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British Lichen Society Bulletin

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Edited by P W Lambley

FORTHCOMING BLS MEETINGS

BANGOR (Maritime lichens workshop)
Leaders Dr A Fletcher — 6 Aug - 13 Aug 2004

NOTTINGHAMSHIRE
Leader Dr A Fletcher — 1 October - 3 October 2004

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Cover artwork *Cladonia cariosa by* Alan Orange.

TOM CHESTER 1933—2003

It seems hardly possible that two years after writing an appreciation of all the many contributions that Tom Chester had made to this society – as a prelude to him receiving the Ursula Duncan award – I am now once more struggling for words that adequately describe, not only the debt that we owe to this man, but also his life, for he is no longer with us.

Tom Chester was a Yorkshire man by birth and inherited that affability and ease of communication, which so characterises the people of that county, and also a love for the game of cricket, although perhaps "passion" would be a better phrase. Indeed, the only time that I ever experienced any impatience from him was during one of my telephone calls that coincided with a test match, and one poised at a critical stage. I never repeated that mistake again!

He read Geography at Durham and his subsequent understanding of geology was to underpin his later fascination with lichens. He had a natural gift for relating specific lichens to their substrata so that, for example, the flora of a church wall became for him infallible indicators of underlying geology, texture, pH and composition.

He joined The Society in 1982 and his commitment, interest, and skill as a communicator rapidly enabled him to contribute to the core of the Societies work. He ran field meetings in his adopted county of Northamptonshire, was invited onto Council and served on almost every committee: Data, Conservation and Education. In this latter role he found his real forte for he was a teacher by profession, becoming a Head-teacher and finally a Primary School Advisor. With children he had an enviable ease of communication. I watched this ability in complete awe when he taught a primary class at Oxford as part of a conversazione. A lunch pack became a creative visual aid, jam tarts were apothecia, pears were perithecia, pips became spores and a ruler his graticule. And for a man who over the phone never used one word when several sentences would do, he had that knack of just saying the minimum to sustain the children's interest and yet still managing to inspire. It was a quite masterly performance.

I have hinted at his long telephone conversations. They became occasions of great excitement to my children when they were younger as they would scamper into the lounge giggling with delight to inform me that Tom was on the phone! Their humour was partly in anticipation of my facial expression at the news but sometimes, I am ashamed to say, by my expletives at being dragged away, often for an hour at a time from some occupation. He always addressed my wife, who invariably answered the phone, with the phrase, "Sorry Jane", as if awaiting censure. But apologies were never needed, as the conversations were always a privilege to share, involving the latest

discoveries, the differences between one species and another, new information he had gleaned about some difficult group, and so forth.

As often happens with people of great untapped ability when inspired by unexplored openings and challenges, they not only exploit them to the full but also extend and develop them far beyond what others might have achieved. Being somewhat reticent about his ability, he reluctantly agreed to chair a sub-committee devoted to churchyards as habitats for lichens, but his early reserve soon developed into a remarkable passion. He had a grand design – The Churchyard Project – involving the survey of a churchyard in every hectad of lowland England. Deadlines were set and by dint of his encouragement, urging and sometimes browbeating, the task was accomplished. Thousands of churchyards were visited. Hundreds of thousand of individual lichens were recorded by many colleagues, it was a fine collective achievement, but all under his leadership and direction. It is impossible to disregard the effect of all this on the distribution maps of our lichen flora. Indeed, many lichens have become synonymous with churchyards because of this activity—*Arthonia lapidicola, Lecanora conferta, L. pannonica, L. pruinosa, Psilolechia leprosa* and *Sarcopyrenia gibba* are but a few. Like ripples on water, this impetus has spread out to the southwest, to Wales, to The Midlands and the northern counties, and lastly to Scotland. All this close contact with other lichenologists also gained him a network of many friends, how many could only be appreciated at Christmas when his home, in his lovely Northamptonshire village, was bright with cards and greetings.

His gift for writing was channelled into numerous items for *The Bulletin*; a masterly summary of churchyard lichen habitats for *British Wildlife*; several fine newspaper articles, and also, of course, into *Stonechat*, his unique publication devoted to the lichen flora of churchyards, which was circulated to anyone with an interest. As a publication it grew to four, and then six pages and was distributed to almost one hundred members of The Society. In these literary endeavours he set the highest of professional standards and, as minuting secretary to the regular churchyard sub-committee meetings, I rapidly became aware that any errors in context, spelling and syntax would be pounced upon. I never resented this demand for correctness, as the standard he set for his own work was even more exacting.

In the mid-1990's, seeing the need for churchyard recorders to agree on the determination of difficult taxa, he organised field meetings specifically for sub committee members and area coordinators, "The Works Outings", as Keith Palmer so amusingly described them. For those taking part, these meetings hold the fondest of memories; of warm sunny days—it always seemed to be so—in churchyards of extraordinary beauty and richness. And afterwards, there inevitably seemed to be a need to return to a particular church to retrieve some lost article that he had left behind.

He always blamed the aging process but I suspect that it was a strategy to revisit and add more species to the list.

Tom's educational expertise was, naturally, in great demand. Students from all over Europe and the U.K. contacted him for help with projects involving churchyards, and of course they were never turned away, even though this aspect took increasingly more of his valuable time. His output of correspondence each week was quite daunting and his telephone bills were frightening, but the enjoyment that he showed on receiving a project or dissertation, as a thank you for his efforts, indicated that this was amongst his greatest pleasures.

He lived quietly, a much-respected figure in village life and a member of the cricket team. In recent years he regained much of his love for teaching by becoming a table tennis coach to local children He enjoyed books, poetry and the opera; a civilised and urbane man with a wide range of interests.

It does seem to be one of life's great injustices that such a fine communicator, with a voice of enviable clarity and dignity, and a non-smoker, should develop throat cancer. The resulting operation left him unable to speak and living alone he never did find the need to regain his voice – his final months were silent ones. In spite of this radical surgery the tumour had spread to his lung and was incurable, a fact that he shouldered with great courage and dignity until the end.

Although his immediate legacy to this Society will be " The Churchyard Project", of far greater importance and ultimate worth is that he will be remembered as one who gave much more to this Society than he took from it, a quality that through his chosen field of education also characterises his contribution to the wider community of this country. In this increasingly selfish world perhaps there is no better epitaph to this fine English gentleman and respected lichenologist.

Tom Chester died on 2nd August 2003

Ivan Pedley

JANUARY MEETINGS 2004

For the first time since the British Lichen Society was founded in 1958 the Annual General Meeting and lectures were held away from London in Edinburgh. This was appropriate as it is the home of the retiring President Sandy Coppins and also because there has been a big effort to encourage an increased interest in lichenology in Scotland. There was a feeling of excitement that we were making the break from London and it was encouraging to see both such a good Scottish attendance but also that so many members from the south of England had made the effort. Throughout the whole meeting members were made to feel very welcome with traditional Scottish hospitality very evident.

