Meeting in Autumn 2014 to address proposed Constitutional Changes.

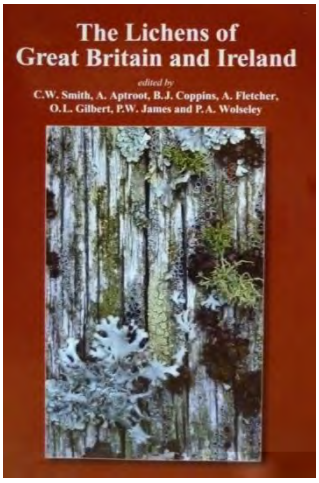
Notice of Annual General Meeting

The 2015 Annual General Meeting of the British Lichen Society will take place on Saturday 17 January 2015 at the Jodrell Laboratory, Royal Botanic Gardens, Kew, Surrey TW9 3AF.

Further details will be announced in the Winter 2014 Bulletin.

Publications and other items for sale

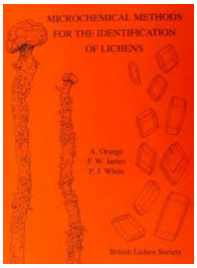
Please contact The Richmond Publishing Co. Ltd, P.O. Box 963, Slough SL2 3RS, tel. (+44) (0)1753 643104, email rpc@richmond.co.uk to purchase these items.



Cat.1. The Lichens of Great Britain & Ireland. Ed. Smith et al. (2009). Hardback, 700pp.
This work, a much enlarged revision of 'The Lichen Flora of Great Britain and Ireland published in 1992, reflects the enormous advances in lichen taxonomy over the last two decades. There are keys to 327 genera and 1873 species, with detailed descriptions and information on chemistry and distributions. The language is accessible, avoiding obscure terminology and the keys are elegant. The Lichens of Britain and Ireland is undoubtedly the standard work for the identification of lichens in Great Britain and Ireland and will be indispensible to all serious students of lichens and to other biologists working in the related fields of ecology, pollution, chemical and environmental studies.

BLS members: £45.00 ; non-members £65.00
Postage & Packing £7.50 UK, £15.00 overseas
(note this is a very heavy book!).

Lichen Atlas of the British Isles, ed. M.R.D. Seaward
The Atlas has been published in fascicles, unbound A4 sheets hole-punched for keeping in a ring binder. Each species account includes a distribution map and a discussion of the lichen's habitat, ecology, identification and status.
Cat.2. Fascicle 2: *Cladonia* part 1 (59 spp). 1996. **Out of print.**
Cat.3. Fascicle 3: The foliose *Physciaceae* (*Anaptychia*, *Heterodermia*, *Hyperphyscia*, *Phaeophyscia*, *Physcia*, *Tornabea*) plus *Arctomia*, *Lobaria*, *Massalongia*, *Pseudocyphellaria*, *Psoroma*, *Solorina*, *Sticta*, *Teloschistes*. (54 spp) 1998.
Cat.4. Fascicle 4: *Cavernularia*, *Degelia*, *Lepraria*, *Leproloma*, *Moelleropsis*, *Pannaria*, *Parmeliella*. (36 spp) 1999.
Cat.5. Fascicle 5: Aquatic Lichens and *Cladonia* part 2. (64 spp). 2000.
Cat.6. Fascicle 6: *Caloplaca*. (58 spp) 2001.
All fascicles are offered to members at a special price of £4.00 each , (approximately half price). Price to non-members is £6.00 per fascicle. Postage & Packing £3.50 UK, 10.00 overseas, per fascicle.
Cat.7. Fascicles 3 to 6 for £12.00 (Buy 3, get one free!). Price to non-members is £6.00 per fascicle. Postage and packing £8.50 UK, £25.00 overseas.



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

2nd edition, with two colour plates. Full of useful information on pigments, crystals, colour tests with reagents and TLC. Price £9 members, £11 non-members.

