British Lichen Society *Bulletin* no. 110 Summer 2012

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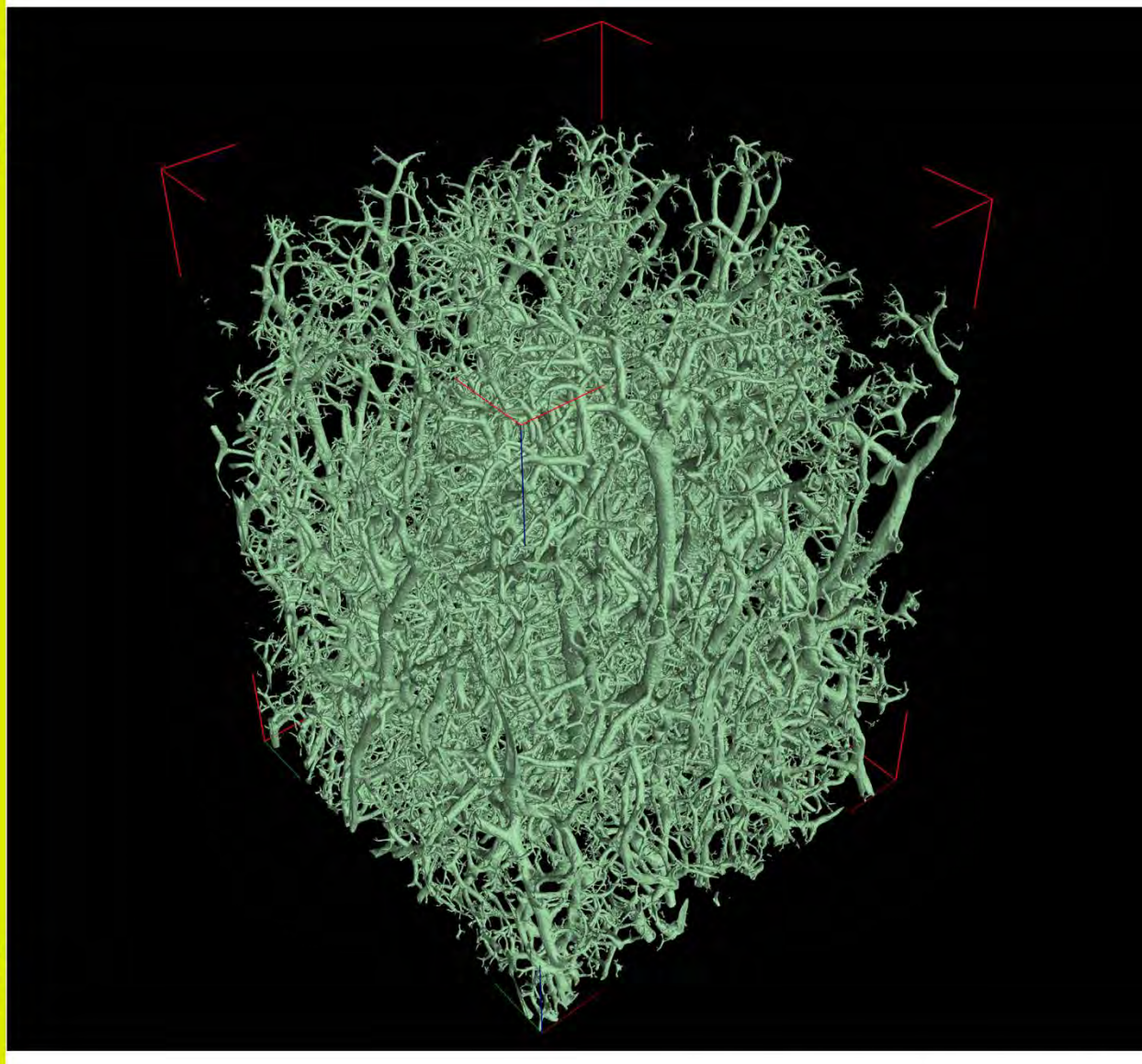

no. 110: Summer 2012

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PRESIDENT B.P. Hilton, Beauregard, 5 Alscott Gardens, Alverdiscott, Barnstaple, Devon EX31 3QJ; e-mail bphilton@eclipse.co.uk

VICE-PRESIDENT J. Simkin, 41 North Road, Ponteland, Newcastle upon Tyne NE20 9UN, email janetsimkin@btinternet.com

SECRETARY C. Ellis, Royal Botanic Garden, 20A Inverleith Row, Edinburgh EH3 5LR; email c.ellis@rbge.ac.uk

TREASURER J.F. Skinner, 28 Parkanaur Avenue, Southend-on-Sea, Essex SS1 3HY, email johnskinner@southend.gov.uk

ASSISTANT TREASURER AND MEMBERSHIP SECRETARY H. Döring, Mycology Section, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, email h.doring@kew.org

REGIONAL TREASURER (Americas) J.W. Hinds, 254 Forest Avenue, Orono, Maine 04473-3202, USA; email jwhplh@earthlink.net.

CHAIR OF THE DATA COMMITTEE D.J. Hill, Yew Tree Cottage, Yew Tree Lane, Compton Martin, Bristol BS40 6JS, email d.j.hill@bris.ac.uk

MAPPING RECORDER AND ARCHIVIST M.R.D. Seaward, Department of Archaeological, Geographical & Environmental Sciences, University of Bradford, West Yorkshire BD7 1DP, email m.r.d.seaward@bradford.ac.uk

DATA MANAGER J. Simkin, 41 North Road, Ponteland, Newcastle upon Tyne NE20 9UN, email janetsimkin@btinternet.com

SENIOR EDITOR (*LICHENOLOGIST*) P.D. Crittenden, School of Life Science, The University, Nottingham NG7 2RD, email pdc@nottingham.ac.uk

***BULLETIN* EDITOR** P.F. Cannon, CABI and Royal Botanic Gardens Kew; postal address Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, email p.cannon@kew.org

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FIELD MEETINGS SECRETARY S.G. Price, Woodlands, Combs Rd, Combs High Peak, Derbyshire SK23 9UP, email lichenrecords@sorby.org.uk

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Summer 2012

Welcome to the Summer 2012 Bulletin, fuller ever than before with articles, notes and reports from field meetings. Goings-on at the Natural History Museum feature in two articles, one focusing on James Stirton and his collections, the other a more general historical account of the Lichen Section from its inception until 1990.

Caloplaca continues to get yet more complicated to the minds of some, but we should be grateful to Mark Powell and Jan Vondrák for uncovering the identities of collections from Buckinghamshire that may be Italian immigrants, and of species of the *Caloplaca citrina* aggregate.

Two contributions from young lichenologists merit particular mention: one a report of a most impressive BLS-supported vacation project by a student in New Zealand, and the other by pupils from a London school who carried out an air pollution project (with a bit of help from Pat Wolseley and Holger Thüs) that impressed to such a degree that the project will feature in the Royal Society's annual Summer Science Exhibition. It's heartening to see such interest in lichens from the pre-arthritic generation.

There's also a bumper crop of reports from field meetings and workshops, emphasizing how active the BLS is when it comes to tramping around with a handlens and (legal) collecting knife (see the warning note). Meetings in Killarney (this one a rather delayed report!), Islay (avoiding the distilleries but not necessarily their products), Pembrokeshire (messing around constructively in streams, with some participants more immersed in the subject than others) and back to Derbyshire with a gritty meeting to complement the recent visit to limestone habitats.

In the previous Bulletin, we learnt that lichens have the potential to control prion diseases (and see the article in *Lichenologist* **44**(4): 523-531, 2012); now we find that the red orcein dyes extracted from *Roccella tinctoria* could hold the key to curing Alzheimer's disease. See the article (in German) at *http://www.gesundheitsforschung-bmbf.de/de/4455.php*. There's a way to go before the therapeutic potential of these lichen products can be fully understood, but the work underlines that lichens can do much more for us than decorate trees and rocks.

And finally…. Members will be relieved to learn that the video presentation on Facebook entitled "The Living Dead – my Years in the BLS" refers to the US Government's Bureau of Labour Statistics rather than the British Lichen Society.

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

Front cover: *Cladonia portentosa* as you've never seen it before: a 3-D visualization using X-ray computed tomography. A new project at the University of Nottingham will use the technique to investigate its complex morphology as a mechanism to improve competition for light resources in the high Arctic.

The James Stirton lichen collection at the Natural History Museum, London (BM)

Scattered through the British and Foreign lichen herbaria at the BM and in the lichen herbarium in Glasgow (GLAM) are numerous small brown manila card packets (Figs 1A, 1B) neatly labelled by the Scottish lichenologist/bryologist James Stirton (1833-1917). Stirton's handwriting is recognisable at once and is distinguished by its legibility (rare in the medical profession generally) and its graceful structure. At the BM, many more of these Stirton packets are in boxes as part of the great unincorporated lichen backlog that was stored initially on the tops of herbarium cabinets in the General Herbarium, and subsequently (c. 1990) transferred to the attic storeroom of the corner tower above the Palynology Suite.

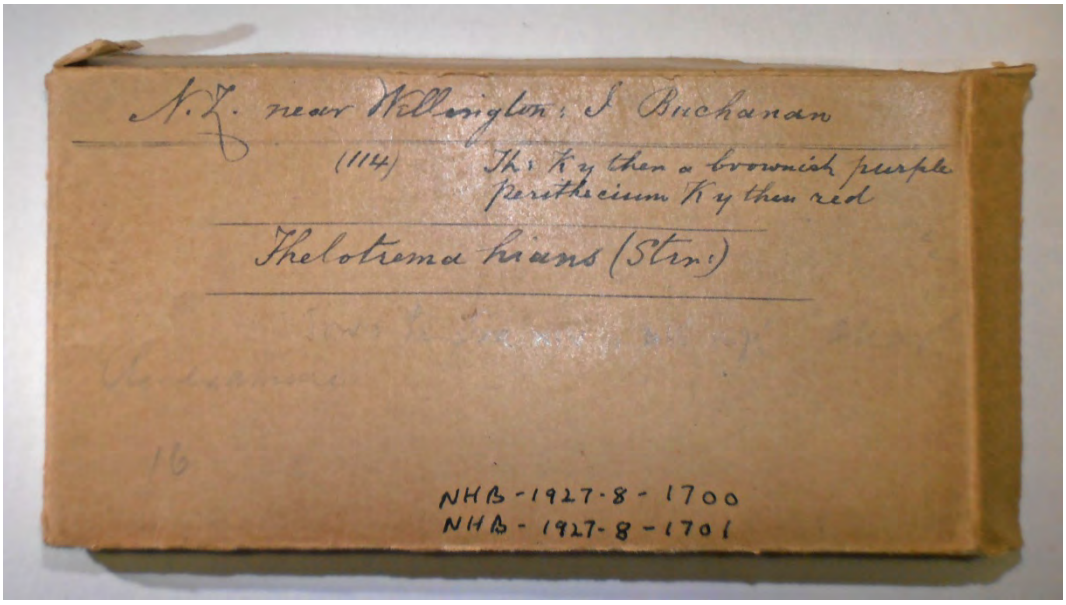


Fig. 1A: Stirton packet of *Thelotrema hians* Stirt. (GLAM)

From 1973 until 1982, when I was preparing the first edition of *Flora of New Zealand Lichens* (Galloway 1985), I searched for many of Stirton's New Zealand collections that were sent to him from Wellington by the Scottish draughtsman-botanist John Buchanan (1819-1898). Many of the BM collections were then still unincorporated, and an initial visit to Glasgow (GLAM) in 1978 disclosed the full extent of Buchanan's New Zealand collections from which the BM specimens were derived as duplicates. Between 1873 and 1900 Stirton described 116 new lichens from Buchanan's collections of over 180 different numbers, the largest number of new lichen names from New Zealand in the 19th century. Although Stirton's New Zealand names are a significant tranche of his published output, he also made contributions to

knowledge of the lichen mycobiotas of many other regions and these will be discussed briefly below.

James Stirton was born in Coupar Angus, Perthshire in 1833 (Lawley 2011). He graduated MD from Edinburgh University in 1858, his thesis entitled "On the Disorders of Digestion in Infancy" (Sally Pagan *pers. comm*.). He taught Mathematics at Merchiston School in Edinburgh from 1856-1858, and after graduation Stirton moved to Glasgow where he spent the rest of his professional life, established a large practice, was appointed Lecturer in Gynaecology in 1876 at the Glasgow Royal Infirmary, and in 1889 became Professor of Midwifery at St Mungo's College (incorporated into the Medical Faculty of Glasgow University in 1947), a position he held for 15 years (Traill 1917; Boyd 1920). Besides pursuing a fulfilling medical teaching career, Stirton early developed a keen interest in mosses and lichens, making many and regular visits to the Scottish mountains, especially to Ben Lawers, to observe and collect. His parallel life in bryology/lichenology brought him fellowship and membership of several natural history and biological societies (The Linnean Society of London, the Philosophical Society of Glasgow, the Natural History Society of Glasgow, the Glasgow Society of Field Naturalists of which he was the first President, and the Botanical Society of Edinburgh), to whose journals he contributed many articles, and in whose activities he was an active member and frequently an office-bearer.

Fig. 1B. Lectotype specimen of *Thelotrema hians* Stirt. (GLAM)

His publications in bryology and lichenology (see Trail 1917; Hawksworth & Seaward 1977) soon brought Stirton a wide correspondence with the leading bryologists and lichenologists of the day (e.g. James Crombie, William Leighton,

William Nylander, Edward Tuckerman, T.M. Fries, Jean Müller Argoviensis), and several collectors sent him lichens from many different parts of the world for identification, including:

(1) *New Zealand* – his collectors being John Buchanan (Stirton 1873, 1874, 1875b, 1875c, 1877b, 1877c, 1878, 1881a, 1883a, 1883b, 1884, 1898a, 1900; Galloway 1985, 2007, 2012), Hugh Paton (Stirton 1881c, 1898a), Henry Travers (Stirton 1877b), Dr R. Pinkerton (Stirton 1883b) and T.W.N. Beckett (Stirton 1898a, 1900; Galloway 1998).

(2) *Australia* - - his collectors being Hugh Paton, F.M. Bailey, Mrs Heywood McEwen, E. Spong. Mr Hartman, Rev. M. Anderson, Mrs McCann, Mr Kirton, Mr Falck, C. de Burgh, F. v. Mueller, C.J. Gwyther, Mr Sullivan and Mr Lucas (Stirton 1876a, 1878, 1880, 1881a, 1881c, 1883a, 1898a, 1898b, 1900; Rogers 1982).

(3) *South and West Africa* – his collectors being Prof. P. MacOwan of Gill College, Dr John Shaw of Capetown, Mr J.H. McLea, Dr J.B. Knobel, T. Chapman, G. Thomson, Dr W. Sutherland and Mr Grant (Stirton 1876a, 1876b, 1877a, 1877d, 1878, 1881a, 1883a).

(4) *The Amazon* – his collector of foliicolous lichens being, Prof. Trail of Aberdeen University (Stirton 1877a, 1879). [Stirton's publication of new species of foliicolous lichens from this collection (Stirton 1879), brought him into correspondence with Dr Johannes (Jean) Müller Argoviensis, who was also interested in lichens growing on living leaves. In a letter to Müller on 19 December, in reply to a request for specimens of foliicolous lichens, Stirton wrote "…I have <u>only now</u> had returned to me my Epiphyllous lichens. I lent them to another botanical correspondent who was anxious to study the <u>tribe</u>. I am sorry to say that this botanist has made sad havock [sic.] amongst them. As you must know many of the specimens embraced only 2 or 3 apothecia and this friend has not scrupled to destroy the larger number of these, and in one or two instances there are no apothecia left by way of types. In these circumstances, I dare not trust the collection out of my possession a second time. I am sorry for this, as I could have had no objection to let you have the collection for purposes of comparison. I think you have copies of the papers containing the diagnoses of all the species (N. Zealand as well as South American). If not I shall be delighted to send copies.
Yours truly
James Stirton M.D.

I understand French, J.S.…" (Archives, Conservatoire et jardin botaniques de la Ville de Genève)].

(5) *Brazil* – his collector being Mr Weir (Stirton 1881a).

(6) *India, Ceylon and the Himalayas* – his collectors being Dr G. Watt, J. Thomson, Dr King and Mr A. Watt (Stirton 1877a, 1878, 1879b, 1881a, 1881c, 1883a, 1883b, 1898a. 1898b, 1900).

(7) *North America* – his collectors being Mrs Roy, Mrs Hawley, Mr D.A.P. Watt, Dr M. Black, J. Richardson and Mr A. Gray (Stirton 1876a, 1881a).

(8) *Chile* – his collectors being – T. & J. King (Stirton 1883a).

(9) *Madeira* – his collector being J. Payne (Stirton 1881a).
(10) *Fernando Po* – his collector being G. Thomson (Stirton 1881a).
(11) *Trinidad* – his collector being Rev. G. Brodie (Stirton 1876b, 1898b).
(12) *Kumaon, East Indies* – his specimens being from Prof. Dickie, Aberdeen University (Stirton 1877a).
(12) *Mauritius* – his collector being Colonel Pike, US Consul (Stirton 1877a).
(13) *Egypt* – his collector being Dr R. Pinkerton (Stirton 1881a).

Stirton also made lichenological comments on lichens collected by Henry Moseley during the "Challenger" expedition of 1872-1876 (Stirton 1875, 1880b).

During my investigations into the lichen collections of John Buchanan (1819-1898) named by Stirton and preserved in the collections of BM and GLAM, over 20 years ago Peter James and Jack Laundon drew my attention to a pencil-written manuscript of D.J. Griffiths (formerly on the staff of the Dept of Botany at the BM), and headed "Re Stirton Collection" and held in the Lichen Section (BM). Written as a draft for a Memo to the Keeper of Botany, it throws useful light on Stirton's intentions for his lichen herbarium, and also helps demonstrate the dimensions of this important lichen collection (which holds many type specimens), presently divided between BM and GLAM (Jones 1980), and which has high interest and value for many different regional lichen mycobiotas. The transcript of Griffiths's manuscript memo is given below in its entirety. Words crossed out by Griffiths are enclosed in square brackets [ ]

"…**Re Stirton Collection**

The object of this memo. is to set out all that I have been able to find out about the Stirton collection so that necessary decisions may be made and the final disposal of the collection taken in hand.

Information
The Collection itself - The Crypt Acquisitions Book for 1927 has a reference to "Herb.J.Stirton Glasgow -.... 1018 British Lichens, 1151 Foreign Lichens" under the date November 14th. However, the collection first came to the Museum in 1917 on the death of Dr Stirton & from that date there was a spasmodic correspondence with regard to it for at least the next ten years.

Stirton [wanted] amassed a large collection of Lichens from various parts of the world & was in touch at one time or another with many of the leading Lichenologists of his day. His was probably the first critical work on [collections] the Flora of N. India & the Himalayas & on that of Australia and New Zealand. [As a consequence of this, he published many new] Stirton, both in his lifetime & since, has been taken to task by many workers for the manner in which he created new species on [what appeared to others to be] what others considered to be small & variable characters. Again, [only this time in connection] though in [connection] common with many of his [time] contemporaries [he attached undue importance to the colour change] he attached undue importance, in the light of later work, to the colour reaction of

various parts of the thallus with iodine. These two factors, along with his reluctance to allow others to see his specimens - he always held [evidently] that his descriptions were [enough] ample for purposes of identification (Dr Ramsbottom [Dr John Ramsbottom (1885-1874), Keeper of Botany 1930-1950] says he can remember Miss Smith complaining about Stirton packing his specimens away in an attic and allowing no one to see them) accounts for the general low regard in which Stirton's work is held. However, [it is interesting that Motyka in his 1936-38 revision of the Genus *Usnea*, a genus with which Stirton was especially concerned, has recognised many of Stirton's species] recent [several modern] workers have tended to take a more charitable view [of his work] & Motyka who was able to see [our] the Stirton specimens in [when he came here in 1930] 1930 and 1931 has recognised many of [the] Stirton's *Usnea* spp. in his Monograph of that genus. The Stirton collection is [obviously] a valuable one both in regard to size and range and the wealth of type material contained in it.

Stirton's wishes as regards its disposal

Stirton wanted his herbarium to go to an institution on his death and thought the British Museum the best for his purposes. But [much of his British Collection concerned the Glasgow area] he also wished to have a representative part of it at Glasgow & in particular a study collection of [all the] local species. I have been unable to find whether or not these wishes were expressed in his will [but] & having asked Dr Ramsbottom about them have found his ideas [on the] to be at variance with what I have written above which I base on a reading of the correspondence. Dr Ramsbottom has it that the collection was [left] bequeathed to Glasgow and we were [politely] allowed [to turn it over and extract parts of the choicer items] as set out in Stirton's will to remove duplicates & parts of the Type specimens.

A further wish of Stirton & one which was insisted upon by his daughters time and again was that the collection should be kept separate from [the] our General Collection in Cabinets of its own. This is probably the main reason for the [present] Collection being in its present state.

The Collection and the BM

One of [the] Stirton's executors [of Stirton] was Director of the Glasgow Art Galleries & he apparently arranged [for the] with the then Keeper that the whole collection should come to the Museum for Miss Smith to deal with. Stirton died in 1917 & the collection [must have] came [in] in that year. Miss Smith's work falls as far as one can see into two parts. Firstly the work [work split] on the type specimens. Some of these bear a printed label "Part of the Type Specimen", so presumably Miss Smith went through [these] the Types & [split them for] extracted duplicates where possible to send back to Glasgow. [To me this seems] Nowadays this would be indefensible but in the light of her regard for Stirton types & his own frequent failure to [specify a] particularise a Type specimen [here] out of sometimes very large samples, her actions may be understood. Secondly [here] the work on the rest of the specimens. Some specimens bear a printed label "Selected for Herb.Mus.Brit. 1918" so presumably Miss Smith went through the collection [choosing] selecting the

choicer items. This work was still [being carrying] going on in 1924 for in the files there is a [reference] memo from Gepp [Antony Gepp (1862-1955) algologist and bryologist at the Museum] attempting to clarify the situation & stating the progress of the work. The only further work since then has been a rather untidy mounting of some type specimens, presumably for convenience of storage and the [getting out] extracting of most of the *Usnea* specimens for Motyka in the years 1930 and 1931. Most of these specimens have been incorporated. Occasionally one comes across Stirton specimens in the herbarium but [why they are] the reasons for their incorporation are not known.

Apart from spasmodic correspondence between the years 1917 and 1927, mostly concerned with the visit the Misses Stirton wished to [pay] make to see their father's collection in its own cabinets, the only other official [entry] note I have found is in the Cryptogamic Donations book for 1927 where is recorded "Herb. Stirton Glasgow - Scottish Mosses 201: Foreign Mosses 24 (countries detailed), 1018 British Lichens, 1151 Foreign Lichens. Brit. Fungi 8 & Foreign Fungi 6. In all 2408 Cryptogams presented by the Misses Stirton". No reference to the collection has been found in the Trustees Reports over what would appear to be the relevant years. Nor has any reference been found about [to] the return of the Collection to Glasgow, though this would presumably have taken place in 1927/1928.

The present State of the Collection

There are three parts to the Collection at present. Nearly all the specimens are in Stirton's own very fine packets.

1) The British
2) The Foreign arranged
3) The Foreign not arranged.

(1) The British part [had been] was stored in [packed] a rough alphabetical arrangement of species names in cupboards over the British Herbarium & as the packaging had recently been restored [by Laundon] it was in fairly good order. I have now arranged the individual packets in order and this facilitates [the] any work on the Collection to a great extent.

(2) The Foreign Arranged. This was arranged in the same way as the British part but as the packaging was that of Miss Smith it was in a very bad state, as in common with the rest of the Lichen Unincorporated collections it had a bad time in the wartime evacuation & subsequent shifts for the expansion of the other herbaria.

(3) The Foreign unarranged was stored in cardboard boxes in the East Central Tower by Norkett [A.H. Norkett, bryologist] after it had been found in a box in the Old Gallery. The packets were [wrapped packaged] in [the] Stirton's own wrapping, (tho' Miss Smith had obviously been through some at least of them) & were in a filthy condition. The individual packets were fairly sound on the whole tho' there was some evidence of Mice having got at them. This part has now been stored in Cabinets above the Foreign Herbarium but have yet to be arranged in any way.

The numbers of specimens are considerably greater [more] than those recorded in the Donations books: British 1243 against 1018. Foreign 1404 against 1151. However at a rough guess Miss Smith has [mounted] placed about 10% on mounting paper & as

these would appear to duplicate packets that might account for the increase in number. Against this is the fact that there are at least over 300 more specimens [of *Usnea* mainly] already incorporated (*Usnea* mainly).

The Foreign unarranged amount to about 1200 specimens & though these may be duplicates I have yet to really account for them. Altogether the Stirton Collection as it stands at present must amount to nearly 4,000 specimens.

The Future of the Collection

The main question to be decided is whether the collections should be incorporated or not [and there seems no reason why this shouldn't be done]. I know Dr Ramsbottom had the task of persuading the Misses Stirton to agree to incorporation but whether he succeeded I do not know. Anyway there seems to be no reason now why this shouldn't be done & many reasons for it. This [will] obviously raises the question of the printing of labels for the collection. There appears to be none of the original labels left. I gather from AHN [A.H. Norkett] and JBE [?Miss Edward]that the Fungi and Moss Specimens have in fact been incorporated.

[I would like to know definitely whether the rest of the Stirton Collection did go to Glasgow & also] - As you will realise a lot of the above ideas are inferences based on the present state of the collections. Yet another, though there is so much information about this as to make it almost a certainty is that Miss Smith's work was left unfinished after her spasmodic attentions over [the] ten years or so [that were]. Such is the state of things that I am uncertain whether Glasgow did in fact receive any of Stirton's Collection & also whether the part I have called the Foreign Unarranged was meant to go there or was merely another part awaiting attention. In compiling this memorandum I have received considerable help from Miss Edward and Mr Sinfield in the search for relevant correspondence & official notes…"

Since Stirton lichen specimens have great relevance to studies of lichen mycobiotas of Great Britain, India, South Africa, Australia, New Zealand, South America and the subantarctic islands, this manuscript memo on the Stirton lichens held in the BM deserves a more permanent record and a wider audience, hence its transcription here.

I am grateful to Sally Pagan (University of Edinburgh Archives), Fred Woodward, Geoff Hancock and Keith Watson (Glasgow Museums & Art Galleries) and Philip Clerc (Geneva) for information on Stirton's archives, collections and correspondence. D.J. Griffith's draft memo (Lichen Section BM) is published by kind permission of Dr Johannes Vogel (Keeper of Botany - BM). Keith Watson also kindly supplied images of Stirton lichen packets, and I am warmly grateful to him for his assistance.

References

Boyd, D.A. (1920). In Memoriam: James Stirton, M.D., F.L.S. *The Glasgow Naturalist* **8**(4): 142-144.

Galloway, D.J. (1985). *Flora of New Zealand Lichens*. New Zealand Government Printer, Wellington.

Galloway, D.J. (1998). Banks Peninsula lichens: Raoul's legacy. In: C.J.Burrows (ed.) *Etienne Raoul and Canterbury Botany 1840-1996*, pp. 59-64. Canterbury Botanical Society Special Publication/Manuka Press, Christchurch.

Galloway, D.J. (2007). *Flora of New Zealand Lichens. Revised second edition including lichen-forming and lichenicolous fungi*. Manaaki Whenua Press, Lincoln.

Galloway, D.J. (2012). Three letters from James Stirton to John Buchanan on New Zealand lichens, 1877-1882. *New Zealand Botanical Society Newsletter* 000: 00-00 (submitted).

Hawksworth, D.L. & Seaward, M.R.D. (1977). *Lichenology in the British Isles 1568-1975. An historical and bibliographical survey.* The Richmond Publishing Co. Ltd., Richmond.

Jones, G. (1980). The herbarium of the Glasgow Museum and Art Gallery. *The Glasgow Naturalist* **20**(1): 51-57.

Lawley, M. (2011). James Stirton (c. 1833-1917). In: *A Social and Biographical History of British and Irish Field-bryologists*. *http://britishbryologicalsociety.org.uk/* 2pp.

Rogers, R.W. (1982). Typification of species of lichens described from Australian specimens by James Stirton. *Austrobaileya* **1**(5): 502-510.

Stirton, J. (1873). Additions to the lichen flora of New Zealand. *Transactions of the Glasgow Society of Field Naturalists* **1**: 15-23.

Stirton, J. (1874). Descriptions of some New Zealand lichens, collected by John Buchanan in the province of Wellington. *Transactions and Proceedings of the New Zealand Institute* **6**: 235-241.

Stirton, J. (1875a). Enumeration of the lichens collected by H.N. Moseley, naturalist to H.M.S. 'Challenger' in the islands of the Atlantic Ocean. *Botanical Journal of the Linnean Society* **14**: 366-375.

Stirton, J. (1875b). Additions to the lichen flora of New Zealand. *Botanical Journal of the Linnean Society* **14**: 458-474.

Stirton, J. (1875c). Description of a new lichen (*Stereocaulon buchanani*). *Transactions and Proceedings of the New Zealand Institute* **7**: 367-368.

Stirton, J. (1876a). Lichens, British and foreign. *Transactions of the Glasgow Society of Field Naturalists* **4**: 85-95.

Stirton, J. (1876b). Foreign lichens. *Transactions of the Glasgow Society of Field Naturalists* **4**: 165-168.

Stirton, J. (1877a). Descriptions of recently discovered foreign lichens *Proceedings of the Philosophical Society of Glasgow* **10**: 156-164.

Stirton, J. (1877b). On new genera and species of lichens from New Zealand ["on the Influence of Microscopic Fungi", pp.285-292; "Additions to the Lichen Flora of New Zealand and the Chatham Islands", pp. 292-306]. *Proceedings of the Philosophical Society of Glasgow* **10**: 285-306.

Stirton, J. (1877c). Additions to the lichen flora of New Zealand and the Chatham islands. *Grevillea* **5**: 147-148.

Stirton, J. (1877d). Additions to the lichen flora of South Africa. *Transactions of the Glasgow Society of Field Naturalists* **5**: 211-220.

Stirton, J. (1878). On certain lichens belonging to the genus *Parmelia. Scottish Naturalist* **4**: 200-203; 252-254; 298-299.
Stirton, J. (1879a). Lichens growing on living leaves from the Amazons. *Proceedings of the Philosophical Society of Glasgow* **11**: 99-111.
Stirton, J. (1879b). New and rare lichens from India and the Himalayas. *Proceedings of the Philosophical Society of Glasgow* **11**: 306-322.
Stirton, J. (1880a). Lichens collected by Mr. Hugh Paton, during a trip through southern Australia (Gippsland), communicated by J.E. Tennison-Woods. *Transactions and Proceedings of the Royal Society of Victoria* **7**: 10-13.
Stirton, J. (1880b). Remarks on Mr. Crombie's paper on the 'Challenger' lichens in the Journal of the Linnean Society, xvi (1877). *Botanical Journal of the Linnean Society* **17**: 152-157.
Stirton, J. (1881a). On the genus *Usnea*, and another (*Eumitria*) allied to it. *Scottish Naturalist* **6**: 99-109.
Stirton, J. (1881b). Vegetable parasites on the tea plants, more especially of Assam. *Proceedings of the Philosophical Society of Glasgow* **13**: 181-193.
Stirton, J. (1881c). Additions to the lichen flora of Queensland. *Transactions and Proceedings of the Royal Society of Victoria* 17: 66-78.
Stirton, J. (1882). A new genus of lichen. *Transactions and Proceedings of the Royal Society of Victoria* **18**: 1-2.
Stirton, J. (1883a). Notes on the genus *Usnea*, with descriptions of new species. *Scottish Naturalist* **7**: 74-79; 292-297.
Stirton, J. (1883b). On lichens (1) from Newfoundland, collected by Mr A. Gray, with a list of species; (2) from New Zealand; (3) from the south of Scotland. *Transactions of the Botanical Society of Edinburgh* **14**: 355-362.
Stirton, J. (1884). "In report of Summer Session 1882. 15 August 1882. Exhibition of *Stereocaulon* and *Sphaerophorus* from Tararuas". *Proceedings of the Natural History Society of Glasgow* **5**: 252-253.
Stirton, J. (1898a). On new Australian and New Zealand lichens. *Transactions and Proceedings of the New Zealand Institute* **30**: 382-393.
Stirton, J. (1898b). A new classification of the genus *Pyxine*. *Transactions and Proceedings of the New Zealand Institute* **30**: 393-398.
Stirton, J. (1900). On new lichens from Australia and New Zealand. *Transactions and Proceedings of the New Zealand Institute* **32**: 70-82.
Traill, J.W.H. (1917). James Stirton, M.D., F.L.S. [Obituary Notice]. *Proceedings of the Linnean Society* **1917:** 71-75.

David Galloway
C/- Landcare Research, Private Bag 1960, Dunedin 9054, New Zealand
gallowayd@xtra.co.nz

Italian balustrade at Cliveden hosts Italian lichens?

Cliveden in Buckinghamshire was once the glittering hub of society, renowned for hosting exclusive parties and later becoming infamously associated with the Profumo Affair. The magnificent house and gardens, overlooking the River Thames, are now owned by the National Trust, though the house is run as a private hotel. Two separate balustrades are present along the south side of the house; the most spectacular is the early seventeenth century Borghese Balustrade which was purchased by Lord Astor in the late nineteenth century from the Villa Borghese Gardens in Rome.

Even such habitats as paved terraces and balustrades may host interesting organisms, which should be considered during restoration of the stonework. For instance, *Papillifera papillaris* is a small Mediterranean land snail, called the "Cliveden snail" because in 2008 it was discovered living in the Borghese Balustrade (*http://www.guardian.co.uk/environment/2010/aug/26/tiny-mediterranean-snail-discovered*), presumably imported from the Mediterranean Basin while hiding in the nooks and crannies of the stonework. The Cliveden snail is thought to feed on lichens.

Because extensive restoration work is being undertaken on the terrace and balustrades of Cliveden, the first author was asked to examine the stonework in case any notable lichens needed special consideration during the works. The balustrades were visited in February and March 2012.

The examination of the lichen communities of the Borghese Balustrade is still in process, but an interesting community has been discovered there which includes *Bagliettoa calciseda*, *Caloplaca ochracea*, *C. variabilis*, *Collema tenax* var. *tenax*, *Lecanora pruinosa*, *Placynthium nigrum* and *Rinodina bishoffii*. This older balustrade, carved from extremely hard travertine and imported from Italy, hosts large lichen thalli completely covering the stone. The lichen communities are formed here of old lichens and, with the absence of pioneer species, they have the ancient appearance of those present on old limestone chest tombs. Here is a nice project for the future, to attempt to confirm (or otherwise) the hypothesis that the thalli of some outstanding lichen species were imported from Italy on the balustrade units. The balustrade was situated in Rome for more than two centuries, thus we suppose it was covered in Mediterranean lichens at the time of transfer to England. Perhaps lichenometry or phylogeography of particular taxa could shed some light. For instance the abundance of *Caloplaca ochracea* seems unusual for the Home Counties and raises further suspicions that the community may not be indigenous.

The more recent balustrade of the terrace is the one that will receive most attention from the restorers and, although the lichen community appears to be much more recently colonised than that on the Borghese Balustrade, it is actually richer in species. Notable lichens include *Lecanora pruinosa* and *Verrucaria ochrostoma* which are both present in good quantity on the horizontal surface of the balustrade rail. This community is dominated by *Aspicilia calcarea*, *A. contorta*, *Caloplaca dichroa* and

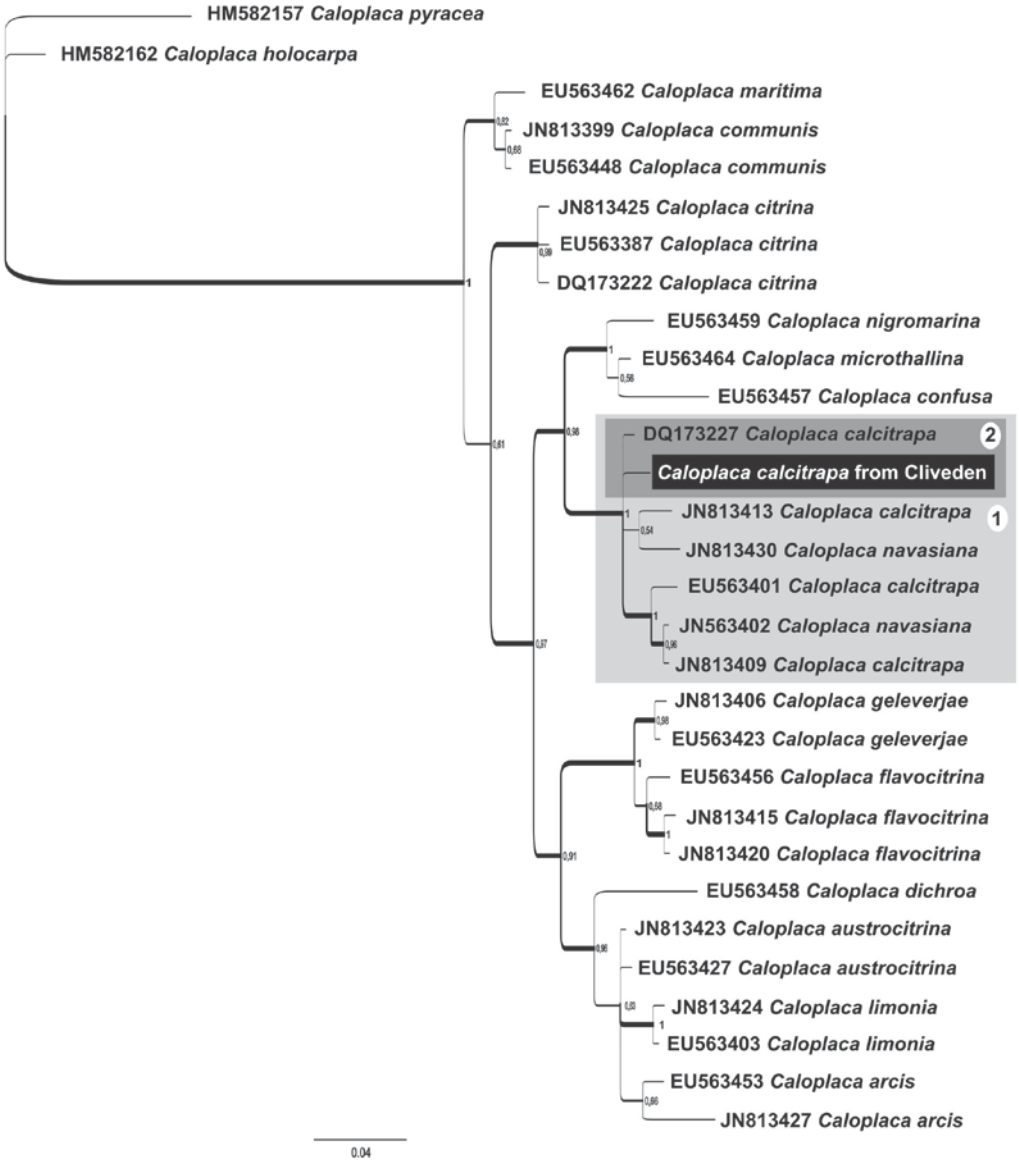
Verrucaria nigrescens with other species such as *Bagliettoa calciseda*, *Caloplaca variabilis*, *Solenopsora candicans*, *Toninia aromatica* and *Verrucaria fuscella* in smaller quantities.

Caloplaca calcitrapa growing on the terrace balustrade, Cliveden

An unfamiliar specimen of *Caloplaca* with yellow bullate areoles was collected (February 2012) from the newer balustrade and this was found to have thick-walled, "sand-clock" type spores. Arup (2006) states that this type of spore is unique to *Caloplaca dichroa* in northern Europe, but these spores also occur in *C. calcitrapa*, a species restricted to the Mediterranean Basin (Navarro-Rosinés *et al.* 2000). The specimen from Cliveden fits well the description of *C. calcitrapa* but we were sceptical and wanted to confirm placement of the English lichen by molecular fingerprinting. Our first attempt at genetic sequencing failed, perhaps due to the small amount of scraped material or by strong contamination with the glue Copydex. We suspected that there may be further species of *Caloplaca* in Europe which have thick-walled spores and so we wavered with the identification. A second, more richly fertile specimen was recently collected and this was confirmed as *C. calcitrapa* by reference to the ITS sequence (see below); unfortunately the specimen has been almost destroyed by removing parts for sequencing.

We are left to speculate whether *C. calcitrapa*, like the little snail, was imported to Cliveden from the Borghese Gardens in Rome or whether it is an overlooked member of our native mycota. If it was imported, it appears to have disappeared

from the Borghese Balustrade but spread to the terrace balustrade some fifty metres to the north where it occurs in three colonies.



Bayesian phylogeny of the *Caloplaca citrina* group showing placement of the English specimen of *Caloplaca* from the Cliveden balustrade. Groups highlighted in grey are: (1) *Caloplaca calcitrapa* s. lat. containing also specimens without "sand-clock" spores and specimens without yellow areolated thallus (*C. navasiana*); (2) *C. calcitrapa* s. str. including the type of *C. calcitrapa* from the Mediterranean France and the specimen from England. For the methods of molecular analysis ask the authors.

References
Arup, U. (2006). A new taxonomy of the *Caloplaca citrina* group in the Nordic countries, except Iceland. *Lichenologist* **38:** 1-120.
Navarro-Rosinés, P., Gaya, E. & Roux, C. (2000) *Caloplaca calcitrapa* sp. nov. (Teloschistaceae) un nuevo liquen saxícolo-calcícola mediterráneo. *Bulletin de la Société linnéenne de Provence* **51:** 145–152.

Mark Powell[1] *and Jan Vondrák*[2]
[1]*markpowell222@btinternet.com*
[2]*Institute of Botany, Academy of Sciences, Zámek 1, CZ-252 43 Průhonice, Czech Republic. Email: j.vondrak@seznam.cz*

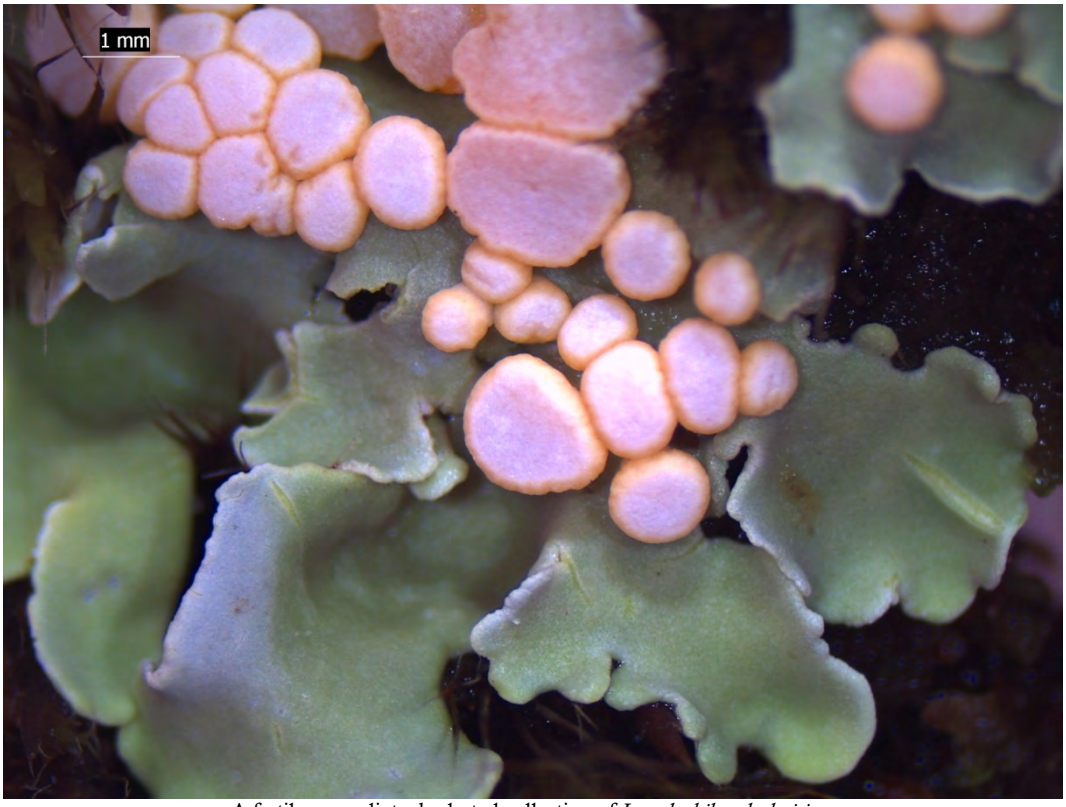
BLS Summer Vacation Scholarship report – a New Zealand lichen study

Introduction and background

I spent the Southern Hemisphere summer 2008/09 with a voluntary lichenological internship at Landcare Research in Dunedin, New Zealand, supervised by David Galloway. During that time, I made the observation that the usually sexually reproducing species *Icmadophila splachnirima* (formerly *Knightiella splachnirima*) can also form marginal soralia. Interestingly, almost all strongly sorediate specimens lacked mature apothecia but were densely covered with apothecium initials, which were apparently arrested at an early developmental stage. In contrast, fertile specimens were mostly esorediate. Further study showed that the sterile and sorediate form prevail in rather exposed and dry micro-habitats, while the fertile and mainly esorediate form is dominant in sheltered and constantly moist sites, though both forms grow in very close spatial proximity, just a few meters or even less than 1 m apart. A continuous range of intermediates was observed as well, including rare specimens with mature apothecia and pronounced marginal soralia. I therefore conclude that only one species exhibiting two reproductive modes is involved, and not a species-pair. Because the two reproductive modes are apparently related to contrasting micro-climatic conditions, I hypothesize, that the switch from sexual to vegetative reproduction might be a stress response to adverse growth conditions.

David advised me to publish this observation, so I prepared a short publication (Ludwig 2011) while finishing my biology degree in Germany. He also applied successfully for the BLS Summer Vacation Scholarship on my behalf, to give me the opportunity to continue my studies on *I. splachnirima* in NZ. This award allowed me to travel back to Dunedin after my graduation in November 2010. A comprehensive and illustrated report of my work in NZ was submitted to the BLS Council last May, and this is a condensed form for the *BLS Bulletin*.

Work on *Icmadophila splachnirima*



A fertile, esorediate, hydrated collection of *Icmadophila splachnirima*

In February 2009, I set up a small reciprocal transplant experiment in a subalpine bog on Swampy Summit (ca 700m a.s.l., 45°48'S 170°29'E), 5 km north of Dunedin.

Ten pairwise reciprocal transplants of thallus-pieces exhibiting either of two reproductive states (fertile and esorediate or sterile and sorediate), were carried out, using a cork-borer of 1 inch diameter. The gap created in a lichen colony by removal of one transplant was filled with the transplant of the other reproductive state. The remaining part of a colony was used as a control for the transplant originating from that colony.

The aim of this experiment was, to test the hypothesis, that in certain "unfavourable" micro-habitats apothecial development is reversibly arrested in an early developmental stage (apothecium initials), and therefore reproduction switches to vegetative propagation via soralia. According to this hypothesis the growth of apothecium initials should be restored in a transplant originating from a sterile and sorediate colony ("unfavourable" site) if it is placed in the micro-habitat of a fertile and esorediate colony ("favourable" site). The apothecium initials of the remaining sterile and sorediate patch, which act as a control, should show no, or much less, apothecial growth after a considerable period of time. On the other hand, I expected that the formation of soralia could be induced in fertile and esorediate transplants when placed in the "unfavourable" habitat of a sterile and sorediate colony.

The status of the transplants was reassessed in December 2010, i.e. 22 month after the transplant. Only one transplant was lost, apparently destroyed by animals. The individual transplants showed a lot of variation in their development, but the expected outcomes were observed.

Apothecial growth was restored in 8 out of 10 formerly sterile and sorediate transplants. In 5 of the 8 cases, the apothecium initials of the control (remainder of the original patch) did not restore growth. When the control also restored apothecial growth, more apothecium initials have developed in the transplant than in the control. Restoration of apothecial growth was accompanied by a total loss of soralia in 3 (of 8) cases and in another 2 cases (of 8) a considerable reduction of soralia was observed. The remaining 3 transplants developed mature apothecia but kept their sorediate margins. Formation of soralia in originally fertile and esorediate transplants was observed in 5 cases, but only 3 of them developed rather pronounced soralia, the other 2 specimens exhibited only small sorediate sections.

Sterile, dry specimen with marginal soralia and covered with apothecium initials. The differing thallus colour reflects the contrasting hydration status, as commonly observed in the field.

Because of the small number of replicates and the diverse outcome in terms of the transplant development, this pilot study has no statistical power, but it shows that: (1) the development of apothecium initials of sterile and sorediate specimens is reversibly arrested and can be restored by transplanting into a different micro-environment, while they remain dormant in the site of origin; (2) simultaneously

with restoration of apothecial growth, the marginal soralia of formerly sterile and sorediate specimens can disappear partially or completely; (3) formation of soralia can be induced in fertile and esorediate specimens, by transplanting them in the habitat of a sterile and sorediate colony.
The most important result for subsequent studies is that considerable development of both reproductive structures was observed in most transplants within less than two years. It also supports my view that only one species with two reproductive modes is involved.

Owing to an extraordinary wet summer 2010/11 in NZ, my intentions for a fieldwork-focused Summer Vacation Scholarship, including measurements of micro-environmental conditions, had to be readjusted. I spent a lot of time in compiling the known world distribution of *I. splachnirima* in detail, based on literature reports, information from virtual herbarium databases and by requesting specimen data from various herbaria.

Numerous potentially suitable localities in southern South Island were searched for the presence of *I. splachnirima*. Thereby I discovered extraordinarily abundant populations in the Blue Mountains summit plateau wetlands (ca 900m a.s.l., 45°56'S 169°21'E). This is a new locality for the species, situated 6 km East of Tapanui and 90 km West of Dunedin, respectively. Considering the extent of this locality and the abundance of the species there, I think this is probably the most important refuge for the species in South Island! I mapped the species' distribution there as well as on Swampy Summit and Silver Peaks near both near Dunedin. During the mapping, I observed several hundred specimens and recorded their GPS coordinates, reproductive state and made a rough evaluation of their growth conditions. I now believe that moisture regime is the limiting factor for sexual reproduction, and thus the trigger for soralia formation. As mentioned above, the sterile and sorediate form prevails in exposed and rather dry sites, but so far I had no indication to distinguish to what extend high-light or desiccation are the actual stress factor. By now, I discovered numerous fully exposed fertile and esorediate specimens, which all have a constantly wet micro-habitat in common. These sites are situated either immediately above the water table of bogs or on permanent seepages. Therefore it seems that not high-light *per se* is a stress factor, but rather desiccation which usually accompanies it.

During my BLS Summer Vacation Scholarship stay in New Zealand, I successfully applied for a PhD scholarship and admission to PhD study at the University of Otago, Dunedin. I can therefore continue my research on the reproductive ecology of *Icmadophila splachnirima* over the next few years. Of course, this will include an improved version of the experiment described above, with many more replicates, better controls and a better site standardisation. Because of this development, I am even more grateful for the financial support of the British Lichen Society, which enabled me to take up this PhD study in New Zealand by sponsoring travel to Dunedin as part of my Summer Vacation Scholarship! I will also make an oral presentation about my PhD project as a contribution to the IAL7 conference next January in Bangkok. Again, I am indebted to the BLS for providing financial travel assistance to this meeting!

Other interesting lichenological observations

25th John Child Bryophyte and Lichen Workshop. I arrived just in time in NZ to participate in the 25th John Child Bryophyte and Lichen Workshop held from 4th-9th December on the bottom of the South Island in Riverton. There I met various interesting people and got to know many more fascinating lichen species. I also found *I. splachnirima* during a field trip to the summit of Bald Hill in the Longwood Range. This is a new locality for that species.

When I spent some time trying to identify my numerous collections about six months later, I eventually realized that I had made a potentially interesting discovery during this workshop. It is an unidentified corticolous *Ochrolechia*, apparently a species unknown from NZ, though it has superficial similarity with *O. pallescens* and *O. parella*. It has three outstanding characters: first, an epruinose yellow disc due to a bright yellow-coloured hypothecium; second, extremely large spores measuring 80-100 µm × 45-50 µm; and third, a UV+ ice blue reaction, which is restricted only to the subcortical tissue of the thalline exciple. I asked Alan Archer and María Inés Messuti for their opinion, but they did not recognise it. Regrettably, the collection is very small and I had no opportunity yet to visit the locality again to collect better material for a necessary chemical analysis. Thus, for the time being, it is unclear if this is a species new to NZ, or possibly even new to science, or just an abnormal state of a known species.

A new NZ species record. In the Silver Peaks and Blue Mountains, I found numerous sterile specimens of an initially unidentifiable coralloid-isidiate species growing over plant detritus, frequently alongside *I. splachnirima*. Jack Elix analysed its secondary metabolites and Gintaras Kantvilas eventually identified it as *Pseudoramonia richeae* Kantvilas & Vězda (see Kantvilas & Vězda 2000). This species was so far considered to be a Tasmanian endemic! A separate, more detailed account on this discovery will be published shortly, probably in *Australasian Lichenology*.

A fascinating oddball. During phytosociological studies on *I. splachnirima*, I began to compile a comprehensive lichen species list for Swampy Summit. Along the way, I came across a graminicolous lichen with extraordinary fruiting bodies, which are not mentioned in any lichenological textbook. The fruiting bodies look superficially like deeply concave, sessile, discoid apothecia. Cross sections reveal, however, that the typical apothecial tissue stratification is not developed. Instead, the hymenium is replaced by a conidiogenous layer and a dense "lawn" of filiform, multiseptate, hyaline conidia. The anatomy of this new type of conidioma is reminiscent to that of campylidia, with the major difference being that campylidia are bisymmetric while the structures I found are radially symmetric. My first impression was that these structures might represent an intermediate form between apothecium and campylidium, and I called them "apothecioid campylidia". Notably, Sérusiaux (1986) showed that apothecia and campylidia of some foliicolous species are indistinguishable in early developmental stages. Therefore these structures might be considered as a kind of "missing link" between both types of fructifications.

It turned out that I am not the first to observe these "apothecioid campylidia". Müller-Argoviensis (1890 p.202) earlier coined the term "orthidium" for a similar structure. However, he failed to specify or describe the respective species. Later the term "orthidium" was mistaken for a generic name and was recently regarded as an obsolete name for the campylidia of the lichenicolous fungus *Pyrenotrichum* (Kirk *et al*. 2001 p.370, Hawksworth 1981 p. 59-60), which is incorrect as well. The former genus *Pyrenotrichum* is now known to represent the campylidia of the "host"-lichens (Sérusiaux 1986, Lücking & Santesson 2002), which are bisymmetric and obliquely positioned and therefore not referable to as "orthidia", because Müller-Argoviensis defined these as upright and radially symmetric ("rectum, perfecte regulare").

Dodge & Rudolph (1955) took up the term "orthidium" correctly for their description of *Ephelidium heardense* Dodge & Rudolph from material collected on Heard Island, Australia. Their description and figures of this species' fruiting bodies are highly similar to the unknown NZ species, although it is currently doubtful whether both are conspecific, based on the anatomical details given by Dodge & Rudolph. Both are certainly congeneric, however, the generic name *Ephelidium* C.W.Dodge & E.D.Rudolph 1955 is a later homonym of *Ephelidium* C.Spegazzini 1921, and therefore invalid.

A paper on this is currently in preparation, co-authored by Robert Lücking, and a poster on it has been presented at the IAL7 conference. The detailed description of the new NZ species will also include the apothecial teleomorph, which I found recently. Aspects to be covered in detail are the molecular phylogenetic placement, secondary metabolites, nomenclatural issues and the peculiar history of this "new" type of conidioma.

Acknowledgements

I am most grateful to the British Lichen Society, and especially Barbara Hilton, Heidi Döring and John Skinner, for funding of this Summer Vacation Scholarship. I am also very grateful to Landcare Research Dunedin for hosting me as research associate and providing me with research equipment, and I want to thank especially David Galloway for applying on my behalf for the scholarship, for his support, supervision, advice and the many things he taught me. Many thanks also to Regine Stordeur (Halle) for supporting the application. For various reason I am much indebted to Alan Archer, Allison Knight, Gintaras Kantvilas, Janice Lord (and her students Ella, Lorna, Olivia and Vicky), Jack Elix, Janet Ledingham, John Steel, María Inés Messuti, Peter Johnson, Peter Johnston, Robert Lücking and the helpful herbarium staff of AK, CANB, CHR, HO, MEL, OTA and WELT.

References

Dodge, C.W. & Rudolph, E.D. (1955). Lichenological Notes on the Flora of the Antarctic Continent and the Subantarctic Islands. I-IV. *Annals of the Missouri Botanical Garden* **42**:131-149. Open Access via *http://biostor.org/reference/11801*.

Hawksworth, D.L. (1981). The lichenicolous Coleomycetes. *Bulletin of the British Museum (Natural History), Botany Series* **9**: 1-98.

Kantvilas, G. & Vězda, A. (2000). Studies in the lichen family *Thelotremataceae* in Tasmania. The genus *Chroodiscus* and its relatives. *Lichenologist* **32**(4): 325-357.
Kirk, P.M., Cannon, P.F., David, J.C. & Stalpers, J.A. (eds.) (2001). *Ainsworth & Bisby's Dictionary of the Fungi. 9th edition*. CAB International, Wallingford, Oxon. 655 pp.
Lücking, R. & Santesson, R. (2002). On the Identity of Pyrenotrichum 'atrocyaneum' P. 'mirum' and P. 'podosphaera', Campylidia of Lichenized Ascomycota (Lecanorales: Ectolechiaceae). *Bryologist* **105**(1): 57-62.
Ludwig, L. (2011). Marginal soralia and conidiomata in *Icmadophila splachnirima*
(Icmadophilaceae) from southern New Zealand. *Australasian Lichenology* **68**: 4-11. Open Access via *http://www.nhm.uio.no/botanisk/lav/RLL/AL/AL68.pdf*.
Müller-Argoviensis, J. (1890). Lichenologische Beiträge. XXXIII. *Flora* **73**: 187-202. Open Access via *http://www.biodiversitylibrary.org/item/989#*.
Sérusiaux, E. (1986). The nature and origin of campylidia in lichenized fungi. *Lichenologist* **18**(1): 1-35.
Spegazzini, C. (1921) [1920]. Sobre algunas enfermedades y hongos que afectan las plantas de 'agrios' en el Paraguay. *Anales de la Sociedad Científica Argentina* **90**: 155-188. Open Access via *http://www.biodiversitylibrary.org/item/108776*.