The Royal Botanic Gardens were the venue and the meetings began with a reception and buffet in the main building which was very well attended. Besides the sumptious food on display were a large number of posters and exhibits showing how lichens can attract such diverse interest. These included two exhibits using the form and texture of lichens as an inspiration for artwork one with illustrations by Judy Spark and textile work created by Helen Bamber. Kerry Dalby provided a taste of Shetland. Whilst Pat Wolseley, & Wananuck Saipunkaew brought a more exotic touch with a poster on epiphytic lichens as bioindicators in Northern Thailand. Janet Simkin showed the development of BioBase. Peter Aspen brought a study of the distribution of marine influenced saxicolous lichens growing on coastal sandstone and dolerite rocks at a ste on the Firth of Forth. There were also displays on the effects of enhanced nitrogen deposition on *Cladonia portentosa* by Ian Leith and Lucy Sheppard and Ray Woods showed that lichens can colonise roadsigns in mid-Wales (see this Bulletin).

Members then adjourned to hear Alan Fryday give the Dougal Swinscow lecture, the first of a number of talks continued on the Saturday afternoon all on a Scottish theme.

THE FIFTH DOUGAL SWINSCOW MEMORIAL LECTURE

Dr Alan Fryday
Michigan State University

Lichens of the Scottish Mountains

Let me begin with a question: Is the following statement True or False? "In alpine areas at least, lichens are important in the 'continental' Eastern Highlands of Scotland and bryophytes in the 'oceanic' western Highlands". It depends what you mean by "important' because this statement is true only in so far as these cryptogams are considered a structural element of terricolous vascular plant communities. The lichen vegetation of the Eastern Highlands consists mostly of terricolous macrolichens, which

can be conspicuous and form dense stands similar to those that occur in Scandinavia. On Beinn a'Bhuird in the eastern Cairngorms, for instance, *Flavocetraria nivalis* can occasionally be the dominant species. Other nationally rare species in the eastern Highlands (e.g. *Alectoria ochroleuca* and *Cladonia maxima*) are also much more frequent in Scandinavia and other boreal areas and this lichen vegetation is best considered a fragmented, species-poor outlier of that present in Scandinavia and is of national interest only.

By contrast, the lichen vegetation of the Western Highlands consists mainly of saxicolous microlichens and most ecologists would describe this habitat as 'bare rock'. However, it is important both intrinsically, with a number of rare and apparently endemic taxa and communities, and as a major contributor to the biodiversity of the ecosystem. For instance the summit of Bla Bheinn on the Isle of Skye looks bare and uninteresting but a closer inspection shows a diverse flora of crustose species, many of them rare (e.g. *Anioa mooreana, Amygdalaria pelobotryon, 'Lecidea' commaculans, Placopsis gelida, Porpidia contraponenda, Rhizocarpon infernulum, R. submodestum,* and *Stereocaulon tornense*). This lichen vegetation is apparently unique in Europe, and probably the world, and is of international importance.

The view that lichens are more important in the Eastern Highlands is, inadvertently, perpetuated by the National Vegetation Classification (NVC) because it treats only those lichen communities dominated by macrolichens. Because these communities are mainly confined to the Eastern Highlands, the NVC gives the impression that lichens are more important in the east.

Confirmation of the importance of the oceanic flora is given by the numbers of species that are more or less confined to either the eastern or western Highlands. There are approximately 13 taxa more or less confined to the Eastern Highlands, most of them macrolichens and all of them more frequent in continental Europe. In contrast, the western Highlands supports 42 taxa, mostly microlichens, and most are rare throughout their range. These include a number of undescribed or only recently described taxa. However, distributions are not that straight forward because oceanic species also occur further east in damp coires and around areas of late snow-lie, and terricolous continental species also occur further west, often on mossy rocks and boulders.

So why is the lichen vegetation of the Western Highlands so special? In a word: CLIMATE! The climate of the Scottish Mountains has been described as "a combination of low temperatures, severe wind exposures, excessive precipitation, cloud and humidity, persistent winter frost and snow cover, deficiency of sunshine, poor visibility, continual ground wetness and low evaporation." (Taylor 1976). These conditions may be extremely unfavourable for vascular plants (and people) but they are responsible for a rich lichen flora.

But what makes the Scottish climate so special? Barry (1992) lists the major controls on alpine climate as: Altitude, Latitude, and Continental Position, and it is the third that gives the Scottish mountains their special character. Situated on the extreme western seaboard of Europe they experience a hyper-oceanic climate, characterized by low seasonal variation in temperature, high atmospheric humidity and precipitation, high winds, and high altitudinal temperature lapse-rates. The oceanicity gradient across the Scottish Highlands is very steep with the result that although the Cairngorms of the eastern Highlands are significantly higher than the Cullin of the Isle of Skye on the west coast, there is a much reduced area above the potential tree-line at the former. Another feature of the climate is its extreme changeable, with 160-180 depressions and 110 frontal systems each year.

Let me now describe three sites in the western Highlands where very special lichens occur. The first is Beinn Dearg in Wester Ross. The River Leal, which flows down Gleann na Sguaib, is, for about 1 km, very slow moving and forms wide shallow pools. Around these pools numerous low rocks occur and these are the habitat for the very rare *Lecanora achariana*. The second site is on the Beinn Eighe NNR, also in Wester Ross. Most of this mountain is composed of acidic Torridonian Sandstone or Cambrian Quartzite and supports a species-poor lichen flora, but the very summits of the peaks are made up of calcareous rocks thrown up by the Moine Thrust, and these support a much more diverse lichen flora. One of these summits supports the only extant British population of *Nephroma arcticum*, which occurs in a mixed *Racomitrium-Salix herbacia* heath. When first visited in 1990, the thalli of this conspicuous, yellow-green species were found to be heavily grazed, presumably by red deer which were commonly seen feeding on the heath. However on the most recent visit in 1998, this did not appear to be as much of a problem. Deer were not seen on the summit heath, and the lichen appeared to be most in danger from rapidly growing pleurocarpous mosses. The third site is Aonach Mór in Westerness, where the spectacular bright yellow, placodioid species *Catolechia wahlenbergii* occurs on steeply sloping schistose rock faces that make monitoring and photographing the species, not only difficult, but somewhat perilous!

I now want to put the Scottish lichen vegetation into a wider context. An oceanic climate similar to that of western Scotland affects the western and, to a lesser extent, the eastern coasts of North America. Recent work on Mt Katahdin, the highest mountain in Maine (Hinds *et al.* 2002, and unpublished) has resulted in ten taxa being recorded for the first time from North America, including the oceanic species *Micarea coppinsii*, and *Stereocaulon plicatile*, which was previously believed to be a British endemic. Similarly a number of taxa characteristic of the western Highlands show a bi-oceanic distribution; being known from only the mountains of NW Europe and NW North America (*eg. Ameliella andreaicola* in ed. and *Rhizocarpon caesium*).