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

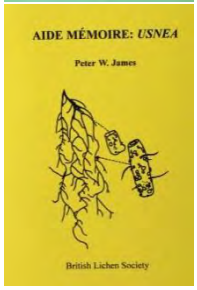
An update and revision of the 2003 edition and now extended to include lichenicolous fungi. Provides a comprehensive catalogue of threat statuses. Also included are lists of specially protected species in England, Scotland and Wales and those species for which Britain has an internationally important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

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

Guidelines on commissioning surveys, fieldwork, identification and report writing, aimed principally at those people and organisations commissioning surveys and at those undertaking them. However, much of the information is of value to any lichenologist engaged in field recording.
BLS members £7.00; non-members £10.00. Postage & Packing £2.50 UK, £6.50 overseas.

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

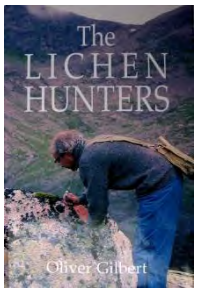
[Out of print]



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

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

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



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

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

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

An excellent introduction to lichenology, from the basic biology of lichens to their environmental importance as well as the history of the science.
BLS members £8.95; non-members £9.95. Postage & Packing £2.50 UK, £6.50 overseas.

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

Spiral-bound book with strong paper. Illustrated keys to lichens of stone, wooden structures, soil and mosses. 53 colour photographs. Covers many common lowland lichens.
BLS members £6.50; non-members £7.50. Postage & Packing £2.50 UK, £6.50 overseas.

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

A superb guide to over 400 species. 96 colour photographs. In the same format as cat. 16.
BLS members £10.00; non-members £12.00. Postage & Packing £2.50 UK, £6.50 overseas.

Cat. 18. A Field Key to Lichens on Trees by Frank Dobson (2013)

A superb guide to around 500 species. 96 colour photographs. In the same format as cat. 16.
BLS members £15.00; non-members £17.00. Postage & Packing £2.50 UK, £6.50 overseas.

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

£5.00 per poster, £4.00 per poster for purchases of 8 or more. Postage & Packing (for up to two posters) £3.00 UK, £6.50 overseas.

Cat.23. Parmelia identification CD-Rom
Although the nomenclature has been superceded, this CD provides a useful range of photographs and other information for identification.
BLS members: £5.00; non-members £7.00. Postage & Packing £2.00 UK, £5.00 overseas.

Cat.24. Lichen Identifier CD-Rom
This is a simple to use multi-access computer key that enables the user to find the species name and characteristics of most British and Irish lichens. It is divided into field and microscopical characters and any information available may be entered in any order to obtain a solution. With the majority of species, a few characters, noted in the field, are sufficient to identify the species. A brief note on each species further assists separation of similar species. It was originally based on *The Lichen Flora of Great Britain and Ireland* by O.W. Purvis et al (1992). It includes every species mentioned in that book plus many that have been more recently described or added to the British list. The nomenclature agrees with the most recent version of the BLS checklist. It can therefore be used to identify any of the lichens contained in the above *Flora*. In addition, it includes many species that have been added to the British and Irish lists since that time.

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

Improvements in Version 3 of *Lichen-Identifier* include: Completely revised data, where possible, using the completed sections of the new Flora, plus many recently described species. The conservation evaluation from *A Conservation*

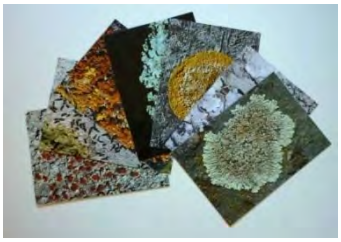
Evaluation of British Lichens is given for each species. Over 750 colour photographs of improved quality with a scale added to each. Every map has been updated and maps of lichenicolous fungi are included, although these are not part of the actual key.