Lars Ludwig
email lars-ludwig@gmx.de

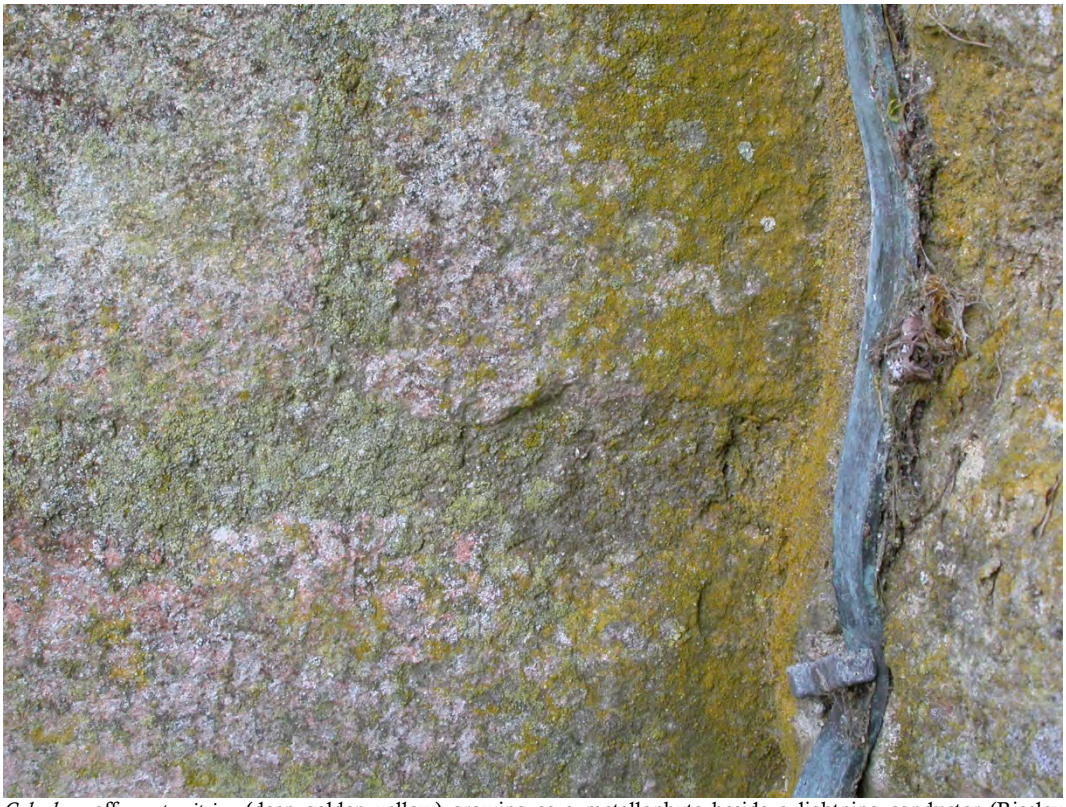
Yellow sorediate crusts called "*Caloplaca citrina*" in England

During churchyard surveys up until 2011, sorediate specimens of the *C. citrina* appearance have generally been treated as a single species and either recorded as *C. citrina* s.str. or as *C. citrina* s.lat., depending on the confidence of the recorder. The first author (MP) suspected that more than one taxon occurs on church walls and sent a specimen from the north wall of All Saints church Riseley (Bedfordshire) containing two distinct morphotypes to the second author (JV) to confirm whether two taxa are involved. The morphotype with bright yellow soralia and smaller soredia was revealed as an unnamed taxon related to *C. austrocitrina* Vondrák, Arup & Søchting (herb. Powell 1959), while the blastidiate/sorediate, pale yellow morphotype (herb. Powell 1958) was the first British material of *C. limonia* Nimis & Poelt confirmed by molecular sequence data (Powell & Vondrák 2011).

Peter Earland-Bennett (pers. comm.) may have been one of the first British lichenologists to ponder the true identity of *C. limonia*. He has recognised it as a separate entity for twenty years and has called it "the egg-yellow coarse *Caloplaca* sp.

B." and has reported fertile material from the Roman Wall at Colchester (Balkerne Hill). This concept was not generally followed.

Church buildings are well-known for their interesting contamination from metal fittings and roofs. Stonework beside copper lightning conductors is generally searched for the presence of specialist metallophytes such as *Psilolechia leprosa* but while surveying churchyards in Huntingdonshire in summer 2011, MP also noted that the "*C. citrina*" showed an interesting feature in the outer zone of copper contamination. The deeper-coloured form (what is now labelled *C.* aff. *austrocitrina*) was well-developed on moderately contaminated stone while the pale form (*C. limonia*) was completely excluded by the presence of copper contamination. A particularly spectacular banding caused by the spatial separation of these taxa by copper run-off was observed beside the lightning conductor on the north wall of Old Weston church (VC 31, Huntingdonshire, TL093.772). *Caloplaca* aff. *austrocitrina* (material from this site has not been sequenced) is particularly well-developed in the outer zone of contamination, appearing here (as well as at other sites) to be a mild metallophyte, while the two taxa occur in an intimate mosaic where the stone is un-contaminated. It is the way that these two lichens often grow together in mixed communities that led many recorders to believe that they both belonged to a single variable species.



Caloplaca aff. *austrocitrina* (deep golden yellow) growing as a metallophyte beside a lightning conductor (Riseley church, Bedfordshire). *C. limonia* (very pale yellow) is dominant on uncontaminated mortar courses in left half of the image.

Vondrák *et al.* (2009) state that the diagnostic characters of *C. limonia* are the pale yellow thallus, large soredia/blastidia, specific type of soralia, which start as pustules on the thallus surface, and a thick apothecial margin often covered by blastidia/granules. In the field the pale, milky yellow colour is a very consistent feature in England and is caused by an abundance of small crystals within the thallus. When fertile the orange disc of the apothecium contrasts in colour with the much paler thallus.

Caloplaca limonia, well-developed and fertile on a limestone headstone (with darker yellow-orange patches of *C. dichroa* growing in close association).

Although many British lichenologists thought that *C. limonia* was "classic" *C. citrina* (Hoffm.) Th. Fr., these two species, while supposed to be similar, differ mainly by the type and size of vegetative diaspores (Vondrák *et al*. 2009). While *C. citrina* has real soralia with small soredia (usually up to 60 μm in diam.), *C. limonia* has larger blastidia (usually more than 60 μm in diam.). Soredia in our sense are without cortical tissues and are usually brighter yellow than the thallus, but blastidia are covered by a thin cortical layer ("alveolate cortex" = a hyaline tissue formed by living fungal cells among dead algal cells or in gaps left by dead algal cells) and usually do not differ in colour from the rest of thallus surface. While *C. citrina* rather resembles little-developed specimens of *C. flavocitrina* (Nyl.) H. Olivier, *C. limonia* is very similar to *C. ruderum*, which is a well known taxon in England differing mainly in the

absence of blastidia. Unfortunately, our attempts to sequence *C. ruderum* and test its relationship with *C. limonia* failed.

Our recent investigations of British material have failed to find *C. citrina* but the absence of evidence is not evidence of absence and more work is required to find out if this taxon occurs in Britain. Arup (2006) reported that *C. citrina* s.str. shows a wide distribution in the Nordic countries and has a wide ecology occurring on limestone, concrete, slate, asbestos, bone, roof tiles, siliceous rocks, and sandstone as well as on calciferous ground and mosses. This taxon is also confirmed from Central Europe (Vondrák *et al.* 2009) and even from Greece (our unpublished record). It would be strange if such a widespread species in the Nordic countries was absent from the British Isles.

Arup (2006) gives a history of the way that the sorediate "*C. citrina*" crusts have been treated. *Caloplaca citrina* and *C. phlogina* (Ach.) Nyl. were both described in the late 18th century, while *C. flavocitrina* was described almost a century later. Wade (1965) united them into one species, *C. citrina*, with *C. flavocitrina* as a variety. Following Wade's publication it became the prevailing opinion to unite them into one species. In the British Lichen Flora, Laundon (1992) used the name *C. citrina* to cover the entire group; no mention is made of *C. flavocitrina*, while a single form (f. *phlogina*) is listed. Despite appearances, the latter is now known not to belong to the *C. citrina* group (Arup 2006, Vondrák *et al*. 2010). Most British lichenologists followed Laundon (1992) by including the sorediate "*C. citrina*" taxa under the one name.

However, even Laundon (1992) hints at the possibility of further taxa as follows: "In E. England a similar, but possibly distinct, entity occurs with deeper orange, flattened, ± angular areoles with initially ± sorediate margins, the soredia eventually involving the whole surface of the squamules. It occurs with *C. citrina* on calcareous memorials and is easily recognised by the deeper colour." That description is presumably a reference to what we now know as *C. dichroa* Arup (2006) and Laundon may be describing pure stands of *C. dichroa* showing its characteristic two colour forms growing side by side. *Caloplaca dichroa* is very common in England on the horizontal surfaces of limestone and marble gravestones and, when fertile, the thick spore wall (1.0 – 2.0 μm) can be recognized. Many spores show an hour-glass shaped lumina ("sand-clock" type). Churchyard recorders had recognised another entity within the *C. citrina* group which has sub-squamulose areoles giving rise to coarse blastidia/isidia at their edges. This taxon was recorded as "*Caloplaca* A" for a decade or more before it was described as *C. arcis* by Arup (2006). When the new "Flora" was published, Fletcher & Laundon (2009) listed *C. arcis*, *C. citrina*, *C. dichroa* and *C. flavocitrina* as the sorediate/blastidiate members of the *C. citrina* group in the British Isles. Other British species with the *C. citrina* appearance are *C. phlogina* (mentioned above) and *C. sorediella* Arup, but these have a special ecology and do not belong to the monophyletic *C. citrina* group.

Finally, our experiences with "*C. citrina*" crusts show that particular taxa differ in their ecology to some extent. This means that if we collect a large number of these

morphologically similar crusts from various habitats and analyse their sequences, we would get the real (and possibly surprisingly high) diversity of taxa.

References

Arup, U. (2006). A new taxonomy of the *Caloplaca citrina* group in the Nordic countries, except Iceland. *Lichenologist* **38**: 1-20.

Fletcher, A. & Laundon, J.R. (2009). *Caloplaca*. 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): 245-273. London: British Lichen Society.

Powell, M. & Vondrák, J. (2011) *Caloplaca citrina* and *C. lactea* are incorrectly understood in the British Isles. *British Lichen Society Bulletin* **109**: 25-30.

Laundon, J.R. (1992) *Caloplaca*. In *The Lichen Flora of Great Britain and Ireland*. (O.W. Purvis, B.J. Coppins, D.L. Hawksworth, P.W. James & D.M. Moore, eds): 141-159. London: Natural History Museum Publications.

Vondrák, J., Šoun, J., Søgaard, M.Z., Søchting, U. & Arup, U. (2010). *Caloplaca phlogina*, a lichen with two facies; an example of infraspecific variability resulting in the description of a redundant species. *Lichenologist* **42**: 685-692**.**

Vondrák, J., Řiha, P., Arup, U. and Søchting, U. (2009). The taxonomy of the *Caloplaca citrina* group (Teloschistaceae) in the Black Sea region; with contributions to the cryptic species concept in lichenology. *Lichenologist* **41**: 571-604.

Wade, A E. (1965) The genus *Caloplaca* Th. Fr. in the British Isles. *Lichenologist* **3**: 1-28.

Mark Powell[1] *and Jan Vondrák*[2]

[1]*email: markpowell222@btinternet.com*

[2]*Institute of Botany, Academy of Sciences, Zámek 1, CZ-252 43 Průhonice, Czech Republic. email: j.vondrak@seznam.cz*

A lichen-spider letter from Devon

Philodromus margaritatus is a UKBAP species, and very closely tied to lichens hence its sometimes called the "Running Lichen Spider". It's incredibly difficult to spot when still amongst foliose lichens on a vertical trunk, but if anyone is likely to casually stumble across one, it will be a lichenologist with a hand lens.

I found a specimen at Yarner woodland, sunning itself on the side of a wooden building. It was about 6mm in body length and with its legs slighty curled, took up about the same space as a ten pence piece. There are other *Philodromus* and crab spiders that can occur on tree trunks, but none with a combination of long thin stripey legs and an abdomen that widens behind the middle.

If anyone finds one (or remembers finding one) I'd be interested in as much detail as possible ~ I'm thinking that it might be a good creature to survey for, and to see if it is linked to any lichen species or lichen group in particular, it was amazing to watch when a piece of *Platismatia glauca* was placed next to it ~ it instantly jumped in, folding its legs to the shape of the lichen and virtually disappeared.

The Pembury specimen found in 2007 is the only one reported in Devon since 1992, making mine the second reported in two decades, closely followed by Nicola who spotted one on the ceiling of the Yarner workshop within half an hour of mine!

p.s. Why running? *Philodromus* are crab spiders, but not as heavily adapted as the type you find on flower heads, they have less modified, thinner, legs and actively hunt, they can shoot surprisingly quickly along flat surfaces.

Matt Prince
email MattPrince1969@gmail.com

Names for Lichens. 4. What is the Correct Name?

The whole point of having rules of nomenclature is so that everyone can agree on what any particular lichen should be called. However, it turns out that this is not just a matter of mechanically applying rules. As the examples below will make clear, rules of nomenclature and judgments on taxonomy can not be separated.

The *Lichens of Great Britain and Ireland* discusses, on page 404, a lichen that it calls *Flavoparmelia caperata*. If you have a copy of the previous *Lichen Flora for the British Isles*, published in 1992, have a look at page 428 where you will find the same lichen discussed under the name *Parmelia caperata*, with *Flavoparmelia caperata* listed as merely a synonym. Which name is correct? The genus *Parmelia* consists, by definition, of all those species that are considered to belong to the same genus as the type species of the genus, which is *Parmelia saxatilis*. Everyone agrees that *Parmelia/Flavoparmelia caperata* is fairly closely related to *P. saxatilis*, and everyone also agrees that it is not as closely related to *P. saxatilis* as grey species like *P. sulcata*

or *P. omphalodes*. If you decide to take a narrow view of *Parmelia*, and include only those species that are *very* closely related to *P. saxatilis*, then *Parmelia/Flavoparmelia caperata* does not belong in *Parmelia* and its correct name is *Flavoparmelia caperata*. On the other hand, if you take a broad view of *Parmelia*, then its correct name is *Parmelia caperata*. How broadly you choose to circumscribe *Parmelia* is a matter of taxonomic judgment, not of nomenclature. Both the broad and the narrow view of the genus are acceptable; this is not a situation where one view is right and the other wrong. The contemporary fashion (and I feel that it is little more than fashion) in lichenology is generally to prefer more narrowly circumscribed genera where possible.

We can go even further. If you consider that the lichen we have been discussing belongs in, say, the genus *Verrucaria* (i.e. if you consider that it is congeneric with *V. muralis*, the type species of *Verrucaria*), then, on that taxonomic view, its correct name is *Verrucaria caperata*. No-one can argue about this. (At the same time, no-one is obliged take your taxonomic viewpoint seriously either.)

Now for another example. In 1855 William Nylander described a lichen that he called *Verrucaria confinis*. In 1891 Jean Müller described a lichen that he called *Anthracothecium corticatum*. These two names are now considered to refer to the same species. In other words someone has examined the type specimen of *V. confinis* Nyl. and the type of *A. corticatum* Müll. Arg. and decided that the two collections belong to the same species. This is a taxonomic judgment, and it would be possible for other lichenologists to disagree. Someone has also concluded that this species belongs in the genus *Pyrenula*; this is another taxonomic judgment, and once again disagreement is possible. Let us suppose that we agree with both judgments. Both names have in fact been combined into *Pyrenula*: we have *P. confinis* (Nyl.) R.C. Harris (1995) and *P. corticata* (Müll. Arg.) R.C. Harris (1989). We don't want to have two names in *Pyrenula* for the same species, so how do we decide which one to use?

When cases like this first started to be discussed, in the 19th century, many botanists argued that we should choose the epithet that best matches the plant, and use that. Charles Darwin himself took this view. I have a lot of sympathy with it too, but in practice it is unworkable. Deciding which epithet is most appropriate is an aesthetic judgment, and reasonable people can disagree. We need a more objective method.

The rule adopted is that of priority. Take the oldest epithet, and use that. Oldest here means oldest in whatever genus it was first published in, not oldest in the genus of interest. Thus *confinis*, which dates from 1855, is older than *corticatum* which dates from 1891 (even though *Pyrenula corticata* was published before *P. confinis*). The correct name is thus *Pyrenula confinis*.

I stated the rule in its simplest form. A fuller statement is: take the oldest *legitimate* name *at the same rank*, and use its epithet. (Even this isn't quite complete, as you may have to take into account complications caused by conservation, sanctioning, rejected names, and nomina nova; but let's ignore those.)

The restriction of the rule of priority to "the same rank" is a serious design error in the Code, as it can enormously complicate the task of determining a correct name. To see this, suppose that you consider that *Pyrenula confinis* would be better treated as a variety of *Pyrenula nitida*. The obvious thing to call it, *Pyrenula nitida* var. *confinis*,

may or may not be the correct name. To find out, you have to go through the entire nomenclatural history of the taxon, looking for the earliest legitimate name at the rank of variety. If there isn't one, you can use any epithet you like. (It would be sensible to use *confinis*, but you don't have to.) If there is one, it may or may not be *confinis.* It might not even be based on either *Verrucaria confinis* Nyl. or *Anthracothecium corticatum* Müll. Arg., in which case you would have to make yet another taxonomic judgment about synonymy. Having found it, you use its epithet. If that epithet is, say, xyz, the resulting name, *Pyrenula nitida* var. *xyz* will not bear any obvious relation to the name *Pyrenula confinis*, which is a recipe for confusion. We would be better off if the Code used what is sometimes called "absolute priority": just find the earliest legitimate name at any rank, and use the epithet from that.

Most validly published lichen names are legitimate. Two things can make a name illegitimate. The first is when a name is spelt exactly the same as an earlier name that refers to a different taxon. Such names are called later homonyms. An example is *Verrucaria circumscripta* Taylor (1836), which is illegitimate because it is a later homonym of *V. circumscripta* Chaub. (1821). The second is a name that introduces a new and unnecessary epithet for a previously described taxon. These are called superfluous names. For example, Acharius did not like the epithet *filix* in *Lichen filix* Sw. (1781), and when he treated this species in the genus *Sticta* he introduced the superfluous name *Sticta filicina* Ach. instead of making the combination *Sticta filix* (Sw.) Ach. Although Acharius's epithet *filicina* (an adjective, meaning fern-like) is arguably more appropriate than Swartz's *filix* (a noun, meaning a fern) this change is not acceptable.

There is an important difference between the two kinds of illegitimate name, and if you are doing serious nomenclatural work you need to remember it. (Many people don't.) A name that is superfluous remains so (except in a few special cases, such as change of rank) even when combined into a different genus: thus *Stictina filicina* "(Ach.)" Nyl. is still a superfluous name. However, if a later homonym is combined into a different genus then the result is (usually) legitimate. The later homonym *Verrucaria circumscripta* Taylor was combined into *Sagedia* by Leighton in 1851. The result is not cited as *S. circumscripta* (Taylor) Leight., because a basionym always has to be a legitimate name (which is why I put quotes around (Ach.) for *Stictina filicina*), but as *Sagedia circumscripta* Leight. Leighton's name is legitimate and its priority dates from 1851, not 1836.

If you have absorbed the material in these four articles you will be in a position to understand much of what you read on nomenclatural matters in the scientific literature. I haven't covered everything, and there are some quite important topics that might be worth treating, but they are more specialised than what I have covered so far. Since I don't want to take up valuable space in the Bulletin without good reason, I will continue this series only if I receive enough requests to indicate that there is a real demand for it.

Linda in Arcadia
email: linda_in_arcadia@hotmail.com

A Duet and a Trio of Davids and a Quartet of Lobarias

This reminiscence of events about 50 years ago has been prompted by two unrelated articles in the Winter 2011 issue of the Society's Bulletin. In the first (which involves the duet of Davids, David Galloway and myself, David Lewis), I was flatteringly, but inaccurately (see below), called a 'luminary lichenologist' by David G., as featured in a list of true luminaries who had joined the Society at the same time as ourselves in 1959 (Galloway, 2011). The second concerned the Lobarion (Lambley, 2011) and will bring me below to the trio, two of whom, David Smith and David Richardson, most certainly deserve that accolade, and to the quartet of *Lobaria* spp.

David G.'s flattery is misplaced since, although I have quoted the work of various lichenologists in review articles, my personal contribution to lichenology is confined merely to two papers. Even one of these, my very first publication, was an account of a field meeting of the Society (Lewis, 1963) and so was largely a compilation of the contributions from a range of experienced taxonomists and ecologists --- hardly an original contribution to science by me!

I also only played a small part in the trio (Richardson, Smith and Lewis, 1967) but the circumstances that led to my being a co-author are perhaps worth recording. They relate to the genus *Lobaria* and specifically to the four species whose impressive photographs appear in Lambley (2011).

[The taxonomy and/or nomenclature of the organisms involved in these symbioses, as well as among *Xanthoria* spp. and their algae, have changed since 1967 but, to keep the following narrative simple, those current then and used in Richardson et al. (1967) are retained here.][1]

With regard to the trio of Davids, some background to the situation in one aspect of lichenological physiology being studied at the time, the mid-1960's, is necessary. Work in David S.'s research group, especially the studies by Edward Drew and David R., had established that the principal carbohydrates that passed from photobiont to mycobiont in *Peltigera polydactyla* and *Xanthoria aureola* were, respectively, glucose and ribitol. The information had been gathered using a procedure dubbed 'the inhibition technique', perhaps now better regarded as an isotope dilution approach. The photobiont in the former lichen was the prokaryotic cyanobacterium*, Nostoc,* and that in the latter the eukaryotic green alga, *Trebouxia.* The mycobionts were also unrelated and so the experimental data were limited. In this way, the generality of these conclusions needed to be tested.

One day, David R. received an unsolicited parcel containing substantial samples of *Lobaria amplissima, L. laetevirens, L. pulmonaria* and *L. scrobiculata*. Because of their rarity, his first reaction was to return the material for rapid re-planting. Then, however, their potential experimental value began to dawn on Davids R. and S. for not only were the four species of mycobiont related but *L. pulmonaria* and *L. laetevirens* contained *Trebouxia* (but see ***** below also) and *L. scrobiculata* had *Nostoc*,

[1] The current name for *Lobaria laetivirens* is *L. virens*, and that for *Xanthoria aureola* (in this usage) is *X. calcicola*.

whereas *L. amplissima* sported both, *Trebouxia* in its thallus and *Nostoc* in its large obvious external cephalodia. The scene was thus set for a major comparison. Plans were quickly drawn up for more isotope dilution experiments before the lichens degenerated. Because time was of the essence and the experiments and subsequent analyses were quite large, I, then studying similar problems in mycorrhizas of beech with Jack Harley in an adjacent laboratory to David R., was co-opted essentially as a spare pair of technical hands. The experiments were conducted and analyses begun. With confidence that the results would fully agree with what could be predicted from the earlier work of Ed Drew and David R., a paper, to be sent to '*Nature*', was drafted with blank spaces for the actual data and diagrams. Confirmation and extension were indeed obtained and the paper duly accepted (Richardson et al., 1967).

*****In 1967, it was not generally recognised that *L. pulmonaria* had small internal *Nostoc*-containing cephalodia. Subsequently, their nitrogen-fixing capacity was demonstrated (e.g., Millbank & Kershaw, 1970). Interestingly, a re-look at our own carbon-based data, published in the 1967 paper, also provides a hint of the presence of *Nostoc*. However, we did not notice it then and so missed the scoop of drawing attention to these structures and revealing the complex role they play!

This evidence therefore provides proof that I am no 'luminary lichenologist' but, twice, just happened to be in the right place at the right time for some lichenology, two most enjoyable experiences!

References

Galloway, D. (2011). "…none at present from the Southern Hemisphere": joining the BLS in 1959. *British Lichen Society Bulletin* **109**: 48-55.

Lambley, P. (2011). Searching for the Lobarion – how you can help. *British Lichen Society Bulletin* **109**: 3-8.

Lewis, D.H. (1963). Field meeting at Preston Montford. *Lichenologist* **2**: 190-194.

Millbank, J.W. & Kershaw, K.A. (1970). Nitrogen metabolism in lichens. III. Nitrogen fixation by internal cephalodia of *Lobaria pulmonaria. New Phytol*ogist **69**: 595-597.

Richardson, D.H.S., Smith, D.C. & Lewis, D.H. (1967). Carbohydrate movement between the symbionts of lichens. *Nature* **214**: 879-882.

I am most grateful to Professor Sir David Smith and Professor David Richardson (both former Presidents of the Society) for their helpful comments on earlier drafts of this note.

David Lewis
Grange Cottage, Nether Padley, Grindleford, Hope Valley, Derbyshire, S32 2HE, UK.
email d.h.lewis@sheffield.ac.uk

A brief history of the Natural History Museum Lichen Section and its collections, from its foundation up to 1990

In January 1990, as part of the BLS AGM for that year, a Lichen Section visit was organised, where BLS members were guided around the various constituent lichen herbaria, that comprise the Natural History Museum's lichen holdings, and viewed a number of displays that were set up indicating the Lichen Section staff's work and research interests. As part of that afternoon visit, a handout was prepared outlining a brief history of the Lichen Section and its collections. A slightly amplified and referenced version of the handout printed at that time is presented here, as a record of the Lichen Section's first 120 years at South Kensington.

The earliest lichens in the herbarium of the Natural History Museum [formerly the British Museum (Natural History)] are in the Hans Sloane Herbarium and comprise (1) British lichens collected by the **Rev Adam Buddle** (c.1660-1715); (2) a collections of lichens and bryophytes made by **William Vernon** (c. 1688) and identified by Dillenius, with duplicates at OXF; (3) a collection of lichens from Tierra del Fuego, made in 1690 by **George Handisyd**, surgeon of the East Indiaman *Modena* and (4) lichens from Virginia collected by **John Bannister**.

The Lichen Section Herbarium contains a collection of 18th century lichens from Sir Joseph Banks's herbarium, among which are collections of Southern Hemisphere lichens gathered by **Joseph Banks** (1743-1820) and **Daniel Carl Solander** (1733-1782) in 1769-1770 during Captain Cook's *Endeavour* Voyage (1768-1771), **Johann Reinhold Forster** (1729-1798), **Johann George Adam Forster** (1754-1794) and **Anders Sparrman** (1748-1820) from Cook's second voyage (1772-1775), and **William Anderson** (1750-1778) from Cook's third voyage (1776-1780). There are also Southern Hemisphere, Atlantic and Cape lichens collected by **Archibald Menzies** (1754-1842a) during two circumnavigations in 1786-1789, and in 1791-1795, the latter as Captain George Vancouver's naturalist on board the *Discovery* (Galloway 1995). Additional 18th century and early 19th century lichen material was added from the collections of the first Keeper of Botany, **Robert Brown** (1773-1858) and the extensive lichen herbarium of **Churchill Babington** (1821-1889). Babington (often confused with his cousin Charles Cardale Babington, Professor of Botany in the University of Cambridge), was a Fellow of St John's College Cambridge, Disney Professor of Archaeology, and Lecturer in Theology in the University of Cambridge. He prepared the accounts of lichens for two of the parts of Joseph Hooker's Botany of the Antarctic Voyage, firstly in *Flora Novae Zealandiae* (1855) and secondly, with William Mitten, in *Flora Tasmaniae* (1859). He also contributed accounts of Seemann's Arctic lichens, and enumerated lichens from the Himalaya, collected by Strachey and Winterbottom in 1847 and 1848. His herbarium is rich in 19th century collections including specimens from Darwin's *Beagle* voyage (Galloway 2009), and

material from the herbaria of James Edward Smith (Laundon 2005) and Dawson Turner.

The lichen herbarium (BM) was founded mainly on the collections (together with those of other lichenologists) and work of the **Rev. James Morrison Crombie** (1831-1906), who was a frequent visitor to the Department from 1969 until his death (Hawksworth & Seaward 1977, Stearn 1981). Crombie published many papers on lichens and a book which was part I of *A monograph of lichens found in Britain: being a descriptive catalogue of the species in the herbarium of the British Museum* (Crombie 1894). Unfortunately, he did not live to complete the second volume, but the work on the book and the lichen collection was continued by **Annie Lorraine Smith** (1854-1937), who was an unofficial worker or "acting Assistant" in the Department from 1889 until 1933 (Stearn 1981). A.L. Smith's 2nd volume and second editions of *A monograph of the British Lichens* (Smith 1911, 1918, 1926) were based on specimens in the herbarium where they are still held in impressive cabinets together with the excellent illustrations. Amongst other publications, A.L. Smith also wrote *A Handbook of the British Lichens* (Smith 1921a), a portable guide based on the *Monograph* volumes, and *Lichens* (Smith 1921b) in the Cambridge Botanical Handbooks series, a major review of the group and one which is still of considerable importance and utility today.

The first lichenologist to be employed on the BM staff was **Ivan Mackenzie Lamb** [later Elke Mackenzie] (1911-1990) who worked in the Museum from 1935-1946, apart from absence during the Second World War. Lamb studied the genera *Usnea* sect. *Neuropogon, Placopsis* and *Stereocaulon* in great detail, publishing several major monographs and papers (Llano 1991). **Alan Henry Norkett** (1915-1990), employed from 1933 until 1975 did much curatorial work on the lichen collections during Mackenzie Lamb's time. In 1947, **David John Griffiths** was appointed to the staff of the Diatom Section and was funded by the Museum to attend Cambridge University to obtain a degree in 1948 and returned for a few years (1950-1955) to work on lichens.

In 1955 **Peter Wilfrid James** (1930-) was appointed as lichenologist, having previously worked on lichens as a vacation student when the lichen herbarium was still in the Central Tower where Diatoms are now housed. The major part of the cryptogamic herbarium, excluding Ferns and Diatoms, was moved from the Central Tower to its present position in the late 1950s after reconstruction of war damage, with lichens occupying first a central position where bryophytes are now, then finally moving further east to their present position adjacent to the Mineralogy Library in 1969 when the Kew lichens were added on permanent loan. At the same time, the BM mycological collections were transferred to Kew as a condition of the Morton Agreement (Stearn 1981), the myxomycete collections being retained by both Kew and the BM. [The Myxomycetes at the BM, Based on the work of **Arthur Lister** (1830-1908) and his daughter **Guilelma Lister** (1860-1949) (an infrequent visitor), remain at the Museum, as do the microscope-slide collection. The Myxomycetes were written up by A. Lister in *A monograph of the Mycetozoa being a descriptive catalogue of the species in the herbarium of the British Museum* (Lister 1894), which ran to a second, revised edition by G. Lister in 1911, and a third edition in 1925. The Lister

notebooks (owned by the British Mycological Society) are housed in the BM. The myxomycete herbarium was fully curated in 1977 by John L. Cleden.]

Peter James became Deputy Keeper of Botany in 1977. In 1961, **Jack Rodney Laundon** (1934-) was transferred from flowering plants to work in a deputy capacity on lichens, in later years becoming also the Editor of the *Bulletin of the British Museum* (*Natural History*) Botany series. **David John Galloway** (1942-) worked in the Lichen Section from 1973-1982 as a long-term visitor while preparing a New Zealand lichen flora. He was appointed Senior Research Fellow in 1982, joined the permanent staff in 1987, becoming Head of Section in 1988, and Coordinator of Lichens and Bryophytes in 1989. **John-Henry H. Looney** was NCC Senior Research Fellow, 1986-1988, studying the effects of substrate acidification on the *Lobarion* in the UK. **Ole William Purvis** (1959-) was a vacation student in the Section in 1980, obtained a BP-funded Museum Centennial Studentship, 1982-1985, continuing as Junior Research Fellow, 1986-1988 funded by NERC to work on a new British lichen flora, joining the staff on 1 September 1988. The British lichen flora was published in 1992 (Purvis et al. 1992).

Lichen Section Assistants have included: **Janet Butler** (1958-1961), **Ian Tittley** (1963-1965), **A. Roy Vickery** (1965-1971), **Janet E. Menlove** [now Mrs Brinklow] (1971-1975, **Tessa K. Power** [now Mrs Styles] (1975-1076), **F. Joy Walker** [now Mrs White] (1976-1988).

Lichen Section staff have worked closely with the British Lichen Society since its formation in 1958 (Hawksworth & Seaward 1977, Laundon 1995, 2008, Seaward 2008), most being at one time or another either an Officer or a Council Member of the Society. Both Peter James and Jack Laundon served terms as President of the BLS and both are now Honorary Members. Peter James was Founder Editor of the Lichenologist, continuing in that capacity until 1978, and Jack Laundon was Secretary from 1964 until 1983, a particularly notable length of service to the Society. Peter James was the first President of the International Association for Lichenology (1969-1975), and David Galloway was elected IAL President for the term 1987-1992. He resigned from the Museum in November 1994 to return to his native New Zealand to live.

The BM lichen herbarium was greatly enriched by the addition of two major collections. That of Erik Acharius (1757-1819) was brought to the Museum from the Linnean Society of London (to whom it was gifted by Acharius in 1807), carefully curated into its present state by Jack Laundon in 1962-1963, and purchased from the Linnean Society in 1963 for £250.00. Most of the collection of nearly 900 specimens are types (Galloway 1988). In 1969, the lichen herbarium at the Royal Botanic Gardens Kew was transferred to the Museum, under the provision of the Morton Agreement, where it is now on permanent loan (Brenan & Ross 1970). This collection is rich in foreign material, especially of collections accumulated by Sir William Jackson Hooker (1785-1865) and Sir Joseph Dalton Hooker (1817-1911), successive Directors at Kew, from their wide networks of colonial collectors and scientific contacts.

The Foreign Herbarium contains some 150,000 specimens with extensive holdings of type material from all parts of the world. The British Herbarium contains some 70,000 collections. The BM-Acharius collection comprises c. 900 specimens. The Myxomycete Herbarium contains 9400 specimens. Boxed Lichen Exsiccati contain 1000 specimens. In addition, there are c. 100 specimens of fungal parasites on lichens, a slide collection with 8400 myxomycetes and 6500 lichens; 250 colour transparencies; and some 150,000 unincorporated specimens of British and mainly foreign lichens from many expeditions to polar, alpine and/or tropical regions.

It is estimated that the sum total of lichen material in the BM Herbarium amounts to c. 400,000 specimens, making it probably the largest and richest lichen collection in the world.

References

Brenan, J.P.M. & Ross, R.R. (1970). Reorganization of the cryptogamic collections at the Royal Botanic Gardens, Kew, and the British Museum (Natural History). *Lichenologist* **4**: 257.

Crombie, J.M. (1894). *A Monograph of Lichens found in Britain*. Vol. 1. British Museum, London.

Galloway, D.J. (1988). Erik Acharius and his influence on English lichenology. *Bulletin of the British Museum* (*Natural History*) *Botany* **18**: 149-194.

Galloway, D.J. (1991). Churchill Babington MA, DD, FLS (1821-1889), theologian, archaeologist, rector: a forgotten Victorian lichenologist. *British Lichen Society Bulletin* **69**: 1-7.

Galloway, D.J. (1995). The extra-European lichen collections of Archibald Menzies MD, FLS (1754-1842). *Edinburgh Journal of Botany* **52**: 95-139.

Galloway, D.J. (2008). Godley Review. Austral lichenology: 1690-2008. *New Zealand Journal of Botany* **46**: 433-521.

Galloway, D.J. (2009), Darwin's lichens. *The Linnean* **25**: 36-51.

Hawksworth, D.L. & Seaward, M.R.D. (1977). *Lichenology in the British Isles 1568-1975. An historical and bibliographical survey*. Richmond Publishing, Richmond.

Laundon, J.R. (1995). The formation of the British Lichen Society. *British Lichen Society Bulletin* **77**: 1-10.

Laundon, J.R. (2005). The publication and typification of Sir James Edward Smith's lichens in *English Botany. Botanical Journal of the Linnean Society* **147**: 483-499.

Laundon, J.R. (2008). Fifty years ago. *British Lichen Society Bulletin* **102**: 46-48.

Lister, A. (1894). *A Monograph of the Mycetozoa being a Descriptive Catalogue of the Species in the Herbarium of the British Museum*. British Museum, London.

Llano, G.A. (1991). I. Mackenzie Lamb, D.Sc. (Elke Mackenzie) (1911-1990). *Bryologist* **94**: 315-320.

Purvis, O.W., Coppins, B.J., Hawksworth, D.L., James, P.W. & Moore, D.M. (Eds) (1992). *The Lichen Flora of Great Britain and Ireland*. Natural History Museum Publications, London.

Seaward, M.R.D. (2008). The British Lichen Society: past, present, and future. *British Lichen Society Bulletin* **102**: 48-52.

Smith, A.L. (1911). *A Monograph of the British Lichens*. Vol. 2. British Museum, London.
Smith, A.L. (1918). *A Monograph of the British Lichens.* Vol. 1. Edn 2. British Museum, London.
Smith, A.L. (1921a). *A Handbook of the British Lichens*. British Museum, London.
Smith, A.L. (1921b). *Lichens*. University Press, Cambridge.
Smith, A.L. (1926). *A Monograph of the British Lichens*. Vol. 2. Edn 2. British Museum, London.
Stearn W.T. (1981). *The Natural History Museum at South Kensington. A History of the British Museum* (*Natural History*) *1753-1980*. Heinemann, London.

David J. Galloway
Landcare Research, Private Bag 1930, Dunedin 9054, New Zealand
email gallowayd@xtra.co.nz

Jack Rodney Laundon
5 Donne Close, Kettering, Northamptonshire NN16 9XS, UK.

Lichen studies in the biodiversity hot spot, Horton Plains National Park - a world heritage site in Sri Lanka

Introduction: floristic richness of Sri Lanka

The flora of Sri Lanka, notably the angiosperms has been studied and documented by different scientists such as Hermann, Gardner, Thwaites, Trimen, Hooker, and Alston since the eighteenth century. Similarly, Gardner, Thwaites, and Petch have made extensive fungal collections, which were some of the most comprehensively explored in the whole of South Asia (Gunatilleke and Gunatilleke, 1990). According to Abeywickrama (1986), the indigenous flora of Sri Lanka comprises *ca* 7,000 species which includes more than 200 lichens, with 39 endemic species. In the most recent revision of the flora of Sri Lanka by Dassanayake and Fosberg, in 1980 to 2000, the lichens of Sri Lanka are not included. In 2007, IUCN prepared "The 2007 Red List of Threatened Fauna and Flora of Sri Lanka", in which the total number of lichens in Sri Lanka is given as 661, without any reference to endemic species.

Sri Lanka, in common with most of the tropical countries, has incomplete information on lichens due to lack of experienced taxonomists as well as the lack of basic taxonomic and ecological data. The seriousness of this situation worldwide is highlighted by Feuerer (*http://www.checklists.de*) who states that there are 14 countries from which not a single lichen species has been recorded until 2006. Therefore our study on lichens of the Horton Plains National Park (HPNP) may be

useful to produce baseline taxonomic information for ecological or environmental studies in Sri Lanka. Thus, the objective of this study was to provide complete taxonomic descriptions of the lichens present on tree trunks in continuous and island forest areas of the HPNP as the initial step for the exploration of lichen biota of Sri Lanka and correlation of the lichen diversity with respect to past ecological changes.

Observing forest in one of the continuous forest site of Horton Plains National Park in 2006

Study site

HPNP is a cloud forest and with the Central Highlands of Sri Lanka being declared a world heritage site in 2010 its national importance has grown. It can be regarded as a "super-hotspot" within the Western Ghats and Sri Lanka because it possesses a large number of endemic flora and fauna and is home to unique climatic and physiographic factors (World Heritage Report, 2010). HPNP is located south of Nuwara Eliya between latitude 6^0 47'- 6^0 50' N and longitude 80^0 46'- 80^0 51' E at an elevation ranging from 1500m to 2524m with a plateau starting from about 2100m altitude. This is the only montane plain in Sri Lanka with a socionomic history dating back to pre-historical times (Green, 1990). HPNP covers 3160 ha or 9% of the upper montane forest in the country. The forest occurs as continuous forest on the upper slopes, and as forest islands of different sizes interspersed in 'pathana' grassland. The mean monthly temperature is 17 ^{0}C and it shows little variations, particularly during late January, February and early March, when day temperatures

reach 25^0C and night temperatures are close to or below 0^0C. Other climatic factors include a mean annual rainfall over 2000 cm, very high humidity, frequent cloud cover which limits the amount of sunlight reaching plants and high winds during late August to early October. The interaction between all these climatic features over many thousands of years has given rise to the vegetation of Horton Plains as seen today.

A forest patch in the 'Pathana' grassland at HPNP


Most of the canopy species are dead (arrow head) due to forest die back

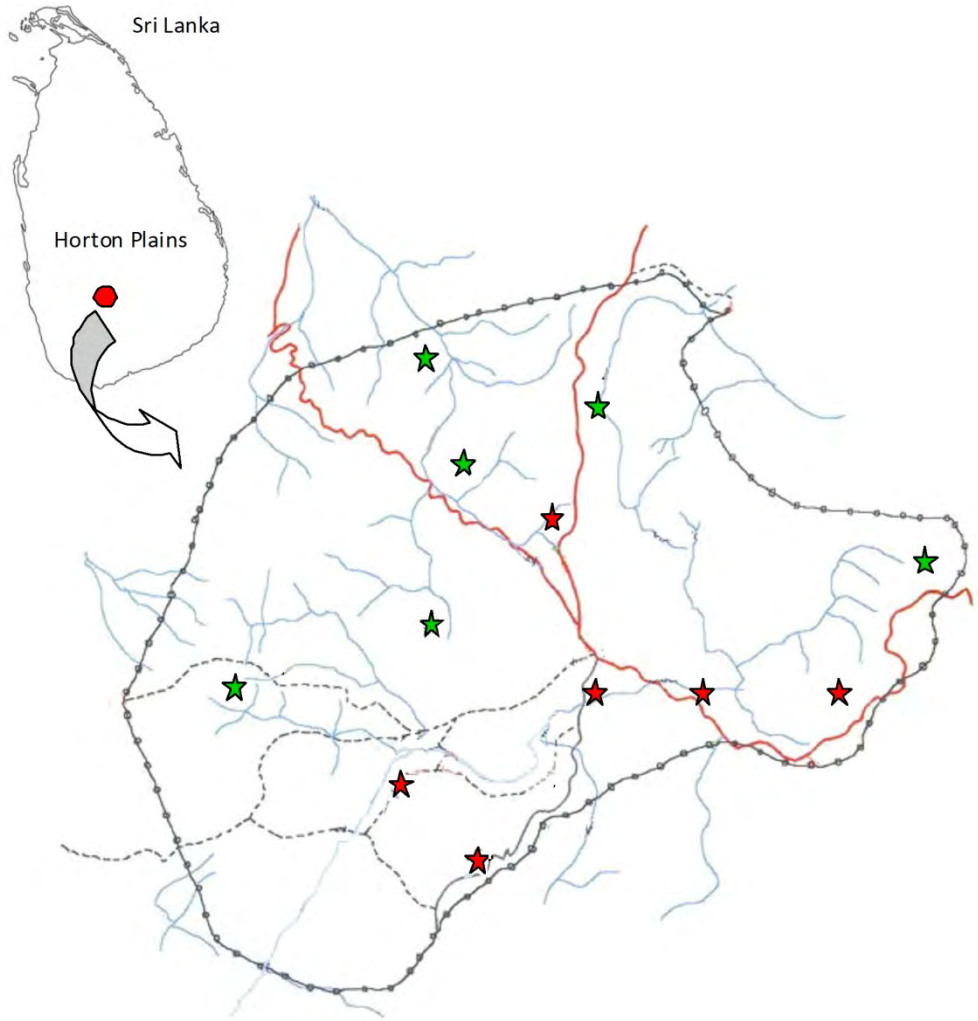
Sambar deer in the grassland of HPNP (above) and their effect on stem bark of endemic tree species *Symplocos* sp. (below left) and *Neolitsea fuscata* (below right).

The forests of HPNP vary in height from 10 -15 m and 1-1.5 m on the summits of Kirigalpotta and Totapolakanda. In appearance most trees do not have straight stems or buttresses (stilt roots may sometimes be present); they are low-branched and twisted. On the whole the leaves of the taller trees are small and show drought resistant features such as hairs or a thick waxy layer on their surfaces. Where the forest is windswept, the canopy is more or less continuous without any characteristic emergent trees. Beneath the tree layer, shrubs and herbaceous forms abound. Other plants that predominate are epiphytes growing on the tree trunks and branches, and many epiphyllous species grow on leaf surfaces. Among these are orchids, ferns, mosses, liverworts and lichens. The major factor that determines their growth may be the high moisture content.

Left, typical moist condition at the Ohiya road entrance of HPNP. Right, *Exacum trinervium*, one of HPNP's endemic flowering plants.

Methodology

Twenty plots were selected using a map of HPNP, 6 within the forest islands and 6 in the continuous forest. Lichen samples were quantified from one third of the individual phorophytes (trees whose girth at 1.50 m is ≥ 10 cm) occurring in each segment, together with environmental data such as light intensity and tree data including species, trunk diameter, bark type and bark pH. Finally, each lichen was identified to genus level according to lichen determination keys and previous literature. Cluster analysis and correlation analysis were performed using SAS software (version 6.12). The *t*-Test was performed using Minitab 14 software.

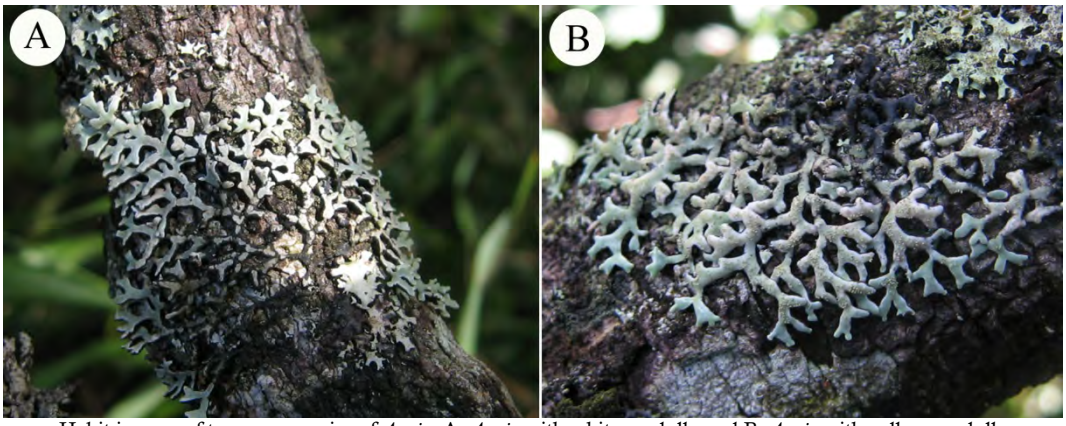


Map of the HPNP indicating continuous forest plots (green) and forest island plots (red)

Results and discussion

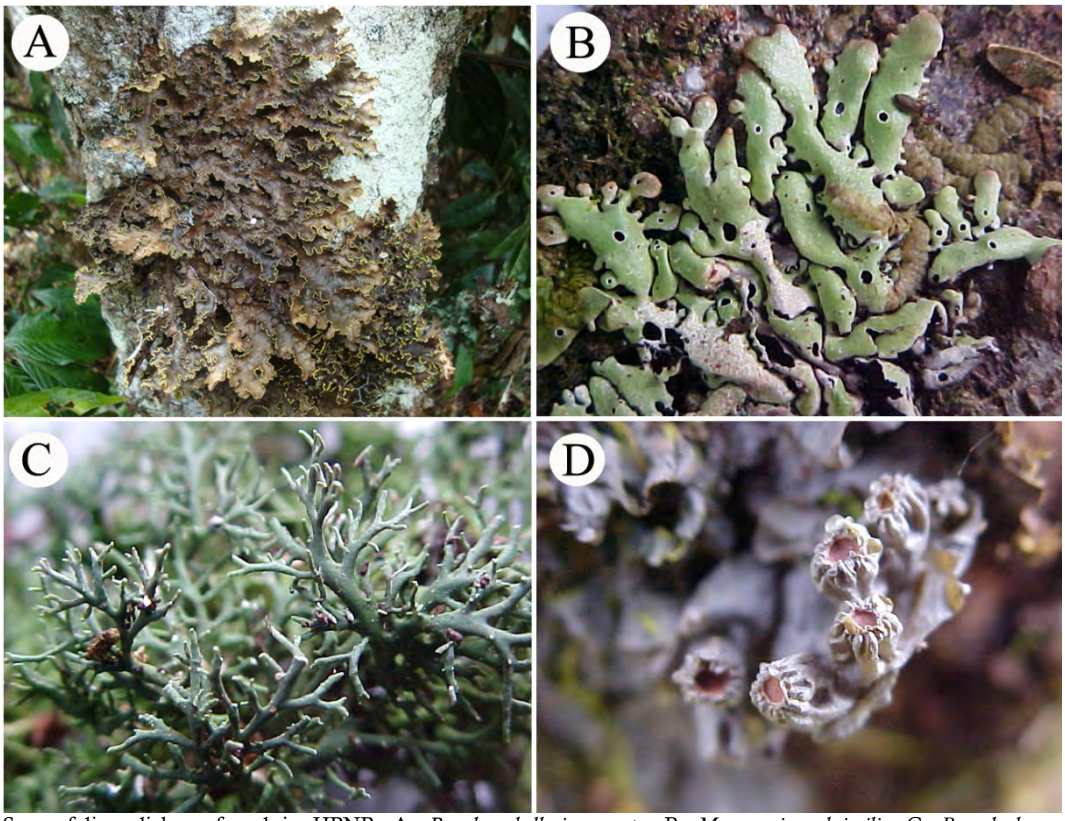
Lichen taxa recorded in HPNP

Lichens collected from the 12 plots of HPNP were observed and were identified using different lichen keys. Although much of this material provided new records for Sri Lanka, the final identification of this material has been investigated at NHM during a five week visit, using their extensive collections and literature resources, in order to confirm species identifications and designate appropriate indicator species for upland forests in Sri Lanka. A total of 379 lichen taxa belonging to 67 genera and 24 families was identified from the 12 collecting plots at HPNP. Of them 51 macrolichens were identified as new records for Sri Lanka, and two new species were detected. These belong to the genus *Anzia*, and have a yellow and white medulla respectively. All the microlichens were kept for further identification at NHM and PDA.



Habit images of two new species of *Anzia*. A: *Anzia* with white medulla and B: *Anzia* with yellow medulla

In HPNP, the family *Parmeliaceae* is represented by 67 species from 16 genera. The second highest family diversity (52 species from four genera) was the family *Thelotremataceae*. There were nine families which were represented by only a single genus of lichens, the *Chrysothricaceae*, *Cladoniaceae*, *Coccocarpiaceae*, *Gyalectaceae*, *Megalosporaceae*, *Nephromataceae*, *Placynthiaceae*, *Ramalinaceae* and *Sphaerophoraceae*. Of the 67 identified genera in HPNP, *Heterodermia* and *Sticta* included 27 and 23 taxa respectively, followed by *Thelotrema* which was represented by 22 taxa of lichens. *Pseudocyphellaria, Parmotrema and Pertusaria* was represented by 17 taxa in each. Amongst the 67 genera of lichens, 24 were represented by a single species or taxon.

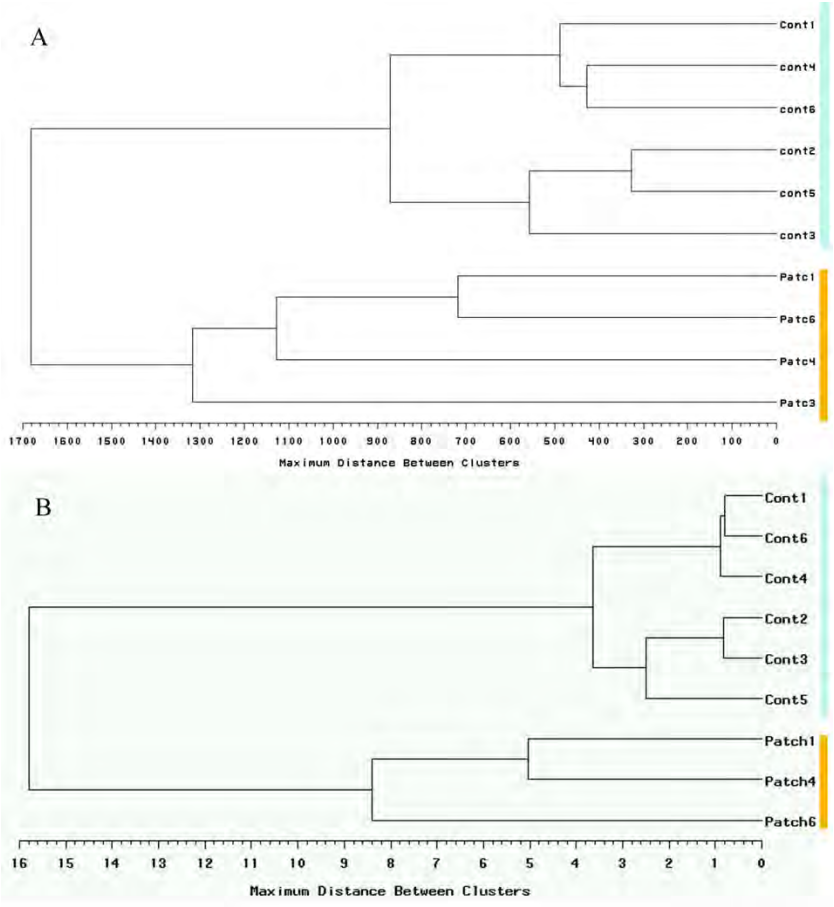


Some foliose lichens found in HPNP. A: *Pseudocyphellaria crocata*. B: *Menegazzia subsimilis*. C: *Bunodophoron formosanum* and D: *Leptogium javanicum*.

In addition to the taxonomic diversity, distinct differences in the habit (growth forms) of the collected lichen were also observed. Amongst them, 30 (44 %) and 28 (42 %) of genera were represented by foliose and crustose lichens, respectively. However, seven (10 %) genera were found as fruticose lichens and only two genera were represented by leprose lichens. At the species level, 179 taxa (47 %) of the collected lichens were foliose and 172 taxa (45 %) were crustose. 26 taxa (7 %) of fruticose and 2 species of leprose lichens were collected during this survey.

Using established indicator genera, this research was able to identify significant differences between lichen communities of forest islands and the continuous forest where forest die-back is occurring. The results indicate that Shannon Diversity Index, species richness and species density of the Ecological Continuity Indicator (ECI) genera were higher in the forest islands, while species evenness was higher in the continuous forest. Wolseley & Aguirre-Hudson (1997a) showed that the environmental continuity of substrate and microclimate conditions in the forest, whether dry or moist, is associated with the development of characteristic lichen communities of higher diversity. Our results also emphasized that environmental continuity is more preserved in the forest islands compared with the continuous forest.

Cluster analysis was performed with frequency and cover values of ECI lichen genera in order to evaluate the relationship between continuous forest and forest island plots. Two clear clusters regarding the cover value and frequency of ECI genera in the two forest types were observed. All the plots in continuous forest were separated from forest island plots by 1, 3, 4 and 6 according to the frequency values. Similarly, all continuous forest plots were separated from island plots by 1, 4 and 6 with respect to cover values of ECI genera of lichens.



Dendrogram of average cover values (A) and frequency (B) in continuous (Cont) and forest islands (Patch)

The above data revealed that frequency and cover values of ECI genera show a clear difference between forest islands and the continuous forest. This difference may be due to the higher ecological disturbances which may have occurred in the continuous forest.

All the findings will be included in action plans for the conservation of forest biodiversity in Sri Lanka, and an illustrated book on lichens of Horton Plains NP is planned for publication in English and Sinhalese.

Acknowledgements

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References

Abeywickrama, B.A. (1986). *The Threatened Plants of Sri Lanka*. UNESCO and MAB National Committee for Sri Lanka, Publication No. 16. NARESA, Colombo, Sri Lanka.

Dassanayake, M.D. & Fosberg, F.R. (1980-1987). *A Revised Hand Book to the Flora of Ceylon*. Vols I-VI. Amerind Publishing, New Delhi.

Green, M.J.B. (1990). *IUCN Directory of South Asian Protected Areas*. IUCN-The World Conservation Union, Cambridge, U.K.

Gunatilleke, I.A.U.N. & Gunatilleke, C.V.S. (1990). Distribution of floristic richness and its conservation in Sri Lanka. *Conservation Biology* **4**: 21-31.

IUCN Sri Lanka (2007). *Red List of Threatened Fauna and Flora of Sri Lanka*. 147 pp.

Jayalal, U., Wolseley, P., Wijesundra, S., Karunaratne, V. (2008). Macrolichen diversity as an indicator of environmental changes in montane forest of Horton Plains National Park, Sri Lanka. 6th IAL symposium and annual ABLS meetings, California, USA p. 140.

Anon. (2010). *Report of the Decisions Adopted by the World Heritage Committee at its 34th Session*. United Nations Educational, Scientific and Cultural Organization pp. 180-183.

Wolseley, P.A. & Aguirre-Hudson, B. (1997a). The ecology and distribution of lichens in tropical deciduous and evergreen forests of northern Thailand. *Journal of Biogeography* **24**: 327-343.

Wolseley, P.A. & Aguirre-Hudson, B. (1997b). Fire in tropical dry forests, corticolous lichens as indicators of recent ecological changers of Thailand. *Journal of Biogeography* **24**: 345-362.

Wolseley, P.A. and Aguirre-Hudson, B. (1991). Lichens as indicators of environmental change in the tropical forests of Thailand. *Global Ecology and Biogeography Letters* **1**: 170-175.

U. Jayalal[a], P.A. Wolseley[b], S. Wijesundara[c] and V. Karunaratne[a]

[a] Department of Chemistry, University of Peradeniya, Sri Lanka; [b]Department of Botany, Natural History Museum, London; [c] Royal Botanic Gardens, Peradeniya, Sri Lanka.

email rgujayalal@yahoo.com

Speak to me lichen – How clean is the air?

Silver CREST Project, La Sainte Union Catholic School 2011- 2012
The project *Speak to me Lichen – How clean is the air?* was funded by a Royal Society Partnership Grant and will be exhibited at the Royal Society's annual Summer Science Exhibition. The Exhibition will be held from 3 – 8 July at the Royal Society's main premises in central London (Carlton House Terrace, 6 – 9 Carlton House Terrace, London SW1Y 5AG). It is open to members of the general public as well as students and teachers, scientists, policymakers and the media. More Information on The Royal Society's Summer Science Exhibition can be found at *http://www.royalsociety.org/Summer-Science/*.

Our project

Our project was mainly based on the quality of air around our school. We studied the relationship between levels of the pollutant nitrogen dioxide (NO_2) and the distribution of lichens around the school area.

Lichens are known to be indicators of changes in air quality, where tolerant species replace species sensitive to a given pollutant. This effect is observed widely across urban and rural Britain, especially in regions where oxidised and reduced forms of nitrogen are present. NO_2 is the dominant air pollutant in urban areas, due to pollution from road traffic. Therefore the quality of our town air can be indicated by measuring levels of NO_2.

Lichens are made up of two or more different organisms; fungus and alga. Lichens can be placed into three categories:

- Nitrogen-sensitive; found in clean, non-polluted conditions
- Intermediate; can be found in clean AND polluted conditions
- Nitrogen-loving; found in conditions where levels of nitrogen dioxide are particularly high

Our results support our hypothesis that:

1. The concentration of pollutants will be highest along the main road (Highgate Road)
2. There will be a correlation between the levels of NO_2, data from the NO_2 diffusion tubes, and the lichens.

We monitored NO_2 pollution by placing NO_2-diffusion tubes at different sites around our school area:

- The car park (senior end)
- School tennis court (near orchard)
- Front of school (main entrance)
- Hampstead Heath shrub path
- Hampstead Heath woodland

In our project we learnt to identify lichens and then we mapped their distribution on trees at different locations along and either side of Highgate Road.