Areas of the southern hemisphere also have a highly oceanic climate, in particular the extreme tip of South America and southern New Zealand. With respect to this, the distribution of the genus *Coccotrema* is extremely enlightening. This has its centre of distribution in the southern hemisphere, being particularly diverse in southern South America, but with apparently disjunct populations in NW North America and NW Europe. However when the distribution of *Coccotrema* is plotted onto a map showing areas with a highly oceanic climate, the two can be seen to correspond almost exactly.

I want to finish with three problems that illustrate how much more work there is still to do in the Scottish mountains. 1) There are several collections of *R. geographicum* without rhizocarpic acid, in which case the thallus is white, but what of a specimen from the cairngorms that is completely orbicular but with one half yellow and the other half white, and the dividing line between the two completely straight?; 2) low boulders on the summit of Cairn Gorm show a horizontal lichen zonation from the base upwards of *Umbilicaria torrefacta, Rhizocarpon geographicum,* and *Umbilicaria cylindrica/Lecidea* spp. It isn't surprising that this occurs, but why are the colours so similar to those of the lichen zonation that occurs on maritime rocks?; and 3) an inconspicuous brown, granular crust is frequent on damp alpine heaths in the west of Scotland. Under the microscope, the granules are revealed to be composed of a shell made up of a single layer of pigmented fungal hyphae enclosing a mass of green algal cells. There appears to be more than one species involved because the hyphae can be straight or wavy or green or brown. It has been suggested that these may belong to the enigmatic genus *Moriola* but much more work is required.

The Powerpoint presentation of this lecture is available on-line at:
http://www.msu.edu/~fryday

References:

Barry, R. G. (1992) *Mountain Weather and Climate*. London: Methuen.

Hinds, J. W., Fryday, A. M. & Dibble, A. (2002) Three additions to the lichen flora of North America from Mt Katahdin, Maine. *Evansia* **19**: 137-141.

Taylor, J. A. (1976) Upland climates. In *The Climate of the British Isles* (T. J. Chandler & S. Gregory, eds): 9-38. London: Longmans

BRITISH LICHEN SOCIETY
ANNUAL GENERAL MEETING – 10th January 2004

The annual general meeting for 2004 was held in the Lecture Theatre of the Royal Botanic Garden, Edinburgh at 10.30 a.m. Present; Sandy Coppins (president in the chair), and 56 members of the Society. The president told members that Oliver Gilbert had been collected by ambulance during the night because a kidney had become available for a transplant. A 'good luck' card was available for members to sign.

1. **Apologies for absence**: Joy Fildes, Oliver Gilbert, Jeremy Gray, Albert Henderson, Peter Earland-Bennet, Jack Laundon, Simone Louwhoff, William Purvis, and Francis Rose.

2. **Minutes of the Annual General Meeting 11th January 2003**. Signed as a correct record of the meeting by the president.

3. **Matters arising**: none

4. Presidents address: Mrs Sandy Coppins said that being president had been a great honour conferred upon her by the society. During her period of office she had seen part of her role as one of "housekeeping", strengthening and tightening up on some procedures in order for the Society to run more smoothly and to ensure that the BLS kept in touch with the needs of the wider membership, especially new members. In this respect, initiating that at least one Council Meeting a year should be held in different parts of Britain in conjunction with a BLS Field Meeting had proved extremely successful. This was the first time since the formation of the British Lichen Society that an AGM had been held outside London, and she made a special welcome to all the Scottish members, for most of whom it was the first time they had attended a BLS AGM. Continuing with the Scottish theme, she was pleased to report that lichenology in Scotland was going through a period of renaissance, with RBGE appointing Dr Chris Ellis as a research assistant to Brian Coppins, thus ensuring continuity of a professional post in lichenology. The BLS had also secured a generous grant from Scottish Natural Heritage of £24,000 per year for 3 years (with 10% match funding from BLS) for putting together a comprehensive database of site-based lichen records in Scotland. Part of the money was also to be used to train Lichen Apprentices, to form an active cadre of young expert lichenologists for the future. This project was now well underway, with four of the Apprentices giving talks in the afternoon Lecture Session. Sandy paid tribute to the Native Woodlands Discussion Group in Scotland, which had set up a Lower Plants Group, resulting in an awakening of interest in bryophytes and lichens, and had been instrumental in attracting young, professional people who now formed the core of the Lichen Apprentices. Sandy finished by

thanking all officers of the Society for their support and wished the incoming president David Hill all the best.

5. Officers and Committee chair reports

Treasurers report: The presented accounts were accepted *nem. con.* Dr Hodgson thanked Clifford Smith and Peter Scholtz for their assistance and the latter for setting up a European facility for members to pay in Euros. The Treasurer pointed out that we had recently made a healthy profit through Elsevier but that the real cost of the Lichenologist to each member was £30, so that he suggested that the subscription should be raised in line with the cost.

It was suggested that members should only be eligible for life membership after they had been a member for 10 years. Discussion on options included that life membership could be without the Lichenologist. No decision was taken.

The president stressed that we needed to agree to change the subscription at this meeting in order to bring it into effect following the AGM in 2005.

It was proposed that we agree that the change in the subscription should be left to the Treasurer. Frank Dobson agreed that this would satisfy the Charity Commissioners. Majority agreed.

Douglas Oliver and Bob Hodgson were both thanked for their help.

Assistant treasurer, membership secretary and website manager Clifford Smith reported that there 648 members, but that he was finding his commitments on all BLS honorary posts including the Flora were too much and he would like to find another Assistant Treasurer and membership secretary. He proposed to keep files on the website as small as possible and also to redesign the front page to make access easier to all the pages. He also proposed to eventually include a searchable data base of images of all lichens in the checklist. The president proposed a vote of thanks for all Clifford's hard work, seconded by Barbara Hilton. Mark Seaward suggested that there were also benefits to being a membership secretary as you got to know all the members. Amanda Waterfield thanked Clifford for the membership list and pointed out that T. Ahti was not included as an honorary member.

The mapping recorder and archivist: Prof. Mark Seaward stressed the importance of continuing to produce map fascicles, but suggested that c. 50% of new or interesting lichens were not getting into the data base. He also asked people to provide pictures of members and BLS activities for the archives. These should be B&W and have named persons on the reverse. Problems of scanning archival pictures were discussed and the importance of sending records to both Mark Seaward and Janet Simkin was stressed by the president.

Senior Editor Peter Crittenden reported that 4 parts of volume 35 were sent out and that parts 5 & 6 including a 15 year index were expected shortly for which Bernard Abbott deserved especial thanks. The 1st issue with Cambridge University Press (CUP) was in proof and CUP were arranging good publicity for the Journal. Peter thanked Tony Braithwaite and fellow editors and proof readers Alan Orange, Brian Coppins

and Barbara Benfield for their help. The president thanked Peter Crittenden for accomplishing a smooth transition from Elsevier to CUP. David Richardson asked why there had been a change in publishers and Peter outlined the problems associated with Elsevier and why the change had been made this year.

Bulletin editor Peter Lambley apologised for the delay in the winter issue of the Bulletin due to change of personnel at the printers, and thanked all contributors for sending copy in. He thanked Jeremy Gray for coming to the rescue with the membership list. He also asked for artists to come forward with a new cover for the Bulletin next year.