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

BLS members £26.00 for version 3, (£15.00 for upgrade from version 2).
Non-members £28.00 for version 3, (£15.00 for upgrade from version 2).
Postage & Packing £2.50 UK, £6.50 overseas.

Cat.25. Greetings Cards/Notelets by Claire Dalby

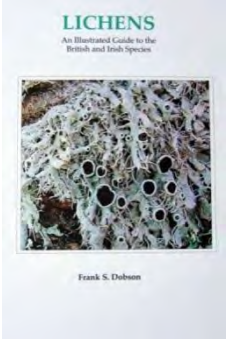
A set of five cards with envelopes, featuring five exquisite pen and ink illustrations of British lichens.
£2.00 per set. Postage & Packing £2.00 UK, £3.50 overseas.



Cat.26. BLS Postcards

A set of 16 beautiful photographic postcards of British lichens.
£2.00 per set. Postage & Packing £1.50 UK, £3.00 overseas.

Cat.27. Woven ties with below-knot motif of BLS logo. Attractive ties with discreet BLS logo. Colours available: maroon, navy blue, brown, black and gold.
£7.00. Postage & Packing £1.50 UK, £3.00 overseas.



Cat. 29. Lichens – An Illustrated Guide to the British and Irish Species 6th Edition (2011)

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

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

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

There is an enlarged generic key and a much extended section on sterile species. A generic synopsis is included to assist the more experienced lichenologist. Paperback £35.00, hardback £50.00. Postage & packing £7.00 UK, overseas £10.00.

NEW MEMBERS since publication of the 2013 Winter Bulletin

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

Mr R. Ashwell, Cladonia, 62 Windemere Crescent, Luton, Bedfordshire, LU3 2PR, UK

Mrs E.J. Biles, Kendalls Lodge, Mitlon on Stour, Gillingham, Dorset, SP8 5QA, UK

Mr S. Brain, Willow Hill Cottage, School Lane, Burwardsley, Chester, CH3 9NX, UK

Mrs S. Brinkley, Cedar Cottage, Longleys, Meigle, Perthshire, SCOTLAND, PH12 8QX, UK

Ms G. Campbell FLS, 6 York Street, Market Harborough, Leicestershire, LE16 7PF, UK

Dr A. Casanova Katny, Departmento de Microbiologia, Fac. Ciencias Biologicas, Univ. de Conception, Barrio Universitario s/n, Conception, CHILE

Ms J. Cassidy, 6 The Rookery, Balsham, Cambridgeshire, CB21 4EP, UK

Dr K. Cavanagh, 94 Kimbolton Road, Bedford, Bedfordshire, MK40 2PF, UK

Mrs M. Chapman, 5 Woodville Park, Dairsie, Fife, SCOTLAND, KY15 4TE, UK

Mr R. Common, 534 Fenton Street, Lansing MI 48910, U.S.A.

Mr R. Cure, 8 Canon Drive, Ash Green, Coventry, West Midlands, CV7 9HJ, UK

Mr I. Day, Wreay Farm, Shap, Penrith, Cumbria, CA10 3LB, UK

Mr P. Feakin, 4 Oakview Gardens, East Finchley, London, N2 0NJ, UK

Dr A. Flakus, Lubicz 46, PL-31-512 Krakow, POLAND

Miss J.R. Gatward, 3 Cornwall Crescent, Yate, Bristol, BS37 7RT, UK

Dr E. Gaya, Royal Botanic Gardens, Kew, Jodrell Laboratory, Mycology Section, Richmond, Surrey, TW9 3DS, UK