From information obtained from the Camden Air Monitoring website we knew that air quality is poor in Camden: in 90% of locations NO_2 levels exceed the Air Quality Standard.

Method

Learning to identify Lichens: We spent two mornings with Pat Wolseley and Holger Thüs (of the Natural History Museum, NHM) learning to identify lichens. We collected twigs from the orchard and took them back to the lab. We used keys to identify the lichens. We then went to the Heath and surveyed the trees with Pat and Holger's help. We worked in the Orchard on our own; however we sent our 'identified' samples to Holger at the NHM for authentication and received an encouraging reply. We kept our authenticated samples in a box as our 'reference herbarium'. We used this to check our identifications.

Making a ladder quadrat: First, we cut out five 10cm by 10cm pieces of graph paper per person and then placed them 8cm away from the top and bottom of plastic bin-liners. Each square was 4cm away from the next square and there were five squares. We then pinned them on carefully to the bin liners and cut around the pieces of paper. This is how we made our strong grids.

Recording method – for each tree:

- Record tree species and girth at 1.50m above ground of each tree sampled.
- Place plastic ladder quadrat with five 10 cm squares with top at 1.50 m above ground level on the north aspect of the trunk trunk, using drawing pins or strong pins to hold it in place.
- Familiarise yourself with the lichens in each sample using the illustrated key.
- Record presence of species of foliose and/or fruticose lichens ("Macrolichens") in each 10 cm square.
- Record presence of crustose lichens ("Microlichens"), bryophytes, algae and bare bark in each 10 cm square (not necessary to record at species level, just note presence).
- Repeat on all compass points (N, E, S, W) so that presence in 20 squares is recorded for each trunk.

Checking reliability: When we were in the orchard, we worked in pairs and groups of three on each tree. After periods of 15 minutes we moved to another tree. Each group surveyed the same three trees and we then gathered and compared our results. When there was a discrepancy, we went back to the tree and rechecked.

Monitoring NO_2 using diffusion tubes: NO_2-diffusion tubes are an easy method of monitoring nitrogen oxides in the air. When you want to monitor, the white cap has to be taken off and the tube placed into position. NO_2 in the air diffuses along the tube and is absorbed by the chemical triethanolamine (or TEA) fluid on the grid in the tube. The concentrations of nitrite ions and NO_2 are quantitatively determined by Ultra Violet/Visible Spectrophotometry. Spectrophotometry is a method of analysing chemically-based substances by measuring their capacity to absorb light of various wavelengths.

The NO_2-diffusion tubes were replaced every three weeks and sent to Gradko's Laboratory to be analysed. Initially we had a problem with the tubes in the Heath disappearing. This may partly be because the tubes were more obvious before the foliage appeared on the trees and shrubs.

Learning to survey trees with Pat Wolseley and Holger Thüs in 'freezing March'

	NO_2 tubes
	School Senior End Car Park
	School Tennis Court
	Front of School Sign
	Heath Shrub path
	Heath woodland
	Apple and Pear trees in Orchard
	London Plane 1 Heath Roadside
	London Plane 2 Heath Roadside
	Oak Tree 1 Heath woodland
	Oriental Plane Tree
	Oak Tree 2 Heath woodland

Location of NO_2 tubes and trees surveyed

Table to show NO_2 concentrations at different locations from 10 March to 21 July 2011

	NO_2 Concentrations (ppb)					
Date	10/03/11-31/03/11	31/03/11-28/04/11	28/04/11-19/05/11	19/05/11-09/06/11	09/06/11-30/6/11	30/06/11-21/7/11
Blank	0.65	0.05	0.21	0.31	0.27	0.29
Senior Car Park School	21.04	16.18	12.77	10.36	12.93	11.72
Tennis Courts School	19.94	13.54	13.82	12.17	13.78	13.11
Front of School	29.30	24.31	22.84	20.06	16.44	20.78
Hampstead Heath Shrub	missing	missing	13.51	10.99	12.45	10.25
Hampstead Heath Woodland	missing	12.21	10.50	10.64	11.12	9.67

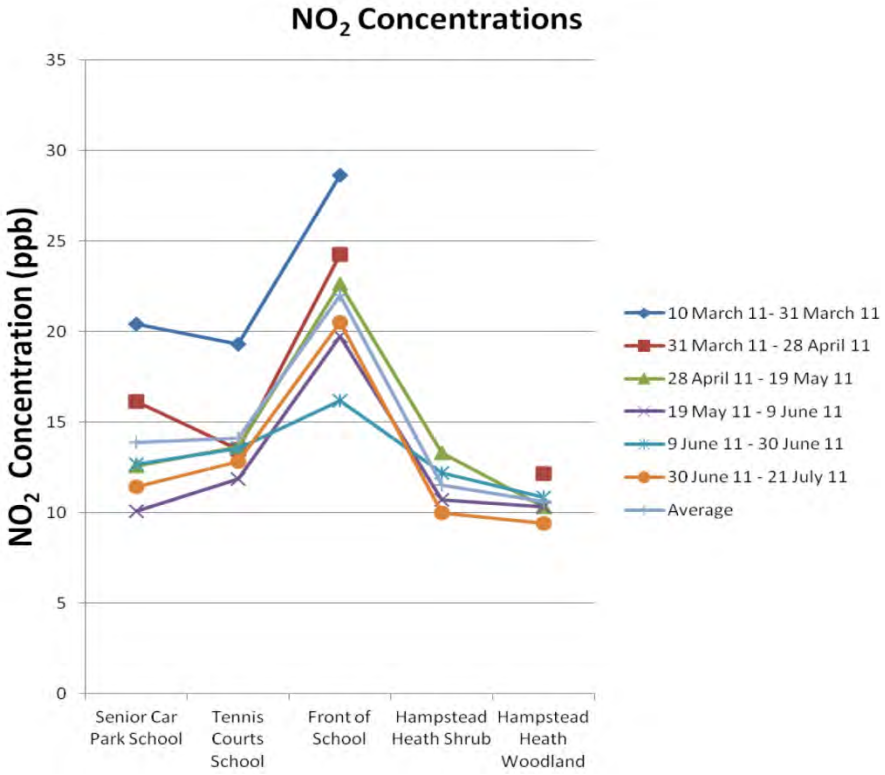
Three of the earlier tubes went missing. At this time the trees did not have foliage and so the tubes were very easy to spot and may have been removed by a local resident using the park. Each set of results had a different blank value which had to be subtracted.

Table to show the NO_2concentrations at different locations from 10 March to 21 July 2011 (corrected for blank readings)

	NO_2 Concentrations (ppb)					
Date	10/03/11-31/03/11	31/03/11-28/04/11	28/04/11-19/05/11	19/05/11-09/06/11	09/06/11-30/6/11	30/06/11-21/7/11
Senior Car Park School	20.39	16.13	12.56	10.05	12.66	11.43
Tennis Courts School	19.29	13.49	13.61	11.86	13.51	12.82
Front of School	28.65	24.26	22.63	19.75	16.17	20.49
Hampstead Heath Shrub	missing	missing	13.31	10.68	12.18	9.96
Hampstead Heath Woodland	missing	12.16	10.29	10.33	10.85	9..38

These are the same results which have been corrected for the blanks. You can see that the values for the front of the school (the main road) are higher.

Graph (below) to show the nitrogen dioxide concentrations at different locations from 10 March to 21 July 2011 (corrected for blank readings)



This graph shows the relationship of NO_2 concentrations and the locations. Strictly speaking, we should have used a bar chart instead of a line graph because our independent variable is categoric but this way of drawing the data makes it easier to see the trends.

A striking observation was that the first set of data (10 March – 31 March 11) was higher than the rest of the data. More people may have driven to work due to the cold weather. Also, in the cold weather there is less movement of air and so the local concentrations of the NO_2 would remain high and would be picked up by the NO_2 sensors. When the temperatures are higher, more people may walk or cycle. Also there may be more air movement due to convection currents.

NO_2-tube location	Distance from the Main Road (m)
Senior Car Park School	-245
Tennis Courts School	-91
Front of School	0
Hampstead Heath Shrub	238
Hampstead Heath Woodland	329

"Macrolichen" diversity

Correlation between NO_2 and lichen diversity

	NO_2 concentrations (ppb)	Average number of different lichens per tree
Hampstead Heath	11.1	9.7
Orchard	14.1	4.0
Highgate Road	22.0	4.5

So, while nitrogen-loving lichens are found throughout the trees sampled, a greater diversity of macrolichens including more 'intermediate' lichens is found in the Heath, away from the road. We might have expected a wider diversity of lichens on the fruit trees in the Orchard as they're set back from the road.

However several factors may affect lichen results, e.g.:

- bark pH (related to tree species)
- age of tree
- proximity to sources of Nitrogen (e.g. fertiliser)
- immediate surroundings of tree (e.g. hedge)

Shading will have an effect on lichen growth and distribution. The orchard is surrounded by houses, walls and school buildings which may have a shading effect on the orchard.

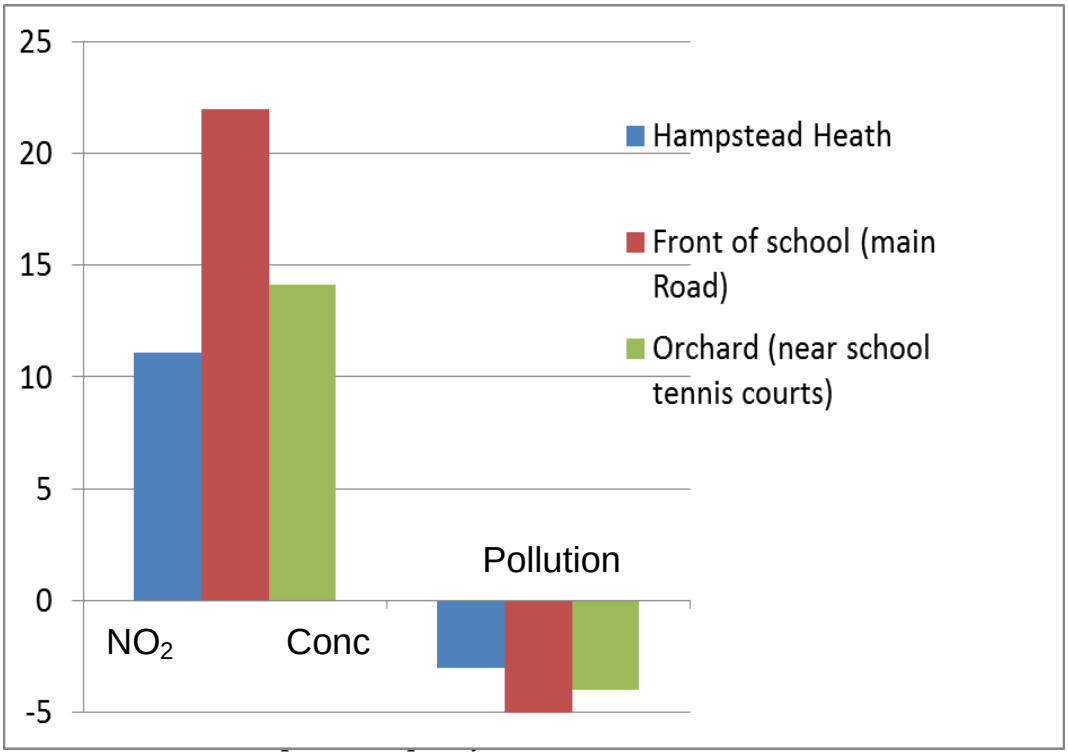
Pollution score based on the frequency of Nitrogen-loving and Nitrogen-sensitive lichens

Indicator Lichen	*Xanthoria ucrainica*	*Xanthoria parietina*	*Xanthoria polycarpa*	*Physcia adscendens*	*Physcia tenella*	*Evernia prunastri*	*Flavoparmelia caperata*	*Melanelixia subaurifera*	*Parmelia sulcata*	*Score*
Score	-1	-1	-1	-1	-1	+1	+1		+1	
Orchard	-1	-1	-1	-1	-1				+1	-4
Highgate Road	-1	-1	-1	-1	-1					-5
Hampstead Heath	-1	-1	-1	-1	-1		+1		+1	-3

We worked out the pollution score based on the frequencies of different lichens. Nitrogen-loving lichens were given a score of minus 1. These are lichens that will grow in polluted air. Nitrogen-sensitive lichen were given a score of plus 1. These are lichens that will not tolerate polluted air. An overall pollution score was then

worked out by totalling adding the scores. (For more information see Air Quality on the OPAL website: *www.OPALexplorenature.org*).

Correlation between the NO_2 and the lichen data (pollution score)



Small changes in our everyday behaviour can make big differences to the quality of London's environment.

- Turn down the central heating when possible.
- Install home energy efficiency measures e.g. loft, cavity wall insulation.
- Use public transport rather than the car wherever possible.
- Walk or cycle for short journeys, instead of using the car.
- Use eco-driving techniques to reduce your fuel use.
- Ensure your car is not wasting fuel, by regularly checking oil and tyre levels.
- Avoid installing polluting wood-burning stoves.
- Avoid burning garden or domestic waste, especially in urban areas.

What difference has the project made to us?

This project has taught us to identify and appreciate lichens more. We notice lichens everywhere. When we went on holidays, we constantly saw lichens and were thinking of the type of lichens and whether they were nitrogen-sensitive or nitrogen-loving. We have also learnt to be more conscious of pollution levels and how they affect the environment around.

Extension

If we had more time, we could have:

- Surveyed more trees and have gone deeper into Hampstead Heath away from the traffic.
- Measured NO_2 levels and surveyed trees on the back roads.
- Looked at lichens on twigs because this would have provided more recent history of lichen growth and air pollution.
- Looked at lichens from rural parts of the UK (collected while on holidays) and compared these with those in London.
- Measured levels of SO_2 because these can also affect lichen growth.

Acknowledgements

We would like to thank Pat Wolseley (Scientific Associate, NHM), Dr Holger Thüs (Lichen Curator, Botany Department, NHM) and Dr Barbara Hilton, (President of the British Lichen Society) for teaching us about lichens, how to identify lichens and their encouragement, and Gloria Esposito (Senior Sustainability Officer, Air Quality) who talked to us about her role in Camden and the ways in which the air quality in Camden is monitored. Advice from these people enabled us to build on the OPAL Air Quality project (www.opalexplorenature.org) and extend methods used for our own project.

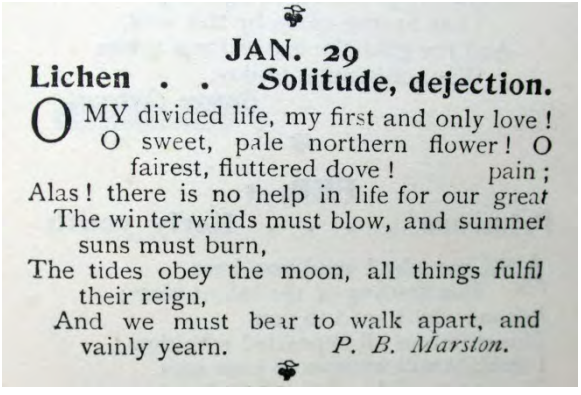
Lastly, we would like to thank our teacher, Dr Pari Collis, for her guidance and support and her collaboration with Camden and NHM staff that led to the award of funding by the Royal Society of Great Britain that made this project possible.

Madeleine A., Mary D., Maureen L., Connie M., Isabel S., Linnet M., Hannah R. and *Siobhan P.*

Year 10-11, *La Sainte Union Catholic School, Highgate Road, London NW5 1RP.*
contact email: pcollis@lsu.camden.sch.uk

Mike Simms has noted the short poem reproduced here, in *The Language of Flowers*, compiled by Flora Klickmann and published by Ward, Lock & Co. Ltd. (1899). Clearly Flora didn't know as much about lichens as the pupils from La Sainte….

Surely we can do better than this. How about a lichen haiku competition?



JAN. 29

Lichen . . Solitude, dejection.

O MY divided life, my first and only love!
O sweet, pale northern flower! O pain;
fairest, fluttered dove!
Alas! there is no help in life for our great
The winter winds must blow, and summer
suns must burn,
The tides obey the moon, all things fulfil
their reign,
And we must bear to walk apart, and
vainly yearn. *P. B. Marston.*

Xanthoria parasitizing *Pertusaria* or *Physcia*: a response to Linda in Arcadia

The previous Bulletin contains a small paper with a picture showing two lichen species growing over each other, with the suggestive title: *Xanthoria parietina* parasitic on *Pertusaria albescens*. The author encourages the audience to send similar cases to the Bulletin. Over the years I have regularly seen, and sometimes collected, lichen species growing over and through each other. Quite often this includes *Pertusaria albescens*, which is a very fast grower and one of the relatively few lichens that grows so fast that it can cover and kill bryophytes.

Instead of providing pictures of such cases, I like to challenge the interpretation of the illustration given in the previous Bulletin. My impression is that it shows *Xanthoria parietina* being overgrown by *Pertusaria albescens*. If I would be right, the phenomenon is nothing special, just a fast-growing species overgrowing a slower-growing one, without actaully killing it, so that the apothecia of the *Xanthoria* can still develop and occasionally break through the overlying *Pertusaria* thallus. One way to prove whom is right, would of course be to make a section through the area where they overlap and see which species is basally attached.

André Aptroot
andreaptroot@gmail.com

Memories of Islay, May 2011

An osprey carrying a fish over Loch Indaal being pestered by gulls to drop it.

Small sandy beaches with ringed plover, dunlin, oystercatcher, redshank, eider, shelduck, merganser and razorbill.

Walking through the woodland at RSPB Gruinart and being amazed by the richness – *Lobaria pulmonaria* in great quantity, *Leptogium cyanescens* and *Degelia atlantica* I have never seen before, green-veined white and peacock butterflies and my ears full of the sweet, descending cadence of the willow warbler.

A chough wheeling and calling above a roofless church. Gravestones completely obscured by Sea Ivory and a memorial made of wood.

A mossy wall beneath the trees, the stones deep in *Sticta*, and the heady scent of bluebells of the darkest blue rising from the woodland floor at Aardbeg. Here we were lucky enough to hear the song of the elusive wood warbler reminiscent of a marble tumbling down a staircase of glass.

A dolphin spotted off the windy headland of Oa, and a leech winding its way through a peaty streamlet.

An otter fishing near the buoys, slicking oilily in and out of the water, at Craighouse Bay on Jura. The tiny wonders of *Pseudocyphellaria crocata* with its sherbet lime soralia and rosy *Caloplaca ferruginea* in the woods.

An enormous thrill as a white-tailed eagle soars before us on the way to Claggan Bay. Startling plumage and mighty strength.

A male hen harrier seen hunting on the western shores of Loch Gruinart above an ancient, ruined church with its weather-worn Celtic cross.

Maxine Puttnam
maxieput@talktalk.net

By Qantas to Queensland: encounters with the Graphidion

Australia's coastline beyond Cairns is fine sugar-cane country. Sweeter still is the sub-tropical rainforest that steers us north towards Cape Tribulation where the empire of the forest meets the kingdom of the sea: Gondwanaland's-End. The still warm air lays thick and spicy. Above the reef the ocean shimmers; its prisms of reflected light, splinters of sparks. Despite the approaching dusk we continue to wear shades against the glare.

Meanwhile I am looking about me for the lichens, surfing the trees with my eyes, imagining the feel of the bark, the compactness of its grain, the furry softness of its warm fibre. But there are endless other distractions here: sudden sounds and sharp scents, mysterious cantilevered flowers, weird stems twisted brittle like oven-fired clay, and hard-cased fruits shredding like coconut matting... all forming a writhing succulence of epiphytic excess swept up in staircases of green which climb above the forest trees and throw a net across the sky.

Dyplolabia afzelii

Night falls fast and while the tourists retreat to the restaurants and bars, I walk though the suffocating air into the darkness. I park myself by a clearing to listen to the frogs and the fruit bats below a glare of unfamiliar constellations. Explosive bursts of avian gunfire rifles across the empty roads, rippling the pools of moonlight that have

threaded their beams between the high vaulted branches of the leafy gum trees. Thrilled to be here I sleep restlessly on a diet of liquid dreams.

After an early breakfast I pack the digital camera, deliver my wife a cold drink and nibbles by the pool and so proceed to explore the grounds of our forest hotel. Tall stands of shady palms surround the narrow walkways leading to our apartment, and I'm drawn to the peculiar scrolled hieroglyphs imprinted about the bark. Here the Graphidion weaves an eccentricity of forms. Some appear criss-crossed, some netted; others, deep and labyrinthine in their designs. Many offer the eye a subtle and mesmerizing intricacy. I'm held spellbound. I steal a photograph and then stare again and again at the image shaking my head in wonder. Out of the corner of my eye I notice a tiny lizard, a Skink, creeping out along the bark to settle in among the mosaics. It lays stock still, panting rhythmically. In this balmy, near-tropical paradise, species of *Phaeographis* develop complex fruiting forms with radiating lirellae (cf. *subdividens* and cf. *brasiliensis*) like early satellite photographs showing the radial drainage patterns carved by rivers. The cryptic backdrop also appeals to a strange, triangular-shaped black-and-white banded spider that has webbed the entrance to several bark hollows. Forever dotted around the cosmos of this extraordinary world are the *Graphina*-like discs of *Dyplolabia afzelii* – the inflated lip-shaped, chalk-white dashes could have been miniaturized from the face of a ventriloquist's dummy. Green-tree ants patrol the surface of the decking near my feet using my sandals as a rat-run setting up an itch I'm desperate to scratch… but my attention is elsewhere. There, almost beyond the range of visible focus like the dotted apothecia of a shade-loving *Enterographa* is the curious signature of a

Phaeographis cf. *brasiliensis*

Thalloloma sp.

Sarcographis (*S.* cf. *verrucosa*) thallus: a world of floating constellations and galaxy-shaped discs. I remember thinking to myself, during my hour of roaming: for a lichenologist, this is as good as it gets.

Sarcographis cf. verrucosa

Flocks of Figbirds besiege the canopy above my head. The noise of their raiding parties is accompanied by clouds of discarded seed husks which float aimlessly downwards like randomly tossed confetti adding a tan coloured tomentum to the stud-shaped fruits of a *Thalloloma*. The first Ulysses butterflies swoop down, weaving and banking on wings of cobalt blue, making their effortless dives and exits. The last flickerings of a breeze succumb to calm. In the momentary stillness I feel blessed to have become part of this dynamic habitat if only for a short time. There is no mistaking the almost mystical lure of these bark-reliefs. Rolled out like parchment there is much hidden beauty here; a frieze to match anything the great civilizations built. Look on these works, ye Mighty, and despair!

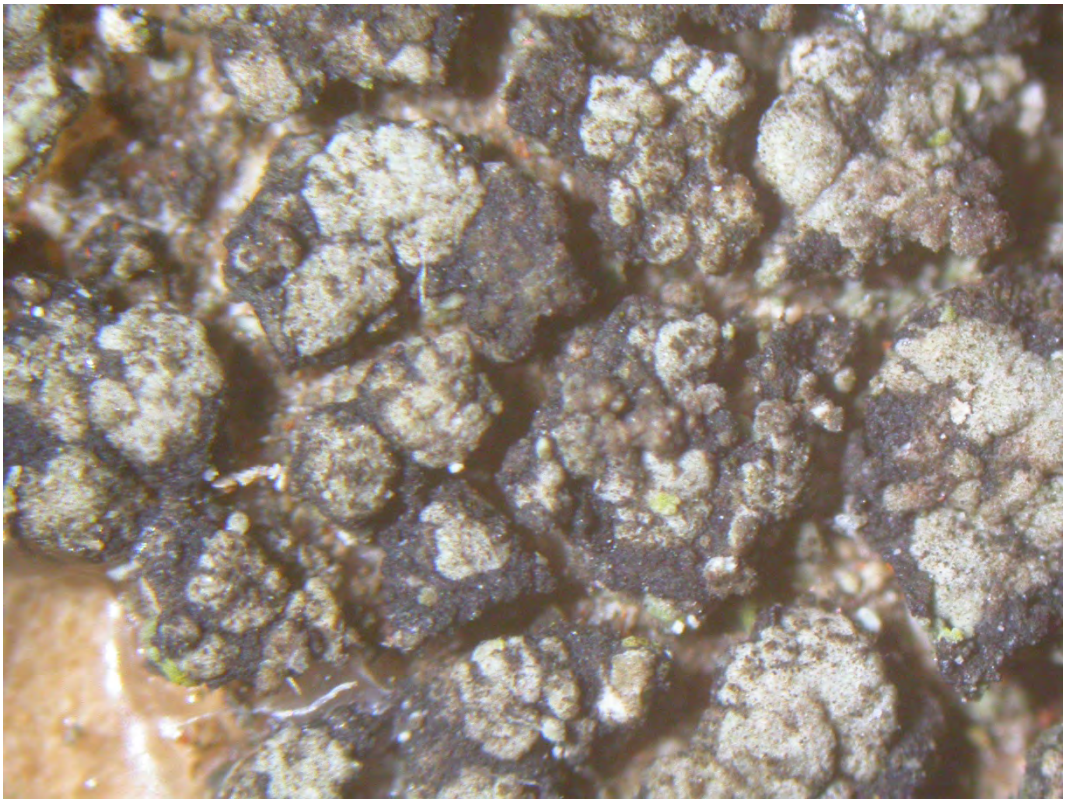
Vince Giavarini
v.giavarini@sky.com

Acknowledgement: I am grateful to Alan Archer of Sydney Botanic Gardens NSW for his patience in attempting to identify some of the Graphidion lichens from my snaps (never an easy task). Genuinely good quality photographs of a selection of named Australian *Graphidaceae* appear in *Bibliotheca Lichenologica* Vols. 94 & 85.

The Sand Point mystery

It was during the 2011 Bristol course that I had my second visit to Sand Point, a rugged limestone promontory jutting out into the Bristol Channel close to Weston Super Mare. Sand Point is large enough to be spectacular, a jagged finger of Carboniferous Limestone, but tamed by its proximity to chalets and caravan sites. We had just finished fieldwork for the day when I noticed a small rounded outcrop supporting an areolate crust. The areoles were plump, like little drop-scones; they were not particularly distinctive but they did have a certain "look" about them. This lichen was not recognised in the field and a specimen was collected. I had that dreaded feeling that this was going to be another mystery without an easy or rapid resolution. Back at the labs of Bristol University I tried to work with what I had, which amounted to little more than pale grey areoles. I cut some good sections which

I drew and made several sketches of the form of the areoles. At the time I doubted whether my efforts would lead to a final determination. Brian offered some useful factual information, pointing out that the photobiont had sufficiently large cells that the Verrucariaceae was ruled out of the possibilities. Oh well, packet it up and file it away in the expanding section of Herb. Powell devoted to problems.



The mystery sterile areoles

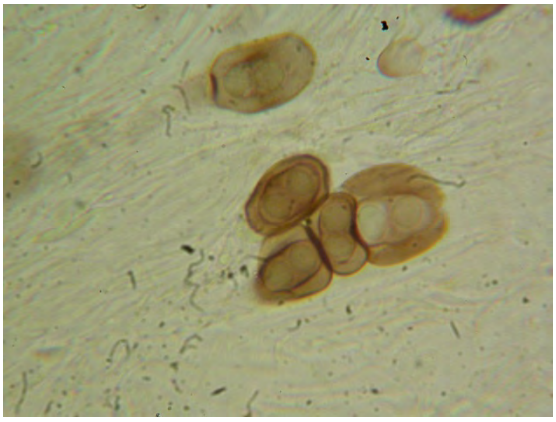
During the spring and summer of 2011 I spent many days exploring churchyards in Bedfordshire and Huntingdonshire and I became convinced that the "Sand Point mystery", whatever it was, occurred rather frequently on limestone headstones and on the string courses of churches. All of my sketching while in Bristol had not been such a waste of time after all. Had I merely looked at the Sand Point mystery without drawing it, I doubt that I would have made the link between it and the material in my home churchyards. The magic of drawing had imprinted on my visual memory. The use of a visual metaphor helped too. I had likened the strange areoles to little starfish which felt so uncomfortable in their surroundings that they had all but retracted their arms. Their stubby appendages in my visual memory kept alive the effigurate margins of the areoles.

On one outing in Huntingdonshire I found some particularly well formed material with black dots. I mistook these for perithecia in the field but found that

they were pycnidia once I got them home. I was pleased to gain a little bit more information but in reality I was still no nearer finding a name, not even a genus.

Some weeks later, during another outing in Huntingdonshire, I eventually found some fruits. When I started sectioning them I met frustration again. This clearly belonged to the genus *Rinodina* but the fruits and spores were immature and I could not be sure of the spore type. I already had a notion, strengthened by comments from another lichenologist, that *Rinodina teichophila* was a rather variable species that might span a range of types of substrata. I was familiar with *R. teichophila* as a rather dark, gnarled-granular crust on sandstone headstones and toyed with the idea that the same species might form the paler, neater and more rounded areoles when growing on limestone. For many months the Sand Point mystery remained in this unsatisfactory speculative limbo.

Now we jump forward several months to January 2012 when I was invited to a village called Sudborough near Corby to examine a thatched roof which was accessible by scaffold ready for "dressing" (removal of lichen!) and re-ridging. The thatch yielded a rather modest list of lichens but it overlooked the churchyard. I almost decided to leave a survey of the churchyard for another occasion as the weather was cold and the lichens were saturated after overnight rain. This sort of attitude has hampered me in the past. Sometimes I used to be scared of doing anything for fear of inadequate results. This was a mistake - the sense of resignation due to poor recording conditions can make a survey take on different priorities. This proved to be the case in Sudborough churchyard. An old limestone headstone had the familiar tiny blobs of the Sand Point mystery and I was thrilled to see some well formed fruits scattered among the areoles. Out came the razor blade, card and Copydex and some of the crust was soon safely collected. Back at home the first section yielded mature spores; now was the time to go back to the "Flora" and work through the keys and descriptions. After all the months of waiting, the final realisation came within a few minutes. The spores were rather distinctive, they had a double wall, the outer layer swelling in K. I dug out a specimen of *Rinodina teichophila* to compare the spores, they were different. The Sand Point mystery was no longer a mystery, it was *Rinodina calcarea*.



The double-walled nature of the spores, swollen in K

Lichenology seems to comprise a long series of such episodes, one waits for fog to clear on many different fronts. Sketching is surprisingly hard work but it seems almost essential to imprint the exact look of a thing. Mysteries cause frustration, especially to the beginner when there are far too many of them, but they are also the source of immense satisfaction once the penny drops. There is a balance to be struck between worrying too intensely and giving up on the quest. Oftentimes no amount of worry can solve the

problem because the information is not yet available. A little attention now and again keeps the problem fresh in the mind but it is a waiting game. It might be the discovery of mature spores as in the Sand Point case, it might be a chance reference while researching something else or another lichenologist might deliver the answer effortlessly at an unexpected time. A reference collection of the common species is really useful for comparison. It is not so much the rarities that one needs, or should desire, in a collection, it is a good range of the common species which allow one to distinguish the more unusual ones.

There is an interesting coincidence to conclude this story. I hadn't realised it when I visited Sudborough but the first reported record of *Rinodina calcarea* in Britain (Coppins 1983) was from Grafton Underwood churchyard where it was collected by Chris Hitch. These two occurrences, in almost neighbouring parishes, are rather rare examples of fertile colonies of this overlooked lichen species.

Reference

Coppins, B. J. (1983) *Rinodina calcarea*, in New, Rare or Interesting British Lichen Records. *Bull. Brit. Lichen Soc.* **52**: 37.

Mark Powell
markpowell222@btinternet.com

Parmelia submontana on willow at Emsworthy, East Dartmoor

In September 2011 a visit organised for the Devon lichen group to the new DWT Reserve, Emsworthy, on eastern Dartmoor, resulted in the amazing discovery of large samples of *Parmelia submontana* draped over willow branches in a thicket beside a stream.

It is a large species, first described in 1832 and unlikely to have been missed by keen Victorian lichenologists so one must suppose it is a newcomer. It was found in three sites in south-west Scotland 20 years ago but until this September there were no further UK records. It appears to have been spreading from Turkey and central Europe with scattered recent records as far as southern Scandinavia and may be a species 'on the move'.

Subsequently a visit with some DWT staff and sharp eyed volunteers found *P. submontana* on 31 trees, mainly willow. A suggestion by a bird recorder was that soredia may have been transported from Europe on the feet of migrating willow warblers which favour a similar habitat. This seems a very plausible theory as to why it has appeared at Emsworthy which certainly had sub-montane climatic conditions on April 18th. The adjacent mire provides a buffer zone which maintains humidity, discourages disturbance and cuts out the risk of wildfires.

Associated species are *Evernia prunastri, Hypogymnia physodes, H tubulosa, Hypotrachyna revoluta, Platismatia glauca, Pseudevernia furfuracea,* and *Usnea subfloridana.*

Barbara Benfield
bbenfield2@bbmax.co.uk

Literature pertaining To British Lichens - 50

Lichenologist **43**(6) was published on 13 October 2011, **44**(1) on 12 December 2011, and **44**(2) on 8 February 2012.

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

ARCADIA, L. & KERRY KNUDSEN, K. 2012. The name *Myriospora* is available for the *Acarospora smaragdula* group. *Opuscula Philolichenum* **11**: 19–25. [*pdf available 3 January 2012 via (*http://sweetgum.nybg.org/philolichenum/*)]. The generic name *Myriospora* Nägeli ex Uloth (1861) is here adopted for the *Acarospora smaragdula* group, and hence the generic name *Silobia* M. Westb. & Wedin (2011) becomes a synonym of *Myriospora*. The British species involved are: *M. myochroa* (M. Westb.) K. Knudsen & L. Arcadia (syn. *Silobia myochroa* M. Westb.); *M. rhagadiza* (Nyl.) K. Knudsen & L. Arcadia (syn.: *Acarospora rhagadiza* (Nyl.) Hue - type is *Lecanora rhagadiza* Nyl. from Whitehaven in Cumberland; *Silobia rhagadiza* (Nyl.) M. Westb.; *A. scyphulifera* Vain.); *M. rufescens* (Ach.) Hepp ex Uloth (1861) (syn.: *A. rufescens*; *S. rufescens* (Ach.) M. Westb. & Wedin); *M. scabrida* (Hedl. ex H. Magn.) K. Knudsen & L. Arcadia (syn.: *A. scabrida* Hedl. ex H. Magn. (1924); *S. scabrida* (Hedl. ex H. Magn.) M. Westb.; *A. verruciformis*); and .*M. smaragdula* (Wahlenb.) Nägeli ex Uloth, (1861) (syn.: *A. smaragdula*; *S. smaragdula* (Wahlenb.) M. Westb. & Wedin). The new generic name *Caeruleum* K. Knudsen & L. Arcadia is introduced for *Myriospora heppii* (Nägeli ex Körb.) Hue, which becomes *Caeruleum heppii* (Nägeli ex Körb.) K. Knudsen & L. Arcadia (syn. *A. heppii* Nägeli ex Körb.).

DIEDERICH, P., LAWREY, J.D., SIKAROODI, M., VAN DEN BOOM, P.P.G. & ERTZ, D. 2012. *Fungal Diversity* **52:** 1–12. *Briancoppinsia*, a new coelomycetous genus of *Arthoniaceae* (*Arthoniales*) for the lichenicolous *Phoma cytospora*, with a key to this and similar taxa. The new genus **Briancoppinsia* Diederich, Ertz, Lawrey & van den Boom is introduced for the lichenicolous *Phoma cytospora* as *B. cytospora* (Vouaux) Diederich, Ertz, Lawrey & van den Boom. Molecular data shows that it belongs to the *Arthoniaceae*, as does the hyphomycetous lichen *Reichlingia leopoldii*.

ELLIS, C.J., YAHR, R. & COPPINS, B.J. 2011. Archaeobotanical evidence for a massive loss of epiphyte species richness during industrialisation in southern England. *Proceedings of the Royal Society B*, **278**: 3482–3489. Using lichens preserved on the timbers of pre-18th Century, low-status buildings to quantify species loss across the industrial boundary. The study indicates a loss of up to 80% of the pre-industrial lichen flora, for south-east England, though with regional variability explained by pollution levels and changed woodland management practices.

GUZOW-KRZEMIŃSKA, B., HALDA, J.P. & CZARNOTA, P. 2011 ['2012']. A new *Agonimia* with flabelliform thallus from Europe. *Lichenologist* **44:** 55–66. The new species **Agonimia flabelliformis* Halda, Czarnota & Guzow-Krzemińska is reported from Wales (Merioneth) from the base of *Quercus* in a woodland.

JAMES, P.W. & DAVIES, L. 2003. Resurvey of the corticolous lichen flora of Epping Forest. *Essex Naturalist (New Series)* **20:** 67–82. Epping Forest has been well recorded for its lichens since the late 18th century. The present day flora is compared with that recorded during three earlier periods. With signs of recovery being noted in 1989–91, the present survey records the highest diversity for over a century, although the emerging flora is typical of a now wide-ranging pioneering community.

KUKWA, M. 2011. *The Lichen Genus* Ochrolechia *in Europe*. Gda★sk: Fundacja Rozwoju Uniwersytetu Gdańskiego. ISBN 978-83-7531-170-9. Pp. 309. A monograph of the genus *Ochrolechia* in Europe, recognizing 27 taxa. In 1992, Tønsberg (*Sommerfeltia* **14:** 1–331) recognized four unnamed species within the *Ochrolechia androgyna* aggregate, three of which occur in the British Isles. These have been assigned names as: *O. androgyna* s. str. (Tønsberg's "sp. B"), *O. bahusiensis* H. Magn. (1927) ("sp. C); *O. mahluensis* Räsänen (1947) ("sp. A"), and the non-British *O. gowardii* Brodo (1991). In the British Isles, *O. androgyna* is common and widely distributed, but the other two are less common: *O. bahusiensis* being cited from VCs 11, 14, 90, 105 and 107; *O. mahluensis* only from VC 88. These species show morphologically differences from one another, but TLC is recommended for confirmation. A collection from Inverpolly in West Ross is called *O.* aff. *laevigata* (Räsänen) Verseghy ex Kukwa (2011), differing from N. American material only in chemistry; it resembles *O. szatalaensis* but has an epruinose disc. Somewhat controversially the author subsumes *O. inaequatula* under a broad concept for *O. frigida* [but with little discussion], and corticolous material of the *Ochrolechia parella* is assigned to *O. pallescens* [this needs more extensive, critical study]. Interestingly, a specimen in the Stockholm Museum (S) from Glen Clova, collected by William Gardiner in 1846, is cited under *O. upsaliensis* [if the specimen's provenance is confirmed, then this species will need to be re-instated on the British list].

MOLINA, M del C., DIVAKAR, P.K., MILLANES, A.M., SÁNCHEZ, E., DEL-PRADO, R., HAWKSWORTH, D.L. & CRESPO, A. 2011. *Parmelia sulcata* (Ascomycota: *Parmeliaceae*), a sympatric monophyletic species complex. *Lichenologist* **43:** 585–601. Molecular studies have revealed a cryptic species, named as *Parmelia encryptata* A. Crespo, Divakar & M.C. Molina, which is probably widely distributed in the British Isles. It is apparently morphologically and chemically identical to *P. sulcata* s. str.

MUGGIA, L., NELSON, P, WHEELER, T, YAKOVCHENKO, L.S., TØNSBERG, T. & SPRIBILLE, T. 2011. Convergent evolution of a symbiotic duet: the case of the lichen genus *Polychidium* (Peltigerales, Ascomycota).

American Journal of Botany **98:** 1647–1656. Phylogenetic studies have shown that *Polychidium dendriscum* belongs in the genus *Leptogidium* Nyl. (1873) in the *Pannariaceae*, and should be known as *L. dendriscum* (Nyl.) Nyl. (1873). *Polychidium muscicola*, although superficially similar, belongs in the *Massalongiaceae*.

NEUWIRTH, G. & APTROOT, A. 2011. Recognition of four morphologically distinct species in the *Graphis scripta* complex in Europe. *Herzogia* **24:** 207–230. Four morphologically distinct species are recognized, three of which are reported from the British Isles: *G. scripta* s. str., *G. macrocarpa* (Pers.) Röhl (1813) and *G. pulverulenta* (Pers.) Ach. (1809). *Graphis scripta* s. str. has a slit-like disc that is hardly visible, *G. macrocarpa* has a visible disc that is epruinose, and the ends of the lirellae are rounded; *G. pulverulenta* has a widely opened, white-pruinose disc. [A stimulating paper, and it remains to be seen if these subtle (or perhaps not so subtle to the discerning eye!) differences are supported by molecular analyses – watch this space!].

PRICE S.G. 2012 ["2010"]. Lichen Recorder's Report 2010 and an Update to the Checklist of Derbyshire Lichens. *Sorby Record* **46:** 64–71. A report of the 39 additions to the Derbyshire list of lichens and lichenicolous fungi in 2010 and from churchyard records of the 1990s. Details are also given of other records of special interest. [Copies can be obtained from Derek Whiteley, Secretary Sorby NHS, Beech Cottage, Wardlow, Derbyshire SK17 8RP email: *sorbyrecord@sorby.org.uk*, for £3.50 incl. p&p (cheque to 'Sorby NHS')].

SEAWARD, M.R.D. 2011. Mosses, liverworts and lichens. *Transactions of the Lincolnshire Naturalist Union* **27:** 258–262. Recent new or interesting records for the county (Lincolnshire), including five new county records. A marked decline in terricolous lichens, especially *Cladonia* spp., since the 1960s, is noted from the coastal reserve at Gibralter Point.

B.J. Coppins
Email: lichensel@btinternet.com

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 British Isles

Agonimia flabelliformis Halda, Czarnota & Guzow-Kremińska (2011): on base of *Quercus petraea* in woodland, Coedydd Afon Gwynant RSPB Reserve, west of Penmaenpool, VC 48, Merionethshire, GR 23(SH)/679.170, March 1991. Herb. A. Orange 8551 (**NMW**). Recently described by Guzow-Kremińska *et al.* (2012) in *Lichenologist* **44**: 55–66. See also under **Other Records**. **BLS no. 2588**. *A. Orange*

Arthonia byssacea (Weigel) Almq. (1880): with *Cresponea premnea* on trunk of large (girth 5.27 m) *Quercus* by stream, Walcot Wood, VC 40, Shropshire, 32(SO)/341. 838, alt 230 m, February 2012. Herb. Coppins 23868 (**E**). A species of veteran trees, especially oaks, in communities of the *Arthonietum impolitae* and *Lecanactidetum premneae* associations, occurring in Europe and North America. This species is usually sterile, as is the case with this British occurrence, but is recognized by its thin whitish thallus with scattered, black, urceolate pycnidia, each surrounded by a neat, white thalline rim, which is K–, C–. The conidia are non-septate, bacilliform, *c*. 5–6 × 1.5 µm. **BLS no. 2604**. *B.J. Coppins & A.M. Coppins*

Caloplaca calcitrapa Nav.-Ros., Gaya & Cl. Roux (2000): on limestone balustrade beside terrace at south side of Cliveden House, VC 24, Buckinghamshire, GR 41(SU)/910.851, March 2012. Herb. Powell 2189. Determined tentatively by Mark

Powell and confirmed by Jan Vondrák using molecular analysis. Previously this species was known from Algeria, Bulgaria, France, Italy, Morrocco, Spain, Turkey and Ukraine. The Borghese Balustrade, which is situated approximately 50 metres to the south of the terrace balustrade, was imported from Rome in the nineteenth century. It is a plausible hypothesis, but without hard evidence to support it yet, that *C. calcitrapa* was imported to Cliveden on the Borghese Balustrade and spread to the terrace balustrade. In the field *C. calcitrapa* might be mistaken for an exuberant *C. crenulatella* and the bullate areoles somewhat resemble a non-pruinose *C. ruderum*. The spores are thick-walled "hour-glass" type. For a description and illustrations see Vondrák *et al.* (2009) in *Lichenologist* **41**: 571-604, and the article in this *Bulletin*. **BLS no. 2609**. *M. Powell*

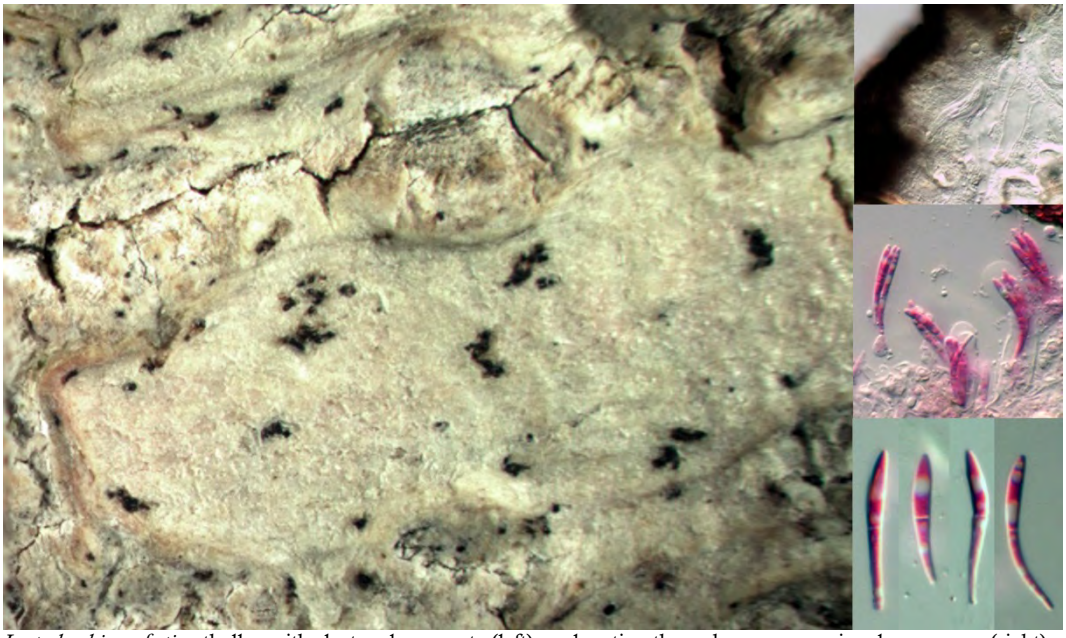
Caloplaca limonia Nimis & Poelt (1994): on limestone and mortar of north wall of church, Riseley, VC 30, Bedfordshire, GR 52(TL)/039.631, August 2011. Herb. Powell 1958. Determined by Jan Vondrák and confirmed by him using molecular analysis. The diagnostic characters are the relatively large blastidia which have a pale, milky yellow colour, a thick apothecial margin often covered by blastidia and an orange disc which contrasts in colour with the thallus. *C. limonia* is probably common throughout the British Isles but further material should be examined and sequenced to confirm this. For a description and illustrations see Vondrák *et al*. (2009) in *Lichenologist* **41**: 571-604, and the article in this *Bulletin*. **BLS no. 2607**.
M. Powell

Caloplaca marmorata (Bagl.) Jatta (1900): on mortar of church, Great Staughton, VC 31, Huntingdonshire, GR 52(TL)/123.646, September 2010. Herb. Powell 1445. Determined by Jan Vondrák and confirmed by him using molecular analysis. In the past such material has been named *C. lactea* by British lichenologists, but Vondrák *et al*. (2011) in *Lichenologist* **43:** 467-482, considers *C. lactea* to be restricted, in Europe, to (sub)Mediterranean regions. It is now considered unlikely that *C. lactea* occurs in the British Isles and that most of the material previously assigned that name is *C. marmorata* hence the BLS number previously assigned to *C. lactea* is transferred to use for confirmed records of *C. marmorata*. For illustration see Vondrák *et al*. (2011) as cited above. See also **Other Records**. **BLS no. 0264**. *M. Powell*

Caloplaca neotaurica Vondrák, Khodosovtsev, Arup and Søching (2012): has been reported by Vondrák *et al* (2012) in *Lichenologist* 44: 401 – 418. The records are from VC 45, Pembrokeshire, 1992. Herb. U. Arup. (**LD** 1118360, 1118540 and 1424694). A fuller description will appear in BLS *Bulletin* no. 111: Winter 2012, under Literature Pertaining – 51, by B.J. Coppins. **BLS no. 2595**. *C.J.B. Hitch*

Hydropunctaria aractina (Wahlenb.) Orange (2012): on boulder on sea shore, with *Hydropunctaria maura* and *Pelvetia canaliculata*, Rubha nan Sasan, Cove, Loch Ewe, VC 105, West Ross, GR 18(NG)/8074.9244, March 2012. Herb. A. Orange 20945 (**NMW**). Recently described by A. Orange (2012) in *Lichenologist* **44**: 299-320. **BLS no. 2610**. *A. Orange*

Leptorhaphis confertior Norman (1884): on *Ilex*, in *Fraxinus – Corylus* wood to east of Leitir Fura, Kinloch and Kyleakin SSSI, Skye, VC 104, North Ebudes, GR 28(NG)/733.159, July 2010, Cannon 0652 (**K**); IAL Excursion. This species appears not to have been collected previously since its original description from a Norwegian collection on the same bark type well over 100 years ago. It is an inconspicuous and possibly only facultatively lichenized species, but is distinctive amongst species of *Leptorhaphis* for its small ascomata that are aggregated in clusters. It has elongate ascospores that are similar to those of other species of the genus. *L. confertior* was placed into synonymy with *L. deformis* (Norman 1868), another poorly known taxon and collected from *Salix* rather than *Ilex* bark by Aguirre-Hudson (*Bulletin of the British Museum* (*Natural History*) Botany series **21**: 85-192, 1991) but we are now not confident of the synonymy. **BLS no. 2589**. *P.F. Cannon & M.B. Aguirre-Hudson*



Leptorhaphis confertior, thallus with clustered ascomata (left), and section through ascoma, asci and ascospores (right)

Myriospora myochroa (M. Westb.) K. Knudsen & L. Arcadia (2012): (i) on side of Ordovician gritstone outcrop by upland lake, northeast of Llyn Moel-y-llyn, Cwm Ceulan, VC 46, Cardiganshire, GR 22(SN)/712.916, alt 510 m, November 1995. Confirmed by M. Westberg. Herb. SPC; (ii) on outer edge of granite tor, Wild Tor, south of Cosdon, Hill, Dartmoor, VC 3, South Devon, GR 20(SX)/623.876, alt 531 m, August 1993. Herb. SPC. Has chunky, convex to sub-squamulose areoles, each mostly with 1(-5) prominent apothecia, to c. 1.5 mm diameter, having wide-dilated, scabrid-roughened, uneven discs. Norstictic acid is present in the cortex, but in low concentration, and K spot or squash tests can appear negative. Originally described by M. Westberg *et al.* in *Silobia gen. nov.*, as *S.myochroa* M. Westb. (2011). For full description and illustrations see *Lichenologist* **43:**7-25. An earlier validation of the name *Myriospora* by Uloth (1861), however, necessitates placement in that genus,

along with other members of the *Acarospora smaragdula* group. See Arcadia, L. & Knudsen, K. (2012), *Opuscula Philolichenum* **11**: 19-25, in Literature Pertaining – 50 in this Bulletin. **BLS no. 2601**. *S.P. Chambers*

Ochrolechia bahusiensis H. Magn. (1927): on *Fraxinus*, in grounds of Cortachy Castle, near Kirriemuir, VC 90, Angus, GR 37(NO)/39-59-, March 1968. Herb. U.K. Duncan (**E**). Determined by Martin Kukwa. A species of the *O. androgyna* complex. Additional specimens cited from England (VCs 11 and 14) and Scotland (VCs 105 and 107), and description and illustration, in Kukwa in *The Lichen Genus Ochrolechia in Europe* (See Literature Pertaining – 50 in this *Bulletin*). **BLS no. 2598**. *B.J. Coppins*

Ochrolechia laevigata (Räsänen) Verseghy ex Kukwa (2011): on dead *Betula* trunk, Salachy, by Loch Shin, VC 107, East Sutherland,GR 29(NC)/5--0--, July 1966. Herb. S.A. Manning (**E**). Determined by Martin Kukwa. Similar to *O. szatalaensis*, but with an epruinose disc and a different chemistry (with gyrophoric acid in margin cortex, epithecium and proper margin, giving C+ red reaction). Identified as "*O.* aff. *laevigata*" as it differs from the North American population in lacking olivetoric acid. Also reported from VC 105. Description and illustration in Kukwa in *The Lichen Genus Ochrolechia in Europe* (See Literature Pertaining – 50 in this *Bulletin*). **BLS no. 2599**. *B.J. Coppins*

Ochrolechia mahluenis Räsänen (1947): on *Sorbus* by stream, Old Wood of Meggernie, Glen Lyon, VC 88, Mid-Perthshire, GR 27(NN)/54.44, July 1974. Herb. Coppins 1779 (**E**). Determined by Martin Kukwa. A species of the *O. androgyna* complex. Only British record to date. Description and illustration in Kukwa in *The Lichen Genus Ochrolechia in Europe* (See Literature Pertaining – 50 in this *Bulletin*). **BLS no. 2600**. *B.J. Coppins*

Strigula calcarea Bricaud & C. Roux (1991): on limestone on west-facing wall sheltered by high north-facing wall of ruined castle, with *Porina linearis* and *Caloplaca flavescens*, Ogmore Castle, Ogmore, near Bridgend, V.C. 41, Glamorgan, GR 21/8817.7698, alt 10 m, 8 February 2012. Herb. A. Orange 20845 (**NMW**). Abundant, mainly on west-facing walls of castle, but not otherwise confined to damp or shaded places. First recorded here 5 February at the British Lichen Society's post AGM field meeting. Thallus endolithic, pale pink, lightly cracked, containing *Trentepohlia*; macropycnidia immersed, pale, ostiole sometimes brown; macroconidia 3-septate. For a description, see Roux, C. & Sérusiaux, E. (2004), Le genre *Strigula* (Lichens) en Europe et en Macaronésie, in *Bibliotheca Lichenologica* vol. **90**. **BLS no. 2605**. *A. Orange*

Tremella candelariellae Diederich & Etayo (1996): on thallus of *Candelariella vitellina* on wooden fencing around car park, Turret Lane, behind Old Cattle Market Bus Station, Ipswich, VC 25, East Suffolk, GR 62(TM)/164.443, January 2010. Herb. P.M. Earland-Bennett (**E**). Determined by Brian Coppins. This inconspicuous species forms convex to subglobose galls on the host thallus, with its hymenium replacing the thalline cortex. The galls are of the same colour as uninfected parts of the thallus,

and look like slightly swollen areoles. In this collection, the thallus is discoloured to a rusty brown, but this is probably due to chemicals in the treated timber. Elsewhere the species is also known from *C. xanthostigma*. For full description see Diederich (1996) in *Bibliotheca Lichenologica* **61**: 52–55. **BLS no. 2602**.

P.M. Earland-Bennett & B.J. Coppins

Tubeufia heterodermiae Etayo (2002): appearing pathogenic on the moribund thallus and apothecia of *Physcia aipolia* on wooden handrail of boardwalk (installed c.2001), Pentrosfa Mire (Radnorshire Wildlife Trust reserve), Llandrindod Wells, VC 43, Radnorshire, GR 32(SO)/058.594, alt 210 m, March 2011. Herb. SPC & duplicate in Herb. Diederich. Determined by P. Diederich. Has small, *ca* 0.2 mm diam, pale brown sessile perithecia with minutely setose-hairy apices, long-cylindrical KI- asci, and colourless, linear-filiform, multi-septate ascospores. Originally described from southewest Europe (Spain). Since found in a few localities in South Netherlands and once in Belgium. Previously reported hosts include *Heterodermia obscurata, Physcia adscendens, P.caesia* & *P. tenella*. For full description see Etayo (2002) in Catalogo de líquenes y hongos liquenícolas del Parque Natural de Bertiz (Navarra, Espana), *Bull. Soc. Linn. Provence* **53**: 155-170. **BLS no. 2603**. *S.P. Chambers*

Other records

Agonimia allobata: on base of ancient *Fraxinus*, in ancient deer park, The Park, Dinefwr Park NNR, VC 44, Carmarthenshire, GR 22(SN)/ 6075.2250, March 2012. Herb Sanderson 1794. New to the Vice-county.

N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Agonimia flabelliformis: on trunk of mature *Quercus petraea*, with *Isothecium myosuroides, Normandina pulchella* and *Cladonia* sp. Talsarnau, near Pont Dolorgan, Merionethshire, VC 48, GR 23(SH)/6242.3561, May 2002. Herb. A. Orange 13909 (**NMW**). Second record for both Great Britain and the Vice-county. See also under **New to the British Isles**. *A. Orange*

Agonimia globulifera: on soil, in concrete-enriched, disturbed acid grassland in former WWII airfield in heathland, Janesmoor Plain, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2447.1278, October 2011. Herb. Sanderson 1701. First record for Hampshire, although earlier records of *Agonimia gelatinosa* may have actually been of this taxon. *N.A. Sanderson*

Agonimia opuntiella: (i) on mosses in seepage track on vertical granite, Honeybag Tor, VC 3, South Devon, GR 20(SX)/729.788, alt 445 m, July 2009. Herb. B. Benfield; (ii) on *Andreaea rothii* in seepage tracks in underhangs of vertical, south-facing, outcrop, Crockern Tor, VC 3, South Devon, GR 20(SX)/615.758, alt 410 m, June 2011. Herb. B. Benfield. Confirmed by B.J. Coppins. First confirmed county records. *B. Benfield*

Anisomeridium robustum: on smooth bark of young *Acer pseudoplatanus* & *Ulmus* in old woodland, Dinefwr Park National Nature Reserve, Llandeilo, VC 44, Carmarthenshire, GR 22(SN)/608.222, alt 30 m, March 2012. Field record. New to the Vice-county. *N.A. Sanderson, S.P. Chambers & T.E. Greenaway*

Arthonia anombrophila: on dry bark on old *Quercus*, Great Wood, Gregynog SSSI, VC 47, Montgomery, GR 32(SO)/0836.9779, October 2011. Field Record. New to the Vice-county. *N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices*

Arthonia fuscopurpurea: on *Peltigera hymenina* at base of willow, in wet carr-type woodland between railway line and B9152 road, Strathspey, VC 96, East Inverness-shire, GR 28(NH)/8027.0312, alt. 220 m, December 2011. Herb. S. Taylor (**E**). Confirmed by B.J. Coppins. New to Speyside and second record for the Vice-county. *S. Taylor*

Arthonia invadens: parasitising *Schismatomma quercicola* on several *Betula* and one *Alnus,* in pasture woodland, on slopes south of Carrick Lough, Largalinny, Monawilkin ASSI, VC H33, Co Fermanagh, GR 23(H)/135.388, alt 95 m, March 2012. Herb. Sanderson 1797. Second record of this BAP species from Northern Ireland. *N.A. Sanderson & A.M. Cross*

Arthonia molendoi: on senescing lobe and living apothecial thalline margin of *Xanthoria parietina* on *Prunus spinosa* thorn in exposed, wind-pruned face of coastal scrub patch, Llan-non, VC 46, Cardiganshire, GR 22(SN)/507668, alt *ca* 5 m, February 2012. Herb. SPC. New to Wales. *S.P. Chambers*

Arthopyrenia atractospora: in bark crevices on *Quercus,* Rammer Wood, Deuchrie, Lammermuir Hills, VC 82, East Lothian, 36(NT)/638.719, alt 210 m, December 2011. Herb. Coppins 23881 (**E**). On dry side of trunk, dominated by *Lecanactis abietina*. New to southeast Scotland, and sixth British site. *B.J. Coppins*

Arthopyrenia cinereopruinosa: on *Crataegus* twig, north edge of Agdengreen Wood, VC 31, Huntingdonshire, GR 52(TL)/126.660, April 2011. Herb. Powell 1737. New to the Vice-county. *M. Powell*

Arthrorhaphis grisea: two records from the New Forest SSSI, VC11, South Hampshire, (i) on soil bank, parasitising *Baeomyces rufus*, along hollow way, Dur Hill Down, GR 41(SU)/1943.0179; (ii) in old quarry, parasitising *Baeomyces rufus,* Ogdens, GR 41(SU)/1885.1169, both September, 2011. New to Hampshire and rarely recorded from the lowlands. *N.A. Sanderson & A.M. Cross*

Aspicilia radiosa: abundant on limestone crenellations of church, Riseley, VC 30, Bedfordshire, GR 52(TL)/039.631, October 2011. Herb. Powell 2014. This is a re-discovery at this site; Tom Chester found it on a buttress in 1997, but all attempts to relocate it from ground level had failed. An opportunity to record from the roof of the church revealed extensive colonies of this lichen and added *Rinodina bischoffii* to the county. *M. Powell*

Bachmanniomyces uncialicola: (i) forming galls on *Cladonia uncialis* in short grazed heathland, Dorrage Hill, New Forest SSSI, VC11, South Hampshire, GR 41(SU)/1794.1148, October 2012. Herb. Sanderson 1711; (ii) – (iv) also seen at GR 41(SU)/18-12-, 41(SU)/27-02- and 41(SU)/33-08-. New to the county.