Chris Hitch asked members to please contribute records to the new and interesting section of the Bulletin.

Conservation Officer Bryan Edwards reported his 1st year in office including the successful Nitrogen workshop at Nettlecombe and the Plantlife meeting on identifying Important Plant Areas (IPAs). He thanked his committee for their support.

The curator Richard Brinklow asked members to note his article in the Bulletin asking new members to use the BLS collection and old members to contribute specimens.

Librarian Tony Fletcher reported that the BLS library now occupied 36m of shelf space at Leicester Museum and that in the last year he had had more than 100 requests with Lichen Ecology being the top request. He thanked Sydney Cosgrove for converting the library catalogue to Access and recorded his intention of putting the lichen catalogue on the BLS website, and reminded members to send reprints and copies of reports to the library. There were over 2000 further entries to be made to the catalogue and he hoped that he would soon have a volunteer in place to help him with this.

BioBase Recorder Janet Simkin reported that 35 people had copies of BioBase but <50% were actually used and some not even loaded! She also reported that the error rate for grid references was very high. It was suggested that a map and instructions should be produced and that this should also be in the proposed members handbook.

Ivan Pedley gave an appreciation of Tom Chester and his immense contribution to the Society since he joined in 1982, including his setting up and running the churchyard committee, his teaching and his contributions to every bulletin for 10 years.

Field meetings secretary Simon Davey thanked Ivan Pedley for his work as field secretary and Sandy and Brian Coppins for the very successful Graphidion workshop and to SNH for funding it. The meeting in Marlborough was combined with a Council meeting and had broken all records for attendance. In future the he would try to combine field meetings with Council meetings. Future meetings include a joint meeting in Holland with the Dutch lichen society, a work shop on Collema and Leptogium with Peter James, a field meeting in Islay led by Vince Giaverini. Other meetings suggested for the future include Spain with Prof Hawksworth and Sweden.

6. The Ursula Duncan award was presented to Peter James for his contribution to International Lichenology. Vince Giavarini accepted the award on behalf of Oliver Gilbert for his contribution to British lichenology.

7. The Acharius medal that was awarded to Professor David Smith at the Symbiosis Congress 2003 in Halifax Nova Scotia (see Honegger in IAL newsletter vol 36 1st July p.1-2) was now presented to David Smith by Mark Seaward. David Smith was a founder member of the Society and had contributed greatly to the understanding of the symbiotic relationship in lichens.

8. Election of officers and members of Council

The following officers were elected:

Vice president - Peter James proposed Pat Wolseley as vice-president and gave an account of her involvement with the society. Seconded by Sandy Coppins.

Field meetings secretary Simon Davey was proposed by Brian Coppins and seconded by Ivan Pedley

Re-election of other officers was proposed en bloc by Ian Evans and seconded by Ivan Pedley. Members agreed

Retiring ordinary members of Council included Vince Giavarini, Simon Louwhoff, Neil Sanderson and Clifford Smith.

Proposed new members of Council included Jacqui Middleton leader of the Sussex Lichen Recording Group which organises 6 meetings a year, proposed by Simon Davey; Jack Laundon past president and former secretary of the society proposed by Pat Wolseley and Stephen Ward the former lower plants co-ordinator for SNH proposed by Sandy Coppins. Their election proposed by Peter James and seconded by Ray Woods.

Sandy Coppins had also persuaded Joy Ricketts to be co-opted onto Council and spoke about her as a representative of the shop floor and an excellent communicator as on her Radio broadcast. Members agreed

9. Any Other Business

Ian Evans noted that lichen information on BAP species in Scotland was still very sparse.

Re her broadcast on Radio 4 Joy Ricketts suggested that anyone interested should contact Sheila Duncan producer of the programme.

Date and place of the next AGM. It was agreed that the next AGM should be in London and the 7-9th January suggested. The Flett theatre at the Natural History Museum is now booked for this occasion and the Foyer will be used for exhibition space as in 2003.

Afternoon lectures on the theme: Scottish lichenology

The History of Lichenology in Scotland
Brian Coppins

[Brian took us on a whistle-stop tour through lichenological activities in Scotland during the last 320 years, giving us an insight into the contributions, networking, and trials and tribulations of many of the personalities concerned.]

The first published lichen records from Scotland appeared in 1684 from the founder of the Royal Botanic Garden Edinburgh (RBGE), **Sir Robert Sibbald** (1641–1722), Charles II's King's Physician, Geographer Royal and Natural Historian. This was before the days of Linnaeus and his binomial [genus and species] system of nomenclature, and so the names in Sibbald's '*Scotia Illustrata*' are long phrase names and it is not certain if all are lichens. Scotland was quiet lichenologically until 1771, when we learned that the **Rev. John Burgess** (1725–95) of Dumfries sent a package of seven specimens to Linnaeus, with *Lichen* [*Leptogium*] *burgessii* L. as a result.

In the summer of 1772, the **Rev. John Lightfoot** (1735–88) of Uxbridge, accompanied Thomas Pennant in a tour of the Highlands and Islands. His discoveries included *Teloschistes flavicans* on Ailsa Craig in the Firth of Clyde, and *Lichina pygmaea* near Edinburgh in the Firth of Forth. The latter he described as an alga (*Fucus pygmaeus* Lightf.) in the first published lichen flora of Scotland (*Flora Scotica*, 1777). In their travels Lightfoot and Pennant met with the **Rev. John Stuart** (1743–1821) of Killin (and later Luss), a much revered mountain botanist who was the first to record *Solorina saccata* in Britain, and who acted as a guide and inspiration to many other lichen excursionists such as Robert Brown, J.E. Smith and W.J. Hooker.

The Scottish mountains attracted the attention of another 18th Century worthy, namely **James Dickson** (1738–1822), a Scottish nurseryman who worked at Covent Garden. He made several excursions to the Highlands, and from his visits to Ben Lawers, *Brigantiaea fuscolutea* and *Lecanora frustulosa* were among the new species he described in his *Fasciculus plantarum cryptogamicarum britanniae* (1785–91). Later, in 1804, he was one of the founder members, along with e.g. Sir Joseph Banks, of the Royal Horticultural Society.

Born the son of an episcopalian bishop, in Montrose in 1773, **Robert Brown** (1773–1858) was later to win fame as naturalist to Matthew Flinders' coastal survey of Australia (1801–05), as the first Keeper of Botany at the British Museum (BM)(in

1827), and for describing what we now know as 'Brownian movement' - the movement of fine particles in liquid. However, as a lad of only 17 he visited Angus with George Don (1764–1814), a pioneer of Scottish mountain botany (and collector of lichens). In 1793 Brown made a 'Botanical Journey to the Highlands' [MS in BM], making several lichenological 'firsts', such as *Collema dichotomum* and *Leptogium saturninum* from near Airlie.

Encouraged by Prof. John Hope (of RBGE), an earlier expedition to the Highlands was made by his young gardener **Archibald Menzies** (1754–1842). Although several lichen specimens of this 1778 tour survive, they are all poorly localized. However, Menzies went on to make better documented collections in far flung regions of the globe, as documented in the several recent papers by David Galloway and Eric Groves.