Mr D. Gray, Sunnyside, Green End, Dane End, Ware, Hertfordshire, SG12 0NX, UK

Mr P. Halstead, 62 Palatine Road, Worthing, West Sussex, BN12 6JW, UK

Dr D. Haughland, 11326 103 St NW, Edmonton, Alberta T5G 2H7, CANADA
Mr R.W. Heath, 12 Park Place, Lochee, Dundee, SCOTLAND, DD2 2HS, UK
Mrs M. Holderness, 904 Cascades Tower, Westferry Road, London, EI4 8JN, UK
Mr A. Hotchkiss, Dolfa, Bridge Street, Llanfair Caereinion, Powys, WALES, SY21 0RZ, UK
Mrs M. Huffer, Flame Lily, 16 The Sandpipers, Rivermount, Gravesend, Kent, DA12 5QB, UK
Miss E.J. Johnston, 38 Trafalgar Street, York, YO23 1HZ, UK
Mr C. Jones, Troserch Farm, Llangennech, Llanelli, Carmarthenshire, WALES, SA14 8AZ, UK
Mr P. Jones, 5 Hampton Road, Newbury, Berkshire, RG14 6DB, UK
Ms Z. Kaufmann, 101 Oakley Road, Belmont MA 02478, U.S.A.
Dr A. Latham, Venn, Mines Road, Bideford, Devon, EX39 4B2, UK
Ms R. Leach, 4 West View Close, Middlezoy, Bridgewater, Somerset, TA7 0NP, UK
Mr A. McBay, Schoolhouse, Weydale, Thurso, Caithness, SCOTLAND, KW14 8YJ, UK
Mrs W. Mulford Bevan, 6 Benhall Green, Benhall, Saxmundham, Suffolk, IP17 1HU, UK
Ms J. O'Keeffe, 25 Guildford Street, Stoke-on-Trent, ST4 2EP, UK
Mr P.J. O'Neill, Albro House, Main Street, Oswaldkirk, York, YO62 5XT, UK
Ms T. Rice, 22 Firbeck Road, Wollaton, Nottingham, NG8 2FB, UK
Mr R.D. Robare, 12 Holdstock Place, East Hartford CT 06108, U.S.A.
Dr H. Schaefer, 25A Medway Street, Dorchester MA 02124-5771, U.S.A.
Mr B. Warrington, 51 Buttfield Road, Hessle, East Yorkshire, HU13 0AX, UK
Ms M. Zahradnikova, Realfagbygget, DNS, Allegaten 41, NO-5007 Bergen, NORWAY

Obituary

Sadly we have to inform you that the following members of our society passed away:
Dr D.H. Dalby, 2 West Park, Stanley, Perthshire, SCOTLAND, PH1 4QU
Mr P.W. James, Warren Farm Lodge, 123 Warren Farm Road, Kingstanding, Birmingham,
Mr F.D. Kelsey, White Cottage, Church Lane, Cley next the Sea, Holt, Norfolk, NR25 7UD
Mrs M.J. Palfrey, The Fold, Sheep Street, Stow-on-the-Wold, Gloucestershire, GL54 1AU
Mr J.H. Smith, 13 Baden Road, Redfield, Bristol, BS5 9QE

THANK YOU

for kindly supporting the British Lichen Society with a donation:

Mrs N. Bacciu, Dr G.M. Brown, Dr D. Coxson, Dr P. Crittenden, Mr J. Drewett, Ms J. Fiorentiono, Mrs B.D. Haynes, Mr K. Homble, Miss P. Jackson, Mr K. Jivraj, Dr C.R. Lambrick, Ms E.J. Mackintosh, Dr H. Oakley, and Mr G. Stolley.

Membership Matters – from the Membership Secretary

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

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

2. Expiring year. This will show any credit you may still have for following years.

Please, keep us up to date when your contact details change! Please, also remember to inform the membership secretary when your email address changes.

Members only content on our web site. This has not yet been rolled out. You will be contacted by us with your account details once this is available, and you will be provided with an update privacy statement.

Review of membership categories and online membership administration. This is work in progress, and if ready in time for the next AGM you will be contacted individually by mail.

Publication of the Winter 2014 Bulletin

Copy for the Winter 2014 Bulletin should reach the editor (contact details on the inside front cover) by 1 October 2014

British Lichen Society Bulletin no. 114
Summer 2014

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