N.A. Sanderson & A.M. Cross

Bacidia arceutina: on exposed roots of mature *Fagus* at summit of Sharpenhoe Clappers, VC 30, Bedfordshire, GR 52(TL)066.303, December 2011. Herb. Powell 2083. This lichen was growing in an interesting community on the hard, slightly dust-enriched bark with an abundance of saxicolous species such as *Candelariella vitellina* and *Lecanora campestris*. New to the Vice-county. *M. Powell*

Bacidia caligans: on railway sleeper of foot bridge, north edge of Agdengreen Wood, VC 31, Huntingdonshire, GR 52(TL)/127.660, April 2011. Herb. Powell 1739. Determined by B.J. Coppins. New to the Vice-county. *M. Powell*

Bacidia incompta: a large colony in wound track of stunted *Populus tremula*, Eversden Wood, VC 29, Cambridgeshire, GR 52(TL)/34.53, March 2012. Herb. Powell 2228. Confirmed by B.J. Coppins. Sterile but with abundant pycnidia. "I find the K+ purple reaction of the pycnidial wall difficult to discern but Brian assures me that there is a hint of purplish to the red-brown and likens the final colour to the dregs of a good crusty red wine!" *M. Powell*

Buellia badia: on sandstone table tomb, Bedford Cemetery, VC 30, Bedfordshire, GR 52(TL)/049.511, September 2011. Herb. Powell 1976. New to the Vice-county.

M. Powell

Buellia badia: on chemically treated gate rail, Cliveden, VC 24, Buckinghamshire, GR 41(SU)/912.851, January 2012. Herb. Powell 2117. Growing in association with *Micarea denigrata* and *Lecanora stenotropa*. *M. Powell*

Buellia badia: on chemically treated gate rail, Hyde Hall, VC 18, South Essex, GR 51(TQ)/78-99-, March 2012. Herb. Powell 2221. Growing in association with *Buellia ocellata*, *Lecanora stenotropa* and *Strangospora pinicola*. "Tanalised" gates and fences support a limited but interesting assemblage of lichens.

A. Harris, M. Powell & J. Skinner

Buellia hyperbolica: on *Quercus* lignum of (i) standing dead wood, (ii) propped up dead wood and (iii) living tree, in ancient deer park, The Park, Dinefwr Park NNR, VC 44, Carmarthenshire, at (i) GR 22(SN)/6088.2229, (ii) 22(SN)/6089.2230 & (iii) 22(SN)/6102.2266, March 2012. Herb Sanderson 1788. A new site for this Welsh Section 42 species, with a strong population.

N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Buelliella physciicola: on *Phaeophyscia orbicularis* on well-lit tops of old concrete railway posts, Erwood Station, beside River Wye, VC 43, Radnorshire, GR 32(SO)/090438, alt 120 m, February 2007. Herb. SPC. Determined by B.J. Coppins. New to Wales. *S.P. Chambers*

Burgoa angulosa: three VC 46 Cardiganshire records: (i) on moribund bryophytes on *Fraxinus excelsior* trunk by streamlet in old woodland, Coed Cwm Cletwr, GR 22(SN)/668920, alt 90 m, February 2011; (ii) on *Metzgeria furcata* on *Fraxinus excelsior* trunk in river gorge woodland by the Afon Tywi below Llyn Brianne, GR 22(SN)/789481, alt 200 m, August 2011; (iii) seemingly pathogenic on *Trentepohlia* (infected areas becoming greyish and decolorised) on damp *Salix cinerea* trunk in patch of bog woodland within conifer plantation, Rhos-lwyd, southwest of Rhydyfudr, GR 22(SN)/585664, alt 230 m, November 2011. Herb. SPC. All determined by P. Diederich. New to the Vice-county. *S.P. Chambers*
** Note from the sub-editor. This basidiomycetous fungus is not obligate on lichens, though it does occasionally occur on them and can therefore be recorded, rather like *Athelia arachnoidea.*

Caloplaca marmorata: From a limestone wall at Highgrove House, VC 33, East Gloucestershire GR 31(ST)/87-91-.(Herb. Powell 1944) and the Mendip Hills (D.J. Hill). See also **New to the British Isles**. *M. Powell*

Caloplaca ochracea: abundant on the Borghese Balustrade, Cliveden, VC 24, Buckinghamshire, GR 41(SU)/910.850, February 2012. Herb. Powell 2163. Due to the well developed nature of this material with dark cracks containing dirt and cyanobacteria, it was mistaken for *C. dalmatica* in the field. This species appears to be rarely recorded in the Home Counties. There is a possibility that the colonies on this balustrade may have been imported from Italy along with its substratum in the 19th century. *M. Powell*

Caloplaca pyracea: on *Populus tremula* twigs, Eversden Wood, VC 29, Cambridgeshire, GR 52(TL)/34.53, March 2012. Herb. Powell 2231. Confirmed by B.J. Coppins. New to the Vice-county. *M. Powell*

Catillaria usneicola: on primary stems of *Usnea wasmuthii* on twig, Broad Wood, Maryburgh, VC 106, East Ross, GR 28(NH)/528.559, alt 60 m, January 2012. Herb. Coppins 23879 (**E**). Third British record. *B.J Coppins*

Cetraria islandica subsp. ***islandica***: four sites in VC 65 North-west Yorkshire, (i) very frequent among short bilberry scrub, Fore Gill Gate, Swaledale, GR 35(NY)/992.010, alt 380 m, November 2011; (ii) on track-way across managed heather moorland, at bridge over Old Gang Beck, Swaledale, GR 34(SD)/989.022, alt 350 m, November 2011 (iii) at base of lead mine spoil heap, Turf Moor, Arkengarthdale, GR 35(NY)/989.022, alt 475 m, November 2011; (iv) in turf on well drained sandstone quarry spoil, Birkdale Cross, GR 35(NY)/832.025, alt 450 m, March 2012. These discoveries have doubled the number of records for this uncommon lichen in the Vice county. *J.L. Knight & S.M. Knight*

Chaenotheca chrysocephala: on lignum ("larch-lap" fence panel), boundary of Yelling, Church of the Holy Cross, churchyard, VC 31, Huntingdonshire, GR 52(TL)/262.625, June 2011. Herb. Powell 1889. First churchyard record. Even

domestic-type fences, when long-neglected, can acquire interesting lichens. New to the Vice-county. *M. Powell*

Chaenotheca hispidula: frequent in humid, dry bark crevices, on southeast-facing trunk bases of two riverbank *Fraxinus excelsior* and one *Acer pseudoplatanus*, Afon Aeron, Llanerchaeron, VC 46, Cardiganshire, GR 22(SN)/476.602, alt 35 m, March 2012. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Chaenothecopsis nigra: on *Quercus* lignum on standing dead wood, in ancient deer park, The Park, Dinefwr Park NNR, VC44, Carmarthenshire, GR 22(SN)/6089.2226 & 22(SN)/6076.2253, March 2012. Herb Sanderson 1791. New to the Vice-county. *N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices*

Chaenothecopsis pusilla: on lignum on four standing ancient *Quercus* in ancient deer park, Powerscourt, VC H20, Co Wicklow. GR 32(O)/1974.1221, 32(O)/1978.1228, 32(O)/2006.1215 & 32(O)/2007.1214, alt 145–165 m, November 2011. Herb. Sanderson 1725, 1727 & 1728. In an exceptionally rich site for dead wood lichens. New to Ireland. *N.A. Sanderson*

Chaenothecopsis savonica: on *Quercus* lignum on one standing dead tree and two ancient trees, in ancient deer park, Park Hill, The Park, Abbeyleix Estate, VC H14, Co Laois, GR 21(S)/4167.8293, 21(S)/4165.8294 & 21(S)/4166.8282, November 2011. Herb. Sanderson 1750 & 1751. In an exceptionally rich site for dead wood lichens. New to Ireland. *N.A. Sanderson*

Cladonia callosa: on the side of rut in dry heath, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR41(SU)/2773.1884, December 2011. Field identification. New to the county. *N.A. Sanderson & A.M. Cross*

Cladonia mediterranea: a patch less than 0.5m across in short grazed dry heath on a southwest facing slope, Ogdens, New Forest SSSI, VC11, South Hampshire, GR 41(SU)/1881.1168, October, 2012. Herb. Sanderson 1711 (specimen now at Universidad Complutense de Madrid), Determined by Ana Rosa Burgaz. The morphology of the collection is very similar to the Lizard taxon, which is more straggly than typical *Cladonia mediterranea*. The New Forest material had the podetia predominantly branching in twos, with some branches in threes, Pd – & medulla UV blue-white; the algae layer continuous & averaging 85 µm, the medulla 70 µm, with the total thickness of the podetia 155 µm (average of 10 measurements). TLC at Madrid found the specimen to have perlatolic and usnic acids, and Ana stated "looking through it carefully, this sample could be *Cladonia mediterranea*". On the available evidence the New Forest taxon would seem to be the same taxon that occurs on the Lizard and which does appear to be *Cladonia mediterranea*, but has a somewhat atypical morphology. At Ogdens,the *Cladonia mediterranea* was found in the richest area of heathland for lichens recorded recently within the New Forest, with 50 taxa recorded from heathland in the same 1km grid square, including 33 *Cladonia* taxa. The area is an extensive area of heavily grazed low productivity heath, adjacent to productive grassland and beyond this, smallholdings that turn grazing

animals out on to the heathland. The high grazing pressure produces permanently short open heath on adjacent unproductive soil. 1948 aerial photographs show the area to have been similarly short, with several large rabbit warrens established on the heathland. The area may have been grazed short since the establishment of the adjacent smallholdings in the early 19th century and not have been burned since then.
N.A. Sanderson & A.M. Cross

Cladonia phyllophora: on humus in canopy gaps in *Calluna* heathland, White Moor, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/3139.0831 & 41(SU)/3131.0827, September 2011. Herb Sanderson 1688 & 1689 (**BM**). Subsequently found to be local but widespread in the New Forest, frequently in hollow ways within heaths in GR 41(SU)/18-11-, 41(SU)/18-12-, 41(SU)/22-13-, 41(SU)/23-03-, 41(SU)/31-07- & 41(SU)/33-08-. New to the New Forest and first modern records for southern England.
N.A. Sanderson, P.A. Wolseley, A.M. Cross & Wessex Lichen Group

Cladonia phyllophora: on humus in short grazed heath, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/2779.1891, 41(SU)/2773.1884, 41(SU)/2751.1889 & 41(SU)/2747.1901, December 2011. Herb Sanderson, 1773 (**BM**). New to Wiltshire. *N.A. Sanderson & A.M. Cross*

Cladonia subcervicornis: in open short grazed heath, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/2779.1891, 41(SU)/2775.1863, 41(SU)/2769.1854 & 41(SU)?2757.1872, December 2011. Field identification. New to the county. *N.A. Sanderson & A.M. Cross*

Cladonia sulphurina: two thalli, one attached and one loose, in open area of short grazed heath, on bank created along a track in the 1940s within a former WWII bombing range, Ogdens, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/1879.1196, October 2011. Field identification. A remarkable outlying record for this northern species. New to Hampshire. *N.A. Sanderson & A.M. Cross*

Cladonia zopfii: at three sites in the New Forest SSSI, VC 11, South Hampshire in open short grazed heath in hollow ways and at the transition to wet heaths, (i) Ogdens, GR 41(SU)/1885.1191, 41(SU)/1878.1197 & 41(SU)/1868.1176, October 2011; (ii) Burley Rocks GR 41(SU)/2395.0305, October 2011; (iii) North of Matley Wood GR 41(SU)/ 3351.0820, October 2011. Herb Sanderson 1690 (**BM**) & 1710. First records from the New Forest since collection by H.M. Livens in 1910 from "near Bramshaw Wood" (possibly not in Hampshire) and first modern records for England. *N.A. Sanderson, P.A. Wolseley, A.M. Cross & Wessex Lichen Group*

Cladonia zopfii: in open short grazed heath at the transition to wet heath, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/ 2779.1891, 41(SU)/ 762.1860, 41(SU)/2757.1872 & 41(SU)/2757.1873, December 2011. Field identifications. This area is potentially the site from which this lichen was collected by H.M. Livens in 1910 from "near Bramshaw Wood", meaning the 1910 record was not from Hampshire, as was assumed. *N.A. Sanderson & A.M. Cross*

Cliostomum flavidulum: sterile, on damp acidic bark of several old *Quercus*, in *Quercus*-dominated pasture woodland, Great Wood, Gregynog SSSI, VC47, Montgomeryshire, GR 32(SO)/08- 97-, October 2011. Field identification. First record of this local ancient woodland species for Wales.

N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Cliostomum flavidulum: a single small sterile thallus, *ca* 6-8mm across, on west side of trunk of veteran *Quercus* (tagged 0297) in ancient deer park, Dinefwr Park National Nature Reserve, Llandeilo, VC 44, Carmarthenshire, GR22(SN)/610226, alt 80 m, March 2012. New to the Vice-county and second record for Wales.

N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Corticiruptor abeloneae: on 'blue-green' *Sticta canariensis* on south-facing base-rich rock-face, in deep, sheltered gorge woodland, on north bank of Afon Rheidol opposite Derwen, VC 46, Cardiganshire, GR 22(SN)/736.773, alt 80 m, September 2007. Confirmed by B.J. Coppins. Herb. SPC. New to Wales.

S.P. Chambers & C.M. Forster-Brown

Cryptothele rhodosticta: on irrigated, ground-level rock outcrop, with *Ephebe lanata*, in hillside *Sphagnum – Nardus* vegetation, Mynydd y Waun, east of Cadair Idris, VC 48, Merionethshire, GR 23(SH)/759127, alt 340 m, April 2012. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Dactylospora purpurascens: for details, see under *Stereocaulon tornense*.

Dibaeis baeomyces: three records from New Forest SSSI, VC 11, South Hampshire, (i) on gently sloping compact damp acid soil along edge of unsurfaced track in heathland, Long Water Lawn, GR 41(SU)/3225.0834, September 2011; (ii) same habitat in WWII quarry in heathland, Red Hill, 41(SU)/2772.0206, October 2011; (iii) same habitat in old quarry in heathland, Ogdens, 41(SU)/1885.1169, October 2011. Herb Sanderson 1668. The first record confirmed its presence in the New Forest, but subsequently found in two more sites in Hampshire. All were sterile, but the species is easily separated from sterile *Icmadophila ericetorum* by the UV+ orange fluorescence. *Dibaeis baeomyces* is much scarcer than *Icmadophila ericetorum* in the New Forest and grows in a different habitat. The latter has been found on well-drained steeply sloping banks, while the *D. baeomyces* is confined to gently sloping compacted and wetter soils. *N.A. Sanderson & A.M. Cross*

Dibaeis baeomyces: on gently sloping compact damp acid soil, in short-grazed wet heath, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/2775.1862, December 2011. Field identification. Fourth confirmed record from the New Forest area. *N.A. Sanderson & A.M. Cross*

Diederichia pseudeverniae: on 'bleached' thallus of *Pseudevernia furfuracea* on *Quercus*, Rammer Wood, Deuchrie, Lammermuir Hills, VC 82, East Lothian, 36(NT)/63-71-, alt 220 m, December 2011. Herb. Coppins 23880 (**E**). New to southeast Scotland, and third British site. *B.J. Coppins*

Enterographa sorediata: on dry bark of two ancient *Quercus*, one dead, in *Quercus* dominated pasture woodland, Great Wood, Gregynog SSSI, VC 47, Montgomery, GR 32(SO)/0836.9774 & 32(SO)/0833.9777, October 2011. Herb. Sanderson 1720. First record of this BAP species for Wales.

N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Graphina pauciloculata: with *G. ruiziana* on seven *Corylus avellana* poles in extremely sheltered and humid streamside valley-bottom in old woodland, Coed Moeddyn, northwest of Gorsgoch, VC 46, Cardiganshire, GR 22(SN)/478516, alt 220 m, October 2011. Herb. SPC. Third Vice-county record and the best population to date.

S.P. Chambers

Halecania viridescens: on *Salix* branch, of relatively young tree in overspill car park, Cliveden, VC 24, Buckinghamshire, GR 41(SU)/914.855, March 2012. Herb. Powell 2188 and Herb. Hitch (duplicate). Due to the densely pigmented superficial hyphae of this material, the pale yellow-green soredia are obscured beneath a blueish-green surface. The original description in Coppins, *Lichenologist* **21**: 217-228 (1989), gives useful extra information, including notes about the photobiont cells, mostly in clusters of 4-8 small cells, each with a single haustorial penetration.

M. Powell & A. Harris

Hypotrachyna afrorevoluta: corticolous in Agdengreen Wood, VC 31, Huntingdonshire, GR 52(TL)/12-65-, April 2011. Field record. This species appears to be at least as common as *H. revoluta* in the East Midlands and East Anglia though further observations are required to estimate their relative abundance and to investigate whether they have differing ecological preferences. New to the Vice-county. *M. Powell*

Illosporiopsis christiansenii: on *Physcia tenella* on apple twigs in walled garden, Newbold House, Forres, VC 95, Morayshire, GR 38(NJ)/053.582, January 2012. Herb. H. Paul (**E**). Confirmed by B.J. Coppins. New to the Vice-county. *H. Paul*

Lecania inundata: (i) on limestone of church, Great Staughton, VC 31, Huntingdonshire, GR 52(TL)/123.646, October 2011. Herb. Powell 1445. This is a much over-looked lichen and many lichenologists have lumped it into an informal *L. erysibe s.lat*. aggregate, but it lacks blastidia and has a papillose thallus; (ii) an enormous colony at margins of Grafham Water, GR 52(TL)/16-67- and 17-67-, July 2011. Herb. Powell 1897. It grows on the draw-down zone of the concrete dam wall and on limestone boulders placed as an anti-erosion measure at the margins of the reservoir. This occurrence, on periodically submerged surfaces, gives a relevance to the specific name. New to the Vice-county. *M. Powell*

Lecanora argentata: on twig of *Juglans*, Barnack Hills and Holes, VC 32, Northamptonshire, GR 53(TF)/07.04, June 2011. Herb. Powell 1859. Confirmed by Jiří Malíček. New to the Vice-county. *M. Powell*

Lecanora argentata: on young *Fraxinus* bark, north of Grafham Water, VC 31, Huntingdonshire, GR 52(TL)/16.68, July 2011. Herb. Powell 1906. Confirmed by

Jiří Malíček. A welcome confirmation that this species occurs in the East Midlands region and it appears to be occasional rather than rare in this area. New to the Vice-county. *M. Powell*

Lecanora barkmaniana: (i) on *Fraxinus* twig, Hayley Wood, VC 29, Cambridgeshire, GR 52(TL)/2-52-, February 2010) Herb. Powll 1110. Confirmed by TLC; (ii) on *Salix*, at Woodwalton Fen, VC 31, Huntingdonshire, GR 52(TL)/23.84, February 2012. Field record. The species appears to be distinctive with a better-developed thallus than *L. expallens* and soredia which are C- and K+ bright yellow. In contradiction to the literature, most specimens have a yellowish tinge to the soredia, a feature noticed by other lichenologists (S.P. Chambers, pers. comm.). *L. barkmaniana* appears to be not uncommon in the region. New to the Vice-county. *M. Powell*

Lecanora campestris: corticolous on *Sambucus* twig, Barnack Hills and Holes, VC 32, Northamptonshire, GR 53(TF)/07-04-, June 2011. Herb. Powell 1859. Confirmed by Jiří Malíček using TLC. This, along with a second confirmation from a twig in Huntingdonshire, confirms that *L. campestris* can occur on young bark that has no evidence of dust-enrichment. *M. Powell*

Lecanora compallens: near southern edge of Agdengreen Wood, VC 31, Huntingdonshire, GR 52(TL)12-65-, April 2011. Herb. Powell 1736. This species may, in general, be over-recorded due to misidentification of *L. expallens*, often caused by using weak or degraded "C" which prevents observation of the C+ orange reaction of that species. Morphologically *L. compallens* has a better-developed thallus than *L. expallens*, more similar to that of *L. barkmaniana* and initially at least, in part, strongly corticate. New to the Vice-county. *M. Powell*

Lecanora horiza: on sunny mesic *Quercus* bark of old tree, in ancient deer park, The Park, Dinefwr Park NNR, VC44, Carmarthenshire, GR 22(SN)/6089.2226, March 2012. Herb Sanderson 1791. A species rarely recorded in Wales. New to the Vice-county. *N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices*

Lecanora ochroidea: abundant over about 2m of dry schist under an overhang, with *Schismatomma umbrinum,* on a rock outcrop within upland *Quercus* dominated old growth pasture woodland, Derrybawn, Glendalough, VC H20, Co Wicklow, GR 31(T)/1273.9642, alt 160 m, November 2011. Herb. Sanderson 1771. Some earlier records of the *Lecanora subcarnea* agg. could also be this. Confirmed by UV+ pale orange fluorescence and K+ yellow to red needles forming under the microscope. *The Lichens of Great Britain and Ireland* states that this species is confined to the xeric-supralittoral zone, but it actually appears to occur inland on acid rocks in strongly oceanic climates as well. New to Ireland. *N.A. Sanderson*

Lecidea lichenicola: on chalk rubble of small scree slope in the Hanging Woods, Cliveden, VC 24, Buckinghamshire, GR 41(SU)/90.84, January 2012. Herb. Powell 2181. This inconspicuous species is probably related to the genus *Trapelia*. It appears to be slightly easier to find in the field when it is damp, when the thallus forms a thin

green gelatinous film and the semi-immersed apothecia swell and glow reddish-brown in colour. *M. Powell*

Leptogium brebissonii: two small populations on *Sorbus aucuparia* and *Fraxinus*, on the edge of *Fraxinus – Acer* woodland, Berth-lwyd, Parc Dolmelynllyn, Glanllwyd SSSI, VC 48, Merionethshire, GR 23(SH)/72266.2368 & 23(SH)/7227.2375, alt 140–155 m, January 2012. Field Identifications. Records are of a now very rare Welsh Section 42 species at one of its last two sites known in Wales. *N.A. Sanderson*

Megalospora tuberculosa: occasional as scattered thalli on mosses on old *Quercus*, in landscape park, Parc Dolmelynllyn, Glanllwyd SSSI, VC48, Merioneth, GR 23(SH)/7267.2387, alt 45m, February 2012. Field Identification. First found in 1986 by Francis Rose and determined by B.J. Coppins. This is the first record of this Welsh Section 42 species at this site since 1999. *N.A. Sanderson*

Megalospora tuberculosa: very localised on *Corylus* and *Fraxinus*, in *Corylus* pasture woodland with local emergent *Fraxinus*, Crossmurrin NR and Coaghan, Marlbank ASSI, VC H 33, Co Fermanagh, GR 23(H)/1149.3464, 23(H)/1155.3470, 23(H)/1155.3469, 23(H)/1157.3466, 23(H)/1159.3472 & 23(H)/1154.3467, alt 165–170 m, March 2012. Herb Sanderson 1783 & 1784. A new site for this BAP species, which is very rare in Northern Ireland. *N.A. Sanderson & A.M. Cross*

Melaspilea interjecta: on water-flushed rock outcrop in upland *Nardus* grassland, west side of Mynydd y Waun, east of Cadair Idris, VC 48, Merionethshire, GR 23(SH)/758.129, alt 380 m, March 2012. Herb. SPC. Last recorded in the Vice-county in 1959. *S.P. Chambers*

Micarea paratropa: a few small thalli, *ca* 7-12 mm across, on steeply sloping damp flushed northeast-facing rock outcrop, above Llyn Cau, Cwm Cau, Cadair Idris, VC 48, Merionethshire, GR 23(SH)/717121, alt 480 m, July 2011. Herb. SPC. Confirmed by B.J. Coppins. This exclusive chionophile of snow-lie habitats occurs at altitudes above 950 m in Scotland, but paradoxically at the southern edge of its British range, it was at a comparatively low elevation. New to Wales. *S.P. Chambers*

Micaria subnigrata: in depressions in horizontal surfaces on dolerite boulders on the south-facing side of Cox Tor, VC 3, South Devon, GR 20(SX)/530 760, 430 m, August 2010. Herb. B. Benfield. Confirmed by. B.J. Coppins. A third Devon record, and all from west Dartmoor. *B. Benfield*

Micarea ternaria: on rough siliceous stone on surface of ploughed afforestation ridge in upland *Picea sitchensis* plantation, Bryn Forestry southeast of Gnwch Mawr, near Llanddewi Brefi, VC 46, Cardiganshire, GR 22(SN)/692.529, alt 470 m, April 2011. Herb. SPC. Determined by B.J. Coppins. The record of this species for Cardiganshire in *The Lichens of Great Britain and Ireland* has not been traced, so it is assumed to be New to the Vice-county. *S.P. Chambers*

Microcalicium ahlneri: on soft lignum, exposed in hollow of post-mature *Quercus* in *Quercus-Ilex* pasture woodland, Staverton Park, Staverton Park and the Thicks SSSI,

VC25, East Suffolk. GR 62(TM)/3546.5076. alt 30 m. April 2011. Field Record. New to the county. *A.M. Cross*

Microcalicium ahlneri: on exposed lignum of three very large, ancient *Quercus*, in open old growth *Quercus* woodland being infilled with *Fraxinus* regeneration, in ancient deer park, Park Hill, The Park, Abbeyleix Estate, VC H14, Co Laois, GR 21(S)/4147.8301, 21(S)/4144.8297 & 21(S)/ 4158.8240, November 2011. Herb. Sanderson 1755. In an exceptionally rich site for dead wood lichens. New to Ireland. *N.A. Sanderson*

Minutoexcipula tephromelae: on *Tephromela atra* on pebble, The Snook, Holy Island, VC 68, North Northumberland, GR 46(NU)/093.437, October 2008. Herb. Coppins 23857 (**E**). Recorded during a BLS Meeting. New to the county. *B.J. Coppins*

Mycoglaena myricae: on *Myrica gale* at Woodbastwick Marshes (Bure Marshes NNR), VC 27, East Norfolk, GR 63(TG) /334.163, July 2011. New to the Vice-county and new to East Anglia. *P.W. Lambley*

Mycoglaena myricae: on *Myrica gale* at Roydon Common NNR, VC 28, West Norfolk, GR 53(TF)/682.219, November 2011. New to the Vice-county. *P.W. Lambley*

Mycoglaena myricae: on *Myrica gale* at its only site in Suffolk, Barnby Broad, VC 25, East Suffolk, GR 62(TM)/48-90-, April 2012. New to the county. *C.J.B. Hitch, P.W. Lambley and T. Abrehart*

Mycoporum lacteum: frequent on ancient *Ilex* on cliff in *Quercus* woodland, Coed Berth-lwyd, Parc Dolmelynllyn, Glanllwyd SSSI, VC 48, Merionethshire, GR 23(SH)/7252.2332, alt 140 m, February 2012. Herb Sanderson 1779. New to Wales. *N.A. Sanderson*

Opegrapha areniseda: fertile patches, extensively spreading on sheltered calcareous Silurian mudstone outcrop, with *Arthonia endlicheri* and *Bacidia carneoglauca*, in old woodland by Afon Leri, north of Elerch, VC 46, Cardiganshire, GR 22(SN)/680 877, alt 130 m, May 2002. Determined by B.J. Coppins. Herb. SPC. New to the Vice-county. *S.P. Chambers*

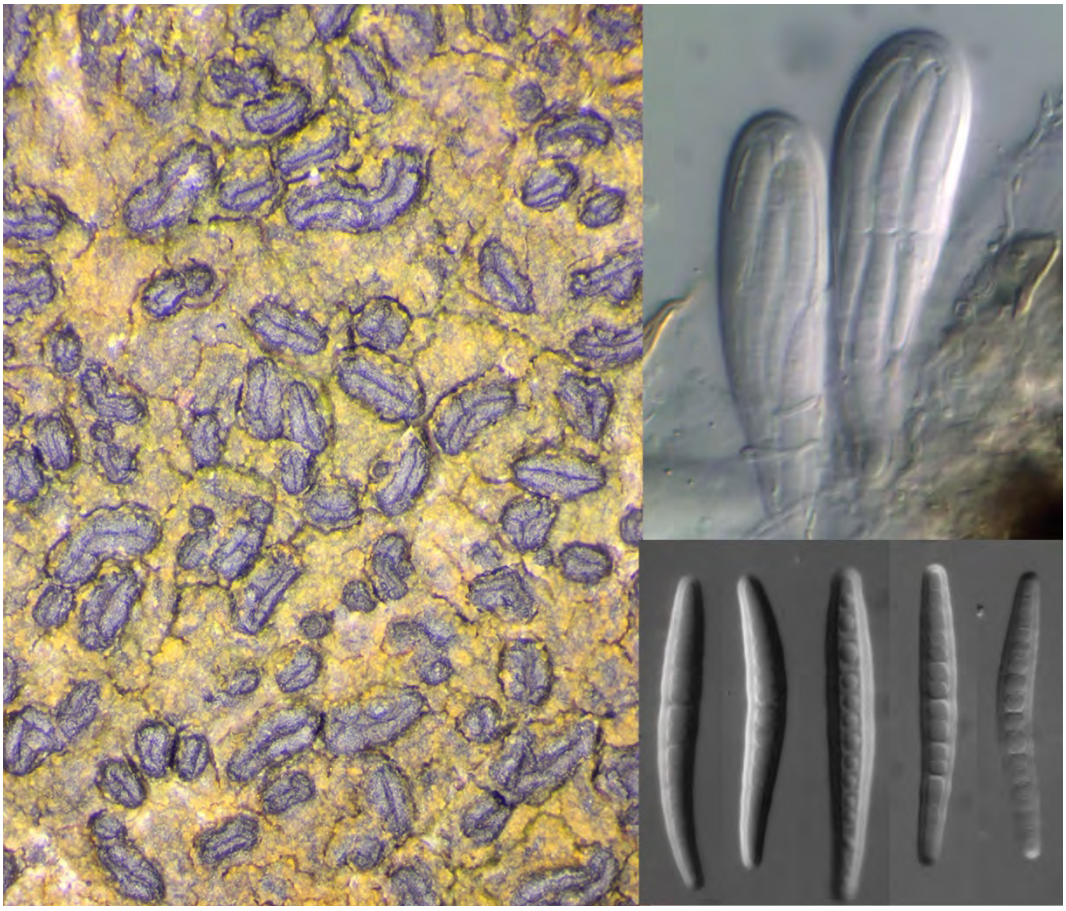
Opegrapha fumosa: two small patches on west side of trunk of veteran *Quercus* in pasture-woodland, Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/083.978, alt 210 m, October 2011. Field record. New to the Vice-county. *S.P. Chambers & N.A. Sanderson*

Opegrapha physciaria: on *Xanthoria parietina* on rock above HWM at Stoke Gabriel, VC 3, South Devon, GR 20(SX)/846.568, June 2006. Herb. B. Benfield. Confirmed by. B.J. Coppins. A new site for this uncommon lichenicolous fungus, which appears to be maritime. *B. Benfield*

Opegrapha subelevata: in sheltered indentations on basic shale overhung by light vegetation at edge of River Teign estuary, VC 3, South Devon, GR 20(SX)/89340.72292 and 20(SX)/90801.72290, Feb 2012. New to the Vice-county. *B. Benfield*

Opegrapha viridipruinosa: abundant on lignum of moribund (but still living) trunks of *Sambucus*, east edge of Woodwalton Fen, VC 31, Huntingdonshire, GR 52(TL)/23-84-, February 2012. Herb. Powell 2183. It can be separated from *O. varia*, which it can resemble, by the presence of yellow pigment in the thallus, spores with (3-) 4 -5 septa, smaller pycnidia and shorter conidia, up to 3µm long. New to the Vice-county. *M. Powell*

Opegrapha viridis: forming fairly discrete brown patches on trunk of mature *Acer pseudoplatanus*, Dunglass Burn, VC 81, Berwickshire, 36(NT)/763.713, February 2012. Herb. Coppins 23897 (**E**). This is the most convincing material I have seen from the British Isles, as most collections look as though they are probably the related *O. sorediifera* with few if any soralia. New to southeast Scotland. *B.J. Coppins*



Thallus, asci and ascospores of *Opegrapha viridis* (Coppins 23897).

Parmelia submontana: on *Salix*, *Corylus* and *Fagus*, by stream, at edge of Emsworthy Mire DWT Reserve, east Dartmoor VC 3, South Devon, GR 20(SX)/744.767, alt 340 m. Sept 2011. Herb. B. Benfield. Confirmed by B. J. Coppins. See BLS *Bulletin* 71: 43 (Winter 1992), and article in this *Bulletin*. The first record south of Scotland. *B. Benfield & The Devon Lichen Group*

Parmelina tiliacea: healthy populations on branches of *Quercus* and *Fraxinus* near lake at Shobrooke Park, VC 3, South Devon GR 20(SX)/853.013, February 2012. Not seen in Devon since 1984. *B. Benfield & The Devon Lichen Group*

Parmeliopsis hyperopta: on exposed lignum on ancient *Castanea* sativa in landscaped park, by the car park, Dinefwr Park NNR, VC 44, Carmarthenshire, GR 22(SN)/6154.224, March 2012. Field Record. New to the Vice-county.
N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Peltigera polydactylon: on moss over rotting log, Keld, Swaledale, VC 65, North-West Yorkshire, GR 35(NY)/8957.0117, March 2012, Herb. Knight 2265. Confirmed by S. Price. This is only the second authenticated record for this lichen in Yorkshire.
J.L. Knight & S.M. Knight

Pertusaria corallina: fertile, on wall, Emsworthy Mire DWT Reserve, east Dartmoor VC 3, South Devon, GR 20(SX)/744.767, alt 340 m. Sept 2011. Herb. B. Benfield. This is the same site as for *P. submontana*. It is very rare to find apothecia on *P. corallina*, which is only frequent on nutrient-poor siliceous rock
B. Benfield & The Devon Lichen Group

Pertusaria pupillaris: on *Quercus* lignum, exposed on live tree, in ancient deer park, The Park, Dinefwr Park NNR, VC 44, Carmarthenshire, GR 22(SN)/6102.2266, March 2012. Field Record. New to the Vice-county.
N.A. Sanderson, S.P. Chambers & The Welsh Lichen Apprentices

Pertusaria velata: a single thallus on *Acer pseudoplatanus* on edge of *Fraxinus – Acer* woodland, Berth-lwyd, Parc Dolmelynllyn, Glanllwyd SSSI, VC 48, Merionethshire, GR 23(SH)/7231.2374, alt 140 m, February 2012. Field identification. Its occurrence on *Acer pseudoplatanus* emphasises that this introduced European native tree can be of great conservation significance for lichens in some semi-natural woodlands. First record from Wales for this Welsh Section 42 species, since the last known tree fell in the early 2000's. *N.A. Sanderson*

Phylloblastia fortuita: foliicolous, on unidentified shrub with largish leaves, The Arboretum, Hardwicke Court, VC 33, East Gloucestershire, GR 32(SO)/791.118, August 2011. Herb. Powell 1949. New to the Vice-county. *M. Powell & J. Bailey*

Phylloblastia fortuita: foliicolous on ?*Rhododendron* leaves, Cambridge University Botanic Garden, VC 29, Cambridgeshire, GR 52(TL)/453.571, December 2011. Herb. Powell 2040. The bush supporting this lichen grows in an urban shrubbery which is not humid, suggesting that *P. fortuita* is not exacting in its requirements. New to the Vice-county. *M. Powell*

Phylloblastia fortuita: foliicolous records from VC 46, Cardiganshire: (i) on leaves of *Hedera hibernica* climbing north side of *Corylus avellana* bush in sub-coastal, sheltered ravine woodland, Afon Cledan, southeast of Llan-non, GR 22(SN)/517 664, alt 70 m, February 2012; (ii) on leaves of *H. hibernica* climbing north side of *Acer pseudoplatanus*, Parc Natur Penglais, Aberystwyth, GR 22(SN)/591 822, alt 80 m,

February 2012; (iii) on *H. hibernica* leaves in garden hedge, Capel Bangor, GR 22(SN)/658 801, alt 30 m, March 2012. Herb. SPC. The ease with which this species can be found on sheltered Ivy leaves suggests it is very under-recorded. New to the Vice-county. *S.P. Chambers*

Phylloblastia inexpectata: on laurel leaves, on bushes by stream in ancient woodland, Coombe Wood, Thundersley, VC 18, South Essex, GR 51(TQ)/785.881, March 2012. Herb. PME-B. Duplicates in Herb. **STD** and Herb. Hitch. Determined by B.J. Coppins. New to Essex. *P. M. Earland-Bennett*

Piccolia ochrophora: on shaded *Sambucus* stem in churchyard, Great Paxton, VC 31, Huntingdonshire, GR 52(TL)/209.641, July 2011. Herb. Powell 1914. A careful examination of semi-shaded *Sambucus* stems has shown that this species is occasional rather than rare in Northamptonshire, Bedfordshire, Huntingdonshire and Cambridgeshire and presumably could be found widely elsewhere in Eastern England. Most occurrences have been found on stems which are sufficiently well-lit to retain a discontinuous cover of *Lecania cyrtella*, but sufficiently shaded to have excluded most other species. In this region *Piccolia ochrophora*, while sometimes found in ancient woodland, has no particular affinity for it and is often found in secondary woodland and orchards. New to the Vice-county. *M. Powell*

Piccolia ochrophora: on *Acer campestre* in open woodland, Wilsummer Wood, VC 26, West Suffolk, GR 52(TL)/77-62-, March 2012. Herb. Powell 2223 and duplicate in Herb. Hitch. Not seen in the county since 1985, but very likely to have been overlooked. *M. Powell & C.J.B. Hitch*

Placynthiella dasaea: on sandy bank in heathland, with *Placynthiella icmalea* and *Cladonia incrassata*, Half Moon Common, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2944.1702, November 2011. Field identification. Proving to be overlooked and widespread on heathland. New to the county. *N.A. Sanderson*

Placynthiella dasaea: on sand on the side of rabbit holes in heathland, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/2775.1879, December 2011. Field identification. New to the county. *N.A. Sanderson & A.M. Cross*

Polycoccum squamarioides: on *Placopsis lambii* on copper-rich mine spoil, north shore of Glaslyn, below Snowdon, VC 49, Caernarfonshire, GR 23(SH)/615.546, alt 600 m, September 2011. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Porpidia islandica: on free-draining buttress at base of igneous rockface, Clogwyn y Garnedd, below Snowdon, VC 49, Caernarfonshire, GR 23(SH)/613544, alt 660 m, September 2011. Herb. SPC. A few metres away from the *Vestergrenopsis elaeina* rockface. See BLS *Bulletin* 80: 46 (Summer 1997). New to Wales. *S.P. Chambers*

Porpidia striata: (i) on outcrops on south side of Rippon Tor VC 3, South Devon, GR 20(SX)/746.756, 470m, July 2011; (ii) on south side of Holwell Tor, VC 3, South Devon GR 20(SX)/753.776 400 m September 2011. Herb. B. Benfield. Determined by B.J. Coppins. Both records new to the county. *B. Benfield & C.J.B. Hitch*

Pronectria oligospora: on moribund thallus of *Punctelia subrudecta s. str.*, on leaning trunk of *Acer pseudoplatanus*, west end of Brownrig Wood, Tyninghame, VC 82, East Lothian, GR 36(NT)/607.804. alt 15 m, January 2012. Herb. Coppins 23869 (**E**). New to Scotland and second British record. *B.J. Coppins*

Psoroglaena stigonemoides: an extensive sterile colony on shaded *Sambucus* trunk close to River Thames, Cliveden Hanging Woods, VC 24, Buckinghamshire, GR 41(SU)/90.84, March 2012. Herb. Powell 2187. *A. Harris & M. Powell*

Pyrenula acutispora: abundant on single, twisted, suppressed *Tilia cordata* in *Quercus* woodland, Coed Berth-lwyd, Parc Dolmelynllyn, Glanllwyd SSSI, VC 48, Merionethshire, GR 23(SH)/7253.2332, alt 110 m, February 2012. Herb. Sanderson 1780. A new site for a rarely recorded western oceanic species. *N.A. Sanderson*

Pyrenula acutispora: on two *Corylus* bushes on very steep slope in limestone ravine, Monastir, Aghnahoo, Marlbank ASSI, VC H33, Co Fermanagh, GR 23H/1194.3343, alt 180 m, March 2012. Herb Sanderson 1780. The site was rich in hyperoceanic *Graphidion* species, which were confined to the more inaccessible areas. The ravine appears to have been a woodland refugium, that survived the low point in woodland cover in the 18th and early 19th centuries. New to Northern Ireland
N.A. Sanderson & A.M. Cross

Ramonia dictyospora: on damp, decaying bark, on northwest side of mature *Fraxinus excelsior* on riverbank, Afon Marteg, Gilfach Farm Nature Reserve (Radnorshire Wildlife Trust), VC 43, Radnorshire, GR 23(SH)/962.713, alt 240 m, October 2011. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Ramonia dictyospora: on damp, soft bark, on northwest side of trunk of *Fraxinus excelsior* in wet riparian woodland, Afon Cwmere, Cwmere, VC 46, Cardiganshire, GR 22(SN)/686.880, alt 140 m, March 2012. Herb. SPC. New to the Vice-county.
S.P. Chambers

Ramonia interjecta: on trunk of mature *Fraxinus excelsior* in old woodland, south of Llancwm, near Maesymeillion, VC 46, Cardiganshire, GR 22(SN)/406.463, alt 170 m, April 2010. Confirmed by B. J. Coppins. Herb. SPC. New to Wales. *S.P. Chambers*

Ramonia nigra: with scattered occasional apothecia and dominated by *Bacidia rubella,* on flushed lignum inside hollow old *Fraxinus*, on old boundary in unimproved grassland, Lacandarragh, Glencree, VC H20, Co Wicklow, GR 32(O)/1869.1484, alt 120 m, November 2011. Herb. Sanderson, 1723. A major extension to the range of this internationally rare species. First record for Ireland. *N. A. Sanderson*

Rinodina bischoffii: on limestone crenellation of church, Riseley, VC 30, Bedfordshire, GR 52(TL)/039.631, October 2011. Herb. Powell 2012. This species is rather easy to overlook as it can resemble *Caloplaca variabilis* and often grows with it. New to the Vice-county. *M. Powell*

Rinodina calcarea: on top of limestone headstone in churchyard, Little Paxton, VC 31, Huntingdonshire, GR 52(TL)/189.627, July 2011. Herb. Powell 1908. This is one

of several sterile collections from limestone headstones during the summer of 2011. When collected the identity of these specimens was unknown, but after the discovery of fertile material in Northamptonshire the thallus is sufficiently distinctive to recognise as the same species. It appears to be occasional in the region but is rarely fertile. *M. Powell*

Rinodina pityrea: fertile on trunks of large *Sambucus* bushes, at east edge of Woodwalton Fen, VC 31, Huntingdonshire, GR 52(TL)/23.84, February 2012. Herb. Powell 2182. Previously collected material of this lichen, which may be occasional rather than rare in the region, has involved sterile material which had been tentatively identified as corticolous *Caloplaca chlorina*. New to the Vice-county. *M. Powell*

Rinodina teichophila: in dusty crevice on edge of south-facing siliceous flagstone, on quayside promenade wall, Aberaeron, VC 46, Cardiganshire, GR 22(SN)/457628, alt *c.*5 m, January 2012. Field record. New to the Vice-county. *S.P. Chambers*

Romjularia lurida: in crevices of soft, base-rich rocky outcrops on clifftop, Watermouth Harbour, Ilfracombe, VC 4, North Devon, GR 21(SS)/552.485, November 2011. Herb. M. Putnam. Confirmed by B. Benfield. New to the Vice-county. *M. Putnam*

Schismatomma graphidioides: (i) innumerable small thalli on smooth mesic bark on trunk of *c.*150 year old planted *Fagus sylvatica* in secondary woodland, Parc Natur Penglais, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/592.821, alt 60 m, January 2012. Herb. SPC; (ii) tiny, *ca* 3-5 mm diameter thalli, set in mosaic of dominant *Enterographa crassa* on west side of trunk of mature *Fagus sylvatica* in ornamental estate woodland, Llanerchaeron, VC 46, Cardiganshire, GR 22(SN)/479602, alt 40 m, March 2012. Herb. SPC. *S.P. Chambers*

Solorina spongiosa: on the ground, in limestone quarry pit, Laggan Hill, Dulnain Bridge, VC 95, Morayshire, GR 38(NJ)/004.265, October 2011. Herb. S. Taylor Confirmed by B.J. Coppins. New to the Vice-county. *S. Taylor*

Stereocaulon pileatum: on sandsone table tomb in cemetery, Bedford, VC 30, Bedfordshire, GR 52(TL)/049.511, September 2011. Field record. Urban cemeteries can be surprisingly productive. New to the Vice-county. *M. Powell*

Stereocaulon tornense: fertile, on intermittently wet-flushed upland rockface, Craig Clungwyn, VC 46, Cardiganshire, GR 22(SN)/778 472, alt 280 m, June 2005. Herb. SPC. Confirmed by B.J. Coppins. An unexpected occurrence of a snow-patch pebble specialist, previously only recorded in Wales from high altitude sites in Snowdonia, VC 49, Caernarfonshire. Hosting *Dactylospora purpurascens.* New to the Vice-county. *S.P. Chambers*

Strigula calcarea: on north-facing wall of church, Cattistock, VC 9, Dorset, GR 30(SY)/5915.9952, April 2012. Specimen not retained. New to England and second British record. See also under **New to the British Isles**. *A. Orange*

Syzygospora bachmannii: on *Cladonia ramulosa* over quartz chippings on ground-level tomb in chapel graveyard, Trefenter, VC 46, Cardiganshire, GR 22(SN)/606.686, alt 270 m, February 2007. Herb. SPC. Determined by B.J. Coppins. New to the Vice-county. *S.P. Chambers*

Teloschistes chrysopthalmus: only 1 thallus at each site, on south-facing, chest high, well lit branches of *Crataegus,* (i) West High Down, VC 10, Isle of Wight, GR 40(SZ)/31-85-, 2 April 2012 (Les Street); (ii) Newtown Meadows, VC 10, Isle of Wight, GR 40(SZ)/42-90-, 3 April 2012 (Sheila Street). A fragment from the first site was collected, Herb. Street. Confirmed by Sheila Street. The first thallus is very large (approx. 6 cm), yet poorly-formed with varying-shaped apothecia, whereas the second is a typical looking specimen, but considerably smaller at around 2 to 3 cm diameter. These are the first records for this species on the Island since the 19th Century when it was found in Ryde. *L. & S. Street*

Thelidium pyrenophorum: on limestone coffin tomb in churchyard, Riseley, VC 30, Bedfordshire, GR 52(TL)/039.631, November 2011. Herb. Powell 2021. Confirmed by A. Orange. Only occasional spores could be found which contained a septum, which led to initial uncertainty. New to the Vice-county. *M. Powell*

Thelidium pyrenophorum: on limestone chamfered plinth of church, Little Gransden, VC 29, Cambridgeshire, GR 52(TL)/271.551, November 2011. Herb. Powell 2035. Confirmed by A. Orange. New to the Vice-county. *M. Powell*

Thelotrema petractoides: locally abundant on *Corylus* bushes on cliff tops and ledges in limestone ravine, Monastir, Legnabrocky & Aghnahoo, Marlbank ASSI, VC H33, Co Fermanagh, GR 23(H)/1195.3325, 23(H)/1193.3327 & 23(H)/1185.3300 - 23(H)/1187.3303, alt 200–210m, March 2012.. The site was rich in hyperoceanic *Graphidion* species, which were confined to the more inaccessible areas. The ravine appears to have been a woodland refugium that survived the low point in woodland cover in the 18th and early 19th centuries. A new site for a very rare species in Northern Ireland. *N.A. Sanderson & A.M. Cross*

Trapeliopsis glaucolepidea: on humus in heathland, Spy Holms, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2365.0268, October 2011. A species rarely recorded from the lowlands. New to Hampshire. *N.A. Sanderson & P.A. Wolseley*

Trapeliopsis glaucolepidea: on sand on the side of a rabbit hole in heathland, Plaitford Common, New Forest SSSI, VC 8, South Wiltshire, GR 41(SU)/2775.1879, December 2011. Field identification. New to the Vice-county.
N.A. Sanderson & A.M. Cross

Tremella phaeographidis: on *Phaeographis lyellii* on *Quercus* twig in lower part of Piles Copse, 20(SX)/644.620 March 2009. Herb. B. Benfield. Confirmed by. B.J. Coppins. A third Devon record of this rare lichenicolous fungus. *B. Benfield*

Unguiculariopsis thallopila: ascomata forming concentric arcs on the periphery of *Lecanora chlarotera* thalli on upper side of bough of mature *Fraxinus excelsior* in open

pasture, Roundton Hill NNR, near Church Stoke, VC 47, Montgomeryshire, GR 32(SO)/293947, alt 250 m, December 2011. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Usnea articulata: on windswept branches of four roadside *Crataegus monogyna*, Trichrug Hill, VC 46, Cardiganshire, GR 22(SN)/546.598 & 22(SN)/545.600, alt 310 m, November 2011 & January 2012. Voucher in herb. SPC. A stupendous colony of at least 43 strands, tangles and pendent tassels, the best *ca* 35-40 cm long. Spied by SDBS from the window of a moving car, on a road driven by lichenologists for years! A stylish and welcome return for this Section 42 species, thought to be extinct in Cardiganshire, after disappearing from its *Salix cinerea* tree at Rhos Glyn yr Helyg. *S.D.S. Bosanquet & S.P. Chambers*

Verrucaria ochrostoma: on limestone balustrade of terrace at south side of Cliveden House, VC 24, Buckinghamshire, GR 41(SU)/910.851, February 2012. Herb. Powell 2161. Confirmed by A. Orange. This dark crust, growing amongst abundant *V. nigrescens*, was nearly overlooked, but is frequent on the balustrade. The thallus of this material is grey-brown with an olive tinge. The perithecia form low projections, each within a circular areole, giving a different appearance from the angular "cracked mud" areoles of *V. nigrescens*. Microscopically *V. ochrostoma* is characterised by the lack of an involucrellum. The exciple, which is pigmented throughout in mature perithecia, is sometimes colourless below in immature fruits. *M. Powell*

Vezdaea leprosa: overgrowing mosses flushed with water behind an ineffective downpipe, south wall of church, Great Gransden, VC 31, Huntingdonshire, GR 52(TL)/271.556, June 2011. Herb. Powell 1871. New to the Vice-county. *M. Powell*

Xerotrema quercicola: on lignum, on two standing dead *Larix* and four dead *Quercus,* both standing dead trunks and the drier parts of fallen trunks or branches, in old growth cliff woodland in ancient deer park, Powerscourt, VC H20, Co Wicklow. GR 32(O)/1999.1283, 32(O)/1995.1282, 32(O)/1989.1270, 32(O)/1976.1266 & 32(O)/1954.1248, alt 280–335m, November 2011. Herb. Sanderson 1737 & 1738. The occurrence of the species on *Larix* is a new substrate, as previous records from Britain have all been on *Quercus*. New to Ireland. *N.A. Sanderson*

Corrigendum The subeditor is grateful to our Irish correspondent for drawing our attention to a typographical error that occurred in BLS Bulletin 109 (Winter 2011). Under the entries for *Byssoloma subdiscordans*, *Degelia plumbea* s. str., *Imshaugia aleurites, Melaspilea amota* and *M. interjecta,* VC H35, Co. Fermanagh, should read VC H33, Co. Fermanagh.

Field Meeting in Killarney, South West Ireland, 1996

Located in North Kerry (IV.C. 2), south-west Ireland at the eastern gateway to the Iveragh Peninsula, Killarney is Ireland's first national park. Despite its spectacular topography it is surprisingly small in scale: an irregular oval 13 x 9 km, spread over an area of 10,236 hectares. Justly renown for its stunning scenery which combines pollution-free lakes, lofty mountains and smouldering woodlands set in an Atlantic environment of International scientific importance, Killarney was designated a UNESCO Biosphere Reserve in 1981. To the west, Ireland's highest mountain range, the Macgillycuddys Reeks (1039m) rise up to form a sudden and dramatic backdrop. This has a significant bearing on the climate which is of the extreme oceanic type with mild winters and cool summers. The number of rain days in the mountains can exceed 250 per year, so typically, sunshine totals are low. Solid geology divides the national park in two with Carboniferous Limestone forming the lower ground to the north and east, and the Devonian Old Red Sandstone underpinning the smooth peaks and lofty terraces of high ground to the south and west.

The Spring Field Meeting of the British Lichen Society based at Killarney was held from 27 April to 4 May 1996, and was attended by 14 members under the leadership of Howard Fox. The main focus of the meeting was to gather data on the lichen communities of the oceanic woodlands. Both Killarney National Park and Uragh Wood – a National Nature Reserve (NGR IV 8462) on the Beara peninsula – were used as key sample sites. The places visited, while generally small, formed clearly delimited subsites within the overall structure of the Killarney woodlands. The site lists obtained from participants and from Killarney National Park (KNP) Head Ranger, Paudie O' Leary relevant to this field visit are presented together with an approximate reconstruction of the ecological data and events. In total 451 lichens (including 310 epiphytes) and 35 lichenicolous fungi were recorded.

Close canopy limestone swamp

The coastal woodlands to the north east of Lough Leane are among the wettest in Killarney with many extensively inundated during the winter months. Named 'swamp forests' from their drowned or flooded appearance, they are the largest of their kind in Ireland covering over 155 ha. By summer, water levels have almost returned to normal, though the soil can remain persistently wet and marshy underfoot. Outlying sites experiencing swamp conditions include the Cloghereen Blue Pool near Muckross; and a much smaller, delimited stand by the N71 near the main entrance to Muckross House - locally referred to as 'mangrove swamp' owing to its conspicuous and stilted root system.

The swamp forests are dominated by alder, birch and willow with scattered oak, ash and hazel. All support Lobarion. At Ross Cottage (IV 951.885) near the edge of Ross Island, colonies of the scarce *Lobaria amplissima* grow shoulder to shoulder with *Heterodermia japonica*, whose silver-grey lobes form conspicuous patches on the leaning boughs of sallows or sally trees as they are known in these parts. Mossy tree boles and arching branches attract large foliose lichens such as *Degelia atlantica, D. cyanoloma*, *Leptogium cyanescens, L. hibernicum, L. lichenoides,*

Lobaria pulmonaria, L. scrobiculata, L. virens, *Menegazzia terebrata* and *Nephroma laevigatum* along with a supporting cast of Parmeliellas, Pannarias and common Stictas, with *S. limbata* something of a swamp specialist. The majority of the corticolous crusts are confined to moss-free sites such as brightly-lit, dry bark, smooth narrow branches and small projecting twigs. Here *Cliostomum griffithii, Lecanora jamesii, Megalaria pulverea* and *Thelotrema lepidinum* form intricate bark mosaics with *Caloplaca ferruginea, Graphis* spp., *Japewiella tavaresiana* and *Loxospora elatina.* Above a height of about three or four metres, the low canopy of the trees is home to a beard-like plasma of Usneion lichens comprising light-demanding assemblages of *Evernia prunastri*, *U. cornuta, U. esperantiana* and *U. subfloridana* seen best in sunken dells and sunny clearings.

Leptogium hibernicum – a Killarney speciality

The swamp habitat close to the slip road leading to the Muckross arboretum car park is a flooded depression (IV 970.856) edged with outcrops of Carboniferous limestone. It experiences conditions of complete summer dry-out, like a turlough. The trees surrounding the hollow are mainly hazel and ash and support a long list of Lobarion notables, among them *Collema fasciculare, C. furfuraceum, C. subflaccidum, Fuscopannaria sampaiana, Leptogium burgessii, Parmeliella testacea* and *Peltigera collina*. A feature of this site is a tall specimen of *Salix* cf. *fragilis* with abundant cushions of *Collema subnigrescens* occupying the sunniest positions on brightly-lit, upsweeping branches.

Limestone wood complex

The main body of the limestone woodlands form extensive stands by the shores of Lough Leane. These are particularly fine and comprise mixed woods of ash, hazel, yew, holly and sallow: a stunning sight from the top of Torc Mountain gazing down. At the hub of this scenery is its underbelly of white calcareous rock from which has arisen an eroded landscape beset with grykes and terraced limestone pavement. Groves of trees cling fiercely to the outcrops adding a real sense of remoteness to the peninsula as well as enriching its biological diversity. Loose stands of birch, alder and rowan occupy the marshy fringes crowded with tussock grass against still pools of *Myrica gale*. Wood pasture with mature, stand-alone trees dominates the estate parkland which is set well back from the lake shore on the higher ground between.

Looking across Lough Leane from Muckross to Tornies

On the twin peninsulas of Ross Island and Muckross where the mixed woods are continually moist and humid, a wealth of foliose lichens hanging in loose tufts and ragged bundles form the common currency of the trees. This mix includes *Cetrelia olivetorum*, Degelias, Leptogiums, Lobarias, Pannarias and Stictas, and a wider than normal range of the *Parmeliaceae* including *Hypotrachyna endochlora, H. sinuosa, Parmotrema crinitum, P. perlatum* and *P. reticulatum* s. lat. One of the most characteristic macrolichens is *Leptogium brebissonii* which can grow to the size of a cricket ball.