Later of *English Botany* fame, and founder of the Linnean Society, **Sir James Edward Smith** (1759–1828) spent 1781–83 as a student in Edinburgh, making some notable finds, most of which survive in his herbarium [LINN-Smith]. Among them is *Sticta limbata*, about which he wrote "we have long observed this lichen, at the roots of trees, and on shady mossy rocks at the Hermitage near Edinburgh". Unfortunately, this and most other recorded *Lobarion* lichens have not been seen in Edinburgh and the Lothians since those early days.

Returning to the Highlands: in 1808, the 'two Williams', **Borrer** (1781–1862) and **Hooker** (1785–1865), aged 27 and 23 respectively, made a major excursion, visiting Schiehallion, Ben Lawers, Ben Lomond, Ben Cruachan and Ben Nevis and in the north Ben Hope & Ben Loyal, and over to Orkney. From Ben Lawers, they collected two species that Borrer named in honour of his companion - *Pannaria hookeri* and *Dacampia hookeri*. They visited Mr James Brodie of Brodie [Castle] and the RBGE herbarium houses Brodie's lichen collection, which mainly comprises specimens sent to him by Borrer. In 1820, Hooker was appointed the Chair of Botany at Glasgow, and in 1821 published his *Flora Scotica*, the second volume of which is devoted to cryptogams. The Highland tours carried out by the early botanical explorers were long and arduous, on horseback or foot. They also encountered some 'local' difficulties. Regarding the 1808 trip with Borrer, in a letter to his father-in-law, Dawson Turner, Hooker describes their reception there:

> "We did not leave North Sutherland with the good wishes of the inhabitants, at least the lower classes of them, most of whom took us for French spies, or, what is worse in their estimation, sheep farmers. Daniel Forbes, who often acted as our guide, was advised by some to conduct us by the worst way possible; by others that he might be better employed. Our lad heard some saying that we ought to be flogged and sent out of the country. They have not the least idea of persons

travelling for mere curiosity, and could not be persuaded that we were not come to do them some ill."

Moving from the Highlands to the Borders, in early 19th Century, we meet **George Johnston** (1797–1855) of Berwick, a founder member and mainstay of the Berwickshire Naturalist's Club - the first of its kind in Britain (1831). He was also a founder member of the Ray Society. His lichenological publications include his *A Flora of Berwick-upon-Tweed* (1831) and *The Natural History of the Eastern Borders* (1853), and a bound set of specimens 'The lichens of Berwickshire and North Durham' (1835) [displayed at the meeting]. Lichenological interest in the region was continued by **James Hardy** (1815–1898), who published a 'Lichen Flora of the Eastern Borders' (1863). Unfortunately few of his collections seemed to have survived, including the types of two '*Catillaria*' species.

An important character in Scottish cryptogamy is **Robert Kaye Greville** (1794–1866), a man of independent means who settled in Edinburgh in 1816. Although he collected some lichens and included a list of lichens in his *Flora Edinensis* (1824), his main interests were in diatoms and fungi. Indeed, his monumental six-volume *Scottish Cryptogamic Flora* (1822–28) includes only three lichens! Greville was a close friend of William Hooker and mentor to the legendary mycologist, the Rev. Miles Berkeley. Another friend of Greville's was **John Hutton Balfour** (1808–84), an Edinburgh physician who founded the Botanical Society of Edinburgh in 1813, and was later appointed Professor of Medicine & Botany, Univ. of Edinburgh and Regius Keeper of the RBGE (1845–1879). Balfour led many student excursions on which lichens were collected, including the famous 'Battle o'Glen Tilt' where Balfour had a run-in with the Duke of Atholl, which later went to litigation and inspired many poems and cartoons at the time. Balfour gained great fame as a teacher, especially for his innovative practical classes, and one of his student gardeners, **John Sadler** (1837–82), later compiled a list of lichens for Balfour's *Flora of Edinburgh* (1863). He also published several papers that included reports of lichens, and his lichen collections are in E.

Balfour's inspirational teaching led to the development of undoubtedly the greatest of all Scottish lichenologists, the Edinburgh born **William Lauder Lindsay** (1829–80). In 1852 Balfour wrote of Lindsay in a testimonial:

"Dr Lauder Lindsay has devoted much time to the examination of vegetable tissues by the microscope, and is well acquainted with the use of that instrument. In 1851, he spent a portion of his time at the Garden making microscopical examinations of tissues, and putting up preparations. Dr Lindsay sent in an excellent Thesis on Lichens, in which he gave a full account of all that has been

done in regard to that difficult order of plants. He also made a beautiful series of drawings and preparations to illustrate the structure and properties of Lichens."

The mentioned 'Thesis' later formed the basis of Lindsay's *Popular History of British Lichens* (1856). Lindsay's remarkable skills as a microscopist and illustrator, as well as a taxonomist, are clear to see, especially in his papers on the conidial states in lichens, on lichenicolous fungi, and on New Zealand lichens. Lindsay travelled widely, visiting Norway (1857), Iceland and the Faeroes (1860) and New Zealand (1861). Lindsay's professional career was as a Physician, mainly at Murray's Royal Institution for the Insane in Perth. Despite this, and in addition to his 'taxonomic' studies, he was much aware of the possible economic potential of lichens, and published and experimented on their dyeing properties. Indeed, he was very much a polymath and researched and wrote about a wide range of topics, including histology of blood in the insane, the action of hard water on lead, and coal-mining in New Zealand. Lindsay's reprint collection and herbarium are at RBGE, but unfortunately his correspondence [mentioned in his will] seems to be lost.

Lindsay was a popularizer of lichens, but even more so was his contemporary, the **Rev. Hugh Macmillan** (1833–1903), a family member of the publishers of that name. His books, *Footnotes from the Page of Nature or First forms of vegetation* (1861) and *Holidays on High Lands; or rambles and incidents in search of alpine plants* (1869), make delightful reading. Amongst his 'finds' was *Pseudocyphellaria crocata* on rocks at the Birks of Aberfeldy in Perthshire – and the challenge is still on to refind it there!

Lichenological activity hotted up in the mid-19th century, assisted by the expansion of the the railway network into the Highlands, and it is not possible to mention in any detail all the participants. In brief, these include the 'home-grown' **Alexander Croall** (1809–85), **William Gardiner** (1808–52) and **Alexander Maingay** (1836–69), and visitors such as **Harvey B. Holl** (1820–86), who received his MD from Aberdeen University in 1859, and **Isaac Carroll** (1828–80) from Cork. Of great significance to British lichenology were the visits to the Highlands by **Admiral Theobold Jones** (1790–1868), a long-time friend by correspondence of William Nylander – the foremost lichenologist in the latter half of the 19th century. The significance is not just because of his several 'firsts', such as *Caloplaca nivalis*, but because of an accident that befell him in the summer of 1862. What might be called 'The Glen Callater Incident' was described in a recent paper by Prof. Michael Mitchell.