Ross Island's sprinkling of pseudopodioid peninsulas exceeded all expectation, producing some mouth-watering records. Highlights included *Anisomeridium robustum* (birch), *Bacidia absistens* (oak), *Gyalecta derivata* (ash), *Porina borreri* var. *borreri*, *Strigula taylorii* (both horse chestnut) and *Rhaphidicyrtis trichosporella* (birch). An *Arthonia*

growing in the apothecia of *Caloplaca ferruginea* appears to be an unknown species. *Agonimia allobata* (second Irish record) a diminutive lichen of mossy bark was collected near Library Point by Barbara Benfield. The main prize, however, only came to light recently while Brian Coppins was working through a backlog of specimens belonging to Sandy his wife. This was the discovery of *Bacidia subturgidula*, otherwise known only from the New Forest in southern England, and until very recently, listed as extinct on the British and Irish checklists. The spongy-soft trunks of shaded oaks best suited *Catillaria atropurpurea, Gyalecta truncigena, Megalaria grossa, Normandina pulchella, Pachyphiale carneola* and *Piccolia ochrophora*, creating a living network of neat, intimate patches. Thickly mossed tree boles also had their speciality species. Along the Muckross peninsula east of Reenadinna Wood, colonies of *Gomphillus calicioides* - with their stumpy-fingered, piebald fruits – began to occur in unparalleled abundance. Tightly woven into these silken thickets were *Cladonia pyxidata, Mycobilimbia pilularis, Dimerella lutea, Lepraria incana, Leptogium coralloideum* (hazel), *Peltigera* spp, and some of the less widespread *Pannariaceae* such as *Fuscopannaria sampaiana* and *Protopannaria pezizoides*.

Edging the marshes were birch and alder; these wore chequer boards of lichen distinctly mellower in tone. The pioneer species *Arthonia radiata, Buellia disciformis, Caloplaca ferruginea, Graphis elegans, Pertusaria albescens, P. multipuncta* and *Thelotrema lepidinum* introduced subtle shades of pastel, while the puffed-up rosettes of *Hypogymnia* and the cascading shrubbery of *Evernia, Ramalina* and *Usnea* provided overlapping layers of drifting colour. By blending and merging against the different bark surfaces where sorediate forms like *Buellia griseovirens, Loxospora elatinum, Mycoblastus caesius* and *Pyrrhospora quernea* had homestead some of the most beautiful colour combinations arose. Stunning monocultures of *Buellia erubescens* were also encountered here.

The Muckross Estate parkland is renowned for its widely spaced field trees; it is essentially a stock-grazed, wood-pasture environment with its edges and corners cosseted by scrub and marshy woodland. *Anaptychia ciliaris, Caloplaca luteoalba, Teloschistes chrysophthalmus, T. flavicans* and *Thelenella modesta* are now remote and distant nineteenth century records. Today's epiphytic lichens have a more familiar ring to them with *Arthonia vinosa, Anisomeridium ranunculosporum, Bacidia biatorina, Lecanora alboflavida, Phlyctis agelaea, Porina coralloidea, P. hibernica, P. rosei, Rinodina roboris* and *Thelopsis rubella* particularly prominent, and the occasional luminous yellow-green thallus of *Myxobilimbia epixanthoides* bursting through the bark to skim the thick carpets of tree moss. The shy *Melaspilea amota* was an important find as it is scarce and easily overlooked. Dry acid bark is the principal home of the Lecanactedeetum premnea community. The parkland trees yielded a short yet simmering list of members, among them *Cresponea premnea, Enterographa crassa, Lecanactis abietina, L. subabietina, Opegrapha corticola, O. ochrocheila* and *Schismatomma niveum.* A few surviving ash trees in a dip in a pasture near Doo Lough supplied the first Irish records of *Wadeana dendrographa*.

Brief forays by members to explore the various rock surfaces of the limestone outcrops supplied important records of *Bacidia fuscoviridis, Caloplaca cirrochroa,*

Catillaria minuta, Collema multipartitum, Lecania cuprea, L. sylvestris, Lepraria nivalis, Opegrapha dolomitica, O. mougeotii and *Thelidium decipiens*.

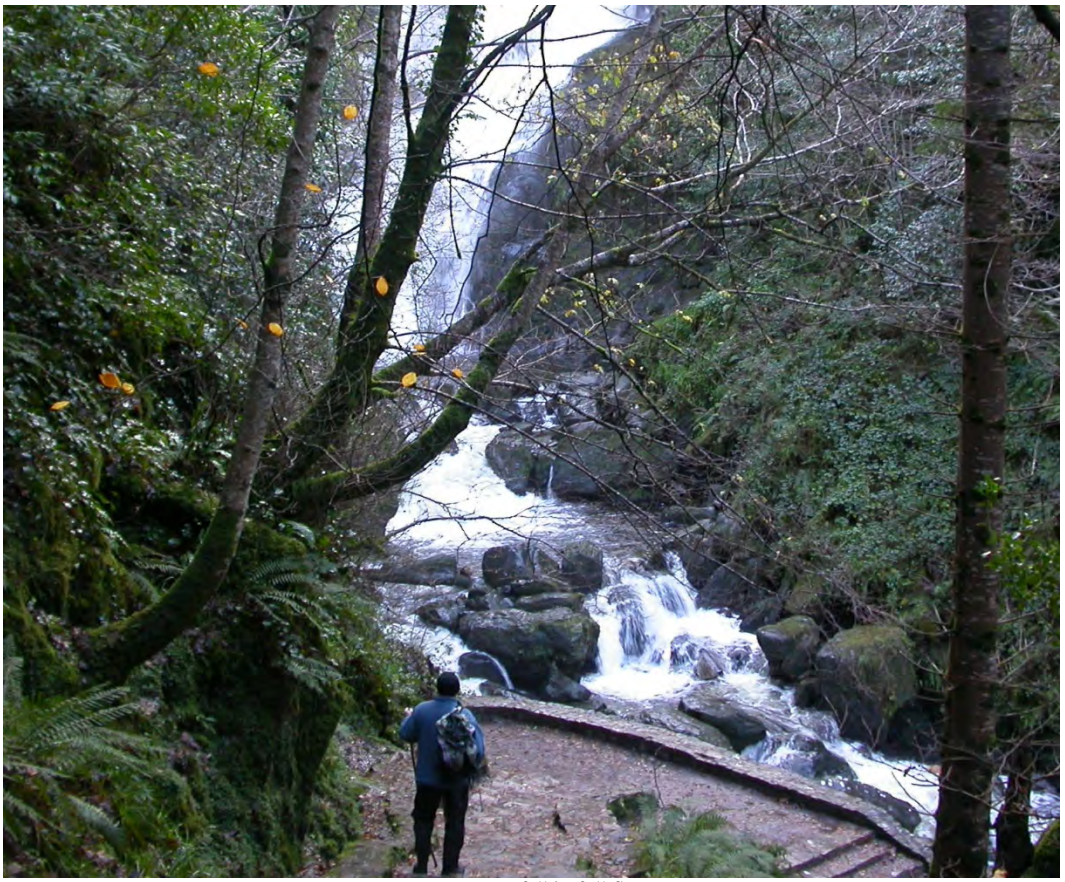
Yew wood on limestone

Reenadinna wood (IV95.86) on the Muckross peninsula commands the greatest extent of yew woodland in Ireland: 25 hectares spread over limestone reef and pavement. The nucleus of the wood is a pure stand of very dense growth but towards the edges, soil-filled hollows provided opportunities for ash, hazel, holly, and oak. Among the close-spaced trees under the perpetually darkened canopy, a spitefulness of underdeveloped crusts and a few *Peltigera* in the gaps between, such as *P. horizontalis* was all that was able to penetrate the bony network of crooked roots. Here, development of the Graphidion is entirely depressed through lack of light. Despite this, from the dry wood of one yew Neil Sanderson supplied a first record for Ireland of *Xerotrema megalospora*.

Around the edges of this wood a wealth of discoveries was made. The moss-free parts of hazel stems had *Arthonia astroidestera*, *A. ilicina, Bactrospora homalotropa, Eopyrenula grandicula, Phaeographis lyellii, Pyrenula dermatodes* and *Thelotrema petractoides*. The exposed bark was further enhanced by constellations of *Anisomeridium* and *Arthopyrenia* spp. Both *Leptogium coralloideum* and *Melaspilea atroides* were major finds, since these species, more than most, require the expert's eye. The holly specialists *Graphina ruiziana, Mycoporum lacteum* and *Opegrapha viridis* now began to appear for the first time west of Muckross.

Open Oak-Holly ravine wood on sandstone mountain slopes

Visits to selected woodlands: Tomies Wood (IV 91.88), Tower Wood (IV 96.83), Torc Upper Bridge (IV 92.82), Ullauns Wood (IV 91.79) and to Uragh Wood (IV 84.62) near Kenmare, enabled access to some of the best oakwoods on the Old Red Sandstone. Oakwoods of this kind cover about 1,200 hectares of the national park extending upwards from lakeshore level (25 m) to beyond 260 m. While these woods may appear ancient, most were felled during the nineteenth century, mainly for charcoal or for tan bark. The current stands date from about 1860 onwards. Tomies Wood ranks as one of the most outstanding, if not *the* most outstanding oceanic woodland of its type in Ireland with a luxuriant Lobarion and fine Graphidion. Along the ravine woodland of Lamb's Fall and O'Sullivan's Cascade this lichen cover is optimally developed: an Aladdin's cave awaits. Holly forms the understory and supports an outstanding Graphidion dominated by *Arthonia astroidestera, A. ilicinella, A. ilicina, A. stellaris, Arthopyrenia carneobrunneola, Bactrospora homalotropa, Blarneya hibernica, Graphina ruiziana, Lecanactis abietina, Mycomicrothelia confusa, Mycoporum lacteum, Schismatomma niveum, Pyrenula dermatodes, P. occidentalis,* and *Thelotrema petractoides*. A curious species of *Arthothelium* similar to *A. ruanum* but with larger spores also occurs here (see *Lichenologist* **11**: 30-31, 1979). The diminutive rarity *Calicium diploellum* - one of the smallest of the pin-head lichens known to Britain and Ireland, grows deep in the crevices of holly bark. Another first: *Micarea pycnidiophora* was recorded new to Ireland by Brian Coppins.



Torc Waterfall in full flow

Coppiced oaks twisted to fairy-dell stature dominated the ravine section and supported a prolific and diverse lichen flora. Of the microlichens and crusts, *Arthonia anombrophila, Cladonia caespiticia, Cresponea premnea, Megalospora tuberculosa*, *Micarea adnata, M. alabastrites, M. stipitata, Phyllopsora rosei, Porina coralloidea, P. hibernica, P. effilata* and *Strigula phaea* are entirely typical of the habitat. Thick cushions of liverworts cramped by mosses encircle all upright, leaning or fallen tree trunks like an insulating jacket. This produces suitable habitat for bryophilous taxa such as *Bacidia caesiovirens, Gyalideopsis muscicola, Heterodermia japonica, Lepraria umbricola, Leptogium coralloideum, L. lichenoides, L. juressianum, Micarea xanthonica, Peltigera collina, P. horizontalis* and *Stenocybe nitida*. In this lichen-heaven macrolichens abound, notably *Hypotrachyna endochlora, H. laevigata, H, sinuosa*, all four species of *Lobaria, Leptogium brebissonii, L. burgessii*, two Degelias and three *Sticta* species. The small foliose lichen *Leptogium subtile* was recorded from a rotted-out holly. Rocky outcrops provided further useful records including those of *Arthonia arthonioides* and *Bryophagus gloeocapsa.*

Tower Wood graces the steep north-west facing slopes of the Long Range near Eagle's Nest. It is an impressive site owing to the tall stepped outcrops which rise like a fortress above the N71 cut by sloping terraces and wooded gullies. The lower part

by Newfoundland Bay (an easterly projecting arm of the Upper Lake) is accessed easily from the road which is dotted here and there with a number of mature wayside trees. Sheltered and sunny, the trees supported an impressive list of over 90 epiphytes including *Agonimia octospora, Arthopyrenia nitescens, Bacidia caesiovirens, Hypotrachyna endochlora, Micarea stipitata, Ochrolechia szatalaënsis, Parmeliella testacea, Polychidium dendriscum, Porina effilata, Sticta canariensis 'dufourii'* and *Trapelia corticola*.

At Torc Upper Bridge above the famous cascading waterfall, the eastern slopes of Torc Mountain (230 m) have thinning stands of hazel, ash and holly in sloping glades between the plantation trees. Such sites are considerably cooler and wetter than the woodlands below. The Irish lichenologist Isaac Carroll collected fine material of *Pyrenula hibernica* from around here in the 1860's where it is still present (mostly on mossy hazel) together with *Leptogium burgessii* and *L. cochleatum*. Important additional finds from this site included *Pyrenula laevigata* and the basic-bark twig specialist of hyperoceanic woodland sites *Thelotrema macrosporum.*

Ullauns Wood in the southwest corner of the national park is a remote arm of upland calcifuge woodland with a largely continuous ground cover of bryophytes. With little internal variation in topography the wood has an unbroken uniform structure. Such high-rainfall sites can be hard work. Despite this, good finds of *Agonimia octospora, Anisomeridium robustum, Arthonia ilicinella, Blarneya hibernica, Cyrtidula quercus, Hypotrachyna endochlora, Menegazzia terebrata, Opegrapha fumosa, Porina effilata, P. leptalea, Sphaerophorus globosus* and *Stenocybe nitida* were worthy additions. A saxicolous list from adjacent outcrops included records of *Clauzadeana macula, Enterographa hutchinsiae, Herteliana taylorii, Opegrapha saxigena, Schismatomma niveum* and the speckly yellow-brown rockface species *S. umbrinum*.

Uragh Wood, a National Nature Reserve since 1982, has been known to lichenologists since the nineteenth century. Its 85 ha of mixed deciduous woodland has been the object of various visits by Fox (1996). Located 13 km south-west of Kenmare by the southern shores of Loch Inchiquin it shares many of the characteristics of the Killarney sites but lacks all four *Lobaria* species and several key Parmeliacea which typify the communities of the high rainfall woodlands. Prior to the field meeting, the historical records gave Uragh a WIIEC (West of Ireland Index of Ecological Continuity) rating of 20+1Bonus = 21. The 46 taxa added by the BLS visit raised the WIIEC to 27 and the epiphyte total from 101 to 147. Additions from here include *Arthonia anombrophila, Bacidia caesiovirens, Fuscopannaria sampaiana, Micarea stipitata, M. synotheoides, Mycoporum lacteum, Opegrapha fumosa, Polychidium dendriscum, Pyrenula acutispora, Stenocybe nitida,* and *Strigula phaea.* The *Thelotrema petractoides* dominated community of hazel (and oak) stems is particularly handsome and ranks as one of the best of its kind in Ireland. From along the lake edge *Bacidia carneoglauca, Collema glebulentum, Lecidea ahlesii* and *Stereocaulon pileatum* were also recorded. The full list for this site from all habitats now stands at over 215 taxa.

Wooded islands

On Tuesday 30 April 1996 boat trips were organised to Lough Leane's variously wooded islands; elsewhere motorised transport set off for Brickeen and Dinish at the far end of the Muckross peninsula. The area around the Meeting of the Waters

combines many of the elements of the Tomies and Tower Woods though much of the habitat here is engulfed by industrial sized thickets of Rhododendron – the curse of Killarney! Of the 81 taxa recorded *Sticta canariensis* (green morph) occurs luxuriantly on one oak while *Agonimia octospora, Arthonia elegans, Cladonia caespiticia, Micarea hedlundii* (the only Kerry site), *Opegrapha viridis, Tomasellia gelatinosa* and *Porina rosei* add to the diversity. A species of *Xylographa* listed initially only to genus status, turned out to be *X. trunciseda*.

A number of the party gave the famous Brickeen Bridge a comprehensive inspection resulting in 43 records and notable discoveries of *Catapyrenium cinereum, Polysporina lapponica, Rhizocarpon distinctum, R. simillimum* (new to Ireland) and *Rimularia badioatra*. The shore rocks lapped by freshwater revealed an equally impressive list producing records of *Collema glebulentum, Dermatocarpon intestiniforme, Porina guentheri* var *lucens* and the seepage rock specialist *Pyrenopsis subareolata*, this last within Ireland entirely restricted to Cos. West Cork and Kerry.

Lamb Island's (IV 938.898) famed rookery stands on less than an acre of ground in Lough Leane yet it is the best site at Killarney for eutrophic species. The tenure of bark lichens includes *Hyperphyscia adglutinata, Hypotrachyna revoluta, Ochrolechia subviridis, Phaeophyscia orbicularis, Physcia adscendens, P. leptalea, P. tenella, Physconia distorta, Ramalina canariensis, R. lacera, Xanthoria candelaris* and *Xanthoria parietina*. This mirrors the condition of the trees to the east of Killarney town that lay beyond the climatic influence of the Park.

Burnt Island (IV 932.873) near the SW shores provided an opportunity to expand the saxicolous list and search the bouldery edges for aquatic lichens. The lapped rocks were discovered to be well colonised by crusts of *Bacidia inundata, Catillaria chalybaea* var. *chloropoliza* and *Rhizocarpon lavatum*, and a mix of squamulose/foliose species including *Collema flaccidum, Dermatocarpon intestiniforme, D. luridum, D. meiophyllizum* and *Leptogium britannicum*. A tiny green mat of overlapping squamules was identified as *Endocarpon adscendens,* an unexpected bonus. In the hollows between the rocks *Bacidia carneoglauca* and *Porina guentheri* var. *lucens* were also recorded, and from the pebbles *Polyblastia cruenta*. When one considers the island is barely an acre in extent then the epiphyte list takes on immense significance. It is not so much the 89 taxa that were recorded but the 24 species among these, listed on the quality index, the WIIEC. They included *Buellia erubescens, Hypotrachyna taylorensis, Leptogium burgessii, Lobaria scrobiculata, Nephroma parile* and *Sticta canariensis* (green morph).

The pioneering explorations of Killarney by Taylor (1836), Carroll (1863-1868), Watson, Mitchell (1961-70), Jørgensen & James (1983) and Rose (1992) of course contributed hugely to our knowledge of the area and its oceanic woodland lichen flora. However, the wider importance of Killarney within the context of Europe, where the Lobarion community is reported to be in steep decline, can never be overstated. The successful conservation of these lichen-rich woods and freshwater islands with their significant quota of Macaronesian species e.g. *Dictyonema interruptum, Leptogium juressianum, Porina effilata, Pyrenula dermatodes, P. hibernica* depends entirely on minimising the threat posed by the spread of Rhododendron as well as allowing for ample woodland regeneration in areas where grazing levels are

on the increase. Ranking such sites may be a task for future workers with time to visit the numerous subsites but it is clear from the meeting that despite their small size, woods such as Tomies, Tower and Dinish are destined to remain some of the finest examples of their kind in the Northern Hemisphere

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References

Carroll, I. (1865-1868). Contribution to British Lichenology. *Journal of Botany*, London **3:** 286-295, **4:** 22-26, **5:** 254-260 and **6:** 100-101.

Fox, H. (1996). *Manual for Participants Attending the British Lichen Society Field Meeting to Killarney National Park, Killarney, South West Ireland, 27 April – 4 May 1996*. Unpublished collection of records and papers.

Jørgensen, P.M. & James, P.W. (1983). Studies on some *Leptogium* species of western Europe. *Lichenologist* **15**: 109-125.

Mitchell, M.E. (1961). L'élément eu-océanique dans la flore lichenique du sud-ouest de l'Irlande. *Revista Biologia*, *Lisboa*, **2**: 177-256.

Rose, F. (1992). Temperate forest management: its effects on bryophytes and lichen floras and habitats. In: J.W. Bates and A.M. Farmer (eds) *Bryophytes and Lichens in a Changing Environment* pp 211-233. Clarendon Press, Oxford. 404pp.

A list of the species recorded can be obtained from the report author.

Report prepared by:
Vince Giavarini (December 2012)
v.giavarini@sky.com

BLS Field Meeting to Islay and Jura 30 April – 7 May 2011

Introduction

Islay - Queen of the Hebrides, and Jura (with Colonsay and Gigha) form a tantalising group of populated islands off the Mid-Argyll coast of western Scotland within eyeshot of Ireland's Antrim. This was new and exciting territory for the BLS. From the gently lapping shores of Kennacraig's sunny ferry terminal, a line of distant mountains rippled crookedly southwards until lost in a blur of blue haze: the famous Islay mist. On board our ferry, tea and cakes were summoned, woolly hats donned and binoculars raised and lowered with increasing regularity. Black Guillemots and Gannets were among those names quickly uttered and dispatched but then as Islay and Jura grew ever closer, a narrower scrutiny of the landscape began as we engaged in a form of ecological guesswork probing the coastal features with our minds and filling them all with lichens.

The Scottish Youth Hostel (SYHA) at Port Charlotte was to be our headquarters for the week and it wasn't long before we were catching up with the early birds, shaking hands, hugging old friends and introducing ourselves to new faces. The meeting was well-attended. We were blessed with glorious weather for all but one morning of our stay and throughout the duration a flag-cracking south-easterly blew incessantly across the bay launching needle points of birds into the sky like missiles. Islay based naturalist Malcolm Ogilvy who runs the Islay Natural History Society (INHS) introduced himself on the second evening. The INHS operate from a base below the hostel: an Aladdin's Cave of aquarium filled labs, with lecture theatre, well-stocked library and shop, and large box of lichens collected by Rev Gordon Graham during the early 1970's which Brian Coppins and Vince Giavarini did their best to interrogate towards the end of our visit. Islay's Becky Williamson who assists with bird counts for SNH also tracked us down early on, but then, realizing that we were too good a thing to miss, joined us for several days thereafter. Despite the small size of the island the distances travelled mounted up steeply as we probed the peninsulas with our cars to take in remote chapels and distant coves. Within hours of the first day almost, a number of working teams had evolved within the group. Each had their own specialist agendas including churchyards, photography, wooden fence-posts, the policy woodland trees, etc. We also had our critical experts. Usnea Man was Paul Harrold, Aquatic Man: Holger Thüs. But it was our younger members Kate, Oliver and Badger that were the real explorers, eagerly ascending cliffs, balancing precariously on ledges and scouting out the ground ahead with a real spirit of adventure that was both nostalgic (Swallows and Amazons forever) and refreshing.

By the end of our stay the woodlands had yielded 334 taxa while the churchyards, walls, wooden posts and coastal rocks had an accumulated total of 360 taxa.

Geography

The southern Hebridean group to which Islay and Jura belong embraces a constellation of smaller isles of which Colonsay, Oronsay, Gigha, Cara and Scarba are the largest. Coastal features like the many headlands and elongated promontories form a natural extension of the mid-Argyll mainland where the grain of the land trends NE to SW. But whereas Jura is an island of deer, harsh and physically imposing, with the famous mountain range the 'Paps' visible from Glasgow's tallest buildings, Islay is an island of birds softened by bays, farmland, low-lying peat-bog, coastal machair and whitewashed far-flung settlements. Islay's 600 square kilometres is almost twice that of Jura (363 square kilometres). A narrow strait of water, the Sound of Islay separates the two. One travels either north or south on Jura's one main road, but on Islay there is access to almost all points of the compass – The Rhinns, The Oa, Kildalton or Kilchoman, each of which has a multiplicity of fine whisky distilleries. Suitable soils provide the barley; the peat is used in drying the malt, and sea-breezes aid the maturing process. The only Islay gin is produced by the Bruichladdich distillery. Sold with the appellation of 'The Botanist' it could have been have been named in honour of our visit. Access is by car ferry from Kennacraig or Oban.

Lichen-hunting on cyanobacteria: the rock is a fossil stromatolite, close to the Bruichladdich distillery

Geology

Islay has a complex geology. The mix of rock types is heady and includes limestones and sandstones, slates and phyllite, quartzite and grits, gneiss and schists. Atlantic woodland is at its richest on the slates and phyllite rocks of the south-east between

Port Ellen and Ardtalla. Much of the north and central zone of the island is nutrient-poor quartzite (hills rising to 491m on Ben Bheigir) with Dalradian limestone accounting for the fertility of the lower ground. At Ballygrant where a single limestone quarry is still active, there are old mineral, workings, but these lack suitable areas of exposed spoil favoured by terricolous lichens. On the Rhinns of western Islay the so-called Lewisian gneiss is now believed to be an igneous complex (syenite intruded by gabbro and later folded and metamorphosed) 1700-1900 million years old. To the south of Machair Bay towering cliffs of such rocks form a massive amphitheatre. Most of the Torridonian sandstone at the northern end of the Rhinns lies buried under a blanket of peat.

On Jura, all of the high ground is a weather sculptured grey-pink metamorphic quartzite of Dalradian (Pre-Cambrian) age. The lower strip of country along the east coast is gentler, supporting stands of semi-natural woodland and Atlantic hazel above silvery-green Port Ellen Phyllite, hardened sills of epidiorite and grey shelves of Scarba Conglomerate. Raised beaches are a conspicuous feature of both islands.

Habitats

The parallel ridge and gully woodlands of south-east Islay are less well known than their eastern cousins: the woodlands of the Gruinart Flats SSSI which has been the subject of repeat Site Condition Monitoring (SCM) by Scottish Natural Heritage. The south-east sites hadn't been seriously explored for lichens since 1979. Essentially, these sites stand comparison with those of the of the Knapdale woods on the mainland. They are characterised by Hazel (*Corylus avellana*), Birch (*Betula pubescens*) Oak (*Quercus petraea*) and Rowan (*Sorbus aucuparia*), with Sallow (*Salix* sp) and scattered Alder (*Alnus glutinosa*) along the bottom of the broad wet gullies.

Trees on the ridges suit the development of Usneion communities (predominantly *U. cornuta* and *U. flammea)*, while the sheltered parts have a modest Lobarion of *Degelia* species, *Leptogium cyanescens, Lobaria pulmonaria, L. virens, Parmeliella parvula* and the common Stictas. Graphidion lichens did best on Hazel or Rowan especially *Arthonia cinnabarina, A. ilicina, Graphis scripta, Mycomicrothelia confusa, Pyrenula laevigata, Thelotrema lepidinum* and the two local, oceanic species *Bactrospora homalotropa* and *T. petractoides*. Sallow with *Fuscidea lightfootii, Japewiella tavaresiana, Lecanora jamesii* and *Pertusaria multipuncta*, provided additional diversity. On Oak, Birch and Alder the acid-bark flora included *Bunodophoron melanocarpum, Hypotrachyna laevigatum, Loxospora elatinum, Parmotrema crinitum* and *Schismatomma quercicola.*

Away from the coast, the policy woodlands and shelterbelts have much sought after groves of Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*) and occasionally Elm (*Ulmus* spp). Ash and Sycamore support a moderate Lobarion with species of *Collema* and *Leptogium* conspicuous. Elm was particularly good for *Bacidia, Biatora* and *Bilimbia*. In places conifers such as Larch (*Larix* spp) had been widely introduced. Large plantations are also occasional on the island and here the peripheral fencing was targeted for its bounty of lignicolous lichens.

The acid rock of the quartzite hills supports a poor and repetitive cover of Fuscidion lichens so this habitat was avoided. Over the low ground peat is

widespread and a small proportion of this is still actively cut. Though good for *Cladonia* few members chose to explore it. Limestone hunting was popular but the outcrops of Dalradian limestone were well hidden. Most were grassed over, buried under fields or had been broken up for agricultural use long ago. Around Ballygrant and Loch Finlaggan the dry limestone walls were a welcome substitute. A few narrow bands were located near a long derelict mine site where lead and silver lodes were chased through the country rock. Small lenses of ground-level outcrops were the pick. Here the rock is hard. The calcicolous assemblages have *Aspicilia calcarea, Caloplaca flavescens, Collema fuscoviridis, Dermatocarpon miniatum, Gyalecta jenensis, Petractis clausa, Placynthium nigrum, Verrucaria caerulea* and several species of *Thelidium*.

Visits to Machair Bay and the undercliffs of the Oa provide an opportunity to explore the composition and diversity of the maritime lichen flora. Characteristic taxa include *Anaptychia runcinata, Buellia aethelea, Caloplaca crenularia, C. marina, C. microthallina, Lecanora gangaleoides, L. sulphurea, Lecidella asema, Lichina confinis, Pertusaria pseudocorallina, Ramalina siliquosa, Tephromela atra, Toninia sedifolia, Verrucaria fusconigrescens, V. maura, V. striatula* and *Xanthoparmelia verruculifera*.

History of lichen recording

Islay:

The earliest collections are known to be those of Rev. Gordon Graham who was a regular visitor to the island over the period 1968-77. Part of his personal herbarium is lodged with the INHS at Port Charlotte. In 1974 Francis Rose carried out woodland surveys. Two sites identified for their high grade lichen interest are in the report of the Woodland Working Party (Fletcher *et al* 1982) pp 74 and 93. Peter Lambley (1977), Pauline Topham (1977) and Vince Giavarini (1979) added further records from a range of habitats. In 1992 Brian and Sandy Coppins produced more lists from two areas near Port Askaig. In 2004 Vince Giavarini, Andy Acton and Joe Hope set up the Site Condition Monitoring (SCM) for the Gruinart Flats SSSI.

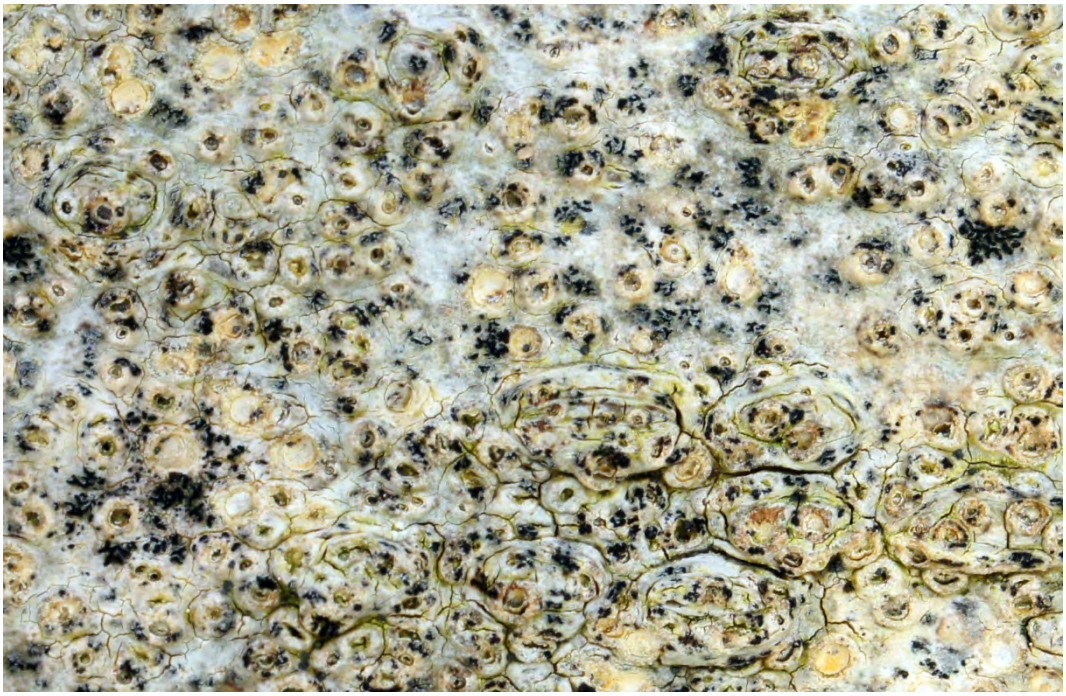
Jura:

James Stirton may have collected the first voucher specimen from Jura in 1895 but it wasn't until Ursula Duncan spent a week there in 1968 that the first serious lichen studies were undertaken. Francis Rose did a tour of the woodlands in 1974. The two best: Doire Dhonn wood and Kinuachdrach wood (p. 93) feature in Fletcher *et al* (1982). Pauline Topham did some general recording in 1977. In 1981 Vince Giavarini spent two weeks on Jura with the Schools Hebridean Society recording widely from around Loch Tarbert. Here he met Rev.Peter Youngson and the archaeologist John Mercer. John and his wife used lichens extensively in their wool-dyeing, spinning and weaving workshop. In 2004 Vince, Andy Acton and Joe Hope established the baseline for SCM at Doire Donne SSSI.

Sites visited by the main party

Ardillistry Bay and Kildalton Church 1st May
Squares recorded NR4448, 4550
Habitats: Atlantic woodland, coastal rocks, boundary walls

The aim of the first day was to explore the Atlantic woodland at Glac an Sgadain near Kildalton but with half the group soon hypnotised by the dry stone walls bordering the roadside (the spell of Fairy Hill (Cnoc Rhaonastil) loomed high above us), an advanced party broke away and marched across the flat, deserted shingle beaches to a low ridge of distant trees. Exploring hazel woods under midge-free conditions is bliss. Willow Warblers and Cuckoos added a special charm to the timelessness of early summer in western Scotland. Dreams of an epiphyte haul dipped slightly below our expectations but there was more than enough to ensure that our hand lenses saw plenty of action. This included Usneas*: fragilescens* var *mollis, rubicunda* and *wasmuthi*i on Birch and Oak growing with *Bunodophoron melanocarpum*, Hypotrachynas: *laevigata, sinuosa* and *taylorensis*, *Cetrelia olivetorum* and *Parmotrema reticulatum.* Now it was the turn of the crustose lichens *Arthonia anombrophila, Dimerella lutea, Enterographa crassa, Porina coralloidea,* and *Loxospora elatina. Bacidia caesiovirens* was cornered on Hazel. Beautiful material of *Arthonia arthonioides* graced the bark of several large Oak boles down the side of the ridges.



Opegrapha thelotrematis parasitizing *Thelotrema lepadinum*, Kildalton Woods

For 300m we followed the damp gully bottom. The best of the Lobarion included the Lobarias: *pulmonaria, scrobiculata* and *virens, Degelia atlantica*, *D. cyanoloma*, *Leptogium burgessii, L. cyanescens, Pannaria conoplea, Parmeliella parvula, Sticta fuliginosa, S. limbata*

and *S. sylvatica*. Wetter areas with Alder and Sallow had *Biatora britannica* (sterile), *Gyalideopsis muscicola, Melaspilea ochrothalamia, Micarea xanthonica, Schismatomma quercicola* and *Trapelia corticola*. Shaded bark produced *Psilolechia clavulifera,* Leprarias *lobificans, rigidula* and *umbricola*; *L. ecorticata* was nearby on stone. Graphidion mosaics (on Hazel and Rowan) comprised *Anisomeridium ranunculosporum, Arthopyrenia carneobrunneola, A. nitescens, Arthonia elegans, A. ilicina, Bactrospora homalotropa, Graphis scripta, Mycomicrothelia confusa, Pyrenula chlorospila, P. macrospora, P. occidentalis, P. laevigata* and *Thelotrema petractoides*. The wood had a calculated West of Scotland Index of Ecological Continuity (WSIEC) of 13+1=14. All told, one-hundred and forty-three lichen taxa were recorded.

Machair Bay, May 2nd
Squares recorded NR2062, 2061
Habitats: Maritime rocks, cliffs, soils…

The beach at Machair bay

Just a short drive from Port Charlotte, Machair Bay on the Atlantic coast of the Rhinns forms one of the largest dune systems on Islay. When the tide is out, the bay expands to over 2km. Today it looked spectacular against the towering inland cliffs that framed its southern shores. Parking was near the stock-grazed dunes or by Kilchoman Church. We made for the southern end where cattle and sheep (with calves and lambs in tow) were buzzed by Marsh Harriers quartering the fields. We began with some preliminary familiarisation. At first the outcrops were rather dreary and undemanding. The influence of wind-brown shell-sand was not apparent and only *Catillaria chalybaea, Dermatocarpon miniatum, Leptogium gelatinosum, Placidium*

lachneum, Placynthium nigrum, Rhizocarpon petraeum, *Toninia sedifolia*, *Verrucaria fusconigrescens* were on the radar. As we turned a corner the communities changed dramatically as the grey zone revealed its Atlantic face. This lichen community can easily grow to be rich in species but we encountered mostly typical assemblages e.g. *Anaptychia runcinata, Buellia subdisciformis, Caloplaca crenularia, Cladonia firma, C. rangiferina, Lecanora gangaleoides, Lecanora sulphurea, Lecanora rupicola* (with *Arthonia varians*), *Lecidella asema, Ochrolechia parella, Peltigera canina, P. rufescens, Pertusaria pseudocorallina, Porpidia platycarpoides, Solenopsora vulturiensis, Tephromela atra, Toninia mesoidea* and *Xanthoparmelia verruculifera*. Nodules of hard acid rock supported assorted *Fuscidea*, *Buellia aethelea, Lecidea lactea* and *Porpidia tuberculosa*. It is temping to suggest that the geology at this site is notoriously mixed. Moss cushions held squamules of *Agonimia tristicula* and in places *A. globulifera* was present.

The green thallus of *Verrucaria mucosa*, close to the low water mark

We took a late lunch on the beach. Behind us the low flat outcrops hid small orange circles of *Caloplaca microthallina*; nearby a grey *Placynthium* cf. *P. garovaglii* was puzzled over. An amphitheatre of cliffs behind the shore drew us away from the sea. The sun was lowering and deep shadows darkened the crags. Boggy ground bristling with *Arthopyrenia punctiformis* and *Mycoglaena myricae* on Sweet Gale stems was traversed. The acid cliffs were scaled and found to yield a few extras: *Fuscidea recensa, Protopannaria pezizoides, Lepraria caesioalba, Micarea botryoides* and *Porina lectissima*, but we were disappointed we hadn't got here earlier with more time to explore.

The Oa, May 3rd

Squares recorded NR2741,

Habitats: coastal cliffs, maritime rocks

Dry and bright with a strong breeze; the party assembled on the Mull of Oa near the American monument, then rapidly dispersed like blown tinsel only to be found wrapped round a crag or boulder further along. Later, finding solace down a steep grassy slope (Allt na h-Uraich) on cliffs by the sea, several of the party re-grouped to work slate and phyllite outcrops, slippage boulders and a tricky assortment of large maritime rocks for 109 taxa. Sunny boulders above a threadbare 'grey zone' supported only *Caloplaca ceracea, C. oasis, Collema flaccidum, C. furfuraceum, Miriquidica leucophaea, Polysporina simplex, Rhizocarpon petraeum* and *Tephromela grumosa.* There was poverty too among the terricolous pickings which included just eleven common species of *Cladonia, Lecanora zosterae, Leptogium gelatinosum, Solenopsora vulturiensis* and *Verrucaria muralis*. The 'black and orange zone' lichens were a predictable mish-mash e.g. *Aspicilia leprosescens, Caloplaca britannica, C. microthallina, C. thallincola, Collemopsidium foveolatum, Lecanora helicopis, Lecidella meiococca, Lichina confinis, Rhizocarpon richardii*, *Toninia mesoidea, Verrucaria mucosa, V. prominula* and *V. striatula.* It was a relief to climb out; one of us salvaged a large orange float. Not for a very long time had so many worked so long for so little.

Coastal scenery near the Oa

Jura, May 4th
Squares recorded NR5266, 5366
Habitats: oceanic woodland
The main objective of the Jura visit was the woods near Craighouse, the largest settlement on the island. By coincidence it is also home of the Isle of Jura whisky distillery. The Craighouse Ravine has exotic bryophytes but records of its lichen flora are now rather dated. We were in need of an up-to-date appraisal. We begin recording on the slopes above the road in a shaded Hazel wood with Ash, Sallow and Oak. The Graphidion community was a modest affair with *Arthonia elegans, A. ilicina, A. stellaris, Arthopyrenia carneobrunneola, A. nitescens, A. salicis, Eopyrenula grandicula, Pyrenula macrocarpa, P. occidentalis* and *Thelotrema petractoides* to the fore. The Lobarion and associated crusts had a similar lacklustre feel with only *Degelia atlantica, D, cyanescens, Leptogium lichenoides, Lobaria pulmonaria, L. scrobiculata, L. virens, Loxospora elatinum, Nephroma parile, Ochrolechia microstictoides, Parmeliella parvula, P. triptophylla, Peltigera collina* and *Phlyctis agelea* the best seen. The jizz of the wood spirit whispered into our ears... 'Don't expect to see too many goodies here'.


Jura's famous Paps – their modesty guarded

During the afternoon a small section of the eastern woodland behind Rubha Laimhrige was investigated. Exploring unfamiliar woods in the Hebrides can be a deeply mystical experience; like entering a shrine: the low vaulting of the trees, the watery green of the dimly-lit interiors; crooked limbs hung with carpets of moss and lichen-jewelled bark; you kneel, inspect, and pay homage. Here we added *Arthonia stellaris, Arthopyrenia cerasi, Cetrelia olivetorum* s. lat*, Degelia plumbea s. str., Hypotrachyna sinuosa, H. taylorensis, Nephroma laevigatum, Pseudocyphellaria crocata* and *Pyrenula*

laevigata. Taken together the two woodland sites gave an RIEC of 85 and WSIEC of 12. It suggests there is more to do here before comparisons can be made with known sites in the north of the island. The woods behind the sheltered cove of Port na Lotha (NN5265) beckon. Approximately 100 corticolous taxa are identified; thirty-three taxa are new to Jura which lifts the island total to 412 species.

Ballygrant and Loch Finlaggan, May 5th
Squares recorded: NR3868, 3968, (3965+4066)
Habitats: deciduous woodland

Dermatocarpon miniatum, on ruined building on Finlaggan Island

Most of us rendezvous at Loch Finlaggan information centre; the skies drizzly but brightening westwards. We visit the centre, learn about Islay's cultural history then drive east a mile, to a block of deciduous woodland on the western corner of Loch Ballygrant where we park up. On the way we pass teams of dedicated lichenologists making exacting lists from the roadside walls and fences. The mature trees by Loch Ballygrant include basic-barked Ash and Sycamore. There is Lobarion here but the subtle mix and frequency of epiphytes is different from the Graphidion-tastic Atlantic hazel woods. Here frequent species such as *Acrocordia gemmata*, *Catinaria atropurpurea*, *Collema furfuraceum*, *D. atlantica, Degelia cyanoloma, Dimerella lutea, Leptogium lichenoides*, *Lobaria pulmonaria, L. scrobiculata, L. virens, Nephroma parile, Normandina pulchella, Parmeliella triptophylla, Parmotrema crinitum, Peltigera praetextata, Pertusaria* crusts, *Sticta sylvatica, Thelotrema lepidinum* intermingle with *Mycobilimbia epixanthoides, Collema subflaccidum, Nephroma laevigatum,* and *Opegrapha sorediifera*.


Lichens from Ballygrant Woods: *Pannaria conoplea* (left) and *Phaeographis smithii* (right)

Further diversity is provided by Larch (*Usnea* spp, *Chaenotheca brunneola, Chrysothrix flavovirens*), Elm (*Bilimbia sabuletorum*), and crusted-over gate posts (*Buellia griseovirens, Lecanora saligna, L. symmicta, Mycoblastus fucatus, Ochrolechia microstictoides)*. Also mottling the trees hereabouts are *Gyalecta truncigena, Opegrapha ochrocheila* and *Phaeographis smithii*. The photos look good and there are lots of smiley faces.

Gruinart Flats & Nature Reserve woodlands; Ballygrant lead mines, May 6th
Squares recorded: NR2767, 2866, 3963
Habitats: Shelterbelt woodland, mixed woodland with Atlantic hazel and abandoned mines on limestone
Gruinart Flats is tiny sliver of woodland at the foot of Loch Gruinart. It forms a half kilometre long shelterbelt (10m windbreak) of Oak, Willows and Ash behind a ditch adjacent to Loch Gruinart House. We were here to search for *Lobaria amplissima*: a claim made in a document we found in the library of the INHS. It was obvious after just moments searching that we were on a wild goose chase - and there are plenty of wild geese to chase here at Gruinart. What we found were numerous trees with bark enriched communities of foliose lichens. This little woodland was a crash barrier for salt-laden winds. The trees taking the brunt of the impact supported a cast of *Anaptychia runcinata, Physcia aipolia, P. tenella, Physconia distorta, Ramalina calicaris* and *Xanthoria parietina* among the more typical epiphytic lichens but it was good to see *Usneas esperantiana* and *wasmuthii*. The closest we got to the Lobarion was *Normandina pulchellum*.

Further along the road we came to the RSPB Nature Reserve. Here we left the cars while we explored a little triangle of woodland above the flood meadows. We did not expect to be so enchanted by the glorious show of bluebells which met our eyes as we followed a twisting track towards its centre. Here we recorded among

other things *Lobaria pulmonaria, Degelia atlantica, Leptogium cyanescens, Nephroma parile, Pannaria rubiginosa* and *Sticta limbata* clinging to hazel. But a few paces later and the Lobarion melted away and we were out in the open again.

Vince and Peter (Scholtz) made for Ballygrant to search for natural exposures of Dalradian limestone. They find disused lead workings. There are tell-tale mounds and hollows and a few narrow channels cut into the limestone rock. Its grey speckled face breaks the surface only occasionally. The rock appears remarkably pure and very hard, reminiscent of the Carboniferous limestone. *Aspicilia calcarea, Belonia nidarosiensis, Clauzadea immersa Collema cristatum, C. fuscoviridis, Hymenelia epulotica, Petractis clausa, Placynthium nigrum, Protoblastenia calva* are among the frequent species here. *Verrucaria caerulea* with its silver-mirrored thallus is the dominant species of the genus. Shaded hollows have *Lecania cuprea*; damp rock *Gyalecta jenensis, Petractis clausa* and *Ionaspis epulotica*; turfy edges *Peltigera rufescens*, and vertically growing mosses *Bilimbia sabuletorum*. Several pyreno-fruits are collected; these are later identified as *Thelidium decipiens, T. incavatum* and *T. pyrenophorum*. On Islay *Thelidium* outnumbers *Polyblastia* outright. We suspect we have missed *Placynthium subradiatum* which was there in our heads but not in our tins. This is an interesting habitat and generally richer than the Pre-Cambrian limestones of Tiree and Coll but might benefit from further work.

The bluebell carpets at Ballygrant

B. The Places of Burial

"…; through the few islands that we visited we neither saw or heard of any house of prayer, except Sky, that was not in ruins"

Samuel Johnson 1775

If Samuel Johnson had included Islay and Jura in his tour of the Western Islands of Scotland he would have been reassured that his generalization is still amply upheld, for everywhere is found places of worship- "*the remains of ancient sanctity…..unroofed and ruinous".* Fortunately for the lichenologist "*The malignant influence of Calvinism which had effaced these monuments"* never turned its effacing eye upon the lichen communities which still inhabit these sites. Indeed, their ruination has probably prevented them from being repeatedly daubed with lime-wash and has offered sanctuary to the lichens.

One of the remarkable features of this field meeting was the number of these lovely chapels and cemeteries which were surveyed. Previous Society meetings to other parts of our islands have typically managed to include one or two in the itinerary—normally just before or after a visit to a hostelry which is never ideal for recording rigour or zeal—but on this occasion 11 were surveyed and two standing stones included for good measure—if these structures are also embraced as monuments of faith. In total 179 taxa were recorded from these burial places, 39 of which were only recorded during the field meeting from these sites.

All religious sites are special in their way but on Islay and Jura a few are endowed with an extraordinary "sense of place" far above what is normally experienced. Typically, the structures are of acid granite, diorite, gneiss or sandstone, but "sweetened" by layers of lime-mortar bonding the stones together and, where limestone outcrops locally, by the addition of this geology. Typically, also, the building itself is *"enclosed in a small square of stone"* and, judging from the maturity of the lichen communities clothing these walls, they are also of great age. Finally, and again typically, the site chosen for these buildings is well away from habitation and in remarkably wonderful situations—as though a conscious decision had been made by the living that, in death at least, loved ones should rest in life-affirming areas of natural beauty. As is also to be expected on these two islands, subjected as they are to the extremes of Atlantic storms, trees growing about these places of burial are rare and so the corticolous component to the lichen assemblages is weak.

The surveys were carried out by a number of groups:
The burial ground on Jura NR524688, surveyed by Peter, Holger, and Paul Cannon, contained trees which supported a number of interesting corticolous taxa. *Xanthoparmelia mougeotii* was also recorded from stone, one of only two records for this species during the week with the other site situated just outside the burial ground.

Brian, Sandy and Paul Harrold visited Kilchoman NR 216633 and Kilnaughton NR 344451, and recorded, from Kichoman**,** *Acarospora rufescens, Caloplaca albolutescens, Rinodina atrocinerea* and the lichenicolous fungus *Intralichen*

christiansenii. At Kilnaughton they found *Catillaria scotinodes* and *Verrucaria nigrescens* f. *tectorum.* They also found *Buellia subdisciformis* and *Hypotrachyna britannica on* the standing stone at Carragh Bhan NR 328478. All these were the only records of these species for the week.

John, Mark (when he was not reducing Islay's fence posts to matchwood!) and Ivan visited all the other sites.

There is little doubt that if pathos is required then The War Graves Cemetery at Kilchoman NR 212631 is recommended. It is filled with the dead from a ship which foundered in the last year of the "Great War". Sadly, the headstones have been cleaned, as if all life and hope are not welcome here, and will not detain the lichenologist for long. However, in terms of the diversity of the lichen assemblage four other burial sites stand out as being special:

Keills Chapel NR 415686.

Two km from the ferry terminus at Port Askaig, this was the first to be surveyed on arrival by John and Ivan. The site was surveyed by accident—it offered a convenient place to recover from the boat journey and to eat—but it soon became all absorbing. Dalradian limestone outcrops are a feature of this area and the cemetery walls [the church having long since collapsed under a billow of grass and sedge] reflect this geology. A nagging wind made the relative sanctuary of the inner walls almost compelling but a steady rise in the number and interest of the taxa recorded from the boundary walls stiffened resolve.

The yard, itself, provided numerous other records. 83 lichens were found including several for which this was the only site record during the week. They included *Caloplaca ochracea, Cladonia pocillum, Collema cristatum* var. *cristatum, Toninia sedifolia* and *T. verrucarioides* (on *Placynthium nigrum*)—the latter recorded at only one other site during the meeting. *Pertusaria flavicans*, found as a yellow/green "wash" on a low sandstone headstone was an interesting discovery (it was also recorded from Jura later in the week) and the presence of *Protoblastenia calva* initiated a discussion about how it differs from *P. rupestris* [or does not at times!!]. In all it was a wonderful start to the week but the two surveyors were keen to view their accommodation [to reassure themselves that, to paraphrase Johnson, it was "proportionate to the commercial opulence of the web-site"] and also to renew acquaintances with good friends, and so left a yard which must have well over 100 species to record given a more thorough survey.

Kildalton Church and Celtic cross NR 457508.

We were detained first by a drystone wall—not an important wall but one which, on our first full day on Islay, concentrated the mind wonderfully and promised more—and then by a sheltered dolerite dyke surrounded by sparkling shallow sea and bathed in that wonderful warmth of bright Islay sunshine. By then, of course, the main party was far away in the woods of Glac an Sgadain—too far away to catch up and, as John later wisely pointed out, working in "prime tick country". There was therefore, even for the *Acarina* recorder for Leicestershire (who has given enough of his blood to these creatures), very little to distract us from a visit to the nearby Kildalton church and High Cross. "*One of the finest Christian crosses in Scotland*"

trumpets the Islay weblog and hewn from "*lichen resistant*" epidiorite. However, similar stone built into the boundary wall of the church seemed to be less resistant and is covered in lichens and suggests a simpler explanation for the crosses almost pristine appearance—it may have been cleaned in order that the general visitor may appreciate the remarkable intricate shaft carvings and those on the "encircling glory". In spite of this treatment 15 species were recorded including *Punctelia borreri,* a new record for Islay and an extension to its range, and the more generally common *Physconia distorta*—its only church site of the week.

The boundary wall at Kildalton churchyard

The boundary wall was an astonishing sight—at a distance appearing lime-washed but on closer inspection found to be completely covered in pale crusts dominated by *Ochrolechia parella* and *Lecanora rupicola.* It is a wall which, judging from the ecological continuity suggested by the maturity of this lichen community is of great antiquity. A number of interesting finds were made on this wall including *Lobaria virens, Sticta sylvatica, Nephroma laevigatum* and *Lecidella carpathica* –the only record of this latter species for the week. The roofless church was less productive but did support *Degelia cyanoloma* [its only church site] and *Lecania hutchinsiae.* Mark recorded *Vezdaea aestivalis* which we never saw again.

Time, that constant enemy of life, forced us to move on but we left with that feeling that we had only scratched the surface. One lasting memory of this wonderful site will be the attitude of a family, on holiday on Islay, who entered the church yard as three of us were prostrate before the high cross. A tiny daughter, of angelic looks, rushed to her mother for reassurance that we were not spectres raised from the dead,

and a mother, wise beyond measure, came over to talk to us in order to set her daughter's mind at rest. Many minutes later, such was her thirst for information, we were all still in conversation about this and that lichen and a small crowd was gathering. Sadly I had no application form for this inquiring and bright mother, and sadly also, her daughter's unblinking and doubtful scrutiny throughout it all indicated that, although her mother had been won over by these people, she was not!!

The Round Church at Bowmore NR 312596.
It would be creditable to suggest that a visit to this imposing church had been planned but I am ashamed to say that that would be far from the truth—alas it was the Whisky Supermarket in the village which was the allure. We arrived there after the rather "base" idea [not the writers, I hasten to add, but certainly enthusiastically received by him when suggested] of buying as many different "miniatures" of that fine liquid which adorned its shelves as were affordable, followed by a "tasting evening" to see if "grain" was indeed inferior to "malt," and if there were indeed "malts" and "malts". Sadly, but perhaps fortunately for our livers "miniatures" were not miniature in price and the church was resorted to, to lift our more temporal spirits. Outwardly, to a lichenologist, Bowmore Church seems to offer little—it is rendered in cream masonry paint and the outer face of the roadside boundary wall lacks promise. Inside the yard, however, it is another matter and during an all too brief visit nearly 80 species were recorded. Many of the memorials are magnificent, mainly of acid granites and sandstones but with enough basic stones to add variety and interest, and the internal walls together with those surrounding the extension yard include limestone blocks and lime mortar in their construction.

Lichens of particular interest were *Acarospora nitrophila* (a variable species which is probably often mistaken for *A. fuscata* and hence under-recorded). Others included *Protoparmelia badia* on a granite headstone, *Collema tenax* var. *ceranoides, Verrucaria verruculifera, Psilolechia leprosa* (on a pine cross under a brass plate) and *Caloplaca flavovirescens* (as several thalli on the horizontal surface of the concrete foundations to a dividing wall). The last was the only site record for the week.

Kilnave Chapel (Cill Naoimh) and Celtic cross NR 285715
The ferry to Jura was rejected in favour of a visit to Loch Gruinart and the wonderful chapel at Kilnave. This spectacular site is situated on the western slopes of the loch and for the survey party will remain forever in "that inward eye". Yes, there was still that biting wind from the south-west, but it was moderated by wonderfully clear sunshine and by views over the loch towards the east, quite literally for those lying at peace within the yard, to die for! The Paps of Jura modestly peeped over the intervening hills of Islay and yes, we did wave at them in the hope of being seen by our two intrepid mountaineers Graham and Paul who were ascending the summits today. But we had not visited this spot to be "silly" but to record the lichens and, although one of us did lapse into reverie and the other into moments of photogenic rapture, a good list was obtained. *Porina linearis* on the north wall of the church proved to be the only record for the week and *Pertusaria lactescens* [remarkably under

recorded outside churchyards during the week, with only one further site on rocks in woodland!] was frequent on several sandstone headstones.

Kilnave Church – a roofless ruin

Fertile *Xanthoria candelaria* s.str, growing on the eutrophicated tops of several granite headstones was a magnificent sight, as was a huge rosette of *Parmelia saxatilis* on pink granite—not a rare species, but proving that even the common and mundane may aspire to greatness in this environment. We left with eyes still captivated by the glorious outlook over the sand flats of Gruinart north to the turquoise line of the Atlantic, but also by this small enclosure of ancient stones and slabs, and by the simplicity and poignancy of its C7th cross. The cross is un-cleaned and please let all these wonderful sites of sanctuary in these glorious isles remain so!

Coda: Islay's fence posts

This part of the report is written in the "first person singular"; although I (Mark Powell) wasn't the only person to examine fence posts I was the only one to become obsessed by them. This obsession was, in part, a coping strategy for a Midlands lichenologist who felt uncomfortably unsure of most things when recording so far from familiar lichen communities. Restricting my studies to a single substratum narrowed the focus and allowed some familiarity to develop over a period of days. Fence posts provide convenient collecting opportunities; small slivers can be prised away without causing serious damage or depletion. Collection gives the feeling that, however inadequate in the field, something interesting might result subsequently. Jostling for access to the Society microscopes allowed the identification of such treats

as *Agyrium rufum, Bacidia saxenii, Lecidella meiococca* and *Micarea sylvicola* during the field meeting. The remaining specimens (twenty one packets each containing up to twenty slivers) had to wait until I made time for some serious microscopy on my return. Inevitably some of these were beyond my skill and experience to name and I am very grateful to Brian Coppins for looking at ten specimens for me.

Fence posts were examined in sixteen separate kilometre squares. An amalgamated list of the 62 lichens that were found and the number of squares () in which each species occurs was drawn up and is available to those who wish a copy.

Usnea species are known to be under-recorded in this survey; many of the specimens growing on fence posts are stunted and these were not collected. The parsimonious islanders have unwittingly done much to conserve the lignicolous lichen communities by prolonging the life of old fences with the insertion of occasional new posts. Fences surrounding mature plantations appeared to be particularly rich in lichens and it was in this situation that *Bryoria fuscescens* was found beside the large coniferous plantations to the west of Loch Gearach (NR21.59 and NR22.60). The abundance of *Lecanora farinaria*, often abundantly fertile, was a great treat, as were the rich hauls of *Micarea* and *Mycoblastus* species. *Buellia pulverea* (1), *Lecanora aitema* (7), *L. pulicaris* (4), *Lecidea turgidula* (3), *Micarea nitschkeana* (2), *Ochrolechia microstictoides* (2) and *Xylographa vitiligo* (1) are among the genuine lignum specialists.

Participants

Ndurie Abah, Lesley Balfe, Graham Boswell, Richard and Janet Brinklow, Heather Colls, Paul Cannon, Brian and Sandy Coppins, Ginnie Copsey, Marcia Ellis, John Douglass, Vince Giavarini, Katie Grundy, Paul Harrold, Les and Sue Knight, Oliver Moore, Heather Paul, Ivan Pedley, Anthony (Badger)Taylor-Pigott, Mark Powell, Maxine Putnam, Peter Scholz, Sheila Reid, Alan Silverside, Mike Sutcliffe and Holger Thüs (28).

It only remains to thank all the participants for their sterling work over the week, Malcolm Ogilvy and the INHS for the use of their premises; and to the leader (Vince) and field organiser (Ivan) – very well done chaps.

Vince Giavarini and Ivan Pedley…Coda: Mark Powell
v.giavarini@sky.com

Key to abbreviations used in the following lists of sites and records

The abbreviations have allowed sites with broadly similar habitats to be presented adjacent to each other which permit easy comparison between sites and a recognition of social relationships between taxa—perhaps indicator species.

Key:

Anthropogenic sites:

Churchyards/Cemeteries: **1** Chapel NW of Keills Farm NR 414686 **2** Kildalton Church and cross NR 457508 **3** Kilchoman war graves cemetery NR 212631 **4**

Bowmore Church NR 312596 **5** Kilnave Curch NR 285715 **6** Finlaggan Chapel NR 388682 **7** Kilmeny cemetery NR 388653 **8** Port Charlotte churchyard NR 253586 **9** Kilchoman Church NR 216633 **10** Kilnaughton cemetery NR 344451.

Jura-11 Burial Ground, N of Keils NR 524688 [taxa recorded "x" were from a stream site outside the burial ground]

Walls: 1, this mortared dry stone wall is inland from Ardilistry Bay and adjacent to road at NR 439488. **2,** A drystone wall running NE of the Loch Finlaggan visitor centre, topped with some mortar and galvanized wire and posts. A standing stone "ss" is adjacent. NR393685.

Posts: The list of taxa is an amalgamation from several sites. Assume that the substrate is lignum unless indicated as "s"= saxicolous [concrete], "cort" = on *Myrica*. The site codes are "m" = Mulresh, an abandoned farm house with old gate and fence posts NR 401687, "c" = Cornabus Cottage, posts by a conifer plantation with *Myrica gale* and heather NR 331472, "g" = Glenavoulin, various concrete and lignum posts NR 296431 and P = Mark Powell's records mainly from various posts and rails west of Port Charlotte

Primary Habitats:

S = Limestone quarry with birch and hawthorn NR 348635

BL = Limestone and peat bog S of Ballygrant NR399634

Paps: Montane collections by Graham Boswell on Beinn an Oir "•"& by Paul Harrold on Beinn Shiantaidh "*"

Coastal Rocks: "A" = Ardilistry Bay NR441484 **"M"** = Machir Bay [combined] NR 20-62- **"O"** = Mull of Oa NR 271418 "**P"** = Portnahaven NR 164525

Woodlands: The substrate is always corticolous unless indicated as "s" = saxicolous "L" = lignicolous "T" = terricolous "o" = other [e.g. shells]"Lic" = lichenicolous "cort" = corticolous

"B" = Bridgend [combined] NR38-26 **"CL"** = Claggan Bay NR 46-53- **"PE"** = Port Ellen, Coille nan Sgilithean [Cairnmore Woods] NR 34-45-"**GP"**= Gruinart Plantation and South NR 27-68- **"BL"** = Ballygrant Loch NR40-66-

"Ar"= Ardilistry Woods NR44-48- "**Gr"** = combined list for RSPB reserve NR 27-67- [marked "x"] and road-side woodland strip NR 2866 [marked "•"] **"ED"** = Eas na Carrige Duibhe NR 42-71 **"Bu"** = birchwood with willows by road NR 420727 **"AL"** = ash tree at Ardnahoe Loch NR 424715.

JURA: "C" = Craighouse NR 52-66- **"JP"** = woodland south of Jura pier NR 52-66-

Additional sites:

Two additional minor sites were surveyed during the week. The lists recorded do not warrant an inclusion in the table. The sites were:

Carragh Bhan a granite standing stone and boulders at NR 328478 supporting 22 taxa including *Buellia subdisciformis* and *Hypotrachyna britannica.*

Ardnave Point. Mid-shore tidal rocks at NR 29-75- supported 3 species.

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Acarospora fuscata	1.4.7.9.10									*	*	
Acarospora impressula	3.4.8											
Acarospora nitrophila	3.4											
Acarospora rufescens	9											
Acarospora smaragdula	1.4.7.8.10	11									*	
Acrocordia conoidea	1.7											
Acrocordia macrospora											*	
Acrocordia salweyi	6											
Agonimia globulifera										*		
Agonimia tristicula	7				m			•			*	
Agyrium rufum					P							
Allantoparmelia alpicola						*						
Amandinea lecideina									*			
Anaptychia runcinata	2.9.10								*	*	*	*
Arthonia radiata	8											
Arthonia lapidicola	8											
Arthonia phaeobaea										*		
Arthonia varia	2.9									*		
Arthopyrenia punctiformis										*		
Aspicilia caesiocinerea	2.7.9										*	
Aspilicia calcarea	1.4.6.7			*	m.s			•				
Aspicilia contorta subsp. *contorta*	1.7			*				•				
Aspicilia contorta subsp. *hoffmaniana*	1.7.8											
Aspicilia grisea	2.3.4.5.9			ss				•		*		
Aspicilia leprosescens	6.9.10								*		*	
Bacidia inundata										*		
Bacidia saxenii					P						*	
Bacidia scopulicola	3									*		*
Baeomyces rufus										*		
Belonia nidarosiensis	1							•				
Bilimbia lobulata	8											
Bilimbia sabuletorum	1.2			*	g.m.s			•		*		
Botryolepraria lesdainii	2.7											
Bryoria fuscescens					P							
Buellia aethalea	1.3.4.5.6.7.8.9. 10	11	•	*			•			*		
Buellia grisea					P.m.c					*	*	
Buellia ocellata	1.4.7.9											
Buellia pulverea					P							
Bunodophoron melanocarpum										*		
Caloplaca albolutescens	9											
Caloplaca arcis	2.3.4.6.8				g.s							
Caloplaca arnoldii	9.1								*	*		
Caloplaca britannica										*	*	
Caloplaca ceracea											*	
Caloplaca citrina s.l.											*	
Caloplaca citrina s.s.	1.2.3.4.5.7.9		•	*	m.s				*			
Caloplaca crenularia	1.2.4.5.6.7.8.9. 10			*					*	*	*	
Caloplaca crenulatella	8											
Caloplaca dichroa	3.9.10											

	Church/ Cemeteries		Walls		Posts	Paps	Coast Rock					
Species	**Islay**	**Jura**	1	2			**S**	**BL**	**A**	**M**	**O**	**P**
Caloplaca flavescens	1.2.4.5.6.7.8			*	m.s		•	•			*	
Caloplaca flavocitrina	4.6.7.8.9				g.s			•				
Caloplaca flavovirens	4											
Caloplaca holocarpa s.l.		11									*	
Caloplaca holocarpa s.s.	1.3.4.6.7.8.9			*					*			
Caloplaca littorea										*		
Caloplaca marina									*	*	*	*
Caloplaca maritima	3											
Caloplaca microthallina											*	
Caloplaca oasis	2.3.4.7.8.9			*							*	
Caloplaca ochracea	1											
Caloplaca saxicola	3.4.8.9											
Caloplaca thallincola									*	*	*	
Caloplaca verruculifera												*
Caloplaca sp.								•				
Candelariella aurella forma *aurella*	1.2.3.4.5.7.8			*					*		*	
Candelariella coralliza				ss								
Candelariella reflexa					P							
Candelariella vitellina forma *vitellina*	1.3.4.5.7.8.9.10			*ss	P.g.s.m			•	*	*	*	
Catapyrenium cinereum	2		•									
Catillaria atomarioides	9											
Catilllaria chalybeia var. *chalybeia*	1.2.3.4.6.7.8.9. 10			*	P.m				*	*	*	
Catillaria lenticularis	1.3.6.7.8.9							•				
Catillaria scotinodes	10											
Cetraria aculeata						*						
Cladonia arbuscula subsp. *squarrosa*											*	
Cladonia bellidiflora						*						
Cladonia cervicornis subsp. cervicornis										*	*	*
Cladonia chlorophaea s.l.	1.3		•		P.m.c						*	
Cladonia ciliata var. *tenuis*								•				
Cladonia coccifera s.l.							•					
Cladonia coniocraea											*	
Cladonia fimbriata	7											
Cladonia firma										*		
Cladonia floerkeana						*						
Cladonia furcata subsp. *furcata*										*	*	
Cladonia humilis											*	
Cladonia macilenta			•								*	
Cladonia pocillum	1											
Cladonia polydactyla var. *polydactyla*			•		P					*		
Cladonia portentosa						*				*	*	*
Cladonia pyxidata			•							*	*	
Cladonia ramulosa										*		
Cladonia rangiformis	1					•		*		*	*	
Cladonia squamosa var. *squamosa*								*			*	
Cladonia subcervicornis						•*				*		*
Cladonia uncialis subsp. *biuncialis*						•*						
Clauzadea immersa								•				
Clauzadea monticola	1.3.4.6.7.8.9									*		
Cliostomum griffithii					P							

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Cliostomum tenerum												
Collema auriforme	1.3.6.7			*	m.s		•			*	*	
Collema crispum var. *crispum*	1.2.3.4.5.6.7.9			*	g.s		•			*		
Collema cristatum var. *cristatum*	1						•	*				
Collema flaccidum											*	
Collema furfuraceum											*	
Collema fuscovirens	1.7			*				•				
Collema tenax var. *ceranoides*	4											
Collema tenax var. *tenax*	1.2.4.6.7.8				g			•		*	*	
Collemopsidium foveolatum											*	
Degelia atlantica		11								*		
Degelia cyanoloma	2											
Degelia plumbea s.l.		11										
Dermatocarpon miniatum	2.5.7							•		*		
Dimerella lutea			•							*		
Dimerella pineti										*		
Diploicia canescens	2.5									*	*	
Diplotomma alboatrum	1.2.3.4.5.6.7.9. 10								*	*	*	
Dirina massiliensis forma *sorediata*										*		
Endococcus parietinus	10										*	
Evernia prunastri	5		•	*	P.c.m		•					
Flavoparmelia caperata			•				•		*	*		
Fuscidea cyathoides var. *cyathoides*	1.2.4.5.6.7.8.9. 10	11	•	ss		*			*	*	*	
Fuscidea gothoburgensis						•						
Fuscidea kochiana										*		
Fuscidea lightfootii				Lig	P.c.m.g					*		
Fuscidea lygaea						•*				*	*	
Fuscidea recensa										*		
Gyalecta jenensis var. *jenensis*								•			*	
Haematomma ochrol-eucum var. *porphyreum*	10						•					
Hymenelia epulotica								•				
Hypogymnia physodes	2				P.c.m.g	•*				*	*	
Hypogymnia tubulosa	4				P.m.		•				*	
Hypotrachyna revoluta s.s.	4.7											
Intralichen christiansenii	9											
Ionaspis lacustris										*	*	
Lecania cuprea								•				
Lecania hutchinsiae	2											
Lecania rabenhorstii	2.3.4											
Lecanora actophila										*		*
Lecanora aitema					P.c						*	
Lecanora albellula					m							
Lecanora albescens	1.2.3.4.5.6.7.8.9.10		•	*	g.s			•			*	
Lecanora campestris subsp. *campestris*	1.2.3.4.5.7.8.9. 10			*	g.s					*		
Lecanora carpinea					P.m							
Lecanora chlarotera	4.7.8	11		*	P.m							
Lecanora confusa	4				P.c.m						*	
Lecanora conizaeoides forma *conizaeoides*					P.c.m							
Lecanora crenulata	1.2.4.5.6.9			*							*	
Lecanora dispersa	1.2.3.4.5.7.8.10			ss	P						*	

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Lecanora expallens	8				P.c.m						*	
Lecanora farinaria					P.c						*	
Lecanora gangaleoides	1.3.4.5.7.8.9		•	ss						*	*	
Lecanora helicopis									*	*	*	
Lecanora intricata	1.5.8										*	
Lecanora muralis	2.3.4.5.8			*					*			
Lecanora orosthea										*		
Lecanora poliophaea									*			
Lecanora polytropa	1.3.4.5.6.7.8.9. 10		•	*ss	P				*	*	*	*
Lecanora pulicaris					P.c.m.g							
Lecanora rupicola var. *rupicola*	2.3.4.5.8.9								*	*	*	
Lecanora soralifera	7											
Lecanora sulphurea	1.2.6.7.8.9.10			*				•	*	*	*	
Lecanora symmicta	8.9				P.m						*	
Lecanora zosterae											*	
Lecidea diducens	4.8.9.10											
Lecidea fuscoatra s.l.								•				
Lecidea fuscoatra s.s.	3											
Lecidea grisella	3.8		•									
Lecidea lactea s.l.	8											*
Lecidea lactea s.s.	9.1											
Lecidea lithophila	1.8											
Lecidea turgidula					P							
Lecidella asema	3.8.9								*	*	*	*
Lecidella carpathica	2											
Lecidella elaeochroma forma *elaeochroma*	4				P.m			•				
Lecidella meiococca					P					*	*	
Lecidella scabra	1.2.3.4.6.7.8.9. 10			*	P.m.s					*	*	
Lecidella stigmatea	1.2.3.4.5.6.8			*	g.s						*	
Lepraria caesioalba										*		
Lepraria elobata										*		
Lepraria incana s.l.										*	*	
Lepraria incana s.s.	1.2.4.10											
Lepraria lobificans	1.2.5.7		•							*	*	
Lepraria sp.										*		
Leptogium britannicum	6									*		
Leptogium cyanescens										*		
Leptogium gelatinosum	1.2.4.6.7.10			*				•		*	*	
Leptogium lichenoides	2		•									
Leptogium pulvinatum	2.7.10						•			*		
Leptogium schraderi										*		
Lichenomphia hudsoniana										*		
Lichina confinis										*	*	
Lobaria pulmonaria			•									
Lobaria scrobiculata		11										
Lobaria virens	2											
Melanelixia fuliginosa	1.2.4.5.6.7.8.9. 10	11	•	*ss	P		•			*	*	
Melanelixia glabratula	7	11						•				
Melanelixia subaurifera					P.m							
Micarea botryoides										*		

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Micarea byssacea					P.c					*		
Micarea denigrata					P.m.g							
Micarea leprosula					P					*		
Micarea lignaria var. *lignaria*	7					*		•		*		
Micarea nitschkeana					P							
Micarea peliocarpa					m	*						
Micarea sylvicola					P							
Miriquidica leucophaea											*	
Moelleropsis nebulosa										*		
Mycoblastus affinis					P							
Mycoblastus caesius					P.c							
Mycoblastus fucatus					P							
Mycoblastus sanguineus forma *sanguineus*					P							
Mycoglaena myricae					c.cort			•				
Nephroma laevigatum	2											
Ochrolechia androgyna		11			P							
Ochrolechia microstictoides					P							
Ochrolechia parella	1.2.4.5.6.7.8.9. 10	11	•	*ss	P		•	•	*	*	*	
Opegrapha atra								•	*		*	
Opegrapha calcarea	2.5.8.9.10		•	*						*	*	
Opegrapha dolomitica								•				
Opegrapha gyrocarpa	1.5.8.10		•					•		*		
Opegrapha saxigena										*		
Opegrapha varia	9											
Opegrapha zonata										*		
Ophioparma ventosa						•						
Pannaria rubinosa		11										
Parmelia omphalodes	1.2.9					•*			*	*	*	*
Parmelia saxatilis	1.2.4.6.7.9.10	11	•	ss	P.m	•*	•		*	*	*	*
Parmelia sulcata	1.4.5.7.9.10			*	P.c.g.		•					*
Parmeliella parvula		11								*		
Parmotrema crinitum		11								*	*	
Parmotrema perlatum	2.4				P				*	*		*
Parmotrema reticulatum											*	
Peltigera hymenina	1				m		•					*
Peltigera membranacea	6						•			*		
Peltigera praetextata			•									
Peltigera rufescens								•				
Pertusaria corallina			•						*	*		
Pertusaria excludens										*		
Pertusaria flavicans	1											
Pertusaria lactescens	1.5.9											
Pertusaria pertusa	2	11										
Pertusaria pseudocorallina	2.8.9		•							*	*	
Petractis clausa								•				
Phaeophyscia orbicularis	1.2.4.7.8.9.10			*	m.s						*	
Physcia adscendens	1.5.7.10			*ss	g.s				*			
Physcia caesia	1.4.5.7.9.10			*ss	P.m.g.s						*	
Physcia tenella	4.5.7.10			*ss	P.g.s			•				
Physconia distorta	2											

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Placidium lachneum										*		
Placidium squamulosum	1.3.4.8								*	*		
Placynthiella icmalea					P.m			•				
Placynthiella uliginosa					c							
Placynthium nigrum	1.2.7.10			*				•		*	*	
Platismatium glaucum		11			P.c	•*						
Polysporina simplex	1.4.7.8.9										*	
Porina chlorotica forma *chlorotica*	2.4.8.9		•							*		
Porina lectissima										*		
Porina linearis	5											
Porpidea cinereoatra	1.2		•					•		*	*	
Porpidia crustulata		x			m			•		*		
Porpidia macrocarpa f.*macrocarpa*						•						
Porpidia platycarpoides										*		
Porpidia soredizodes	1.4			*								
Porpidia tuberculosa	1.2.3.4.5.6.7.8.9.10		•	*	m	•*	•	•	*	*	*	
Protoblastenia calvescens	1							•				
Protoblastenia rupestris	1.2.3.4.5.7.8.9. 10		•	*	m.g.s			•				
Protopannaria pezizoides										*		
Protoparmelia badia	4							•				
Psilolechia leprosa	1.4											
Pseudevernia furfuracea var. *ceratea*					P							
Pseudevernia furfuracea var. *furfuracea*					P							
Punctelia borreri	2											
Pyrenula occidentalis		11										
Racodium rupestre										*		
Ramalina cuspidata										*		*
Ramalina farinacea	1.2.4				P.c		•					
Ramalina fastigiata					P.c		•					
Ramalina siliquosa	1.2.3.4.5.6.7.8.9.10			ss	P.c		•		*	*	*	*
Ramalina subfarinacea	8.9.10	11							*			
Rhizocarpon distinctum	4											
Rhizocarpon geographicum	1.2.3.4.5.7.8.9	11x	•			•*			*	*	*	*
Rhizocarpon infernulum forma *sylvaticum*											*	
Rhizocarpon lavatum		x										
Rhizocarpon oederi	1.4.7.8					•						
Rhizocarpon petraeum	9.1o										*	
Rhizocarpon reductum	1.2.3.4.7.8.9.10	x	•	*	ms	•		•	*	*	*	
Rhizocarpon richardii	2.3.4.5.6.8.9								*	*	*	
Rhizocarpon umbilicatum	1.2.7											
Rinodina atrocinerea	9									*		
Rinodina confragosa											*	
Rinodina luridescens									*	*		
Rinodina oleae	1.2.3.4.6								*	*	*	
Sarcogyne regularis	8			*								
Scoliciosporum chlorococcum					P						*	
Scoliciosporum umbrinum	4.6.7.8.9.10				P.m.g						*	
Solenopsora vulturiensis									*		*	
Sphaerophorus fragilis						•						
Sphaerophorus globosus							•			*	*	*

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Stereocaulon evolutum						•						
Stereocaulon pileatum		11										
Stereocaulon vesuvianum var. *vesuvianum*						•*						
Sticta limbata							•					
Sticta sylvatica	2		•									
Stigmidium epiramalina	10											
Tephromela atra var. *atra*	1.2.3.4.5.7.8.9. 10	11		*					*	*	*	*
Tephromela grumulosa	1.2										*	
Thelidium decipiens								•				
Thelidium incanum								•				
Thelidium papulare forma *papulare*				*				•				
Thelidium pyrenophorum											*	
Tomasellia gelatinosa								•				
Toninia aromatica	1.2.3.5.7.8.9.10			*							*	
Toninia mesoidea											*	
Toninia sedifolia	1											
Toninia verrucarioides	1			Lic								
Trapelia coarctata		x										
Trapelia glebulosa				*					*			
Trapeliopsis flexuosa					c					*		
Trapeliopsis gelatinosa										*		
Trapeliopsis granulosa												*
Trapeliopsis glaucolepidea						*						
Trapeliopsis pseudogranulosa										*		
Umbilicaria polyphylla						•						
Umbilicaria torrefacta						•						
Usnea flammea		11			P							
Usnea hirta					c							
Usnea subfloridana					P.c.m							
Usnea wasmuthii					c							
Vahliella atlantica										*		
Verrucaria aethiobola										*		
Verrucaria aquatilis										*		
Verrucaria baldensis	1.2.4.7			*								
Verrucaria caerulea	7			*				•				
Verrucaria dufourii				*							*	
Verrucaria elaeina			•									
Verrucaria fuscella	1.2.3.4.5.7.8.9. 10			*								
Verrucaria fusconigrescens	3.4.5.6.7.8.9			ss					*	*	*	
Verrucaria hochstetteri	1.2.4.5.9			*								
Verrucaria macrostoma forma *macrostoma*	1.3.4.5.7			*			•					
Verrucaria maura	2.5.7.8.10									*	*	*
Verrucaria mucosa											*	
Verrucaria nigrescens forma *nigrescens*	1.3.4.5.7.8.9.10		•	*	m.g.s			•	*			
Verrucaria nigrescens forma *tectorum*	10											
Verrucaria praetermissa										*		
Verrucaria prominula										*	*	
Verrucaria rheitrophila										*		
Verrucaria scabra										*		
Verrucaria striatula										*	*	

	Church/ Cemeteries		Walls		Posts		Coast Rock					
Species	**Islay**	**Jura**	1	2		**Paps**	**S**	**BL**	**A**	**M**	**O**	**P**
Verrucaria viridula	1.4.7.8											
Vesdaea aestivalis	2											
Xanthoparmelia conspersa	9	x							*			
Xanthoparmelia mougeotii		11x										
Xanthoparmelia verruculifera	4									*		
Xanthoria aureola	1.2.5.6								*	*	*	
Xanthoria calcicola	5											
Xanthoria candelaria s.s.	4.5.9.10			ss					*			
Xanthoria parietina	1.2.3.4.5.7.8.9. 10	11		*	m.g.s		•		*	*	*	
Xanthoria ucrainica				*	P.m							
Xylographa vitiligo					P							

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Abrothallus welwitschii							xLic					
Acarospora fuscata		*					*	s				
Acrocordia gemmata	*				*							
Agonimia tristicula					*							
Agyrium rufum											L	
Anaptychia runcinata		*						s				s
Anisomeridium biforme	*			*		*				*		
Anisomeridium polypori	*		*		*		x			*	*	
Anisomeridium ranunculosporum						*					*	
Arthonia anombrophila						*						
Arthonia arthonioides						*						
Arthonia cinnabarina		*		*	*		x	*			*	*
Arthonia didyma	*					*	*				*	*
Arthonia elegans						*		*			*	*
Arthonia ilicina		*				*					*	*
Arthonia muscigena				*								
Arthonia punctiformis						*						
Arthonia radiata	*		*	*	*	*	*	*		*	*	*
Arthonia spadicea					*	*						
Arthonia stellaris											*	
Arthonia thelotrematis						Lic						
Arthopyrenia analepta					*							*
Arthopyrenia carneobrunneola						*					*	*
Arthopyrenia cerasi												*
Arthopyrenia cinereopruinosa					*							
Arthopyrenia nitescens		*				*					*	*
Arthopyrenia punctiformis					*							
Arthopyrenia salicis											*	*
Aspicilia grisea								s				
Aspicilia leprosescens												s
Bacidia arceutina	*											
Bacidia caesiovirens						*						
Bacidia delicata			*									
Bacidia friesiana	*											
Bacidia inundata						s					s	

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Bacidia rubella	*											
Bacidia squamellosa						*					*	
Bacidia viridifarinosa	*		*									
Bactrospora homalotropa						*						
Baeomyces rufus												T
Biatora britannica						*						
Biatoropsis usnearum						Lic						
Bilimbia sabuletorum	*				*							
Buellia aethalea								s				
Buellia disciformis						*						
Buellia grisea	*					*						
Bunodophoron melanocarpum						*						*
Byssoloma marginatum	*											
Caloplaca arnoldii								s				
Caloplaca ceracea								s				
Caloplaca cerinella				*						*		
Caloplaca citrina s.s.								s				
Caloplaca crenularia								s				s
Caloplaca ferruginea				*						*	*	
Caloplaca marina								s			s	s
Caloplaca microthallina								s				s
Caloplaca obscurella	*											
Caloplaca thallincola								s			s	
Caloplaca verruculifera												s
Candelariella vitellina forma *vitellina*		*										
Catillaria chalybeia var. *chalybeia*				s				s				s
Catillaria chalybeia var. *chloropoliza*											s	
Catinaria atropurpurea	*				*						*	*
Cetrelia olivetorum s.l.	*	*				*			*			*
Chaenotheca brunneola					*							
Chrysothrix candelaris	*					*						
Chrysothrix flavovirens	*				*	L					*	
Cladonia caespiticia												T
Cladonia cariosa		*										
Cladonia cervicornis subsp. *cervicornis*		*										
Cladonia chlorophaea s.l.	*										L	
Cladonia coniocraea	*			*		*		*	*		*	*
Cladonia fimbriata											*	
Cladonia foliacea												T
Cladonia furcata subsp. *furcata*												T
Cladonia gracilis												T
Cladonia macilenta		*		*				*				
Cladonia polydactyla var. *polydactyla*					s	s		*	*		*	
Cladonia portentosa		*										T
Cladonia pyxidata	*		*	*	*	*					*	*
Cladonia ramulosa							x					
Cladonia rangiformis		*						T				T
Cladonia squamosa var. *squamosa*					*							*
Cladonia squamosa var. *subsquamosa*						*		*	*		*	*
Cladonia subcervicornis		*										s
Cladonia subulata					L							
Cliostomum griffithii	*		*		L	*	*			*	*	*
Collema auriforme	s							s				
Collema crispum var. *crispum*	s											
Collema furfuraceum	*				*			s				
Collema subflaccidum					*							

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Collema tenax var. *ceranoides*								St				
Collemopsidium foveolatum								o				*
Corticifraga fuckelii						Lic						
Cystocoleus ebeneus											s	s
Degelia atlantica	*	*		*	*	*	x	*			*	*
Degelia cyanoloma			*		*	*		*	*	*	*	*
Degelia plumbea s.s.			*									*
Dermatocarpon miniatum								s				
Dimerella lutea	*	*	*	*	*	*	x*	*			*	*
Dimerella pineti	*			*		*						
Diplotomma alboatrum								s				
Diplotomma pharcidium				*								
Dirina massiliensis forma *sorediata*												s
Enterographa crassa	*		*	*		*	x*				*	*
Enterographa hutchinsiae			*									
Eopyrenula grandicula											*	*
Evernia prunastri	*	*		*	*	*	x*		*	*	*	*
Fellhaneropsis vezdae	*											
Flavoparmelia caperata	*	*	*	*	*	*	x*	*	*		*	*
Fuscidea cyathoides var. *cyathoides*		s						s				s
Fuscidea lightfootii					L	*		*			*	
Graphina anguina	*		*	*	*							
Graphis elegans						*		*	*		*	*
Graphis scripta	*	*	*	*	*	*	x	*			*	*
Gyalecta derivata	*											
Gyalecta truncigena	*				*							
Gyalideopsis muscicola						*						
Haematomma ochroleucum var. *ochroleucum*		*										
Haematomma ochroleucum var. *porphyrium*						s						s
Homostegia piggotii						Lic						Lic
Hypogymnia physodes	*	*		*	*	*	x*	*	*		*	*
Hypogymnia tubulosa	*				*		*				*	
Hypotrachyna afrorevoluta	*				L	*	*				*	*
Hypotrachyna laevigata						*		*	*			*
Hypotrachyna revoluta s.s.								*				
Hypotrachyna sinuosa						*		*				*
Hypotrachyna taylorii						*s						*
Ionaspis lacustris						s						
Jamesiella anastomosans						*						
Japewiella tavaresii	*					*	x	*	*		*	
Kalchbrenneriella cyanescens												Lic
Laeviomyces opegraphae	Lic											
Lecanactis abietina	*					*					*	
Lecania chlorotiza			*									
Lecania cyrtella	*			*						*		
Lecania cyrtellina	*											
Lecania naegelii				*			*			*		
Lecanora campestris subsp. *campestris*								s				
Lecanora carpinea							*	*				
Lecanora chlarotera	*	*	*	*	*	*	x*	*		*	*	*
Lecanora confusa						*	*	*	*			*
Lecanora expallens	*	*	*	*	*	*	x*	*		*		
Lecanora gangaleoides								s				s
Lecanora helicopis								s				s
Lecanora jamesii	*		*		*	*					*	*
Lecanora persimilis				*						*		

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Lecanora poliophaea												s
Lecanora polytropa		*						s				s
Lecanora saligna					L							
Lecanora sambuci	*											
Lecanora sulphurea												s
Lecanora symmicta					L							
Lecidella asema								s				
Lecidella elaeochroma forma *elaeochroma*	*	*	*	*	*	*	x*	*		*	*	*
Lecidella elaeochroma forma *soralifera*							*			*		
Lepraria caesioalba		*										
Lepraria ecorticata						s						
Lepraria incana s.s.	*		*	*	*	*					*	
Lepraria lobificans	*		*	*	*	*	x*	s	*		*	*
Lepraria rigidula						*					*	
Lepraria umbricola						*					*	
Leprocaulon microscopicum								s				
Leptogium britannicum												*
Leptogium burgessii						*						
Leptogium cyanescens		*	*	*		*	x					*
Leptogium gelatinosum	s				s			s				s
Leptogium lichenoides	*		*		*						*	
Leptogium teretiusculum	*											
Lichenomphalia umbellifera						*			*		*	*
Lichenopuccinia poeltii						Lic						
Lichina confinis								s			s	s
Lobaria pulmonaria	*	*	*		*	*	x	*		*	*	*
Lobaria scrobiculata		*			*	*		*			*	*
Lobaria virens		*	*		*	*					*	*
Loxospora elatina	*					*			*		*	*
Megalaria pulverea	*		*			*	x	*	*		*	*
Melanelixia fuliginosa				*		*		s				s
Melanelixia glabratula	*	*		*	*	*	x*			*	*	*
Melanelixia subaurifera	*	*		*		*	x*	*	*	*	*	
Melanohalea exasperata								*		*		
Menegazzia terebrata								*				
Micarea alabastrites						*						
Micarea bauschiana						T						
Micarea botryoides						s						
Micarea byssacea			L						*		*	
Micarea lignaria var. *lignaria*					*							
Micarea viridileprosa						*						
Micarea xanthonica						*						
Micarea sp.						*						
Mycobilimbia epixanthoides	*				*							
Mycobilimbia pilularis	*											
Mycoblastus caesius	*				*	*				*	*	*
Mycoblastus fucatus					L	L						
Mycoglaena myricae								*				
Mycomicrothelia confusa						*					*	*
Mycoporum antecellens						*						*
Nephroma laevigatum					*		x	*				*
Nephroma parile					*		x	*			*	*
Normandina acroglypta	*						x			*		
Normandina pulchella	*	*	*	*	*	*	x	*		*	*	*
Ochrolechia androgyna		*				*		*		*	*	*
Ochrolechia microstictoides					L						*	

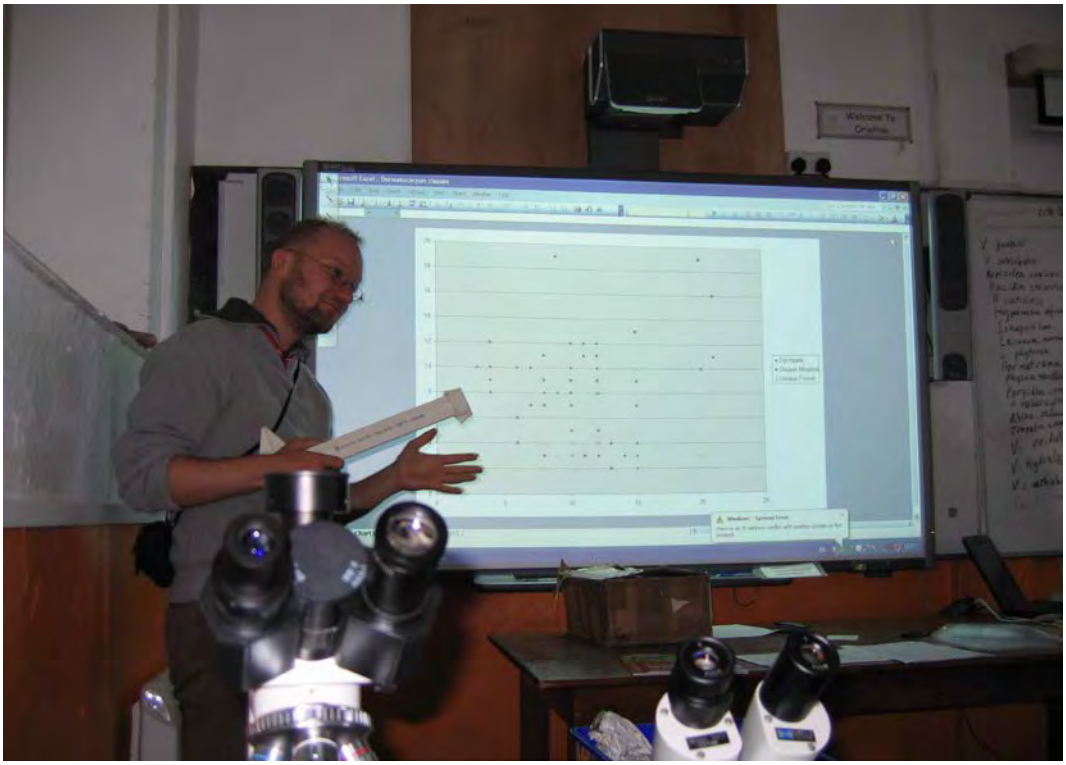
Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Ochrolechia parella	s	*	*					*		*		s
Ochrolechia subviridis	*									*		
Ochrolechia turneri s.s.	*		*									
Opegrapha atra	*		*	*	*		x*	*		*	*	*
Opegrapha calcarea								s				
Opegrapha gyrocarpa												s
Opegrapha herbarum	*		*			*						
Opegrapha niveoatra					*							
Opegrapha ochrocheila	*				*							
Opegrapha pertusariicola											Lic	
Opegrapha sorediifera	*				*		x*			*	*	
Opegrapha thelotrematis						Lic					Lic	
Opegrapha varia	*						*					
Opegrapha vulgata	*		*		*	*	x*					*
Opegrapha zonata												s
Pannaria conoplea		*				*						
Pannaria rubiginosa	*	*	*	*	*	*	x					*
Parmelia omphalodes		*				*						*
Parmelia saxatilis	*	*	*	*		*	x*	*	*	*	*	*
Parmelia sulcata	*	*	*	*	L	*	x*	*		*	*	*
Parmeliella parvula						*					*	*
Parmeliella triptophylla	*	*			*						*	
Parmelina pastillifera	*											
Parmotrema crinitum	*	*	*		*	*	*	*			*	s
Parmotrema perlatum	*	*	*	*	*	*	x*	*	*	*	*	*
Parmotrema pseudoreticulatum				*								
Parmotrema reticulatum	*					*	*					
Peltigera collina	*										*	
Peltigera hymenaea		*			*	*	x					*
Peltigera membranacea		*				*	*	sT				*
Peltigera praetextata	L	*	*		*	*					*	*
Pertusaria albescens var. *albescens*				*	*	*		*				*
Pertusaria albescens var. *corallina*	*											
Pertusaria amara forma *amara*	*	*	*	*		*	x*				*	*
Pertusaria corallina	*	*										s
Pertusaria flavicans												s
Pertusaria hemisphaerica						*						
Pertusaria hymenea	*	*	*	*	*	*		*		*	*	*
Pertusaria lactescens								s				
Pertusaria leioplaca	*	*	*			*	x*			*	*	*
Pertusaria multipuncta	*					*		*			*	
Pertusaria pertusa	*	*	*	*	*	*	*	*		*	*	*
Pertusaria pseudocorallina		*						*				s
Pertusaria pupillaris	*											
Phaeographis smithii	*			*	*		x					
Phaeophyscia orbicularis	*							s				s
Phlyctis agelaea					*						*	
Phlyctis argena	*		*	*			x*					
Physcia aipolia		*		*		*	*	*		*		
Physcia caesia												s
Physcia leptalea				*			*					
Physcia tenella	*			*	*		*	*		*		
Physconia distorta	*			*			x*	*				
Physconia grisea				*								
Piccolia ochrophora	*											
Placynthiella icmalea						*			*		*	

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Placynthium nigrum	s											
Platismatia glauca	*	*			*	*		*	*		*	*
Porina aenea	*			*	*		x					
Porina borreri	s											
Porina chlorotica forma *chlorotica*				*								
Porina coralloidea						*						
Porina lectissima											s	
Porina leptalea			*									
Porpidia tuberculosa	s							s				
Protoblastenia rupestris	s											
Pseudocyphellaria crocata												*
Psilolechia clavulifera						*						
Psilolechia lucida						s						
Psoroglaena stigonemoides	*											
Punctelia reddenda	*		*	*			*					
Punctelia subrudecta s.s.	*			*	*	*	*				*	*
Pyrenocollema sublitorale												o
Pyrenula chlorospila			*		*							*
Pyrenula laevigata						*		*				*
Pyrenula macrospora	*	*	*	*	*	*	*	*		*	*	*
Pyrenula occidentalis		*				*		*			*	*
Pyrrhsopora quernea	*	*	*			*						
Ramalina calicaris	*					*	*	L		*		
Ramalina farinosa	*	*	*	*	*	*	x*	*		*	*	*
Ramalina fastigiata	*	*	*	*			*	*		*		
Ramalina fraxinea				*								
Ramalina siliquosa			s					s				s
Rhizocarpon geographicum		*						s				s
Rhizocarpon reductum	s							s				
Rhizocarpon richardii								s				s
Rinodina oleae												s
Rinodina sophodes			*					*		*	*	
Schismatomma quercicola						*						
Skyttea nitschkei						Lic						
Sphaerophorus globosus		*				*		*				*
Stenocybe pullatula						*					*	
Sticta fuliginosa	*	*	*	*	*	*	x	*			*	*
Sticta limbata	*	*	*	*		*	x	*			*	*
Sticta sylvatica	*	*	*	*	*	*	x	*			*	*
Stigmidium microspilum				Lic	Lic						Lic	Lic
Strigula jamesii	*											
Strigula taylorii	*											
Tephromela atra var. *atra*		*						*				s
Tephomela grumulosa		*										
Thelotrema lepadinum		*	*		*	*		*			*	*
Thelotrema petractoides						*		*			*	*
Tomasellia gelatinosa						*					*	*
Trapelia coarctata									*		s	
Trapelia corticola						*					*	cort
Trapelia placodioides											s	
Trapeliopsis flexuosa					L							*
Trapeliopsis granulosa				L								
Trapeliopsis pseudogranulosa						T			*		*	
Tremella coppinsii									Lic			
Usnea cornuta	*		*		*	*	*		*	*	*	*
Usnea esperantiana					*		•x					

Woodlands	**Islay**										**Jura**	
Species	**Br**	**Cl**	**PE**	**GP**	**BL**	**Ar**	**Gr**	**ED**	**Bu**	**AL**	**C**	**JP**
Usnea flammea	*	*	*	*	*	*	*	*	*	*	*	*
Usnea fragilescens var. *mollis*	*					*			*			
Usnea rubicunda						*						
Usnea subfloridana	*	*				*	x*	*	*		*	
Usnea wasmuthii	*	*				*	x*	*	*			
Vahliella atlantica	Lic											
Verrucaria andesiatica						s						
Verrucaria aquatilis					s	s					s	
Verrucaria fusconigrescens								s				
Verrucaria hydrela						s					s	
Verrucaria maura								s			s	s
Verrucaria mucosa								s				
Verrucaria praetermissa											s	
Verrucaria rheitrophila											s	
Vouauxiella lichenicola	Lic											
Xanthoparmelia conspersa		*										
Xanthoria aureola								s				
Xanthoria calcicola												s
Xanthoria parietina	*			*			x*	*		*		s

Report of BLS Freshwater Lichen Workshop, Pembrokeshire, 14 - 21 August 2011

Tutor: Holger Thüs, Natural History Museum, London
Participants
Andy Acton, Richard Brinklow, Paul Cannon, Ginnie Copsey, Andy Cross, Robin Crump, Theresa Greenaway, David Hill, Les Knight, Sue Knight, Oliver Moore, Steve Price, Neil Sanderson, Pat Wolseley.



Our tutor Holger Thüs in class

This course, promising assistance on 'the identification and ecology of amphibious lichens from freshwater habitats' was based at Orielton Field Centre, near Pembroke, south west Wales. Orielton has hosted lichen courses for many years and the welcome, facilities and excellent food underlined why it remains so popular with both tutors and attendees. It provides an imposing Georgian country house setting which more than compensates for the adequate, but by no means 21st century, plumbing.

Sharing the house with the BLS were, for the first part of the week, a group of Taiwanese forestry employees visiting the UK to learn about how the Field Studies Council operates in order to assist in developing similar facilities at home - hint for a possible future BLS overseas trip? Their enthusiasm for photographing each other and everything else, including the food, reminded me of my own photography in

exotic places. Later in the week they were replaced by a party of 6th formers from an independent school near Hampton Court. Apart from the understandable rise in noise level at dinner, they really were very well behaved and a credit to their school. Any misgivings over sharing accommodation with a party of teenagers were thus dispelled.

Learning the basics of freshwater lichenology in situ

Monday August 15th

Holger set the tone for the week with an introduction to the range of taxa likely to be encountered and some of the key identification features, particularly of crustose, pyrenocarpous species. He highlighted the different approach between the more conservative British authors and their European counterparts to species delimitation, explaining how the different keys would legitimately lead to a different name. He had also brought along a good selection of herbarium specimens which were well studied as the week progressed. Some of the packets had several determinations, synonyms or otherwise, re-emphasising his points.

Our first short excursion was to Stackpole Elidor for a gentle introduction to *Verrucaria*, starting with *V. praetermissa* and *V. rheitrophila*. We parked by a potentially interesting churchyard, but such was the focus of the group that this was ignored and attention was concentrated on the heavily shaded and not very promising-looking stream nearby. Our first 'conservation threat' was demonstrated by a heap of rocks on the bank. Presumably removed to improve water flow it highlighted the risk that, for

lowland streams, dredging might easily remove suitable substrate. Our first challenge was to distinguish rocks with aquatic lichens on from the much more numerous ones covered with algae or just mineral (manganese) deposits. Some of these dark patches mimic aquatic lichens well enough to explain why some previous aquatic samples had failed to yield any perithecia!

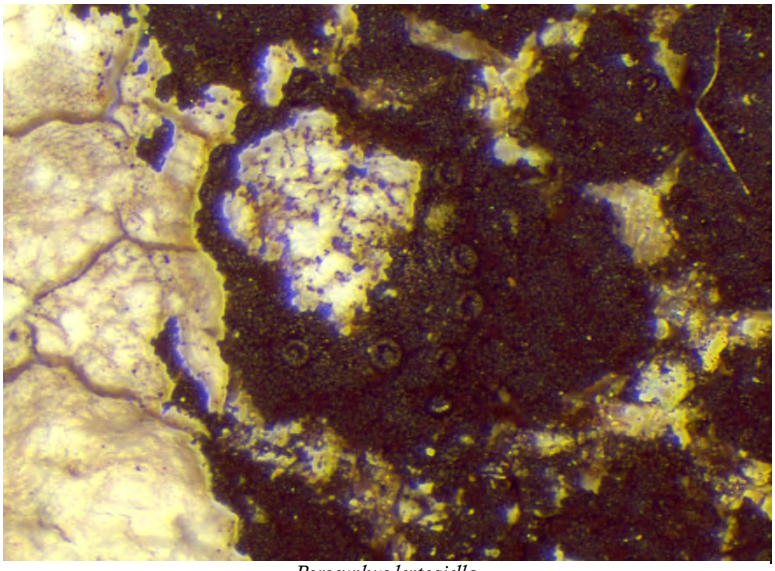
Now familiar with *Verrucaria praetermissa*, we looked into its habitat preferences in respect of substrate size and shading, much to the amusement of the family in an adjacent holiday cottage. The opportunity to seek converts, or at least increase knowledge of lichens, was eagerly seized before a heavy downpour sent us back to the cars. Participants will remember the vicious speed humps on the Orielton driveway which made a lasting impression on both passengers and drivers.

Tuesday August 16th

We now started travelling further afield to check out different aquatic habitats. Our first stop at Nant y Caws Mill, on the Western Cleddau River, took us along a nature trail set with carved wooden sculptures. Being heavily shaded, aquatic lichens were infrequent although the top of the mill lade had *Verrucaria funkii* in small quantity and the green thalli of *Dermatocarpon luridum* were conspicuous on the downstream side of a few of the larger rocks. While part of the group took advantage of the teashop at the mill, others waded through the culvert under the road to examine *Verrucaria praetermissa* and *V. elaeina* growing almost side by side.

Dematocarpon luridum, detail of thallus

Our next stop was at Wolfs Castle, just a mile or so away, to look at an unshaded spot on the main river. Here the growth of filamentous algae which had developed since Holger's reconnaissance a few weeks earlier was very extensive although the target *Verrucaria* species were all located. Paul unfortunately left his Swiss army knife on the ground here, but returning three days later, amazingly found it exactly where he left it! Our picnic lunch was taken beside an acid moorland stream on the northern slopes of the Preseli Mountains. The turf here was studded with the pretty little flowers of the Ivy-leaved Bell-flower (*Wahlenbergia hederacea*). The lichen vegetation of the wet moorland and streamside rocks felt much more familiar to the Scottish contingent of the group, particularly the extensive sheets of *Ephebe lanata* and conspicuous patches of *Ionaspis lacustris*. Highlight of the day for me was the tiny *Porocyphus leptogiella*, although like many of the weeks' choice finds it was only in the evening that it was revealed as we worked through material back in the lab.



Porocyphus leptogiella

Wednesday August 17th

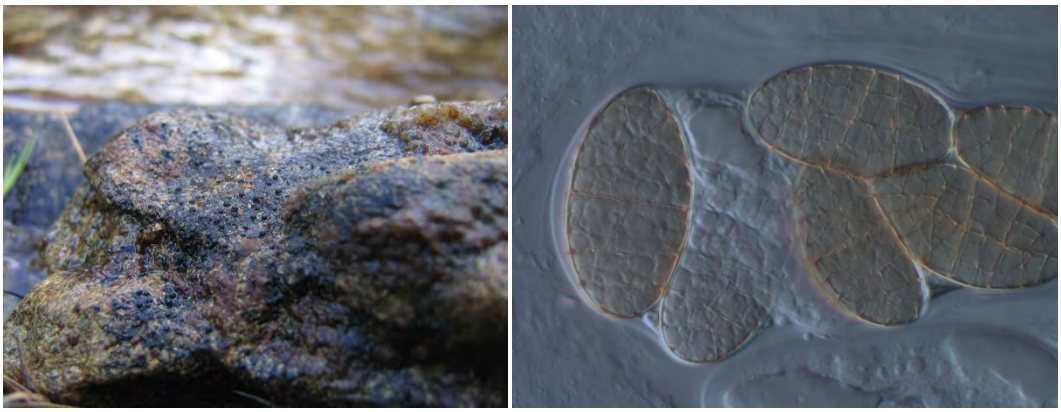
Streams near Rosebush Quarries on the southern slopes of the Preseli Mountains were the target today. This area included sections of stream running through a conifer plantation as well as through areas that had been clear-felled either recently or many years ago. This gave an opportunity to consider the varying ability of different species to recolonise sections of a stream and the implications for short, medium and long-term habitat quality monitoring. Lunch was taken on the slate quarry spoil heaps surrounded by colourful mosaics of lichens that favour mineral-rich rock. It was hard to resist the temptation to collect these thin sheets of slate which make such perfect herbarium specimens.

In the afternoon we visited Blackpool Bridge Wood on the banks of the rather muddy Eastern Cleddau. The aquatic lichens were not particularly inspiring but Neil was in his element hunting down many of the more interesting epiphytes recorded by Francis Rose (who else!) many years ago.

Thursday August 18th

Pembrokeshire's narrow sunken lanes with high banks and very limited visibility were now becoming familiar as we returned to the southern slopes of the Preseli

Mountains to explore the unshaded headwaters of the Afon Tewgyll. This area of common land is rough grazing with extensive patches of gorse and scattered boulders, both rounded and more pointed, which were obviously used as 'perches' by both birds and sheep. These boulders carried quite a rich and varied flora with *Candelariella coralliza* and *Lasallia pustulata* forming distinct zones presumably in response to the concentration of nutrient run-off. The group spread out, some heading for the ridge while others contoured round looking for springs and their resulting streamlets. Freshwater lichens were rather sparse and localised with some streams lacking suitable pebbles and others too acidic. Andy Acton, Theresa Greenaway, David Hill and Steve Price however hit the jackpot with one spring and short length of stream providing most of the aquatic lichen diversity for the day. In addition to *Sporodictyon cruentum (Polyblastia cruenta)* being locally abundant, the tiny *Pyrenopsis grumulifera* and two species of *Thelidium* made their only appearances for the week.



Sporodictyon cruentum, ascomata (left) and muriform ascospores (right)

Friday August 19th

Today was spent in the Gwaun Valley looking at several sites starting with a small rocky woodland stream with *Bacidia inundata* and *Dermatocarpon luridum* quite well developed on larger rocks in the splash zone. Moving downstream to sample a less shaded section of river flowing through pasture, Pat decided to create her own 'splash zone'. She elegantly demonstrated not only how slippery the rocks were but how to come up smiling. Damp rocks beside some rapids added *Porina lectissima* to the list with several exuvia of Golden Ringed Dragonflies also being spotted here.

`The return journey on the opposite bank saw some of the group engaged in what was a successful search for an old site of filmy ferns. Andy Acton confirmed the finding of the rare Tunbridge filmy fern (*Hymenophyllum undulatum*).

Saturday August 20th

Persistent rain in the morning combined with the inevitable backlog of specimens still requiring examination kept us in the lab until after lunch. After concentrating heavily until now on freshwater lichens, the afternoon was spent at Stackpole Warren just enjoying some of the rich lichen diversity that Pembrokeshire offers. Our walk took us around the lily ponds with their very extensive and impressive Charophyte beds,

into a small area of *Salix* carr with luxuriant epiphytes and then onto the coastal limestone outcrops and dunes. Colourful, charismatic species such as *Fulgensia fulgens* and *Solenopsora candicans* counterbalanced the subtlety of all those *Verrucaria* species we had been studying. Paying homage to small colonies of *Teloschistes flavicans* and *Heterodermia leucomela* nicely rounded off the day with regard to lichens. However, as we returned to the cars, seeing three otters leisurely swimming across one of the lily ponds almost stole the show.

Porina lectissima. The pale cup-like structures are cavities formerly occupied by the brown fruit-bodies.

So, how did the course live up to expectations? Freshwater lichens certainly aren't the easiest group to identify, but with guidance and practice they can be done. Experience of where to look with regard to water quality, illumination and suitable substrates pays dividends, but the challenge of successfully chipping off that fragment from a submerged rock remains. Basing the course at Orielton worked well as lacking the greater diversity found in richer areas allowed people to get to grips with the more typical lowland species. Holger was an excellent tutor and the effort he and Pat put into selecting suitable sites maintained the high standard typical of a BLS workshop. All but the most conspicuous of freshwater lichens have tended to be overlooked by most lichenologists. Following this course, I would hope that this is addressed and that the mapping scheme benefits considerably.

Species table

The table below lists species by site. This is an aggregation of the records which were collected and input to the BLS data-base by 1km square.

Site codes:

RS:	Rowston, Stackpole - Small shaded stream with sandstone & limestone rock, most loose, some bed rock, SR9897, alt 60-70m, 15/08/2011
MP-B:	Mynydd Preseli, Beddyrafanc, Open well lit moorland small streams, SN1034, alt 130-145m, 16/08/2011
NyCM:	Nant y Caws Mill - Moderate sized shaded stream with metamorphic cambrian rocks, SM9525, alt 50-60m, 16/08/2011
WCBr:	Wolf's Castle Bridge - Open well lit river, SM956264, alt 35m, 16/08/2011
BBr:	Blackpool Bridge, riverside wood to east - Stand of old oak & beech by river and some estuary, SN0641 1468 to 0637 1463 SN064147, alt 5m, 17/08/2011
RQu:	Rosebush Quarry - disused slate quarry, SN0729, SN0730, alt 280-325m, 17/08/2011
Rss:	Rosebush, sample sites - small and moderate sized streams in open, forest cleared and afforested situations, SN0630,SN0830 , SN0831, alt 235-300m, 17/08/2011
MP-AT:	Mynydd Preseli, Afon Tewgyll - Rocky acid moorland river flowing from mires, SN1331, SN1332, alt 260-275, 18/08/2011
MP-CT:	Mynydd Preseli, Craig Talfynydd; Patshyngrugog; Rhestr Gerrig - slope in moorland with dry acid boulders, base rich flushes and acid flushes, SN1231, SN1331, SN1332, alt 240-340, 18/08/2011 and re-visit to Craig Talfynydd on 21/08/2011
GV-GW:	Gwaun Valley, Afon Gwaun, Garn Wood - river with fixed boulders and small loose stones, flanked by pasture and woodland, alt 65m, SM9935, 19/08/2011
GV-S:	Gwaun Valley, Cwm Mawr, Sychbant - small steep rocky stream in pasture woodland, alt 124-130m, SN0435, 19/08/2011
SW	Stackpole Warren & Saddle Point - coastal limestone headland with closely grazed turf, SR9794, SR9894, alt 15-30m, 20/08/2011

Species name suffix:

- # lichenicolous fungi
- ## non-lichenised fungi

Status key:

- NP New to Pembrokeshire
- NswW New to south west Wales
- NsW New to south Wales
- NWNew to Wales

	RS	MP-B	NyCM	WCBr	BBr	RQu	Rss	MP-AT	MP-CT	GV-GW	GV-S	SW
Acarospora fuscata		●							●			
Acarospora impressula									●			
Acarospora smaragdula									●			
Acrocordia gemmata					●							
Acrocordia salweyi				●								
Amygdalaria pelobotryon									●			
Anisomeridium biforme					●							
Anisomeridium polypori	●		●									
Anisomeridium ranunculosporum					●							
Arthonia cinnabarina					●							
Arthonia spadicea					●							
Arthrorhaphis citrinella #									●			
Aspicilia caesiocinerea		●					●		●	●		
Aspicilia laevata								●				
Atla alpina									●			
Bacidia carneoglauca (NP)										●		
Bacidia chloroticula							●	●				
Bacidia delicata										●		
Bacidia inundata							●			●		
Bacidia saxenii							●					
Bacidia viridifarinosa			●		●					●		
Baeomyces rufus		●						●	●			
Belonia nidarosiensis				●								
Buellia aethalea		●							●			
Caloplaca ceracea									●			
Caloplaca cerina var. chloroleuca												●
Caloplaca chlorina					●							
Caloplaca citrina s.str.					●							
Caloplaca crenulatella					●							
Candelariella coralliza		●										
Candelariella reflexa										●		
Candelariella vitellina forma *vitellina*								●	●			
Cetraria aculeata									●			
Chaenotheca furfuracea					●							
Chaenotheca trichialis					●							
Chrysothrix candelaris					●							
Cladonia bellidiflora									●			
Cladonia borealis									●			
Cladonia cervicornis subsp. *cervicornis*									●			
Cladonia furcata						●			●			
Cladonia gracilis						●			●			
Cladonia macrophylla (NsW)						●						
Cladonia portentosa									●			
Cladonia ramulosa									●			
Cladonia squamosa var. *squamosa*									●			
Cladonia subcervicornis									●			
Cladonia uncialis subsp. *biuncialis*									●			
Cresponea premnea					●							
Dactylospora purpurascens # (NswW)								●				
Dermatocarpon luridum			●							●	●	
Dimerella lutea					●		●					
Dimerella pineti					●							
Diploschistes scruposus						●						
Enterographa crassa					●					●	●	

	RS	MP-B	NyCM	WCBr	BBr	RQu	Rss	MP-AT	MP-CT	GV-GW	GV-S	SW
Enterographa hutchinsiae										●	●	
Ephebe lanata		●					●	●	●			
Evernia prunastri											●	
Flavoparmelia caperata											●	
Flavoparmelia soredians								●				
Fulgensia fulgens												●
Fuscidea lygaea									●			
Fuscidea praeruptorum (NP)		●							●			
Graphina anguina					●							
Graphis elegans					●							
Graphis scripta					●							
Gyalecta jenensis var. *jenensis*				●								
Gyalecta truncigena					●							
Gyalidea fritzei										●		
Halecania spodomela		●										
Herteliana gagei										●		
Heterodermia leucomela												●
Hypotrachyna afrorevoluta	●	●		●		●	●	●	●			
Hypotrachyna britannica		●						●				
Hypotrachyna revoluta s.str.				●								
Ionaspis lacustris		●				●	●	●	●	●		
Japewiella tavaresiana										●		
Lasallia pustulata									●			
Lecanactis abietina					●							
Lecanactis subabietina					●							
Lecania hutchinsiae		●										
Lecanora agardhiana (NP)												●
Lecanora chlarotera					●							
Lecanora gangaleoides		●							●			
Lecanora intricata		●							●			
Lecanora jamesii			●									
Lecanora muralis							●					
Lecanora orosthea		●										
Lecanora polytropa		●					●	●	●			
Lecanora zosterae												●
Lecidea doliiformis					●							
Lecidea fuscoatra		●							●			
Lecidea grisella		●										
Lecidea lithophila		●										
Lecidella elaeochroma forma *elaeochroma*					●							
Lecidella scabra		●							●			
Lepraria caesioalba						●			●			
Leptogium cyanescens											●	
Leptogium lichenoides										●		
Leptogium pulvinatum				●								
Lobaria pulmonaria					●							
Marchandiomyces corallinus #	●	●										
Massalongia carnosa						●			●			
Melanelixia fuliginosa subsp. *fuliginosa*		●							●			
Melaspilea amota ## (NsW)					●							
Melaspilea interjecta (NP)		●										
Micarea cinerea forma *cinerea* (NP)						●						
Micarea leprosula									●			

	RS	MP-B	NyCM	WCBr	BBr	RQu	Rss	MP-AT	MP-CT	GV-GW	GV-S	SW
Micarea lignaria var. *lignaria*		●						●	●			
Micarea lynceola (NW)										●		
Mycoporum antecellens ##					●							
cf Nectria muscivora ##	●											
Neofuscelia loxodes		●							●			
Neofuscelia verruculifera		●										
Normandina pulchella					●							
Ochrolechia androgyna									●			
Opegrapha atra					●							
Opegrapha gyrocarpa		●										
Opegrapha varia					●							
Opegrapha zonata										●		
Pachyphiale carneola					●							
Parmelia discordans		●										
Parmelia omphalodes		●							●			
Parmelia saxatilis		●										
Parmelia saxatilis											●	
Parmelia sulcata		●							●			
Parmelina pastillifera	●											
Parmotrema perlatum							●				●	
Peltigera horizontalis			●		●					●		
Peltigera hymenina			●				●					
Peltigera membranacea			●							●		
Peltigera polydactylon						●						
Pertusaria albescens var. *corallina*					●							
Pertusaria amara forma *amara*											●	
Pertusaria aspergilla									●			
Pertusaria corallina		●				●		●	●			
Pertusaria hymenea					●							
Pertusaria lactea		●										
Pertusaria lactescens									●			
Pertusaria leioplaca					●							
Pertusaria pertusa					●						●	
Pertusaria pseudocorallina		●							●			
Phaeographis dendritica					●							
Phaeographis inusta										●		
Phaeographis smithii					●							
Phlyctis agelaea			●									
Phlyctis argena					●							
Phyllopsora rosei					●							
Physcia tenella subsp. tenella							●					
Placopsis lambii								●	●			
Placynthiella icmalea							●					
Polyblastia cruenta (NP)		●						●	●			
Polycoccum arnoldii # on *Diploschistes scruposus* (NswW)						●						
Porina borreri var. *borreri*					●							
Porina chlorotica forma *chlorotica*	●		●				●				●	
Porina coralloidea					●					●		
Porina lectissima								●	●	●		
Porina linearis				●								
Porocyphus leptogiella (NswW)		●										
Porpidia cinereoatra		●						●	●			
Porpidia crustulata							●	●	●	●		

	RS	MP-B	NyCM	WCBr	BBr	RQu	Rss	MP-AT	MP-CT	GV-GW	GV-S	SW
Porpidia macrocarpa forma *macrocarpa*		●						●	●			
Porpidia melinodes						●						
Porpidia melinodes (NsW)									●			
Porpidia platycarpoides		●										
Porpidia rugosa								●	●			
Porpidia soredizodes		●							●			
Porpidia tuberculosa		●				●	●	●	●	●		
Protoparmelia badia		●										
Psoroglaena infrossa										●		
Punctelia subrudecta s.str.										●		
Pyrenopsis grumulifera (NsW)								●				
Pyrenula chlorospila					●					●		
Pyrenula macrospora					●							
Pyrrhospora quernea					●							
Rhizocarpon lavatum		●					●	●	●			
Rhizocarpon petraeum				●								
Rhizocarpon reductum		●					●	●	●	●		
Schismatomma cretaceum					●							
Schismatomma decolorans					●							
Schismatomma niveum					●							
Schismatomma quercicola (NsW)					●							
Sclerococcum sphaerale # on *Pertusaria corallina*		●										
Scoliciosporum umbrinum		●						●	●			
Solenopsora candicans												●
Sphaerellothecium minutum #									●			
Sphaerophorus fragilis									●			
Sphaerophorus globosus									●			
Stenocybe pullatula ##					●	●						
Stenocybe septata ##					●							
Stereocaulon dactylophyllum var. dactylophyllum		●							●			
Stereocaulon evolutum									●			
Stereocaulon pileatum									●			
Stereocaulon vesuvianum var. *nodulosum*						●						
Stereocaulon vesuvianum var. *vesuvianum*		●							●			
Sticta fuliginosa			●									
Stigmidium rivulorum # on *Verrucaria aquatilis*, *V. denudata*, *V.praetermissa*	●									●		
Teloschistes flavicans												●
Tephromela atra var. *atra*		●										
Thelidium pluvium								●				
Thelidium zwackhii								●				
Thelotrema lepadinum					●					●		
Trapelia coarctata		●					●	●	●	●		
Trapelia placodioides		●						●	●	●		
Trapeliopsis flexuosa					●							
Trapeliopsis pseudogranulosa									●			
Umbilicaria deusta (NP)									●			
Usnea flammea								●				
Verrucaria aethiobola		●							●			

	RS	MP-B	NyCM	WCBr	BBr	RQu	Rss	MP-AT	MP-CT	GV-GW	GV-S	SW
Verrucaria andesiatica	●						●	●				
Verrucaria aquatilis	●		●	●			●			●	●	
Verrucaria conturmatula # on *Ionaspis lacustris* (NswW)						●						
Verrucaria denudata	●			●			●	●	●	●		
Verrucaria dolosa	●									●		
Verrucaria elaeina	●		●	●							●	
Verrucaria funckii			●				●		●			
Verrucaria hochstetteri	●											
Verrucaria nigrescens forma *nigrescens*										●		
Verrucaria praetermissa	●			●	●					●	●	
Verrucaria rheitrophila	●			●			●			●	●	
Verrucaria rosula ined.										●		
Verrucaria sublobulata			●				●					
Verrucaria viridula				●			●		●	●		
Xanthoparmelia conspersa		●							●			

Report by Richard Brinklow
richard.brinklow@btinternet.com

Report of BLS Field Meeting, Derbyshire, 6-10 October 2011

The group were re-welcomed at the YHA Hartington Hall after only a two year absence (see report of the Derbyshire limestone meeting of October 2009 in Bulletin **106**). Attention was paid firstly to the food and refreshments on offer and then to an overview of the gritstone, lead-mine, deer-park and basalt sites to be visited over the weekend. During the four days of field visits we recorded 245 taxa, including 22 new to Derbyshire and 1 previously considered extinct in the county.