During a visit to the Braemar area, the 72 year-old Jones had a brush with death. He was collecting in the hills around Glen Callater when a change in the weather caused him to abandon his explorations. But, in making his way down he lost his footing and found himself sliding through a gully. Jones managed to halt his decent by jamming his chisel into a fissure. In his obituary to Jones, David Moore [of Belfast] continues:

"after one of his feet had reached over a precipice from 70 to 80 feet deep. He felt his imminent danger, and knew that the least slip would be the cause of him precipitating him over the ledge of the rocks. He was therefore unable to move, and in this predicament he lay on his back, holding on with one hand, while the water of the rivulet was running under his body, and the rain pouring on him part of the time (two nights and the best part of three days)...He was at last rescued by the people of the parish turning out *en masse*, with their minister at their head."

The minister was the young **Rev. James Morrison Crombie** (1831–1906). In a letter to Joseph Hooker [son of William], Jones reported that:

"My Accident the other day in Braemar made me acquainted with Mr Crombie the Clergyman of Castleton – He is an enthusiastic botanist...I gave him my copy of Nylander's *Lichenes Scandinaviae* (1861) and also a copy of Mudd's *Manual* (1861) – both of which he was delighted with – he had not seen or heard of either of these."

Thus, Crombie began his long career in lichenology, culminating in his masterly *A Monograph of Lichens found in Britain* (1894). In 1865/6, Crombie moved to London, and in 1869 began his long association with the British Museum. However, until 1884 he made annual visits to Scotland.

A name closely linked with Crombie's is **Annie Lorrain Smith** (1854–1917), who was born in Dumfriesshire. Originally a governess, she later became an 'unofficial worker' at BM for 46 years (1888–1934) - women then being barred from the Civil Service. She is best known for her completion and updating of Crombie's monograph, but her greatest contribution to lichenology is her treatise *Lichens* (1821) in the 'Cambridge Botanical Handbooks' series.

A contemporary but more enigmatic character of the time is **James Stirton** (1833–1917), who gained an MD from Edinburgh in 1858, and later became Professor of Midwifery at St Mary's College, Glasgow in 1889. During 1873–1899 he published widely on lichen taxonomy, describing for the first time several well-known species, e.g. *Fuscidea recensa*, *Punctelia reddenda* and *Usnea subfloridana*. Although a leading lichen systematist of the time, he was very much a loner, but did correspond with several collectors, especially **James M'Andrew** (1836–1917). Born in New Spymie in Morayshire, M'Andrew was the Schoolmaster at Kells (1869–1901) – from where he made important collections from Dumfries and Kirkcudbrightshire. In 1901 he retired to Edinburgh, and made extensive collections in the city environs, – including *Lecanora andrewii* described by the French lichenologist Bouly de Lesdain.

The death of M'Andrew heralded the 'lean years' of lichenology within Scotland. However, there were several important visitors, most notably the 'Liverpool School' of **James A. Wheldon**, (1862–1924), **Albert Wilson** (1862–1949) and **William G. Travis** (1877–1958), who published their finds from different parts of the country, such as Invernesshire, Perthshire and Arran. Their finds included *Nephroma helveticum* from a wood near Killin – the one and only time this species has been found in Britain!

The lean years gradually came to an end with **Ursula Duncan**'s (1910–85) developing interests in lichens in the 1940s, followed by the foundation of the BLS in 1958 and visits to Scotland soon after by **T.D.V.** [Dougal] **Swinscow** (1917–92) and **Peter James**, and later (beginning in the early 1970s) by **Francis Rose**, often in the company of Peter James, myself, and other BLS members.

From the closing of the lean years to the present, Scotland has much benefited from visitors from overseas. Among others, these include **Gunnar Degelius** (1949), **Eilif Dahl** (1952), **Rolf Santesson** (1964 & 1969), **Leif Tibell** (1976), **Per Magnus Jørgensen** (1983) and **Josef Poelt** (1992).

Time and space do not permit me to mention all the British 'players' active in Scotland, but I cannot but fail to mention **Pauline Topham** (who often accompanied Ursula Duncan), and also **Oliver Gilbert**, **Brian Fox** (1930-99), **Alan Fryday** and **Robin Munro** (1926–2001), especially for their endeavours in 'montane lichenology'. Finally, I must thank for their contributions to Scottish lichenology, your retiring President and, last but not least, our dog 'Jack', whose doleful looks have led to walks on which several additions to the Scottish lichen flora have been made!

Apologies and thanks are owed to those from whom I have cribbed information, especially Profs David Hawksworth and Mark Seaward (for their scholarly 'History' in *Lichenology in the British Isles 1568–1975*) and Prof. Michael Mitchell, who in several equally scholarly publications has brought to life many early lichenologists from their archived correspondence.

The Lichens of Whitelee Forest
John Douglass

Whitelee forest is situated 15 km South of Glasgow, is around 13 x 6 km in size and falls within the three Vice Counties of: Lanarkshire, Renfrewshire and Ayrshire. The altitudinal range is 260m to 376m. Whitelee is owned by the Forestry Commission and Sitka spruce was planted over wide areas in the 1960's and 70's. However some large

areas and smaller pockets of unplanted blanket peatland remain. The geology of the site is trachy basalt.

The main reason for the survey was Scottish Power's application for the UK's largest windfarm with over 160 turbines planned for Whitelee. The survey work began in spring 2002 and was carried out by myself and local naturalist Bryan Simpson. Whitelee has proved an excellent training ground for myself and Brian. Prior to the start of the survey we were only familiar with the likes of *Hypogymnia physodes* and *Lecanora chlarotera*.

Whitelee has a great diversity of lichen rich habitats including: blanket peatland, mature trees, miles of old fencing and tracksides, scree areas, drystone dykes, bridges, sheep fanks, extensive rock faces, burns and an exceptional boulder field.

The peatland has produced 32 species with 19 *Cladonia* species such as *C. sulphurina*, and *C. bellidiflora* as well as: *Pycnothelia papillaria, Omphalina ericetorum, Trapeliopsis psedogranulosa, Micarea peliocarpa* and the nationally rare *Cladonia polydactyla var. umbricola* found on a peaty trackside bank.

There are some fine mature trees at Whitelee including: Ash, Willow, Alder, Rowan and Scots pine which are home to a great variety of lichens including: *Hypotrachyna revoluta, Parmotrema chinense, Melanelia exasperatula, Graphis elegans, G. scripta,* and *Bryoria subcana*. A number of young broad leaved trees have recently been planted by the Forestry Commission along the forest edges, trackside and burns to help sustain the forest's biodiversity.

Many old fence posts and tree stumps are turning up some fine examples of: *Flavoparmelia caperata, Bryoria fuscescens, Mycoblastus sanguinarius, M. fucatus,* and the nationally scarce *Ochrolechia microstictoides*.

The dry stone dykes contain a wealth of species, among them: *Stereocaulon versuvianum, S. evolutum, S. dactylophylum* and *S. delisei*. One old sheep fank produced an abundance of *Ochrolechia inaequatula*.