The attendees were: Ndurie Abah, Norman Bamforth, Ishpi Blatchey, Annelie Burghause, Heather Colls, Brian Coppins, Ginnie Copsey, Paul Harrold, Andrew Hodgkiss, John Jones, Les Knight, Sue Knight, Craig Levy, Vivyan Lisewski-Hobson, Ivan Pedley, Mark Powell, Steve Price, Maxine Putnam, Janet Simkin, Mike Sutcliffe, Amanda Waterfield and John Wills.

BLS in Chatsworth Old Park, 9 October 2011 (photo Mike Sutcliffe)

Standing L to R: Ivan Pedley; Heather Colls; Ginnie Copsey; Janet Simkin; Steve Price; Paul Harrold; Brian Coppins; Craig Levy; John Jones; John Wills; Ndurie Abah; Annelie Burghause; Andrew Hodgkiss; Mike Sutcliffe. Seated: Vivyan Lisewski-Hobson; Ishpi Blatchey; Maxine Putnam

Friday 7th October a.m. Lawrence Field (SK2579 and SK2580), alt. 300m

The first site to be visited in the weekend was a gritstone boulder field that lay in a shallow valley. The north-south orientation of the valley seems to have afforded the site some protection from the ravages of two centuries of industrial pollution

emanating from the heavy industry of Manchester to the west and Sheffield to the east. The boulders and heathland hold relatively good populations of lichens compared to the surrounding exposed gritstone edges which the late Oliver Gilbert always described as being "scrubbed clean" by airborne pollution.

The site which holds 4 species of *Umbilicaria* and a good range of acidic loving crustose species gave us 6 species new to the county: *Cercidospora epipolytropa* (on *Lecanora polytropa*); *Micarea coppinsii*; *Rhizocarpon geminatum*; *Placynthiella dasaea*; *Protoparmelia memnonia*; and *Sclerococcum sphaerale.* Other notables included: *Sphaerophorus globosus*, previously considered extinct in the county, was found by Andrew Hodgkiss; *Fuscidea austera* where the bulk of the English records are concentrated on the Peak District gritstone; *Lecidea commaculans,* a 2nd county record for this national rarity; and *Cladonia digitata* which reconfirmed an old site for this county rarity. On tops of gritstone boulders a curious pyrenocarp was collected, occurring as clusters of sessile black perithecia on an inapparent thallus, arising between large grains of the coarse grit. It had brown, 3-septate ascospores, with the ends cells paler, 13–18 × 3.5–5 µm, and lacked paraphyses, and is provisionally referred to the lichenicolous genus, *Phaeospora*.

Gritstone boulders at Lawrence Field (photo Mike Sutcliffe)

Friday 7th October p.m. Upper Burbage Brook (SK2682 and SK2683), alt. 400m

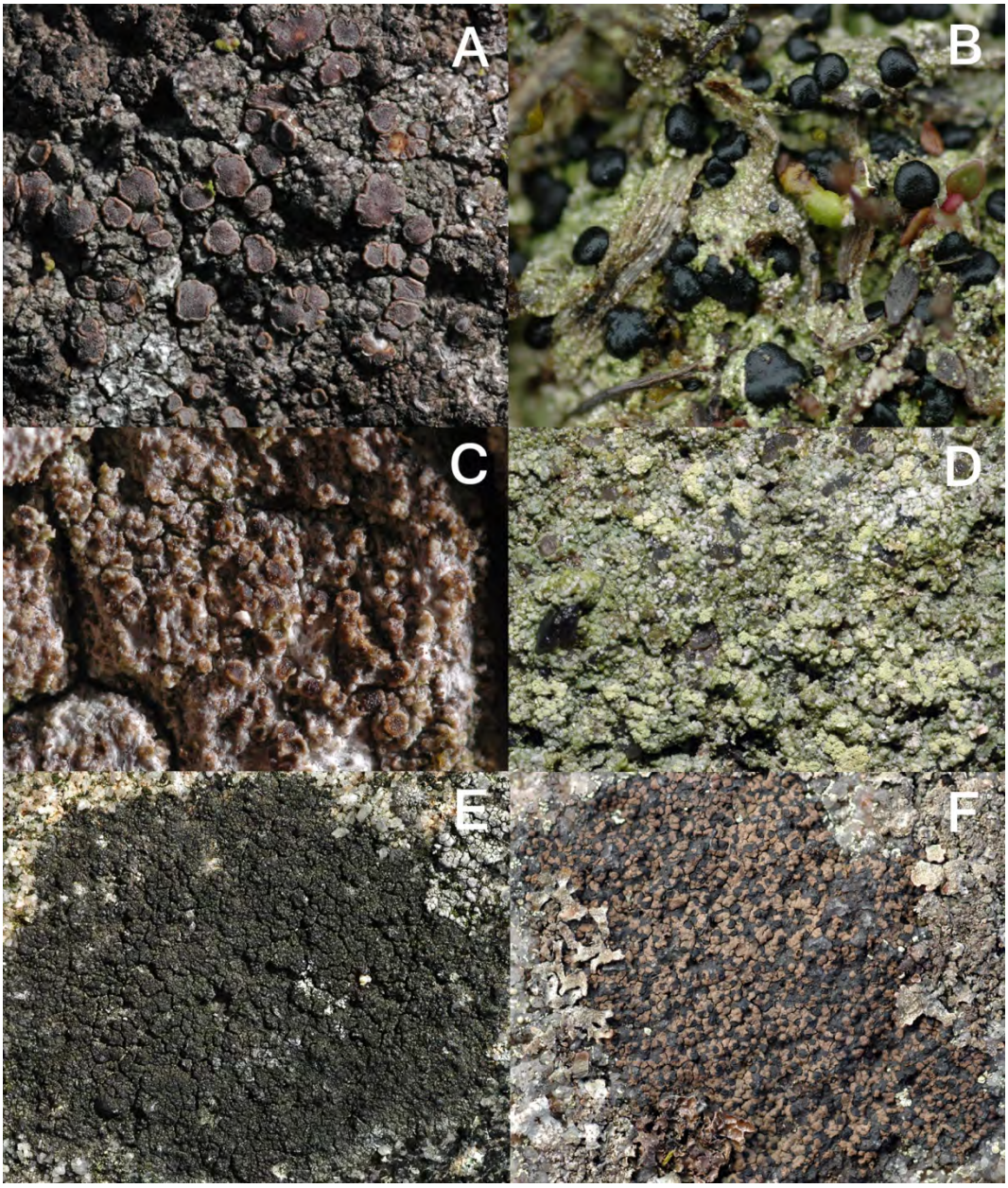
Moving 3km upstream from the mornings site (by car not by walking - this is the BLS after all!) the afternoon was occupied by exploring the gritstone boulders by the

Upper Burbage Brook. *Umbilicaria deusta* was in abundance over a significant length of the brook. It appeared to favour a situation just above the waterline where regular inundation by rapidly flowing water seemed to have removed the isidia familiar to those who are accustomed to seeing the species in dryer positions.
It was here that Sue Knight decided to emulate Alice by exploring for lichens down rabbit holes. Unfortunately unlike Alice on reaching the bottom instead of finding Wonderland she suffered a sharp pain in the foot. Later, at the hospital, after giving her age to the examining doctor Sue was asked "and what is your other problem?" *Fuscidea austera* and *Rhizocarpon geminatum* were found again, and the discovery of the national rarity *Lecidea promixta* gave a second county record for this species. *Sarcogyne privigna*, on the bridge embankment was surprisingly a first for the county.

Saturday 8th October, Highcliffe Mine, Eyam (SK2177) and Tideslow Rake, Little Hucklow (SK 1577 & SK1677), alt. 300m
This day was spent on two disused lead-mine sites. The first, Highcliffe Mine, lies at the junction of carboniferous limestone and shale, and was subject to deep mining through the shales. The spoil heaps had an abundant coverage of *Cladonia rangiformis* and *C. furcata*. There were the four *Peltigera*'s, *P. canina*, *P. rufescens*, *P. neckeri* and *P. hymenina* the last giving us two lichenicolous fungi: *Nectriopsis lecanodes* which grows on cyanophilous lichens and *Dinemasporium strigosum* were both new to the county. Together with *Caloplaca obscurella* which was found on a cankered ash by Mark Powell and *Polyblastia agraria,* this site gave four species new to the county.

The second lead-mine site, Tideslow Rake, is totally on limestone and had been surface worked in a 1.5km long open rake. Although this visit was curtailed by deteriorating weather, soggy notebooks and even soggier clothes it gave a range of typical heavy metal species: *Bacidea bagliettoana*; *Vezdaea aestivalis* and *Sarcosagium campestre*. The last species on both lead sites proved to be the *var. macrosporum* helping confirm the assertion that this variety is associated with heavy metals. New to the county was a specimen on a pebble that was determined later as *Lecania suavis*.

Sunday 9th October, Chatsworth Old Park (SK2668), alt. 150-200m
Permission to continue surveying this normally private ancient enclosed deer park was granted by The Duke of Devonshire following the successful half-day visit by the Society in October 2009 (see the report in BLS Bulletin 106). The veteran oaks provided records that reconfirmed the national significance of the site. Of the 112 taxa recorded that day 7 were new to the county, there were 2 nationally rare species and 9 nationally scarce. 20 records are noteworthy being new, reconfirmations, second records for rare species or similar. *Hertelidea botryosa* was found during the visit in 2009 as new to England, and during this visit it was found on nearly all of the lying dead 'hulks' we examined. The lack of shade from planting and the consequent open nature of their immediate environment certainly contributes significantly to the value of these dead lying oaks. A very viable population of *Hertelidea botryosa* exists here and yet despite searches being undertaken elsewhere in England, the Old Park is still the only site for this lichen in the country. Species new to the Derbyshire were: *Chaenothecopsis pusilla*; *Chrysothrix flavovirens*; *Clypeococcum hypocenomycis*; *Illosporiopsis*



Lichens from the Derbyshire meeting; all images originate from the British Lichens website, © Mike Sutcliffe. A, *Fuscidea austera*. B, *Bacidia bagliettoana*. C, *Lecidea hypopta*. D, *Mycoblastus alpinum.* E, *Protoparmelia memnonia*. F, *Rhizocarpon geminatum*.

christiansenii; *Micarea byssacea*; *Parmotrema reticulatum* and *Usnea flammea.* The last was determined by Paul Harrold back at the Royal Botanic Garden Edinburgh.

Bryoria fuscescens var. fuscescens was found as an 18 x 12in patch on the trunk of an oak and this is a new location on the site. It was not re-found on the boundary

wall where it was last recorded in the early 1990's. This is now the only known extant site for the species in the county. Two corticolous species *Lecanactis abietina* and *Dimerella pineti* were found in an unusual habitat sheltering on sandstone boulders.

Monday 10th October, Cave Dale, Castleton (SK1482), alt. 220 - 300m

Walking up this steep chasm of a dale situated at the face of reef-apron carboniferous limestone is normally hard work in dry weather - however in heavy rain it was more like paddling up a waterfall. Whilst we were on the way up breaks in the rain gave the chance to spy *Solorina saccata*, *Dermatocarpon luridum* and *Romjularia lurida* amongst the outcrops. It was at the top of the dale that lay the real purpose of the visit: a 2 metre thick band of basalt. This had been laid down extrusively onto limestone, to have more limestone later deposited above. The contrast was stark between the lichens on the acidic basalt and the black-dots typical of the surrounding limestone.

Lecanactis dilleniana, directly on rock, *Arthrorhaphis grisea* on *Baeomyces rufus* and *Opegrapha vermicellifera* on the trunk of an ash growing out of the basalt were new to the county. The latter being found in exactly the same micro-habitat as it is found on the basalt of Traprain Law in East Lothian. So, no prizes for guessing that it was Brian Coppins who found the Derbyshire specimen.

All in all it was a profitable and enjoyable weekend, plenty of variety in the lichens, from the common to the rare, and from the macro to the minuscule, in a good variety of excellent habitats.

Acknowledgements

Thanks go to the following landowners for granting BLS permission to visit the sites - The National Trust for Lawrence Field and Upper Burbage Brook, Judith Hancock for Highcliffe Mine, Mr Peter Adkin for Tideslow Rake, The Duke of Devonshire for Chatsworth Old Park, Mr Dalton for Cave Dale and Derbyshire Wildlife Trust for various back-up sites which on this occasion were not needed.

Thanks also to the staff at Hartington Hall Youth Hostel who provided us with hospitality, good food, good beer and a room ideal for microscope work.

Report by Brian Coppins & Steve Price

lichensel@btopenworld.com

Species table

The table below lists species by site. This is an aggregation of the records which were collected and input to the BLS data-base by 1km square.

Site codes:

LF: Lawrence Field / Burbage Brook - gritstone boulders on heather moorland (SK2579 and SK2580, alt 300m, 7 October 2011)

UBB: Upper Burbage Brook - rocky brook in moorland and bridge wall (SK2682 and SK2683, alt 400m, 7 October 2011)

HM: Highcliffe Mine - disused lead mine on shale and limestone (SK2177, alt 300m, 8 October 2011)

TR: Tideslow Rake - disused lead mine on limestone (SK 1577 & SK1677, alt 300m, 8 October 2011)

COP: Chatsworth Old Park - deer park, veteran oaks, gritstone boulders (SK2668, alt 150-200m, 9 October 2011)

CD: Cave Dale, Castleton - limestone chasm with band of extrusive basalt (SK1482, alt 220-300m, 10 October 2011)

CStE: Castleton St Edmund Churchyard - brief visit in rain (SK1582, alt 200m, 10 October 2011)

Status Key:

n1 new to the county (Derbyshire) on 1 site; n2 on 2 sites etc.

nx1 new to the county (Derbyshire) on 1 site – previously considered extinct

r1 reconfirmation of a site record – 1 site known in Derbyshire; r2 2 sites known etc.

Species name suffix:

lichenicolous fungi

non-lichenised fungi

		LF	UBB	HM	TR	COP	CStE	CD
Acarospora fuscata		●	●	●		●		
Acarospora rufescens				●				
Acarospora smaragdula			●					
Agonimia tristicula			●					
Amandinea punctata				●	●	●		
Arctoparmelia incurva		●	●					
Arthonia punctiformis ##						●		
Arthonia radiata				●	●	●		
Arthopyrenia punctiformis ##						●		
Arthrorhaphis grisea # on *Baeomyces rufus*	n1							●
Aspicilia calcarea				●	●			●
Aspicilia contorta subsp. *contorta*					●			●
Bacidia bagliettoana					●			
Baeomyces rufus		●		●	●			●
Belonia nidarosiensis					●			●
Bilimbia sabuletorum			●		●			
Bryoria fuscescens var. *fuscescens*	r3					●		
Buellia aethalea			●				●	
Buellia griseovirens					●			
Calicium glaucellum						●		
Caloplaca aurantia					●			
Caloplaca citrina s.str.			●	●	●			●

		LF	UBB	HM	TR	COP	CStE	CD
Caloplaca flavescens					●			●
Caloplaca flavocitrina					●			
Caloplaca holocarpa s.lat.	on plant debris				●			
Caloplaca holocarpa s.str.				●				
Caloplaca oasis			●					
Caloplaca obscurella	n1 *Abundant on cankered ash*			●				
Caloplaca xantholyta								●
Candelaria concolor						●		
Candelariella aurella forma *aurella*				●	●			●
Candelariella reflexa				●		●		
Candelariella vitellina forma *vitellina*			●	●		●	●	●
Catillaria chalybeia var. *chalybeia*				●				
Cercidospora epipolytropa # on *Lecanora polytropa*	n1	●						
Cetraria aculeata		●			●	●		
Chaenotheca ferruginea						●		
Chaenotheca stemonea	r1					●		
Chaenotheca trichialis	r3					●		
Chaenothecopsis pusilla #	n1					●		
Chrysothrix flavovirens	n1					●		
Cladonia cervicornis subsp. cervicornis		●						
Cladonia chlorophaea s.lat.		●	●	●	●	●		
Cladonia ciliata var. *ciliata*		●						
Cladonia ciliata var. *tenuis*						●		
Cladonia coccifera s.lat.		●						
Cladonia coniocraea		●				●		
Cladonia digitata	r2	●				●		
Cladonia diversa		●	●			●		
Cladonia fimbriata		●			●			
Cladonia floerkeana		●			●	●		
Cladonia furcata		●	●	●	●	●		
Cladonia glauca	r1. *4th county record and first since 1982.*	●						
Cladonia gracilis		●						
Cladonia macilenta		●				●		
Cladonia parasitica	r2					●		
Cladonia pocillum					●			
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*						●		
Clauzadea monticola					●			●
Cliostomum griffithii				●		●		
Clypeococcum hypocenomycis # on *Hypocenomyce scalaris*	n1					●		
Collema auriforme								●
Collema fuscovirens								●
Collema tenax var. tenax				●				

		LF	UBB	HM	TR	COP	CStE	CD
Cystocoleus ebeneus		●				●		
Dermatocarpon luridum								●
Dimerella pineti						●		
Dinemasporium strigosum # on *Peltigera hymenina*	n1			●				
Evernia prunastri		●		●		●		
Flavoparmelia caperata						●		
Flavoparmelia soredians	r2. *2nd county record, on a new site.*					●		
Fuscidea austera	r4. *2 new sites for this rare species in county*	●	●					
Fuscidea cyathoides var. cyathoides		●	●					
Fuscidea lightfootii						●		
Fuscidea praeruptorum		●	●			●		
Fuscidea recensa			●					
Hertelidea botryosa	r1. *On 7 lying oak hulks, the only site in England.*					●		
Hypocenomyce scalaris						●		
Hypogymnia physodes		●	●	●	●	●		
Hypogymnia tubulosa				●		●		
Hypotracina revoluta s.s.						●		
Illosporiopsis christiansenii # on *Physcia tenella*	n1					●		
Imshaugia aleurites	r1. *Found in abundance here at its 1 site in the county*					●		
Ionaspis lacustris								●
Lecanactis abietina	*This usually corticolous species found on sandstone!*					●		
Lecanactis dilleniana	n1. *On a W-facing basalt underhang*							●
Lecania cyrtella	*On Sambucus and on plant debris at Tideslow Rake*				●	●		
Lecania suavis	n1. *On pebble*				●			
Lecanora albescens			●		●		●	
Lecanora caesiosora		●						
Lecanora campestris subsp. *campestris*					●			
Lecanora carpinea					●			
Lecanora chlarotera				●		●		
Lecanora confusa						●		
Lecanora conizaeoides forma *conizaeoides*						●		
Lecanora dispersa			●	●			●	
Lecanora epanora				●				
Lecanora expallens			●	●		●		
Lecanora gangaleoides		●						
Lecanora intricata		●	●					
Lecanora muralis								●
Lecanora polytropa		●	●	●		●	●	●
Lecanora pulicaris						●		
Lecanora saligna						●		
Lecanora semipallida					●			
Lecanora soralifera		●	●	●			●	●
Lecanora symmicta						●		
Lecanora umbrina					●			
Lecidea commaculans	r2. *2nd site for this rare species in county.*	●						
Lecidea fuscoatra s.str.		●						

		LF	UBB	HM	TR	COP	CStE	CD
Lecidea hypopta	r2. *Reconfirmation of 1 of the 2 sites in county (both in Chatsworth)*					●		
Lecidea lithophila			●					
Lecidea plana			●					
Lecidea promixta	r3. *2 new 1km squares for county.*		●					
Lecidella scabra			●	●			●	●
Lecidella stigmatea			●		●			
Lepraria caesioalba		●				●		
Lepraria incana s.str.		●	●	●	●	●	●	
Lepraria lobificans			●		●	●	●	
Lepraria membranacea		●						
Lepraria nivalis								●
Marchandiomyces corallinus # on *Parmelia sulcata* & *P. saxatilis*		●	●			●		
Melanelixia fuliginosa subsp. fuliginosa				●				
Melanelixia fuliginosa subsp. glabratula						●		
Melanelixia subaurifera		●		●		●		
Melanohalea exasperata						●		
Melanohalea exasperatula						●		
Micarea byssacea	n1					●		
Micarea coppinsii	n1	●	●					
Micarea denigrata	*On moribund Cladonia furcata*			●				
Micarea lignaria var. lignaria		●	●	●		●		●
Micarea melaena						●		
Micarea peliocarpa						●		
Mycoblastus alpinus	r2					●		
Mycoblastus fucatus						●		
Mycoblastus sanguinarius forma *sanguinarius*			●			●		
Nectriopsis lecanodes # on *Peltigera hymenina*	n1			●				
Ochrolechia androgyna		●	●			●		
Ochrolechia microstictoides						●		
Ochrolechia parella								●
Opegrapha dolomitica					●			
Opegrapha gyrocarpa								●
Opegrapha vermicellifera	n1. *On root of Fraxinus growing out of basalt*							●
Ophioparma ventosa		●	●					
Parmelia discordans		●						
Parmelia omphalodes		●	●					
Parmelia saxatilis		●	●	●	●	●	●	
Parmelia sulcata		●		●	●	●		
Parmeliopsis ambigua						●		
Parmotrema perlatum			●			●		
Parmotrema reticulatum	n1. *A single thallus.*					●		
Peltigera canina				●	●			
Peltigera hymenina				●	●			
Peltigera membranacea				●	●			
Peltigera neckeri				●	●			
Peltigera praetextata								●
Peltigera rufescens				●	●			
Pertusaria amara forma *amara*						●		

		LF	UBB	HM	TR	COP	CStE	CD
Pertusaria corallina		●	●			●		
Pertusaria lactea		●						
Pertusaria lactescens								●
Phaeophyscia orbicularis				●	●	●		
Phaeospora sp.		●						
Phlyctis argena						●		
Physcia adscendens		●		●	●	●		
Physcia aipolia				●		●		
Physcia caesia				●	●	●		
Physcia tenella subsp. *tenella*		●	●	●	●	●		
Physconia distorta				●				
Placynthiella dasaea	n2	●				●		
Placynthiella icmalea		●				●		
Placynthiella uliginosa						●		
Platismatia glauca		●	●	●		●		
Polyblastia agraria	n1			●				
Porpidia cinereoatra		●	●			●		
Porpidia crustulata			●	●	●	●		●
Porpidia macrocarpa forma *macrocarpa*		●		●				●
Porpidia soredizodes			●				●	●
Porpidia tuberculosa		●	●	●		●	●	●
Protoblastenia calva					●			
Protoblastenia incrustans								●
Protoblastenia rupestris				●	●			●
Protoparmelia badia		●	●					
Protoparmelia memnonea	n1	●						
Protoparmelia oleagina	r1					●		
Pseudevernia furfuracea s. lat.				●				
Pseudevernia furfuracea var. *ceratea*		●	●			●		
Psilolechia lucida							●	●
Punctelia jeckeri						●		
Punctelia subrudecta s.str.				●		●		
Pyrrhospora quernea						●		
Ramalina farinacea		●		●	●	●		
Ramalina fastigiata				●		●		
Rhizocarpon geminatum	n2	●	●					
Rhizocarpon geographicum		●	●					
Rhizocarpon lecanorinum			●					
Rhizocarpon reductum			●	●			●	●
Romjularia lurida								●
Sarcogyne privigna	n1		●					
Sarcogyne regularis			●					
Sarcosagium campestre var. *macrosporum*				●	●			
Schaereria cinereorufa		●						
Schaereria fuscocinerea var. *fuscocinerea*			●					
Sclerococcum sphaerale #	n1	●						
Scoliciosporum umbrinum		●					●	●
Solorina saccata								●
Sphaerophorus globosus	nx1. *Previously considered extinct in the county*	●						
Stereocaulon nanodes				●				
Stereocaulon pileatum				●				
Strangospora moriformis	r2					●		
Thelidium incavatum					●			
Trapelia coarctata		●		●		●		●

		LF	UBB	HM	TR	COP	CStE	CD
Trapelia glebulosa		●	●			●		●
Trapelia obtegens				●				
Trapelia placodioides			●	●				●
Trapeliopsis flexuosa						●		
Trapeliopsis gelatinosa			●					
Trapeliopsis granulosa		●	●			●		
Trapeliopsis pseudogranulosa		●	●			●		
Umbilicaria deusta		●	●					
Umbilicaria polyphylla		●	●					
Umbilicaria polyrrhiza		●						
Umbilicaria torrefacta		●						
Usnea flammea	n1					●		
Usnea subfloridana						●		
Verrucaria baldensis					●			
Verrucaria hochstetteri			●	●	●			
Verrucaria macrostoma forma *macrostoma*					●			
Verrucaria muralis			●	●	●			
Verrucaria murina				●	●			
Verrucaria nigrescens forma *nigrescens*			●		●			
Vezdaea aestivalis					●			
Vezdaea leprosa				●	●			
Xanthoria candelaria s. lat.						●		
Xanthoria parietina			●	●	●	●		
Xanthoria polycarpa				●	●	●		

British Lichen Society Field Meetings & Workshops Programme 2012 / 2013

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

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

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

BLS AUTUMN 2012 FIELD MEETING, Bedfordshire

Thursday 4th to Monday 8th October 2012

Local organiser - Mark Powell

Although a field meeting in the southern part of the East Midlands may not seem particularly adventurous, such areas of the lowlands are relatively unexplored territory. The theme of this weekend is to raise awareness of the surprising diversity of lichens to be found. The discoveries in this region have continued in 2012 with species such as *Buellia badia*, *Rinodina calcarea*, *R. pityrea*, *Thelidium pyrenophorum* and *Verrucaria ochrostoma*. There will be many specimens of such lichens available to peruse in the evenings. Beginners and improvers will have ample opportunity to learn while more experienced members will bring fresh insights.

Outline programme

Thursday 4th: 21.00 Welcome & Introduction (after an evening meal).
Friday 5th: 10.00 Meet at Sandy Lodge Reserve (RSPB), visitor car park (TL192485). Trees, heathland and built structures. In the afternoon we will visit a nearby quarry.
Saturday 6th: 10.00 Meet at south end of Cooper's Hill, Ampthill (TL028374). Trees and heathland. In the afternoon we will visit the parish church.
Sunday 7th: Mystery – details will be available to attendees nearer the time.
Monday 8th: 9.30 Meet at Bedford Cemetery chapel (TL048512).

Accommodation

The meeting will be based at The Park Inn, 2 St Mary's Street, Bedford, MK42 0AR, (*www.parkinn.co.uk/hotel-bedford*, 01234 799988). This large hotel is situated beside The River Ouse at the south end of Town Bridge (TL051495). Double rooms are available at £60 B&B per night if mention is made of the BLS meeting when booking. An internet search will reveal a range of alternative hotels and B&Bs in and around Bedford. The local organiser can be contacted for local knowledge.

Microscope work

A function room has been booked for the duration of our stay. This will provide space for approximately ten work stations while leaving room for others to socialise.

Transport

The Park Inn is about ten minutes walk from the Bedford train and bus stations (taxis always on hand). The hotel has its own car parking.

Booking

Accommodation will be arranged individually by the participants. Please let Steve Price know (*fieldmeetings@britishlichensociety.org.uk*) if you plan to attend and also advise the local organiser, Mark Powell (*markpowell222@btinternet.com*). More detailed information about the sites will be sent out to attendees in the weeks before the meeting; please check with the local organiser, especially if you are travelling direct to sites, in case there have to be last minute changes.

BLS 2013 AGM, Royal Botanic Garden Kew

Post AGM Field Outing

Sunday 27 January 2013

Details will be posted on the BLS website *http://www.britishlichensociety.org.uk/* and will appear in the Winter 2012 issue of the Bulletin.

BRISTOL UNIVERSITY WORKSHOP- Photobionts and Sterile Crusts

Friday 22nd to Sunday 24th February 2013

Tutors: Drs Brian Coppins and David Hill
Location: School of Biological Sciences, University of Bristol
Fee: £50.00 (payable to the British Lichen Society)

Lichen photobionts can be an essential character in lichen identification and especially useful when other features are limited. This workshop will help you distinguish between the main types of photobiont and recognise the different kinds of cyanobiont and green photobiont when examining lichen specimens. Practical help will be given with observing and identifying photobionts and in their use in naming lichens specimens in general and, together with all other features, of sterile crusts. Please bring specimens of unidentified sterile crusts and fresh material of lichen with a range of photobiont types.

If you are interested in attending this course please email David Hill (*d.j.hill@bris.ac.uk*) or phone 01761 221587 for further information.

BLS SPRING 2013 MEETING, Kinlochewe, Wester Ross

Saturday 27 April to Saturday 4 May 2013

Local organiser - Oliver Moore

This is a chance to explore unrecorded pockets of the Beinn Eighe NNR and Letterewe Estate SSSI (to assist with local recording effort) as well as other sites of interest in the vicinity of Loch Maree in the North West Highlands. Local geology is dominated by Lewisian gneiss, Torridonian sandstone, quartzite and horneblende schist. Habitats include fabulous Scots pine woodland, some of the northern-most Atlantic oak/birch woodland, moorland, loch edge rocks, acidic rock communities, wooded ravines with *Lobarion*, riverine habitats and mountain summits for the more energetic. The coast is not far away either. More details nearer the time.

Meeting base & accommodation

The base for the meeting will be at Anancaun (the SNH Field Centre at NH024630) where there is space for setting up microscopes and limited accommodation in a recently refurbished self-catering bunkhouse (4 available bed spaces in each of the two dormitories) and a shared-cottage (3 rooms with 2 single beds in each).

For those not staying at the SNH Centre the village of Kinlochewe is only 1km away and here there is the Kinlochewe Hotel, hostel, B&B and caravan accommodation available. The Kinlochewe Hotel is willing to organise evening meals for the whole group should that be required and there is a popular café in the village as well. There is a small village store in Kinlochewe that is reasonably well stocked for those self-catering. There is also a free campsite (at NH013637) approx 2km NW of Kinlochewe with toilet block and drinking water (and no midges at this time of year). The Ledgowan hotel at Achnasheen (15-minute drive) also serves food and Gairloch is about a 35-minute drive away for alternative eating venues.

Travel
Nearest train station is at Achnasheen, on the Inverness to Kyle of Lochalsh line, where a pick-up could be arranged. Kinlochewe is about an hours drive from Inverness (where there is an airport and from where cars may also be hired).

Registering an interest
Expressions of interest to the local organiser Oliver Moore and the BLS Field Meetings Secretary, Steve Price (*o.moore10@imperial.ac.uk & fieldmeetings@britishlichensociety.org.uk*) stating if you are interested in staying at Anancaun or if you plan to arrange your own accommodation. Oliver apologises in advance for slow responses to emails, due to temperamental internet access.

BLS SUMMER 2013 MEETING, Exmoor & The Quantocks

Saturday 22 to Saturday 29 June 2013
Local organiser - Graham Boswell

This meeting, based in Minehead, Somerset will take us to the Quantock Hills and Exmoor. The heathland, woodlands, rivers and coast of this beautiful area provide plenty of opportunity for us to discover and record a wide range of lichens.

Meeting base & accommodation
The base for the meeting will be at **Foxes Hotel**, Esplanade, Minehead, Somerset, TA24 5QP
Telephone: 01643 704450 E-mail: *reception@hotelfoxes.co.uk* website: *http://www.hotelfoxes.co.uk/*
Rates quoted are £39 bed and breakfast or £55 full board including packed lunch.
Foxes Hotel is the UK's only fully operating training hotel for young people with learning disabilities. Bookings for accommodation at Foxes should be made directly with the hotel mentioning the British Lichen Society.

Self-catering accommodation is available at the backpackers hostel **Base Lodge**, 16 The Parks, Minehead TA24 8BS. The whole hostel is being reserved for use by the BLS meeting.

Contact: Graham Boswell email: *togooutdoors@hotmail.com* website *http://www.togooutdoors.co.uk/* then click the link to Base Lodge (in blue) telephone +44 1823 703520 or mobile 07731651536
Bookings for accommodation at Base Lodge should be made directly with Graham Boswell.
Rates are £15 per night per person. Base Lodge sleeps 22 but I will keep the numbers to about 12 for the BLS meeting, there are five rooms.

Microscope work
A room has been reserved at Foxes Hotel to serve as a meeting focal point and for microscope work.

Travel
Nearest train mainline station is Taunton with a good onward bus service to Minehead (combined train and bus tickets can be purchased). There is also a West Somerset Steam train link form Taunton to Minehead. The nearest airport is Bristol.

Registering an interest
Please advise the local organiser Graham Boswell and the BLS Field Meetings Secretary, Steve Price (*togooutdoors@hotmail.com & fieldmeetings@britishlichensociety.org.uk*) if you are interested in attending the meeting and when you have made a booking.

BLS AUTUMN 2013 WORKSHOP - The genus *Usnea* (Advanced Notice)

September / October 2013
Tutors: Becky Yahr and Paul Harrold

It is planned to hold a workshop on this confusing yet very appealing genus. It will be based in Scotland and using two locations will study both the eastern and western floras. It is likely to be of 5 or 6 days duration. Further details will appear in future issues of the BLS Bulletin and on the BLS website. In the first instance if interested in this workshop please inform the BLS Field Meetings Secretary, Steve Price (*fieldmeetings@britishlichensociety.org.uk*).

The New BLS Website

The Society's website has been feeling its age for some time now, so a project , managed by a small working group, was set up to redevelop it. This was led by Stephen Ward, and began with a thorough review of our requirements and future plans. We decided to use Drupal, a content management system, as the platform for the new website. This is a modern approach to website development that requires some work and technical skill to set up, but should make the website more flexible, powerful (in terms of features) and easier to maintain in the future. Alan Hale agreed to take this on, and to act as webmaster for the first year or two. His work on the Welsh Lichens and Welsh Lichen Apprentice websites is familiar to many of us, and he has also developed and managed sites for the BSBI and BBS.

It's a big job, but the new website should be ready to go live some time in the summer. Everything from the old site will still be there, but there will also be many new pages on topics such as lichen biology and habitats, and on the Lobarion survey and other recording projects. The Events section will contain details of past and forthcoming field meetings and workshops. Look out for the new searchable Taxon Dictionary, which brings the modern names, synonyms, BLS numbers and conservation status all together in place, and for the first of what we hope will be a

useful series of species accounts. Some of the content on the new site will be available to members only.

The new website will be at *www.britishlichensociety.org.uk*, but the old site will redirect to this for the next couple of years so there should be no problem finding it. We are grateful to Howard Oakley for his efforts in keeping the old site going until the new one takes over.

If you have any suggestions for the new website, or would like to contribute to the species accounts or other material, do get in touch.

Janet Simkin
janetsimkin@btinternet.com

Knives: Fieldwork Warning

The law in the UK on carrying knives has been tightened in recent years and the police have increased their vigilance in response to recent well-publicized instances of serious crime involving these weapons. BLS members have expressed concern over the possible illegality of carrying knives to collect samples in the field.

Current law makes it **illegal** to carry any knife with a blade exceeding 3" or 7.5cm (as well as many other sharp objects), in a public place **without good reason**. However, possession of folding knives with blades smaller than these dimensions (such as many "Swiss Army" type knives) is considered to be acceptable. The website *http://www.direct.gov.uk/en/CrimeJusticeAndTheLaw/Typesofcrime/DG_181675* provides basic rules on knives and these are abstracted here (as of the time of writing).

Basic rules on knives

If you're planning to buy or carry a knife, it's important to know the rules. Anyone found breaking these laws can face up to four years in prison.

These include:

- it is a crime to carry a knife in public without good reason – for example, if you work as a chef
- knives with folding blades, like Swiss Army knives, are not illegal as long as the blade is three inches long (7.62 cm) or less
- if any knife is used in a threatening way (even a legal knife, such as a Swiss Army knife), it is regarded as an 'offensive weapon' by the law
- any sharp instrument – even a screwdriver – can be viewed by the police as an illegal offensive weapon if you do not have a good reason for carrying it

- the maximum penalty for an adult carrying a knife is four years in prison and a fine of £5000
- it is illegal to carry, buy or sell any type of knife banned by the government (the list of banned knives is given on the Government website)
- it is illegal for any shop to sell a knife of any kind (including cutlery and kitchen knives) to anyone under the age of 18

Very similar laws, with some variations apply in Scotland.
The website *http://www.scotland.gov.uk/Publications/2011/07/05130225/4* provides details.

Recommendations
The BLS considers that the use of knives and sharp instruments (such as chisels or secateurs) for the collection of lichens constitutes a good reason to carry such tools in public.

When lichen collecting using a knife or other sharp instrument the following is recommended:

- When collecting be able to demonstrate that your activities give you 'good reason' to carry a knife. e.g. being part of an organised activity (such as a BLS Field Meeting); being able to show a copy of written permission to collect; and look the part of a lichenologist with your hand-lenses, packets, field guides etc. Be especially cautious when collecting in populated areas.
- Do not carry your knife or sharp instrument openly on your person, keep it in a rucksack or bag until it is needed for use; similarly if in a car store any knife or sharp instrument so that it is not immediately to hand.
- Consider the potential hazards of using a penknife of the folding type and the real danger of severe cuts to fingers – especially if a folding knife is pushed forward (towards the point) to prise samples from the substrate. Note: some penknives have folding blades with a locking button that needs to be pressed in order that the blade can be stowed. Be aware that these are not considered to be folding blades and thus do not fall within the category of acceptable knives even if the blade is less than 3" long.
- If working with schools or prisons different and tighter laws may apply and it is recommend that advice is taken from the establishment concerned.

Steve Price and Paul Cannon
fieldmeetings@britishlichensociety.org.uk

Minutes of the Annual General Meeting, 4th February 2012 National Museum of Wales

Stephen Ward presided; Chris Ellis noted proceedings.

1. Attendees
Juliet Bailey, Barbara Benfield, Ishpi Blatchley, Graham Boswell, Richard Brinklow, Paul Cannon, Heather Colls, Peter Crittenden, Andrew Cross, Heidi Döring, Sally Eaton, Theresa Greenaway, David Hawksworth, Mary Hickmott, David Hill, Barbara Hilton, Chris Hitch, Bob Hodgson, Peter Lambley, Jack Laundon, Jason Lewis, Alan Orange, Ivan Pedley, Allan Pentecost, Mark Powell, Steve Price, William Purvis, Maxine Putnam, David Richardson, Neil Sanderson, Peter Scholtz, Mark Seaward, Alan Silverside, Janet Simkin, Mike Simms, John Skinner, Justin Smith, Amanda Waterfield, Vanessa Winchester, Ray Woods

2. Apologies for Absence
Leslie Balfe, Nathan Callaghan, Brian Coppins, Sandy Coppins, Simon Davey, Frank Dobson, Joy Fildes, Emma Green, Cécile Gueidan, Peter James, Ken Sandell, Holger Thüs, Pat Wolseley.

A statement of 'best wishes' was received from David Galloway.

3. Obituaries
Mark Seaward paid tribute to Dharani Awasthi, Honorary Member, from India.

Heidi Döring spoke of her mentor Aino Henssen.

Recently deceased members were remembered: C.B. Ballinger, Siegfried Huneck, Christian Leuckert, Don Smith, Gill Stevens.

4. Minutes AGM, January 2011
The AGM 2011 minutes were presented and were approved.

5. Matters Arising
None.

6. Officers and Committee Chair Reports

President
Stephen Ward thanked Alan Orange and museum staff for hospitality and for organising meeting logistics.

Considering some of the Society's achievements during 2011: we produced our first Handbook which has been well received. A first edition inevitably produces suggestions as to how to improve the next; Tom Preece suggested the Handbook should contain a cautionary note on the use of knives for collecting samples of bark lichen. Our Field Meetings Secretary, Steve Price, will addressing this issue.

The first printing of *The Lichens of Great Britain and Ireland,* edited by Cliff Smith sold out and has gone to a second printing. Most members may be content to carry Dobson edition 1,2,3,4,5 or 6 (take your pick) in the field, but others choose to carry Cliff's book in their rucsack. One of those, Mike Simms, coined what was to me a new term 'kindlification' – his proposal is to use the latest technology to make it possible to carry a light-weight version. If you have technical knowledge as to how the Society might do so, please get in touch with Mike.

David Hill commented some time ago that our Website was creaking at the seams. Also our long-serving Webmaster, Jacqui Middleton, had ceased to find Dreamweaver entertaining and looked forward to the day when she could dream-on. Arrive a knight in shining armour, Howard Oakley, to relieve her of this nightmarish task. To oversee revamping the website, a Working Group was formed. Council appointed Alan Hale to design the new site. The new site is already operational on a test basis and by the time you read this you will be able to access it at *www.britishlichensociety.org.uk*. During the continuing developmental phase, Alan Hale will be our new webmaster. So, whilst we normally we have just one Webmaster to thank, this year we have three; we owe them each a sincere word of thanks for taking charge of this essential modern-day means of communication. You can all contribute photographs of lichens, lichen habitats and lichenologists by sending them to Alan at *alan.hale@btclick.com*.

The Society has continued to award funds. In New Zealand, with the support of David Galloway, we awarded Lars Ludwig a Summer Vacation Scholarship which enabled him to undertake an investigation of the physiology and distribution of lichens which appears in this Bulletin. The Wallace-Burnet-Gilbert fund enabled Oliver Pescott to attend the lichen course run by David Hill and Brian Coppins at the University of Bristol, reported on in last summer's Bulletin. Our Overseas Members Travel Fund assisted Udeni Jayalal to work with Pat Wolseley at the Natural History Museum with the aim of preparing a handbook on the lichens of Horton Plains National Park in order to further the conservation of forest biodiversity in Sri Lanka. We also supported Violet Atienza from the University of Valencia who visited Heidi Döring at Kew to advance taxonomic studies of the lichenicolous *Dacampiaceae* using molecular techniques.

It often falls to those working in the field of nature conservation to evaluate an area in terms of the species which occur there. Ray Woods and Brian Coppins have been collaborating with the Joint Nature Conservation Committee in preparing a 2nd edition of *A Conservation Evaluation of British Lichens and Lichenicolous Fungi* to provide an authoritative basis on which to do so for these two groups. It is simply not possible for those implementing conservation policies to ensure that all species of note are encompassed within statutory nature conservation sites. Nor is it feasible to translocate species found to be in the way of a proposed development; such translocations almost without exception fail. The present work provides a basis on which to assess the importance of areas where the species described occur,

irrespective of whether they lie within a designated site. As such its findings will be of crucial importance in planning casework.

The British Lichen Society is a member of the all-encompassing Society of Biology. David Hawksworth represented us at their annual meeting and initiated a proposal to form a Fungal Sciences Group.

During the year, we said farewell to our joint chairs of the Education & Promotions Committee, Nathan Callaghan and Emma Green, who brought great enthusiasm and fresh insights to its work.

No Society can function unless it is efficiently administered and I would like to pay particular tribute to our Treasurer, John Skinner, and his Assistant Treasurer & Membership Secretary, Heidi Döring. John will shortly go through the accounts with you and Heidi summarise membership. They will also introduce proposals for an increase in subscriptions. One task they have been unable to perform recently due to lack of time is reclamation of Gift Aid; we would be delighted if someone volunteered to assist.

Some people even fulfill two roles. Thus David Hill chairs not only the Data Committee, but the Members' Services Committee also. Both Committees have been making excellent progress. A key person in the Data Committee is Janet Simkin, a human dynamo in a lichen world. I will leave her to take you swiftly through her work with the National Biodiversity Network (NBN); something which sounds like a new household product – NBN cleaner and proposals for new approaches to recording by voluntary bodies; not to mention her liaison with Alan Hale over matters Drupal (on which the new website is being built) and Indicia.

Our two editors have continued to surprise and delight with The Bulletin and The Lichenologist.

Bryan Edwards, our Honorary Conservation Officer, is planning a key workshop-by-invitation at Kingcombe on the identification of key lichen habitats.

One of our longest serving officers, Mark Seaward, is looking for a new home for the Society's archives. Anyone with dry storage space to spare, do please let Mark know. Mark is also an Honorary Member and I will shortly ask him to pay tribute to one of our Honorary Members, Dr D D Awasthi of India, who died last year.

We are here gathered in Wales, the land of song – also of literary bards and in our case, home of our Library. Our continuing thanks to Margot Greer and her staff of volunteers at the library of the National Botanic Garden of Wales for looking after this on our behalf.

Lastly, I wish to thank your Vice-President, Barbara Hilton for her unstinting support and sound advice and Chris Ellis as Secretary. A great strength of this Society, which keeps it fresh and driving forward is its protocol for the Presidency - two years in which to give of your best, hopefully notch up some achievements and then hand over to the next person. In the anticipation that you will shortly elect her as President, I wish Barbara and her team all the very best.

I would simply like to close by saying that lichens are important – and so are you!

Treasurer
John Skinner reported that the accounts are in a healthy position, with c. £300,000 assets. Working through the account sheets, he indicated some minor anomalies which require the accounts to be referred back to the accountants.

The President asked that the accounts be approved in principle. Subject to the amendments outlined by the Treasurer, the accounts will be signed-off by the President and Treasurer.

• Proposed – Ivan Pedley; Seconded – David Hill. Approved unanimously.

Membership
Heidi Döring outlined membership figures and statistics. In the calendar year 2011 the Society welcomed 64 new members, eight members resigned, 38 members were removed due to non-renewal of membership, and six members died. At the end 2011 (30.11.2011) the Society had a total of 635 paid members (429 Ordinary, 17 Electronic, 49, Life, 35 Associates, 78 Senior, 17 Junior, 10 Family) and 14 Honorary and 8 Corresponding members.

She thanked those members who had overpaid but who, rather than receive a rebate, had donated the excess payment to the Society.

Council recognises that Heidi requires assistance dealing with the huge task of Membership, especially in routine administrative tasks such as Gift Aid – a volunteer (preferably in the Kew/London area) is sought to help Heidi, if none is forthcoming the Society may need to employ someone on a part-time basis.

Members' Services Committee
David Hill provided an overview; the best use of the Society's library and herbarium are currently under discussion, aiming for greater accessibility and an improved offer of services. Ray Woods and Richard Brinklow were warmly thanked for their assistance.

Steve Price was thanked for his work on Health and Safety issues at field meetings, and Stephen Ward for producing the Society's first Handbook.

Field Meetings
Steve Price reported on the Society's field meetings during 2011, which had encompassed varied aspects of both field and lab-based training, and general recording. Steve Price thanked the local organisers and tutors for making the meetings happen. Approximately 60 different individuals attended the meetings. The 2012 programme was presented.

The use of knives for collecting bark samples etc. had been brought to the Society's attention, by Tom Preece, as an omission from the otherwise comprehensive Handbook. Steve had cooperated with Paul Cannon to draft an advice note which appraises the legal situation and provides recommendations for the Society's

members. Two issues were raised from the floor: (a) there should be a cautionary note that a folding knife may suddenly close in use, causing injury; and (b) the Society should be pro-active in making a strong case for lichenologists having a legitimate reason to carry a knife.

A note on the use of knives for fieldwork appears elsewhere in this Bulletin. Steve Price and Paul Cannon requested further comments on this issue and they were asked to revise the document accordingly.

Data Committee
David Hill thanked Janet for work on the database. Janet reported that the England-Wales database projects will be completed by April, on time (within 3 yr) and within budget. The Scottish database has been up-dated on the NBN, as of November 2011. English data are also on the NBN, as of December 2011. Three different datasets are available: general, churchyard, and rare & threatened. The most up-to-date data will always be on the database, with the NBN a search/access tool. Where data cannot be accessed through the NBN, enquiries directed to the database are welcome.

Conservation Committee
Ray Woods provided an update on the Conservation Evaluation. For example, this includes more information on lichenicolous fungi. He highlighted that we have very little information on *Lobarion* spp in the England & Wales, especially in terms of recording its loss (required for accurate IUCN assessment). The *Lobarion* resurvey will be an important step forward.

During the last two reviews of Schedule 8 if the Wildlife and Countryside Act no lichens have been added; the Conservation Committee has decided to push for greater inclusion of lichens.

A future task, analogous to ecological continuity indicators for woodlands, this will be the focus of a workshp in April.

Archivist
Mark may be asked to relinquish space at the University of Bradford; a safe repository for the archive needs to be found before July.

Senior Editor's Report
There have been 121 submissions to *The Lichenologist* in 2011, making it the busiest year ever. The editorial board has been expanded to handle the additional workload and Peter Crittenden paid tribute to the team, especially Tony Brathwaite (Managing Editor), and proof-readers (Barbara Benfield, Brain Coppins, Jack Laundon).

Whilst issues of *The Lichenologist* have been getting larger; there is a trend in academic publishing towards 'on-line only' (e.g. *New Phytologist)*; this is not anticipated for *The Lichenologist* in the foreseeable future.

Bulletin Editor
Paul Cannon thanked Members for their contributions during 2011 and looked forward to this trend continuing in 2102. David Hawksworth was revealed as the

mystery Father Christmas (Winter 2011 *Bulletin*), with Chris Hitch the winner of the competition.

Society of Biology
David Hawksworth has negotiated a special task force on Fungal Diversity, under the auspices of the Society of Biology.

FaceBook
Sally Eaton has created a Facebook page for the Society which, after just one year has 130 friends mostly in the 18-40 age group. The 'friends' are not restricted to Society members. Contact details will appear in the next *Bulletin*.

7. Membership Fees
Stephen Ward presented the case for an increase in membership fees; this would be the first change for 8 years. Effectively, the cost of membership is not covering the Society's costs on a per member basis and is being subsidised from elsewhere (e.g. *The Lichenologist*). Proposed changes were as follows:

(a) Ordinary membership from £30 to £35;
(b) Electronic membership from £25 to £30;
(c) Associate membership from £22 to £25 (but with Junior and Senior Associate Member fees remaining unchanged at £10.00)
(d) Life membership from £300 to £350.

These adjustments would take effect from January 2013.

Comments from the Floor compared BLS membership variously, favourably and unfavourably with other Societies (e.g. BBS and BMS) – John Skinner confirmed that having researched the matter the BLS is mid-ranged.

The President proposed that membership rates should be modified as specified.

• Proposed – Heidi Doring; Seconded – John Skinner. Approved with one against.

Two Items for Council were proposed from the Floor: a lowered rate of membership fees might be available for the first year; and the membership structure should be modified, e.g. to allow a senior category for Ordinary members.

8. Election of Officers
Stephen Ward thanked retiring members (Linda Davies, Holger Thüs, Mike Simms).

Proposed new Council Members were introduced and voted-in.

President: Barbara Hilton (Proposed – John Skinner; Seconded – Ivan Pedley. Unanimously elected).
Vice-President: Janet Simkin (Proposed – Barbara Hilton; Seconded – Peter Lambley. Unanimously elected).
The following were voted-in on block. Unanimously elected.
Chair of Education and Promotions Committee: Sally Eaton (Proposed – Stephen Ward; Seconded – Graham Boswell)

Members of Council

1. Cécile Gueidan (Proposed – Holger Thüs; Seconded – Theresa Greenaway)
2. Theresa Greenaway (Proposed – David Hill; Seconded – Ishpi Blatchley).
3. Les Knight (Proposed - Allan Pentecost; Seconded – Steve Price).
4. Alan Silverside (Proposed – David Hawksworth; Seconded – Paul Cannon)

8. Amendment of Constitution

Amendments which had been proposed, discussed and withdrawn at AGM 2011, had been modified and circulated in the Winter Bulletin; it was noted that all amendments had been approved by Frank Dobson, who had previously raised objections.

1. The Society's objectives should be expanded by adding reference to '*their habitats*' in the 2nd bullet point of article 2 (Objectives), and adding a third bullet point, i.e. '*to raise awareness of the importance and significance of lichens in the environment*'.

• Proposed - Ray Woods; Seconded – Peter Lambley. Approved unanimously.

2. It was proposed to change the terminology referring to 'Honorary Members', to read: '*Honorary members shall be nominated by the council in accordance with the criteria outlined in Rule 13…*'. Accordingly, a new Rule 13 has been created to clarify the circumstances under which Honorary Membership and the Ursula Duncan Award are conferred, reading:

'*Honorary members shall be distinguished lichenologists and/or persons who have rendered outstanding service to lichenology. They shall be elected in accordance with Rule 3. Presentation of Honorary Membership may be made at an international lichenological meeting or at a General Meeting of the Society'.*

'*Recipients of the Ursula Duncan Award shall be persons who have rendered outstanding service to the Society; they may be proposed by any member of the Society, seconded by five other members and shall be approved by Council. The award will be made at the General Meeting of the Society'.*

Peter Lambley pointed out that a defining point of the UDA, '*service to the Society*', should be viewed in a broad sense (e.g. including fieldwork); The AGM **agreed;** the President reminded Members that the changes were proposed because to ensure that the purposes of the Ursula Duncan award be clearly set out in the Constitution.

• Proposed – David Hill; Seconded – Ivan Pedley. Approved unanimously.

3. A change to the text dealing with Subscriptions under article 5 was proposed, to read: '*Members who have not paid a current subscription will not receive publications; membership terminates if no renewal payment is received within the first 3 months of a year. If a renewal payment is received later in the year membership will be reinstated.'*

Mary Hickmott asked for discretion for members who may struggle to pay (as had previously been the case for members in Eastern-Bloc countries). Heidi Döring explained the Society's policy on discretionary members.

• Proposed – William Purvis; Second – Barbara Benfield. Approved unanimously.

9. Awards

Honorary Membership for Peter Crittenden was proposed by David Hawksworth and approved unanimously, after which Peter was presented an engraved quaich (see oration to Peter elsewhere in this Bulletin).

Chris Ellis presented an oration to David Hill who was then presented with the Ursula Duncan Award of engraved serpentine (see oration to David elsewhere in this Bulletin).

10. Any Other Business

No other business.

11. Date and Place of AGM 2013

The Royal Botanic Gardens, Kew was proposed by the Council as the location for the BLS AGM 2013.

Approved unanimously.

ADVANCED NOTICE

The 2013 Annual General Meeting of the British Lichen Society will take place on 26 January 2013 at the Jodrell Laboratory, Royal Botanic Gardens, Kew, Surrey TW9 3AF. Further details will be announced in the Winter 2012 Bulletin.

Following changes in the Society's Constitution agreed at the 2012 Annual General Meeting, the revised text is reproduced below in full.

Constitution of the British Lichen Society

11th edition: February 2012

1. Name

The name of the society shall be the **British Lichen Society.**

2. Objectives

- To promote and advance all branches of the study of lichens especially in relation to those of the British Isles.
- To encourage and actively support the conservation of lichens and their habitats.
- To raise awareness of the importance / significance of lichens in the environment.

In furtherance of these objectives but not otherwise:

- to publish results of investigations and other relevant work in the Society's publications to the extent that the Council of the Society and Editors deem to be suitable; such publications to be available for sale to the public.
- to facilitate the exchange of information among lichenologists by organising field meetings, workshops, conferences, lectures, exhibitions, and by other means.
- to promote education and awareness of lichens and to support the training of lichenologists.
- to aid in the maintenance of adequate representative collections of British lichens in the national and other public herbaria.
- to establish and maintain a collection of lichens for the use of members and others.
- to develop and maintain databases of information on the distribution and conservation status of lichen species in the British Isles.
- to maintain a library of books and lichenological journals; these to be made available to non-members at the discretion of the Librarian who shall be responsible to the Council.
- to raise money by membership fees or by any other means, at the discretion of Council, and within the rules set by the Charity Commissioners.
- to establish, own and maintain conservation areas and to aid in the establishment and maintenance of conservation areas.
- to promote the views of the Society on matters relating to lichens at a local and national level.

3. Membership
The Society shall have honorary members, ordinary members, associate, senior associate, student associate and family members.

Honorary members shall be nominated by the Council in accordance with the criteria outlined in Rule 13 and elected on a majority vote of those present and voting at a General Meeting of the Society. Election of an Honorary Member should not increase their number beyond 2.5% of the total membership at that time. They shall enjoy the same benefits as ordinary members but shall pay no subscription.

Ordinary members shall be persons who have signed the form of membership and paid the subscription.

Associate members, of all categories, shall be entitled to membership (or removed from it, see below) in the same way as ordinary members but shall pay such smaller subscription as the Society may determine in accordance with Rule 5. Associate members, of all categories, shall enjoy the benefits of ordinary members, except that they shall not receive *The Lichenologist*. Student Associate membership shall be open to full-time students and to persons under the age of 18. Senior Associate membership shall be open to persons over 65. Members under the age of 18 are not eligible to vote at a General Meeting or serve on Council.