The burns have produced a number of species such as: *Dermatocarpon luridum, Hymenelia lacustis, Bacidia inundata* and *Verrucaria funckii*. Large boulders in the burns provide habitat for species including: *Massalongia carnosa* and two nationally scarce species: *Polychidium muscicola* and *Peltigera britannica* the latter was found at a site known to us as the fairy grotto, a beautiful waterfall and pool area with steep rock faces and overhanging rowans and ferns.

The rock faces are good habitat for: *Pertusaria lactea*, *P. aspergilla*, *P. pseudocorallina*, *Protopannaria pezizoides*, *Leptogium gelatinosum*, *L. teretiusculum*, *Lecidea phaeops*, *Opegrapha gyrocarpa*, *Enterographa zonata* and the nationally scarce *Moelleropsis nebulosa*.

A large boulder field near Carrot contains over 1,000 boulders with some measuring 3m by 4m exposed area. These boulders are smothered in lichens such as: *Parmelia omphalodes*, *P. conspersa*, *Umbilicaria polyphylla*, *U. polyrrhiza*, *Cetraria chlorophylla*, *Bryoria fuscescens*, *Ophioparma ventosa*, *Rhizocarpon oederi* and the nationally scarce *Carbonea vorticosa*. The boulder field has over 70 recorded saxicolous lichens with many more still to be found.

The area as a whole has produced over 190 species, 9 nationally scarce, 1 nationally rare and 6 indicators of long ecological continuity. We have spent many happy days checking out the intricate habitats of Whitelee and will doubtless enjoy many more. When we come across a real beauty we do what is known as a Craig Brown and punch the air repeatedly shouting out the man's name, just as he used to do when on those rare occasions Scotland scored.

I would like to thank Brian and Sandy Coppins for their great help and support of this project, as well as Ann McKillop (South Lanarkshire Council Ranger Service) and Emma Stewart (Forestry Commission). The project was supported by a small ecological grant from the BLS.

Lichens of Western Scottish Hazelwoods

Sandy Coppins

This talk was aimed at raising awareness that oceanic hazelwoods form a distinct and definable habitat; to emphasise the importance of these hazelwoods for lichens; to consider why they are so species-rich in *Graphidion* and *Lobarion* species; and to propose conservation and management objectives to maintain the lichen interest.

Sandy began with some of the very special lichens of the *Graphidion* community that occur in Atlantic hazelwoods – *Arthothelium macounii*, *Melaspilea atroides*, *Pyrenula hibernica* (*Parmotrema chilensis* auct. europ.), *P. occidentalis*, *Thelotrema macrosporum*, *T. petractoides*, and *Graphis alboscripta*. This last appears to be a Scottish endemic, known from 12 localities in western Scotland, all on hazel.

The natural dynamics of hazel stools was discussed, showing that stools form self-perpetuating, ecological units, with regular production of young stems. These "sun-shoots" will grow rapidly to fill spaces in the canopy. As soon as the canopy is

reached, the growth-rate of "sun-shoots" slows down, and the smooth-barked, young stems form the basis for *Graphidion* species to colonize. If there is no canopy gap, the young stems will abort, and dead basal shoots are a regularly observed feature of hazel stools. Older stems within the stool are colonized by bryophytes and lichens of the *Lobarion* community.

The concept that all hazel is a multi-stemmed shrub by virtue of having been coppiced in the past was challenged. It was argued that habitat disturbance such as coppicing drastically reduces lichen species diversity, yet these oceanic hazelwoods – which can form extensive, pure stands especially near the coast – are renowned for supporting species-rich lichen assemblages, including several rare and endemic lichens. It was suggested that the natural dynamics of hazel results in long continuity of habitat and niches, the classic scenario for "old woodland" lichens, with always some young shoots for the *Graphidion*, and always some old stems for the *Lobarion*. In Atlantic hazelwoods, many thousands of stools are present, providing ecological continuity over time. The isochrone map produced by Birks (1989) for the pollen evidence of establishment of hazel in western Scotland shows that hazel has been present since 10,000 B.P., and is known to have persisted in pure stands for tens of thousands of years. Are the hazel stands persisting today, relics of those ancient hazelwoods?

A pilot study looked at the genetic relationship between adjacent, individual stools within a large, 27 ha stand (Ballachuan Hazelwood). Evidence of cloning was found, suggesting ancient relationships between individual stools that have reproduced by stool fragmentation or layering.

The dramatic effect of consistent browsing of annually-produced young hazel shoots was illustrated, showing how a stool can be reduced to one or two, old thickened stems, in extreme cases resulting in the hazel "tree". As soon as grazing is removed, the stool quickly reverts to its characteristic, multi-stemmed form.

As to the question of how hazel in western Scotland was exploited in the past, it was suggested that due to the extensive presence of hazel, and the often irregular growth-form of the stems, selective cutting was widely practised.

The talk finished with concern being expressed that there was a worrying upsurge in the desire to coppice hazel, and that this unique habitat may be damaged or destroyed by misguided (if well-intentioned) "conservation management". Coppicing is not a viable long-term option in these oceanic hazelwoods, as it is unlikely to prove cost-effective; there are problems related to irregular growth, so providing a limited useful end product, but above all, the huge costs that would be needed to effectively fence out deer from browsing coppice-regrowth. It was suggested that if hazel poles were

required, they should be selectively cut, leaving the majority of the stool intact, thus preserving this internationally important lichen habitat.

Reference

Birks, H.J.B. (1989) Holocene isochrone maps and patterns of tree-spreading in the British Isles. *Journal of Biogeography* **16**: 503–540.

Bryoria furcellata and landscape modelling in Glen Affric

Joe Hope

This talk gave a brief overview of a piece of work completed as part of a PhD project at Stirling University, funded by the Forestry Commission. It outlined the development of landscape modelling techniques aiming to support conservation management of the woodlands in Glen Affric National Nature Reserve.

Glen Affric, situated in the northern Scottish highlands, is notable for its large extent of native Caledonian pinewood and high biological diversity. Palynological evidence suggests that the composition of the forest has been highly dynamic, with cyclical relationships occurring at the stand scale between pine, birch and open ground. In terms of the Native Pinewood Index of Ecological Continuity, it ranks second only to Glen Strathfarrar. One of the most notable inhabitants of the glen is the Schedule 8 lichen, *Bryoria furcellata*. Whilst this species may be common and abundant in some parts of its wide global distribution (e.g. boreal forest in eastern Canada), in Britain it is found in only a handful of sites occurring within four ten-km squares.

Conservation strategies for lichens, (or indeed for most groups of taxa) have tended to be implemented at the site scale or smaller. Whilst in many cases, site-specific conservation measures may be entirely appropriate or even essential, there is growing acceptance amongst conservation biologists that a more holistic landscape-level approach may often be necessary. This may be particularly so for taxa whose habitats are seral or subject to regular disturbance. Such organisms may form metapopulations or spatially extended populations; site-based measures are unlikely to be effective in these circumstances. The development of the 'ecosystem management' concept in North America is, partly, a response to these concerns. Landscape modelling is often included as a component of ecosystem management, since it provides a means for tackling the complexities inherent in large heterogeneous landscapes.