Family membership is available to persons living in the same household as a member in some other category. Family members receive no publications and have no voting rights.

Ordinary members aged 65 or over may pay a life subscription. Other discounted subscriptions for more than one calendar year may be offered to members, at rates determined by the Society in accordance with Rule 5.

4. Removal from Membership
Any member whose conduct, in the opinion of the Council, is prejudicial to the interests of the Society may be removed from membership by a two-thirds majority vote of those present at a meeting of the Council, on the agenda of which the words "Removal of a member" shall have appeared; provided no member may be so removed unless due notice of 28 days has been sent to the member of the intention of the Council to proceed under this Rule. In such a case, the nature of the charges made shall be stated, and the member concerned shall be afforded the opportunity to answer such charges, either by means of a written statement to be circulated to Council members at least 7 days before the meeting, or by means of a verbal reply at the meeting, or both. A member so removed shall forfeit any claim upon the Society.

5. Subscriptions
Subscription rates shall be determined, as and when necessary, at a General Meeting of the Society by a majority vote of those present and voting. Subscriptions shall relate to one or more calendar years, and **shall be payable in advance on or before 1st January each year**. A person joining the Society who has signed the form of membership and paid a subscription shall be entitled to receive those of the Society's

publications which are appropriate to his or her category of membership, and which are issued during the calendar year(s) for which the subscription is paid. Members who have not paid a current subscription will not receive publications; membership terminates if no renewal payment is received within the first 3 months of a year. If a renewal payment is received later in the year membership will be reinstated.

6. Officers

The officers of the Society shall be the President, the Vice-president, the Secretary, the Treasurer, the Assistant Treasurer & Membership Secretary, the Senior Editor, the chairs of the Conservation Committee, Data Committee, the Education and Promotions Committee, the Members' Services Committee, the Finance Committee, the Bulletin Editor and such others as the Council shall decide. The positions of President, Secretary and Treasurer shall be held by three different members at any one time.

7. Election of Officers

The President shall be nominated by the Council and elected for a term of two years by a majority vote of those present and voting at an Annual General Meeting of the Society. Nominations for the Vice-president and all other officers shall be in writing, submitted with the consent of the nominee, and shall be received by the Secretary at least two weeks before an Annual General Meeting. The Council shall have power to make nominations at any time prior to an Annual General Meeting. The Vice-president shall be elected for a term of two years and shall be ex-officio a member of all the Society sub-committees during his/her term of office. All other officers are elected for a term of one year. The election of officers shall be by a majority vote of those present and voting at an Annual General or Special General Meeting.

8. Council

The Council shall consist of the officers of the Society and of nine members each elected at a General Meeting of the Society for a term of three years with three new members normally being elected each year. Nominations for the members shall be in writing, submitted with the consent of the nominee, and shall be received by the Secretary at least two weeks before an Annual General Meeting. The Council shall have power to make nominations at any time prior to an Annual General Meeting. The members thus elected shall not be eligible for re-election until one year after their term of office. The retiring President shall remain a member of the Council for one year following his/her retirement. The Council shall have the power to co-opt to fill any vacancy on the Council or to offer specialist advice.

The following are not members of Council but are entitled to receive the minutes of Council meetings and to make a personal report at the Council meeting immediately prior to the AGM: Field Meeting Secretary, Mapping Recorder, Database Manager, Archivist, Curator, Librarian, Webmaster. At other Council meetings they will report through either the Chair of the Data Committee, Chair of Members' Services Committee or Chair of the Education and Promotions Committee.

9. Duties of Council and Officers
The Council, through its officers, shall administer the affairs and the funds of the Society. The President, or in his or her absence, the Vice-president, shall preside at all General Meetings of the Society and the Council. In the absence of both, a chairman shall be elected by a majority vote of those present. The President shall be an ex-officio member of any Committees that the Council considers necessary for the running of the Society. In case of equality of votes on any matter, the President (or chairman of the meeting) shall have a casting vote. The Treasurer or his or her appointed deputy shall keep an account of all receipts and expenditure, a statement of which, reviewed by an Independent Examiner in accordance with the rules of the Charity Commission, shall be presented by him or her at the Annual General Meeting and either published in the Winter edition of the 'The Bulletin' or else included with it as a separate document. The Secretary, Treasurer, Senior Editor, and other officers shall submit written reports to the Annual General Meeting.

10. Trustees
The Trustees shall be the officers and members of Council.

11. Payments to Trustees
Subject in every case to authorization by the Charity commission, any member of Council or their spouse/partner who possesses specialist knowledge or skills may receive reasonable fees when they or their company are instructed by the Council to undertake work which requires such specialist knowledge or skills. Provided that at no time shall more than seven members of the Council benefit under this provision and that a member of Council should withdraw from any meeting where his or her appointment or remuneration is under discussion.

12. Meetings
The Society shall hold an Annual General Meeting and such others as the Council shall decide. The Secretary (or in his or her absence a person appointed by the chairman of any meeting) shall publish to all members of the Society the formal decisions taken at every General Meeting of the Society. Minutes shall be taken of all formal meetings of the Society and its Council. Notice of a General Meeting of the Society shall be sent to members at least four weeks before the date of the meeting. The procedure and order of business at meetings shall be decided by the chairman. A Special General Meeting of the Society shall be convened on the requisition of the Council or of twenty members. The requisition shall be addressed to the Secretary and shall specify the purpose for which the meeting is called. A convening notice stating this purpose shall be sent to every member at least fourteen days before the meeting is to take place. Notice of a Council meeting shall be sent to all members of Council at least fourteen days before the date of the meeting. A quorum at a General Meeting of the Society shall be twenty five members and at a meeting of the Council eight members of Council.

13. Honours and Awards

Honorary Members shall be distinguished lichenologists and / or persons who have rendered outstanding service to lichenology. They shall be elected in accordance with Rule 3. Presentation of Honorary Membership may be made at an international lichenological meeting or at a General Meeting of the Society.

Recipients of the **Ursula Duncan Award** shall be persons who have rendered outstanding service to the Society; they may be proposed by any member of the Society, seconded by five other members and shall be approved by Council. The award will be made at a General Meeting of the Society.

14. Changes to the Constitution

Changes in this Constitution may be made only at Annual or Special General Meetings of the Society and must be approved by not less than two-thirds of the members present and voting at the meeting. Proposals to change the Constitution must be detailed in the notice convening the meeting sent to every member. No alterations, variations, or additions shall be made to the Constitution which will make the objects of the Society not exclusively charitable or the funds and assets of the Society applicable otherwise than for exclusively charitable purposes.

Certified as a true copy of the constitution as passed at the Annual General Meeting of the British Lichen Society on 4th February 2012.

Citation for Honorary Membership – Peter Crittenden

It gives me great pleasure to speak in support of Peter's nomination as an Honorary Member of the British Lichen Society. He is a distinguished researcher with an international reputation, and has also made a major contribution to the success and worldwide reputation of the British Lichen Society.

Peter obtained his BSc from Westfield College of the University of London in 1971, and then moved to the University of Sheffield from which he received the degree of PhD in 1975 for investigations into the effects of air pollution on plant growth. At that time, the ecophysiology of lichens was emerging as a particularly exciting area for original research, and he was lured to McMaster University in Ontario, Canada, to work with Kenneth A. Kershaw from 1975-77. Ken was a somewhat larger than life British experimental lichenologist and quantitative ecologist who had been lured to Canada from Imperial College in the late 1960s. Peter then forsook the harsh Canadian winters and fieldwork in the tundra and moved back to the balmier climes of the University of Sheffield in 1977, a return I can empathize with as a native of that city myself.

In 1981, Peter secured a position at the University of Nottingham, which has proved to be an ideal niche for him, and where he developed an enviable research record as an experimental lichenologist, and he is now Associate Professor and Reader in Plant and Microbial Ecology. He has become the world's foremost researcher on the nitrogen and phosphorus relations in lichens, but has also had diversions into lichen sexual strategies, culture methods, and even a little phylogenetics. In addition he has been instrumental in taking steps to have the whole genome of a lichenized fungus sequenced. However, I should hate to leave the impression that Peter was chained to the laboratory bench. To the contrary, his research has involved fieldwork in areas as distant as Antarctica, Namibia, and Russia. Peter an author or co-author of around 150 scientific publications, several of which are widely cited and contribute to the 6500 hits his work has in Google Scholar.

Peter has been an active member of the BLS since the late 1960s, and served as President in 1998-99, and as Senior Editor of *The Lichenologist* from 2000. He improved the appearance of the journal, oversaw the introduction of the Scholar-One electronic manuscript handling system, and stimulated thematic issues on particular groups of lichens. So successful has he been in attracting quality papers, that the number of issues had to be increased from four to six per year. As an editor, Peter developed a reputation for not only being meticulous but conscientious and fair-minded when handling contentious issues, even consulting his predecessors in this role on occasion. International respect led to his election as President of the International Association for Lichenology for 2008-12, in which role his performance was exemplary, and culminated in a most successful congress in Thailand in January 2012.

Despite his international standing, it is gratifying that Peter still keeps his feet very much on the ground, for instance in having a particularly active role in the Open Air Laboratory (OPAL) Big Lottery Fund project in the East Midlands.

Peter is a special person in several ways, and unique today as the only full-time lichenologist in the entire UK university system. The Council of the British Lichen Society feels privileged that it has been able to benefit from his help and support over so many years, and now wishes to recommend that the Society bestows its highest honour on him – in recognition of both his international stature and service to the Society. I am therefore pleased to commend him to you for the award of the Society's Honorary Membership.

Professor David L Hawksworth CBE
d.hawksworth@nhm.ac.uk

Ursula Duncan Award – David Hill

This is the text of the valedictory address, given by Chris Ellis.

It's a great privilege, to honour on behalf of the Society, this recipient of the Ursula Duncan Award: David Hill.

In soliciting information for this testimonial, I was sometimes met with surprise that David wasn't already in receipt of this honour – and having compiled this biography it's clear to see that David has been a decisive figure in the success of the BLS over the past 40 years.

Academic Career

David's early academic career was at the University of Oxford, where he was mentored by Sir David Smith. There must be something special about the name David; because David Hill was a key member of a very dynamic group of researchers in the 1960s – including David Lewis and David Richardson, working with Sir David Smith – and this dynamic team of Davids worked to establish mechanisms for the transfer of sugars from the algal to fungal partner in the lichen symbiosis – truly ground-breaking biology.

This led to further research across a range of topics, with David Hill among the first to establish experimentally the lichen sensitivity to sulphites, which provided a mechanism for the Hawksworth-Rose scale of pollution sensitivity. Another breakthrough contribution in research was David's work on the mathematical modelling of lichen growth rates – a key paper in the *Journal of Theoretical Ecology*, published in 1979, continues to be well cited in 2011, which testifies to the long-term influence of David's research.

Yet another major contribution can be identified in 1985: when David Hill co-authored with David Hawksworth the book – *The Lichen Forming Fungi*. This became established as the standard text on lichens.

Teaching

David's contribution as a teacher and mentor has been extremely important. He held an academic position in Bristol University's Department of Extra Mural Studies, and he used this position to establish the famous and very highly regarded Bristol courses. These lichen courses began in 1981, ran regularly through to 1994; they were often over-subscribed. They provided workshops on specialist matters, such as identification, advanced microscopical techniques, and so on, providing fundamental support for field recording. The courses also brought some important converts into the BLS community, including among others Ishpi Blatchley, Sandy Coppins and Theresa Greenaway. The Bristol courses were rekindled in 2009 and they continue today, proving as popular and influential as ever.

A special aspect of David's teaching is that he goes far beyond what is needed for identifying lichens, and continually challenges students with questions and answers on aspects of their physiology and ecology also.

Service to the Society

Many here today will be familiar with David's long-standing service to the Society. David first joined the BLS in 1962, as a junior member, and has been a regular contributor ever since then to BLS activities. He has served at least twice as an elected member of Council, and was vice-President of the BLS in 2004-2005. He has represented BLS interests, as our representative to the Institute of Biology, and during its transformation into the Society of Biology, and he has championed the interests of lichens and biodiversity generally within a scientific culture that is strongly biomedical.

David is of course currently Chair of the Data Committee, provides a lead to Member Services, and he has served on various committees over the years – too many to name.

Beyond the BLS

What some may not know is that David has made extensive collections of lichens from New Guinea and the western Pacific, which keep him occupied today. Also that he's a DIY and woodworking enthusiast, as well as a passionate musician. He plays the French horn to a high standard and has a prodigious knowledge of classical music and its social and political context.

In addition to these successes, David is also in many ways the archetypal gentleman, and his easy manner and personal warmth have dissolved away many of the lively conflicts that characterise a vigorous and forward-looking organisation such as the BLS.

Report of BLS AGM field outing, Coity Castle & Ogmore Castle, Glamorgan, 5 February 2012

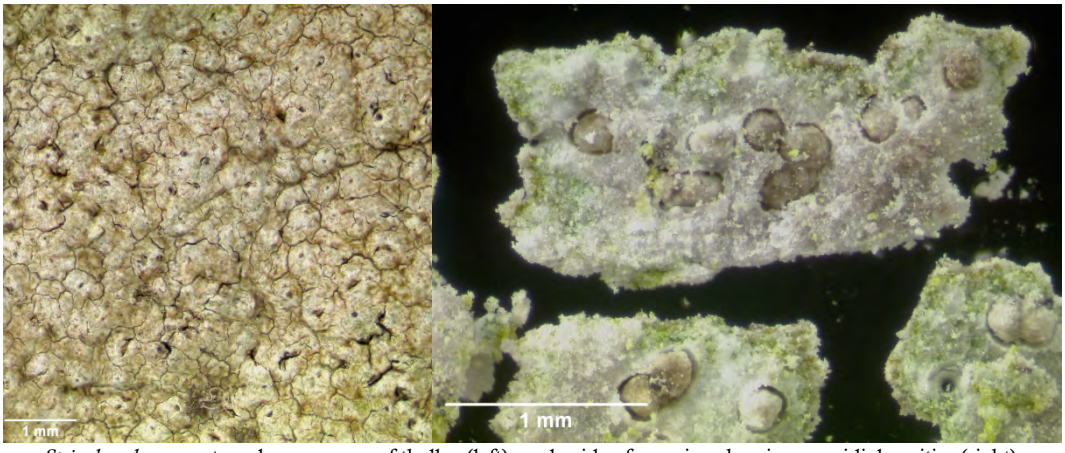
Local Organiser : Alan Orange

Surveying the walls of Coity Castle (left) and Ogmore Castle (right)

Gathering a few hours after dawn, 11 gallant souls set forth from Cardiff to the outskirts of Bridgend to storm the Norman castle at Coity. On arrival it was plainly evident that it had been stormed several centuries earlier and probably on several

occasions. Undaunted by this set-back they decided to record lichens. The group was rewarded with a dry day with the odd burst of sunshine, the snow of the previous day having totally disappeared. The walls of Coity castle gave few lichenological surprises and few disappointments with most of the expected species being present. After having gained what felt like an intimate knowledge of the walls of the castle a siren call was heard - Alan Orange suggested visiting another ruined castle, which firstly, hosted a Welsh endemic lichen and secondly, was located next to a tea-room. With those two temptations little resistance was offered.

A few minutes later the group were at Ogmore Castle. This is built mostly of limestone and lies next to the Ogmore River near the Glamorgan coast. An indistinct pinkish crust dotted with pin-prick pycnidea was pointed out as *Petractis nodispora*, a **Welsh endemic**. A description can be found in *Lichenologist* **41** part 3, 2009. Several colonies were seen on the castle walls where it has currently the largest known population in the world; the thallus is a thin pink crust with minute pits which are the ostioles of pycnidia, and the apothecia are small and immersed with a pink concave disc. Another pinkish species, frequent mainly on north-facing walls, proved to be *Strigula calcarea*, **new to Britain**. The thallus is similar to *P. nodispora*, but slightly thicker, with the apices of immersed pycnidia sometimes visible as pink or brown dots; perithecia were not detected but would also be immersed and very inconspicuous. The pycnidia contain 3-septate macroconidia, whereas the conidia of *P. nodispora* are multicellular. These two species appear to represent a southern element of the Welsh flora, and should be searched for more widely on limestone near the British coast. This species has been found in Belgium, France and Spain so far, and seems to be another warm-climate lichen basking on the balmy Welsh coast.



Strigula calcarea: external appearance of thallus (left), underside of scraping showing pycnidial cavities (right).

All this excitement demanded a quick retreat to the tea-room for fine teas, scones and sandwiches before the journey back to Cardiff and for some long journeys back home.

Meeting attendees:

Barbara Benfield, David Hill, Chris Hitch, Alan Orange, Mark Powell, Steve Price, Maxine Putnam, Peter Schulz, Alan Silverside, Amanda Waterfield.

Species table/lists: Coity Castle, Glamorgan, VC41 grid ref SS9281 alt. 60m. Ogmore Castle, Glamorgan, VC41 grid ref SS8876 alt. 10m

Species name	Coity	Ogmore	Species name	Coity	Ogmore
Acrocordia conoidea	●		*Leptogium pulvinatum*	●	
Acrocordia salweyi	●		*Melanelixia glabratula*	●	
Agonimia tristicula	●		*Melanelixia subaurifera*	●	
Amandinea punctata	●		*Mycoblastus alpinus*	●	
Aspicilia calcarea	●	●	*Opegrapha calcarea*	●	
Aspicilia contorta subsp. *contorta*	●	●	*Ochrolechia parella*	●	
Botryolepraria lesdainii	●		*Opegrapha calcarea*	●	
Caloplaca aurantia	●	●	*Opegrapha gyrocarpa*	●	
Caloplaca crenularia	●		*Pertusaria albescens* var. *albescens*	●	
Caloplaca dalmatica	●		*Pertusaria lactescens*	●	
Caloplaca flavescens	●	●	*Petractis nodispora*		●
Caloplaca flavocitrina	●		*Placynthium nigrum*	●	
Caloplaca flavovirescens		●	*Polysporina simplex*	●	
Caloplaca holocarpa	●		*Porpidia crustulata*	●	●
Caloplaca oasis	●	●	*Porpidia macrocarpa* f. *macrocarpa*	●	●
Candelariella vitellina f. *vitellina*	●		*Porpidia tuberculosa*	●	●
Catillaria lenticularis	●	●	*Protoblastenia rupestris*	●	●
Collema auriforme		●	*Rhizocarpon petraeum*	●	
Collema crispum var. *crispum*	●		*Rhizocarpon reductum*	●	
Collema cristatum var. *cristatum*		●	*Rinodina oleae*	●	
Collema tenax var. *ceranoides*	●		*Sarcogyne regularis*	●	
Collema tenax var. *tenax*	●	●	*Scoliciosporum umbrinum*	●	
Diploicia canescens	●	●	*Strigula calcarea*		●
Diplotomma alboatrum	●	●	*Tephromela atra* var. *atra*	●	
Hyperphyscia adglutinata	●		*Toninia aromatica*	●	●
Lecania cuprea	●		*Trapelia coarctata*	●	
Lecania erysibe	●	●	*Trapelia placodioides*	●	
Lecania hutchinsiae	●		*Verrucaria baldensis*	●	
Lecanora albescens	●	●	*Verrucaria calciseda*	●	●
Lecanora campestris subsp. *campestris*	●		*Verrucaria fuscella*	●	
Lecanora crenulata	●	●	*Verrucaria hochstetteri*	●	
Lecanora dispersa	●		*Verrucaria macrostoma* f. *furfuracea*	●	
Lecanora polytropa	●		*Verrucaria macrostoma* f. *macrostoma*	●	
Lecidella scabra	●		*Verrucaria muralis*	●	
Lecidella stigmatea	●		*Verrucaria nigrescens* f. *nigrescens*		●
Lepraria vouauxii	●		*Verrucaria nigrescens* f. *tectorum*	●	●
Leproplaca chrysodeta	●		*Verrucaria polysticta*		●
Leptogium gelatinosum	●		*Verrucaria viridula*	●	

Report by Alan Orange, Mark Powell & Steve Price

Obituaries

Dr D.D. Awasthi

Dharni Dhar Awasthi, Father of Indian Lichenology, past away on 21 August 2011 at Lucknow, Uttar Pradesh. Born on 28 September 1922, he obtained his BSc, MSc and PhD at Lucknow University, where in 1952 he was appointed as lecturer and was to remain, later as reader, until 1983, after which he worked as emeritus scientist in the same department until 1990. He obtained a second doctorate from Colorado University, USA in 1963 and for a short period worked in the National Botanical Research Institute, Lucknow. Dr Awasthi joined the British Lichen Society in 1963 and was elected an Honorary Member in 1992. He was also awarded the Acharius Medal in 1992. In 1982 he was elected the President of Indian Mycological Society. He was a Fellow of the Indian Academy of Science, Bangalore and of the Indian National Science Academy, New Delhi, receiving the Panchanan Maheshwari Lecture Award from the latter in 1991. Between 1957 and 2007 he was the author or co-author of 86 publications on various aspects of lichenology, including the influential catalogues, monographs, keys to micro- and macro-lichens and handbooks. More than 15 students were awarded PhDs under his supervision. He will be greatly missed, not only by Indian scientists, but also by colleagues and friends worldwide.

Publications:

1. Awasthi D.D. 1957. A new species of *Parmelia* from Kodaikanal, S. India. *Current Science* 26: 123-124.
2. Awasthi D.D. 1957. On new lichens from the Himalayas. I. *Proc. Indian Acad. Sci. B* 45: 129-139.
3. Awasthi D.D. 1957. On Indian species of lichen genus *Usnea. Proc. 44th Indian Sci. Congr. Abstr.* 3: 228.
4. Awasthi D.D. 1960. Contributions to the lichen flora of India and Nepal. I. The Genus *Physcia* (Ach.) Vain. *J. Indian Bot. Soc*. 39: 1-21.
5. Awasthi D.D. 1960. Contributions to the lichen flora of India II. The Genus *Anaptychia* Korb. Vain. *J. Indian Bot. Soc*. 39: 415-442.
6. Awasthi D.D. 1961. Some foliose and fruticose lichens from Assam and North-East Frontier Agency of India. *Proc. Indian Acad. Sci B* 54: 24-44.
7. Awasthi D.D. 1963. Some noteworthy addition to the lichen flora of India and Nepal. *Univ Colorado Studies, ser. Biol.* 10: 28-36.
8. Awasthi D.D. 1964. New combinations in the genus *Dirinaria*. *Bryologist* 67: 369-72.

9. Awasthi D.D. 1965. Catalogue of lichens from India, Nepal, Pakistan and Ceylon. *Beih. Nova Hedwigia* 17: 1-137.
10. Awasthi D.D. 1970. On *Alectoria acanthodes* Hue, *Alectoria confusa* sp. nov. and systematic position of genus *Alectoria*. *Proc. Indian Acad. Sci B*. 72 (4): 149-155.
11. Awasthi D.D. 1973. On the species of *Anaptychia* and *Heterodermia* from India and Nepal. *Geophytology* 3(1): 113-116.
12. Awasthi D.D. 1975. A monograph of the lichen genus *Dirinaria. Biblioth. Lichenol.* 2: 1-108.
13. Awasthi D.D. 1975. Lichen flora of Pindari Glacier valley India. *Geophytology* 5 (2): 178-188.
14. Awasthi D.D. 1976.Lichen genus *Parmelia* in India. Subgenera *Parmelia* and *Amphigymnia. Biol. Mem.* 1: 155-229.
15. Awasthi D.D. 1977. A general resume of the lichen flora of India. *Bull. Bot. Surv. India* 19 (1-4): 301-306.
16. Awasthi D.D. 1980. *Pyxine* in India. *Phytomorphology* 30: 359-379.
17. Awasthi D.D. 1981. Lichen genus *Parmelia* in India. II. Subgenera *Xanthoparmelia* and *Melanoparmelia*. *India. J. Forestry* 4(3): 198-204.
18. Awasthi D.D. 1981. The typification of *Roccella montagni*. *Bryologist* 84 (2): 216-219.
19. Awasthi D.D. 1982. Lichen genus *Cetraria* in India and Nepal. *Bull. Bot. Surv. India*. 24: 1-27.
20. Awasthi D.D. 1983. Present position, prospects and problems of lichenology in India. *Kavaka* 11: 1-10.
21. Awasthi D.D. 1984. Lichen genus *Hypogymnia* and *Menegazzia* from India and Nepal. *Kavaka* 12: 87-97.
22. Awasthi D.D. 1985. Lichen genus Coccocarpia from India. *Kavaka* 13: 83-86.
23. Awasthi D.D. 1986. Macrolichen taxa of Teloschistaceae from India. *Proc. Indian Acad. Sci.* (Pl. Sci.) 96: 87-97.
24. Awasthi D.D. 1987. A new position for *Platysma thomsonii* Stirton. *J. Hattori Bot. Lab.* 63: 367-372.
25. Awasthi D.D. 1988. A key to the macrolichens of India and Nepal. *J. Hattori Bot. Lab.* 65: 207-302.
26. Awasthi D.D. 1988. Two interesting lichen taxa new to India. *Current Science* 57 (3): 146-147.
27. Awasthi D.D. 1991. A key to the microlichens of India, Nepal and Sri Lanka. *Biblioth. Lichenol*. 40: 1-336.
28. Awasthi D.D. 1998. Taxa of Parmeliaceae (Lichens) in Indian subcontinent. *Indian J. Forestry* 21 (1): 42-50.
29. Awasthi D.D. 2000. *Lichenology in Indian subcontinent*. A supplement to *"A Handbook of Lichens"*. Bishen Singh Mahender Pal Singh, Dehradun.
30. Awasthi D.D. 2007. *A compendium of the Macrolichens from India, Nepal and Sri Lanka*. Bishen Singh Mahender Pal Singh, Dehradun.
31. Awasthi D.D. & Agarwal M 1968. A new species of *Mycoblastus* from India. *Current Science* 37 (3): 84-85.

32. Awasthi D.D. & Agarwal M 1968. New or otherwise interesting lichens from Darjeeling district, India. *Canadian J. Bot*. 46: 1025-1030.
33. Awasthi D.D. & Agarwal M 1969. On the species of *Cryptothecia* from Darjeeling district, India. *J. Indian Bot. Soc*. 48 (1-2): 62-72.
34. Awasthi D.D. & Agarwal M 1970. An enumeration of lichens from the tropical and subtropical regions of Darjeeling district, India. *J. Indian Bot. Soc*. 49 (1-4): 122-136.
35. Awasthi D.D. & Akhtar P. 1977. The genus *Leptogium* (sect. Mallotium) in India. *Norweg. J. Bot.* 24: 59-71.
36. Awasthi D.D. & Akhtar P. 1979. The genus *Leptogium* (sect. Leptogium, Leptogiopsis and Homodium) in India. *Geophytology* 8: 189-204.
37. Awasthi D.D. & Awasthi G. 1985. Typification of *Usnea compressa* Taylor. *Lichenologist* 17: 309-311.
38. Awasthi D.D. & Dange K. 1978. Addition to the lichen flora of India- V. *Nat. Acad. Sci. Letters* 1 (1): 11-13.
39. Awasthi D.D. & Joshi M. 1977. Macrolochens of Mussoorie Hills, Uttar Pradesh, India. *Geophytology* 7: 91-97.
40. Awasthi D.D. & Joshi M. 1978. Contributions to the lichens of Chakrata Hills, Uttar Pradesh, India. *Indian J. Mycol. Res.* 16: 273-278.
41. Awasthi D.D. & Joshi M. 1982. Lichen genus *Peltigera* from India and Nepal. *Kavaka* 10: 47-62.
42. Awasthi D.D. & Mathur R. 1987. Species of the lichen genera *Bacidia*, *Badimia*, *Fellhanera* and *Mycobilimbia* from India. *Proc. Indian Acad. Sci. Pl. Sci.* 97 (6): 481-503.
43. Awasthi D.D. & Singh K. P. 1970. A note on lichens from Kashmir. *Current Science* 39: 441-442.
44. Awasthi D.D. & Singh K. P. 1971. Additions to the lichen flora of India. *Geophytology* 1 (2): 97-102.
45. Awasthi D.D. & Singh K. P. 1972. Foliicolous lichens from the Palni and Nilgiri Hills, India. *Proc. Indian Acad. Sci B* 76 (3): 117-133.
46. Awasthi D.D. & Singh K. P. 1973. A note on the revision of some Graphidaceous lichen taxa. *Current Science* 42 (18): 656-657.
47. Awasthi D.D. & Singh K. P. 1973. A synopsis of foliicolous lichens from Nilgiri and Palni hills, India. *Geophytology* 3: 13-25.
48. Awasthi D.D. & Singh K. P. 1974. Species of lichen genus *Phaeographina* in Indian subcontinent. *Kavaka* 1: 87-98.
49. Awasthi D.D. & Singh K. P. 1975. Addition to the lichen flora of India-III. *Geophyhtology* 5 (1): 110-112.
50. Awasthi D.D. & Singh K. P. 1977. *Heppsora*, a new lichen genus from India. Bryologist 80 (3): 536-538.
51. Awasthi D.D. & Singh K. P. 1977. Additions to the lichen flora of India IV-genus *Phylliscum* Nyl. ex. Massal. in India. *Geophytology* 7 (2): 276-277.
52. Awasthi D.D. & Singh K. P. 1978. Observations on some Graphidaceous lichen taxa. *Phyta* 2: 34-40.

53. Awasthi D.D. & Singh S. R. 1977. The lichen genus *Rhizocarpon* (Ram.) Th. Fr. in India. *Kavaka* 5: 49-58.
54. Awasthi D.D. & Singh S. R. 1977. Five new taxa of saxicolous lichens from Meghalaya, India. *Norweg J. Bot*. 24: 1-8.
55. Awasthi D.D. & Singh S. R. 1978. The lichen flora in the environs of Gangotri and Gomukh, India. *Indian J. Forestry* 1: 138-146.
56. Awasthi D.D. & Singh S. R. 1979. New or otherwise interesting lichens from Mt. Abu, Rajsthan, India. *Norweg. J. Bot.* 26: 91-97.
57. Awasthi D.D. & Srivastava P. 1989. Lichen genera *Brigantiaea* and *Letrouitia* from India. *Proc. Indian Acad. Sci.* Pl. Sci. 99 (3): 165-177.
58. Awasthi D.D. & Srivastava P. 1993. New species of *Pertusaria* (lichenized fungi) from India. *Bryologist* 96 (2): 210-215.
59. Awasthi D.D. & Tiwari R. 1987. Lichen genus *Ochrolechia* from Indian subcontinent. *Kavaka* 15 (1-2) 23-27.
60. Awasthi D.D. & Upreti D. K. 1980. A note on lichens from Lalbagh Gardens, Bangalore, India. *Indian J. Forestry* 3: 181-184.
61. Awasthi D.D. & Upreti D.K. 1981. *Buellia isidiophora* and *Lopadium austroindicum* - two new species of lichens from India. *Current Science* 50 (18): 821-823.
62. Awasthi D.D. & Upreti D. K. 1985. Lichen genus *Dermatocarpon* in India. *J. Econ. Taxon. Bot.* 7 (1): 7-12.
63. Awasthi G. & Awasthi D.D. 1985. Lichen genera *Alectoria, Bryoria* and *Sulcaria* from India and Nepal. *Candollea* 40: 305-320.
64. Joshi M. & Awasthi D.D. 1982. The lichen family Stictaceae in India and Nepal. *Biol. Mem*. 7: 165-190.
65. Pant G. & Awasthi D.D. 1989. Caliciales from India and Nepal. *Biovigyanam* 15 (1): 3-27.
66. Pant G. & Awasthi D.D. 1989. Lichen genus *Catillaria* s. lat in India. *Proc. Indian Acad. Sci (Pl. Sci.)* 99 (4): 369-3847.
67. Pant G. & Awasthi D.D. 2003. Lichen genus *Ramalina* in India and Nepal. *Indian J. Forestry* 26(3): 229-316.
68. Singh K. P. & Awasthi D.D. 1978. Two new species and two new combinations in Graphidaceae. *Bull. Bot. Surv. India* 20 (1-4): 136-139.
69. Singh K. P. & Awasthi D.D. 1979. Lichen genus *Phaeographis* from India and Sri Lanka. *Bull. Bot. Surv. India* 21 (1-4): 97-120.
70. Singh S. R. & Awasthi D.D. 1978. A note on some microlichens from Pachmarhi, Madhya Pradesh, India. *Geophytology* 8: 127-128.
71. Singh S. R. & Awasthi D.D. 1981. The lichen genus *Buellia* in India. *Biol. Mem*. 6 (2): 169-196.
72. Singh S. R. & Awasthi D.D. 1990. Lichen genus *Diplotomma* from India and Nepal. *Geophytology* 19 (2): 173-181.
73. Srivastava P. & Awasthi D.D. 1988. Lichen genus *Megalospora* from India. *Kavaka* 16: 8-12.

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

Donald Henry Smith 1927-2011

Don was born in Kingston upon Hull, where his family ran the Anlaby Road post office- cum- shop. He was educated at Riley Hall School and Hull Technical College and at the age of 16 he became a laboratory assistant in forensic science, though he turned to industrial chemistry with British Cod Liver Oil Producers and Hangar's Paints, rising to senior technological positions.

In 1954, having passed a two-year Teacher Training Course at St John's College, York, Don began teaching Physics, Maths, Science and Metalwork. He moved to Ryedale School in 1966 and settled in Kirkbymoorside, where he became a Town Councillor, school governor and Chairman of the Ryedale Sports Council, but Don left teaching before retirement age, "disillusioned", with bureaucracy, a judgement not untypical of someone who cherished order but detested red tape.

An insatiable curiosity about the natural world and the creatures in it, led him to join the Hull Scientific Society and Field Naturalists' Club at the age of 14, where the President, Harry Foster, an ex-headmaster, encouraged his early ventures into the wonders of microscopy. By natural inclination he concentrated on entomology and, in days when the collection of specimens was not an issue, he began to amass a large insect reference collection of over 15,500 specimens representing over 6,000 species, which has now been passed to Tony Harman in Canterbury..

He was invited by Bruce Campbell, Chairman of the Council for Nature to join the Council and while there, wrote the Invertebrates section of their *Handbook for Naturalists*. In 1957, he became Honorary Secretary of the British Junior Naturalists' Association and was instrumental in the purchasing of field study centres and also a Fellow of the Royal Entomological Society, due to his work at the British Museum of Natural History, while conveying many collections to Hull Museum as replacements for those lost during wartime bombing.

Over the years Don has been instrumental in surveying many YWT nature reserves and fieldwork at many other sites, including numerous castles and abbeys for English Heritage, Forge Valley for English Nature and Dalby Forest for Forest Enterprise.

In 1982 in his golden years he joined the British Lichen Society and, more recently, became their Yorkshire and Lancashire representative for the Churchyard Group and Upland England co-ordinator. As such he surveyed over 1500 churchyards from Lincolnshire to southern Scotland and, during this period, assembled a large reference collection of lichens, now held in the Yorkshire Museum. With Albert Henderson he did considerable fieldwork in the extensive area covered by the two-volume *Natural History of the Scarborough District* (1953-1956).

All his life Don had a passion for passing on the knowledge he gained and this spilled over into lichenology, where he was keen to help beginners. Alan Fryday was helped in his early days with many outings in the field at breakneck speed to have such difficult genera as *Cladonia* and the hard to spot *Placynthiella icmalea* pointed out. Alan said in a recent email , "Without him, I'm not sure how far I would have got with lichenology. When I heard that Don had died, I was in Alaska, carrying out a lichen inventory of Glacier Bay National Park, which is a long way from the North

York Moors where I first met Don and without whom, I doubt whether I would have been there".

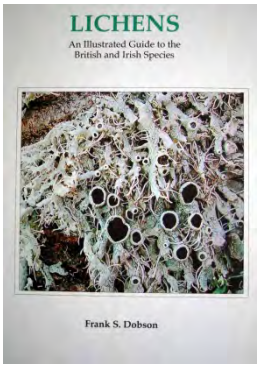
Don was not only a fine field naturalist but also the 'leading technocrat' in his local Ryedale Natural History Society, beginning the computerisation of their records as early as 1983, acting as projectionist and giving generously of his knowledge of the intricacies of the camera. It was with his computer skills that Don helped one of us (C.J.B.H.) most, in that he was able to computerise all the entries that had accrued from NRI data entries in the British Lichen Society *Bulletins* and present them in an alphabetical and tabular form , for easy cross reference. We shall sorely miss him.

After fighting illness for some years, Don passed away peacefully at home. He is survived by his wife, Jean, their son and daughter and seven grandchildren.

C.J.B. Hitch & A. Henderson

Book reviews

Lichens: An Illustrated Guide to the British and Irish Species



Sixth Revised and Enlarged Edition. By **Frank S. Dobson**. Richmond Publishing Ltd, 2011. ISBN 978 0 85546 316 8 hardback, ISBN 978 0 85546 315 1 paperback. Hardback £35, paperback £40.

It is remarkable that this same author, who is not a professional lichenologist, has been able to update the original edition at intervals over the last 32 years, keeping pace with the tremendous growth in the understanding of the taxonomy and distribution of our species. This edition does not disappoint and keeps up this fine tradition. It describes over 1000 species, including 160 additional to the last one, which was published in 2005. It covers all but the rarest species that are known from the British Isles. It has benefited from the publication of *The Lichens of Great Britain and Ireland;* Smith C.W. *et al*, (2009), incorporating the many nomenclatural changes and descriptions which appeared in that volume, and is up to date in references to taxa such as *Hypotrachyna afrorevoluta* and *Caloplaca oasis.* Other changes include a larger section in the lateral key to sterile lichens. The maps now have three date classes, though small they are clear and useful in understanding current and past distributions.

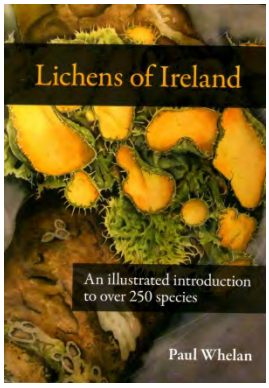
The increased number of species has meant that there are more photographs, but with space at a premium some have been cropped compared with the earlier

edition making it harder to get an overall impression of the species as with *Caloplaca ruderum* and *Chaenotheca ferruginea*. Regrettably there has been a reduction in colour definition in some instances especially amongst the foliose lichens, for example when the illustrations of *Leptogium cyanescens, Pleurosticta acetabulum* and *Physcia adscendens* are compared between the fifth and sixth editions. However, this criticism should not deter anyone from buying this edition – just don't throw the earlier one away if you have it! It is well bound, strong enough to survive field conditions with clear typeface and as an added bonus the paperback edition is amazingly 150gms lighter than its predecessor.

We are extraordinarily fortunate as lichenologists to have one amongst us, who has the persistence and dedication to regularly up date his initial work and make lichens accessible to a wider public. This edition is strongly recommended both for new and experienced lichenologists especially in the British Isles but also in other parts of Europe.

Peter Lambley

Lichens of Ireland – an illustrated introduction to over 250 species



By **Paul Whelan**. The Collins Press, Cork, 2011. ISBN 978-1-84889-137-1. 160 pp Flexibound. £17.99 (19.99 Euro).

For the 258 species described this book is a great photographic resource. For most species the colour photograph includes a scale bar and a magnified section showing key features. The 41 page introductory section provides the reader with a grounding in lichen biology, ecology, habitats and ecosystems as well as guidance on fieldwork and keeping a herbarium. The purpose of the book is intended to "introduce beginners, armed with a simple hand lens, to the delightful Lilliputian world of lichens".

Beginners will find challenges in using this book as a sole reference for lichen identification. Many commonly found species are not described. Notable absentees include *Caloplaca holocarpa*, *Candelariella reflexa*, *Lecanora campestris, L. dispersa, L. polytropa*, *L. soralifera*, *Pertusaria corallina* and *Verrucaria nigrescens* and there is not a single species of *Lecidea* or *Trapelia.* It is appreciated that there are always space limitations on the number of species that can be described, but a book aimed at beginners without the above species has serious limitations. By contrast a page and a third, the space occupied by four species elsewhere in the book, is used to illustrate and describe the rare *Teloschistes chrysophthalmus.*

Many of the species mentioned in the introductory text, and to which a reader will then naturally wish to refer, are not in the species descriptions. For example, of the seven species mentioned in the section on '*Oceanic climate*' only two of them are to be found in the species descriptions section.

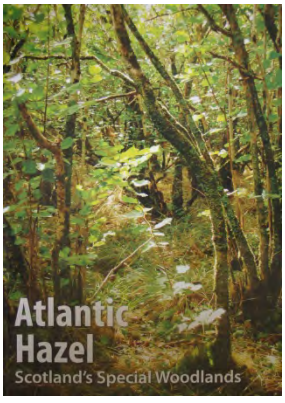
Where appropriate each species description identifies one or more confusion species. This information is potentially very useful, however in some cases (e.g. with *Parmelina tiliacea* and *P. pastillifera*) the confusion species does not appear in the book and the critical differences are not described. The reader is then unable to take a determination any further.

The book contains not even a rudimentary key, apart from a listing of species arranged by thallus type, to guide the reader. The consequence is that any reader wishing to use the species descriptions as a guide to identification has to resort to flicking through the photographs.

The book could have done with expert proof-reading; there are numerous errors in spelling of Latin names. Some of the statements are misleading, e.g. the implication that *Porpidia flavocruenta* is a lichen of limestone substrates on p. 30, and the image of *Candelariella aurella* looks very much like *C. vitellina*. The book is not an entirely reliable introduction to the lichens of Ireland, but the photographs are generally superb and the effort put into collecting and presenting them is obvious.

Steve Price

Atlantic Hazel. Scotland's Special Woodlands



By **Sandy** and **Brian Coppins**. Published by the Atlantic Hazel Action Group, 2012. ISBN 978-0-9572034-0-2. Copies available from Sandy Coppins, 37 High Street, East Linton, East Lothian EH40 3AA, Scotland. Price (to BLS members) £6.00 + £1.50 p&p.

Many people unfamiliar with the hyper-oceanic parts of north-west Europe would assume that Scotland's Special Woodlands constitute the Caledonian pine forests or boreal habitats such as birch woodland. The Atlantic Hazel Action Group has a mission, expressed passionately in this volume, to raise awareness of the extraordinary richness of biodiversity within Atlantic hazel woodland, and the need to ensure its protection for future generations.

Very few (perhaps no) habitats in the British Isles are entirely independent from human actvity. A substantial part of the book is taken up with charting the impact of different management regimes (or lack of them), and recommending the best ways to preserve and restore hazelwood habitats. In these environments, coppicing is considered to be misguided with selective removal of stems to be preferred, and moderate levels of grazing is important to maintain optimum diversity levels.

The natural history of the Atlantic hazelwoods is reported on, with sections on lichens (six pages), non-lichenized fungi (four pages, with the weird *Hypocreopsis rhododendri* (hazel gloves) featuring prominently), bryophytes (two pages) and flowering plants and ferns (four pages). Rather surprisingly, there is almost no reference to invertebrates – surely these must also be highly diverse with species restricted to Atlantic hazelwoods.

The book is copiously illustrated throughout with well-reproduced images of woodlands, individual trees and their associated biota. Its structure could have been more tightly managed – parts are repetitive and the same illustrations appear in different places – but these are small criticisms. The primary aim of the book is to raise awareness of the need to conserve this unique environment and to educate landowners in best practice for habitat management. It should succeed admirably.

This book is an output of a project funded by Scottish Natural Heritage, Argyll and the Islands EU Leader Programme and the British Lichen Society. A web version of the book can be downloaded from the SNH website.

Paul Cannon

British Lichen Society

Publications and other items for sale

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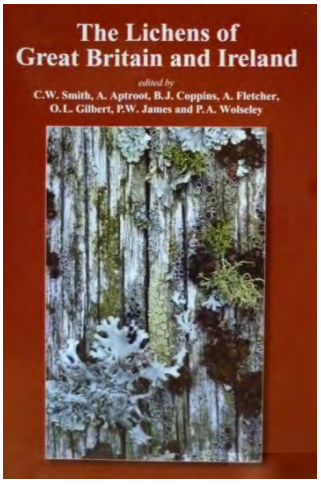
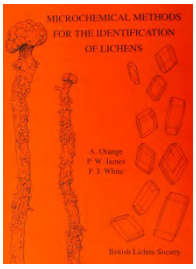


Cat.1. The Lichens of Great Britain & Ireland. Ed. Smith et al. (2009). Hardback, 700pp.
This work, a much enlarged revision of 'The Lichen Flora of Great Britain and Ireland published in 1992, reflects the enormous advances in lichen taxonomy over the last two decades. There are keys to 327 genera and 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.
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. All five fascicles for £16.00 (buy 4, get one free!). Price to non-members is £6.00 per fascicle. Postage & packing £8.50 UK, £25.00 overseas.



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

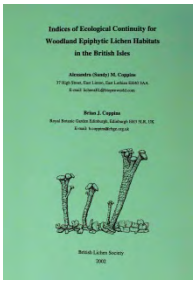
2nd edition, with two colour plates. Full of useful information on pigments, crystals, colour tests with reagents and TLC. £8.00 members, £10.00 non-members. Postage & Packing £3.50 UK, £8.50 overseas.

Cat.9. Conservation Evaluation of British Lichens by B.J.Coppins and R.G. Woods (2003)

An essential reference for anyone trying to assess a habitat when presented with a lichen species list. This is essentially a directory of all British lichens with their conservation status and with notes on particular species. A second edition is in preparation and the remaining stock of this first edition is being remaindered at £1.00.
Postage & Packing £2.50 UK, £6.50 overseas.

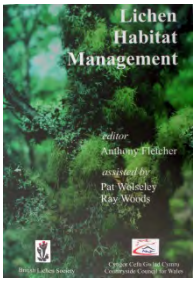
Cat.10. Surveying and Report Writing for Lichenologists Ed. D.J. Hill (2006)

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



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

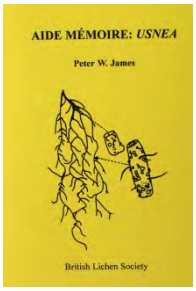
The use of lichens as indeces of ecological continuity in British Woodlands was pioneered by Dr. Francis Rose MBE. The indices he proposed are here updated and regional variations are explained. BLS members £2.00; non-members £5.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.12. Lichen Habitat Management Ed. A. Fletcher (2001)

This 174-page book is the proceedings of a workshop held in 1997 and is packed with practical information for the management of different habitats for lichens. Essential for anyone involved in wildlife conservation.

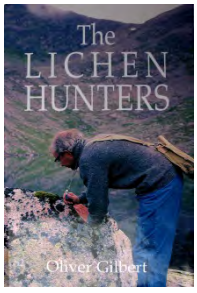
BLS members: £6.00 ; non-members £10.00. Postage & Packing £4.50 UK, £10.50 overseas.



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

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

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



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

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

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

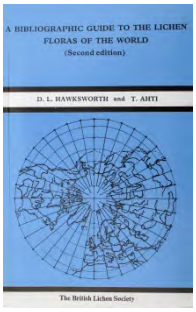
An excellent introduction to lichenology, from the basic biology of lichens to their environmental importance as well as the history of the science.
BLS members £8.95; non-members £9.95. Postage & Packing £2.50 UK, £6.50 overseas.

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

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

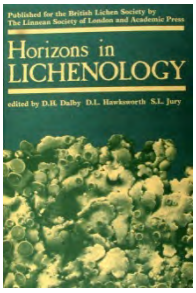
Cat. 17. A Field Key to Coastal and Seashore Lichens by Frank Dobson (2010)

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



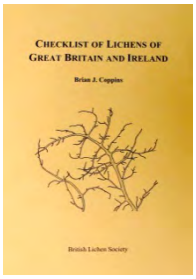
Cat.18. A Bibliographic Guide to the Lichen Floras of the World (2nd edn.) by D.L. Hawksworth and T. Ahti

Reproduced from The Lichenologist vol. 22 (1990). A useful list, up to its publication date, of reference works to lichen floras around the world.
Special price, now £1.00. Postage & Packing £2.50 UK, £6.50 overseas.



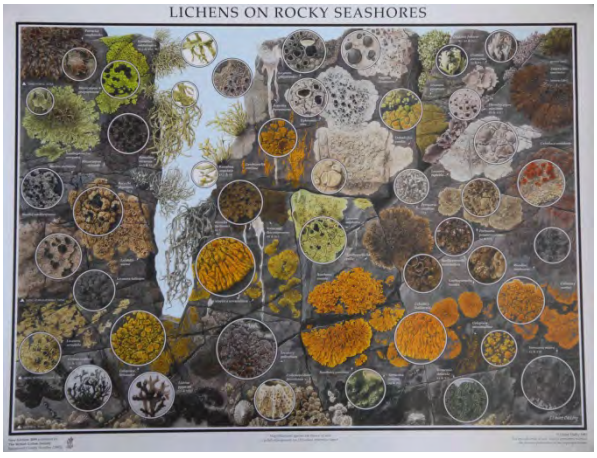
Cat.19. Horizons in Lichenology Ed: D.H. Dalby, D.L. Hawksworth and S.L. Jury (1988)

Proceedings of a symposium held in 1987. Seven wide-ranging review articles.
Special price, now £1.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.20. Checklist of Lichens of Great Britain and Ireland by B.J. Coppins (2002)

Although an updated checklist is available on the BLS website, this is the most recent printed version, an attractive publication ideal for annotation.
Special price now £2.00. Postage & Packing £3.50 UK, £8.50 overseas.



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

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

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

Cat.23. Parmelia identification CD-Rom
Although the nomenclature has been 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 any British or Irish lichen

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.

This multi-access computer key 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'.

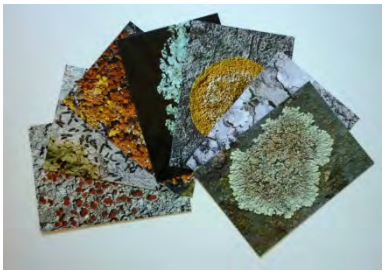
Improvements in Version 3 of *Lichen-Identifier* include: Completely revised data, where possible, using the completed sections of the new Flora, plus many recently described species. The conservation evaluation from *A Conservation Evaluation of British Lichens* by R.G. Woods & B.J. Coppins is given for each species. Over 750 colour photographs of improved quality and with a scale added to each one. Every distribution map has been updated and include now maps of lichenicolous fungi although these are not part of the actual key.

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

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

Cat.25. Greetings Cards/Notelets by Claire Dalby

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



Cat.26. BLS Postcards

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

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

Cat.28. Earthenware mug with coloured logo on both sides, encircled by the words 'British Lichen Society'
No lichenologist's desk should be without one.
£3.00. Postage & Packing £3.50 UK, £10.00 overseas.

Cat.29. Hand lenses
X10 glass lens, diam. 18mm, in metal body.
£8.50. Postage & Packing £1.50 UK, £3.00 overseas.

Cat. 30. Car sticker, BLS logo
Ideal for meeting fellow lichenologists. BLS members
£1.00. Postage & Packing £1.50 UK, £3.00 overseas.

Cat. 31. 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 September 2011 to March 2012

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

Prof. L. Bin Din, 75 Jalan Athinahapan, Taman Tun Dr Ismail, 60000 Kuala Lumpur, MALAYSIA
Mrs J. Brinklow, Crossing Cottage, Kirkinch by Meigle, Blairgowrie, Perthshire, PH12 8SL, UK
Dr C. Burton, Surrey Biodiversity Information Centre, c/o Surrey Wildlife Trust, School Lane. Pirbright, WOKING, Surrey, GU24 0JN, UK
Mr N.D. Chadwick, 43 Brooklands, Horwich, Bolton, BL6 5RW, UK
Mrs R. Cornford, 1 Hilmar Drive, Gillingham, Dorset, SP8 4PL, UK
Mr P. Furze, 98 The Gore, Basildon, Essex, SS14 2BZ, UK
Mr O. Gockman, 1280 Raymond Ave. #4, St Paul MN 55108, U.S.A.
Mr N. Gustavsson, Kapellgatan 5A, SE-81335 Hofors, SWEDEN
Mr M.C. Hanson, 20 Shakespeare Drive, Cheadle, Cheshire, SK8 2DA, UK
Mrs M. Hardie, 33 Palace Street, Berwick upon Tweed, Northumberland, TD15 1HN, UK
Mr P. Heller, 48 Wellesley Road, Chiswick, LONDON, W4 4BZ, UK
Mr C, J. Hill, Rosings, Banham Road, Kenninghall, NORFOLK, NR12 2ED, UK
Mr B.K. Hodgson, 6 Gillisons, Off Lindow Street, LANCASTER, Lancashire, LA1 1SD, UK
Mr A. Hulatt, 2 Berhill, Ashcott, Bridgwater, Somerset, TA7 9QN, UK
Ms U. Kaasalainen, Petter Wetterin tie 9 B 61, FIN-00810 Helsinki, FINLAND

Mr J.T. Klepsland, Gaustadalleen 21, NO-0349 Oslo, NORWAY
Ms A. Launis, Botanical Museum, P.O. Box 7, FI-00014 University of Helsinki, FINLAND
Mr J. Malter, Lees Croft, Lees Hill, South Warnborough, Hampshire, RG29 1RG, UK
Mr D. Martyn, Bryn Hafod, Brynymor Road, Aberystwyth, Dyfed, SY23 2HX, UK
Dr D.P. McCarthy, Dept. of Earth Sciences, Brock University, St. Catharines, ONTARIO L2S 3A1, CANADA
Mr G. McKay, 14 Bankside Court, Denny, Stirlingshire, FK6 6HA, UK
Mr J.R. McLachlan, 28 Jamie Anderson Place, St Andrews, Fife, KY16 8YG, UK
Mr C.A. Morse, Collection Manager, The Ronald L. McGregor Herb., University of Kansas, Campus West, 2045 Constant Ave, Lawrence KS 66047, U.S.A.
Mr R. Muston, 20 Harcourt Hill, Redland, BRISTOL, BS6 7RB, UK
Dr O. Nadyeina, Lichenology & Bryology Depart., M.G. Kholodny Institute, Nat. Acad. Sci., Tereschenkivska str. 2, Kyiv 01601, UKRAINE
Mr N. Pinhorn, Flat 3, Raleigh House, 89 Magdalen Road, EXETER, Devon, EX2 4TG, UK
Mr M. Prince, 3 Allhallows Court, EXETER, Devon, EX4 3BJ, UK
Dr N. Römer, Museuo cantonale di storia naturale, Viale Cattaneo 4, CH-6900 Lugano, SWITZERLAND
Mrs P. Shipway, Mole End, Tring Road, Gubblecote, Tring, Hertfordshire, HP23 4QJ, UK
Mrs S. Simkin, 2 Maple Road, Billingshurst, West Sussex, RH14 9TS, UK
Ms P.J.K. Spicer, Apartment 1, 39 Stockmoor Drive, North Petherton, Somerset, TA6 6GJ, UK
Miss L. Stoddart, Leithen House, Leithen Road, Innerleithen, Scottish Borders, EH44 6HY, UK
Dr L.J. Sudirman, Lab. of Mycology, Dept. of Biology - IPB, Jl. Agatis Kampus IPB Darmaga, Bogor Agricultural University, Bogor 16680, INDONESIA
Mr S, Taylor, Firwood, Nethybridge, Inverness-shire, SCOTLAND, PH25 3DE, UK
Mr P.J. Timms, 24 Willow Lane, Great Houghton, Northampton, Northamptonshire, NN4 7AW, UK
Mr K.S. Vinayaka, Kanivebaglu, Haniya (P), Hosanagara (T), Shimoga (D), Karnataka 577418, INDIA
Prof. M. Wahid Bin Samsudin, No3, Jalan 1/3B, A3650 Bandar Baru Bangi, Selangor, MALAYSIA
Mr T. Waters, 31 Cunningham Road, South Tottenham, LONDON, N15 4DS, UK
Mr A.H. Whiting, 27 Copse Close, Weston-super-Mare, Somerset, BS24 9NU, UK
Ms B. Williamson, 1 Ceol Na Fairge, Bowmore, Islay, Argyll, SCOTLAND, PA43 7LG, UK

Membership Matters – from the Membership Secretary

Please note, that changes to our subscription rates have been agreed for 2013 on the AGM last February:

- Ordinary membership from £30 to £35 ($60 to $70)
- Electronic membership from £25 to £30 ($50 to $60)
- Associate membership from £22 to £25 ($44 to $50) [but with Junior & Senior Associate fees remaining unchanged at £10.00 ($20)]
- Life membership from £300 to £350 ($600 to $700).

We are currently looking into changing payment options for bank transfers within the UK. We hope to provide you with information regarding direct debit payments soon. Members paying at present with a standing order will be sent either a direct debit forms or a new standing order mandate form in good time for next year's renewal.

Members who previously paid membership in advance with payments for more than one year do not need to do anything, as membership years already paid for will remain unchanged as credit.

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. If you don't know whether you may still have a credit, check the envelope – the year your membership expires will be printed below your membership number.

Please, keep us up to date when your contact details change! Please, also consider to update or provide the membership secretary (*h.doring@kew.org*) with your current email address.

BRITISH LICHEN SOCIETY - 2012 MEMBERSHIP DETAILS

Applications for membership should be made to The Membership Secretary, The British Lichen Society: Dr Heidi Döring, Mycology Section, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, email h.doring@kew.org, or through the Society's Web site: http://www.theBLS.org.uk

Queries on membership matters and subscription payments and **Changes of address** should be sent to: The Membership Secretary at the address above.

CATEGORIES OF MEMBERSHIP AND SUBSCRIPTION RATES

Ordinary Membership for individuals (not available to institutions) who have signed the Application Form and paid the subscription. Ordinary Members are entitled to all publications and facilities of the Society.
Rate for 2012: **£30 / $60** ***[note: no 3-year rate, please renew annually]***

Electronic Membership, as Ordinary Members but access to 'The Lichenologist' online only (no hard copy). Rate for 2012: **£25 / $50**

Life Membership is available to persons over 65 years of age at **£300 / $600**. Life Members have the same entitlement as Ordinary Members.

All three categories of **Associate Member** listed below are entitled to all the facilities of the Society, including the *Bulletin*, but excluding *The Lichenologist*.

Associate Membership. Rate for 2012: **£22 / $44**

Senior Associate Membership, for persons over 65 years of age. Rate for 2012: **£10 / $20**

Student Associate Membership, for persons under 18 years of age, or full-time students. Rate for 2012: **£10 / $20**

Family Membership is available for persons living in the same household as a Member. They are entitled to all the facilities of the Society, but receive no publications and have no voting rights. Rate for 2012: **£5 / $10**

Bulletin only subscriptions are available to institutions only. Rate for 2012: **£22 / $44**

PAYMENT OF SUBSCRIPTIONS Members may pay their subscriptions, as follows:
Sterling cheques, drawn on a UK bank, or on a bank with a UK branch or agent, should be made payable to *The British Lichen Society*. Payment by **Standing Order** is especially welcome; the Assistant Treasurer can supply a draft mandate.

Internet (credit card) payments using PayPal: Please see the Society's website for the full details: http://www.theBLS.org.uk/

US dollar payments should be sent to: **Dr James W. Hinds, 254 Forest Ave., Orono, ME 04473-3202, USA.**

Overseas members may also pay by direct transfer into the Society's UK bank account. However, please contact the Assistant Treasurer if you wish to pay in this way, ***and before you make any payment***. Her contact details are given above.

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British Lichen Society Bulletin no. 110
Summer 2012

Index