My work used a variety of landscape modelling techniques to address such issues. The foundation of the modelling architecture was a forest landscape dynamics model that simulated change in tree species composition, age structure and physical attributes. Outputs from this model provided input variables for a habitat suitability model for *B.*

furcellata. This habitat model was based on expert knowledge and predicted habitat quality as a function of substrate availability, tree age, average windspeeds and light levels. The habitat model thus provided a carrying capacity for a spatially explicit population model, simulating dispersal and colonisation processes as well as intra-cell population dynamics.

Results suggest that natural habitat dynamics may place a limit on the proportion of suitable habitat that may be occupied by *B. furcellata* but that certain key site types may be less susceptible to habitat change and thus provide permanent refugia. Thus, current abundance in the landscape may be a less good indicator of population viability than expected. A link can be made between Rose's 'ecological continuity' concept and the historical spatio-temporal connectivity of suitable habitat in the landscape.

However, an important caveat must be attached to any results of this modelling because of very large uncertainties associated with the variable quality of spatial data and paucity of ecological understanding of many key processes. Furthermore, model testing is problematic because the large spatial and temporal scales make experimentation unfeasible and replication impossible.

Grateful acknowledgements are made to Brian and Sandy Coppins, Jonathon Humphrey and the Forestry Commission.

Lichens of Rowan in western Scotland
Andy Acton and Anna Griffith

They presented the results of their desk study and field investigation of the lichens of Rowan in Western Scotland.

The initial desk study collated data from recent lichen surveys undertaken (mainly by Brian & Sandy Coppins) at seven sites in Western Scotland. The total number of lichen species recorded on Rowan at these seven sites was 121. These included 30 EUOCIEC[1] species, 19 WSIEC[2] species, 20 Nationally Scarce lichens, and 1 Nationally Rare lichen. These figures were compared with the corresponding data for a range of other tree species at these sites. As expected Oak, Hazel and Ash consistently had the most species, followed by Birch, Rowan, Alder and Willow.

The field study concentrated on three sites: Ballachuan Hazelwood (a Scottish Wildlife Trust reserve), the woodland of the Glen Nant Site of Special Scientific Interest, and Fearnoch Forestry Commission Plantation on an Ancient Woodland site (PAWs). Rowans of various ages were examined, relevant environmental data collected and an

attempt was made to identify and classify micro-niches. These variables were related to lichen communities and possible stages of succession.

The work is ongoing and future plans include collecting additional data on Rowan micro-habitats, further investigation of the colonisation of these niches by lichens, and subsequent successional stages.

[1] EUOCIEC – Eu-Oceanic Calcifuge Index of Ecological Continuity
[2] WSIEC – West of Scotland Index of Ecological Continuity

The Lichen Ecology of Aspen Woods – A Preliminary Analysis
Christopher Ellis, Royal Botanic Garden Edinburgh.

Project Outline
In April 2003 the Royal Botanic Garden Edinburgh implemented Phase II of its *Scottish Rare Plants Survey*. In recognition of the International importance of the British lichen flora, this initiative is to protect UK lichen species and their habitats under threat or in decline. Over the next one to two years the survey will focus on a hitherto neglected lichen phorophyte: Aspen (*Populus tremula* L.).

Stands of native Aspen have excited recent interest in conservation (Cosgrove & Amphlett 2002). The niches of certain lichen species are associated exclusively with Aspen (e.g. *Arthonia patellulata* and *Lecanora populicola*) and populations of notable rare or threatened species occur in native Aspen woods (e.g. *Caloplaca flavorubescens*, *Leptogium saturninum* and *Schismatomma graphidioides*). The conservation status of Aspen as a habitat for lichens has been noted (Coppins *et al.* 2001) though requires further examination. The work at RBGE has two components:

I. a survey to inventory lichens, including an assessment of conservation status based on their rarity and commonness.
II. Ecological research to describe the habitat requirements of lichen species.

Together these provide information towards the planning and implementation of conservation strategy.

A New Sampling Method
To examine how the abundance of lichen species might be controlled by environmental variables at contrasting spatial-scales, traditional ecological methodology has been

adapted to suit lichens. To capture regional variation in the lichen flora, sites are being visited from biogeographic regions separated by major watersheds. At each site two to three Aspen trees of different ages are examined. The occurrence of lichen species on the trunk is quantified according to a standard methodology – the spiral-transect (Fig. 1 & Plate 1). A starting point (node) is marked, 5 cm above the base of the trunk, at a principal compass point. This point changes in turn for successive trees sampled, in the order: north, west, south and east. Subsequent nodes are marked on the same side of the trunk at heights above the ground of 100 cm and 200 cm, and on the opposite side of the trunk at 50 cm and 150 cm. A linear transect with sampling points at 20 cm intervals is then aligned in a westerly spiral around the tree, incorporating the shortest distance between the ascending nodes. To describe the lichen flora, a quadrat with sides 6 cm x 6 cm, divided into nine subunits (2 cm x 2 cm), is placed with its centre over consecutive sampling points on the spiral transect. Lichen species are recorded in the field as presence-absence in each of the nine subunits, providing a 9-point frequency of occurrence for each quadrat. Difficult taxa are noted and collected for examination in the herbarium.

The Lichen Habitat – A Preliminary Assessment

The abundance of lichens is being compared to environmental variation at different scales: i.e. between quadrats, between trees at a site, between sites within a region, or between regions. Preliminary analysis points to:

(i) dramatic variation between biogeographic regions related to a steep east-west gradient in oceanicity.

(ii) Variation in the lichen flora of stands in close proximity controlled principally by bark chemistry (e.g. pH and conductivity).

These points are exemplified by comparing the lichen flora of an Aspen stand in upper Speyside, Breakachy Bridge (NN 636929), first with a site ca 10 km westwards, across a watershed in the Laggan Valley (NN 514886), second with a site ca 10 km eastwards, Creagan Breugach (NN 742992), which lies downstream along the River Spey.

Of the combined species pool, Aspen from Breakachy Bridge and Laggan have ca 31% of species in common (Fig. 2). These species comprise the common elements of the Aspen flora e.g. *Lecanora chlarotera*, *Lecidella elaeochroma* and *Ramalina farinacea*. The Aspen specialist *Lecanora populicola* occurs at Breakachy Bridge and not at Laggan, though the most obvious difference between the sites is owing to a rich assemblage of oceanic epiphytes at Laggan, absent from Breakachy Bridge. These include the indicators of oceanic woodland continuity *Collema fasciculare* and *Peltigera collina* (Coppins & Coppins 2002).

The difference between lichen communities on the same tree species, over such a small distance (ca 10 kilometres), is the striking result of orographic effects on Scottish weather; Breakachy Bridge is in the rain-shadow of mountains surrounding Loch Laggan. However, comparing sites within the same valley, Breakachy Bridge and Creagan Breugach have still fewer species in common, i.e. 12% of the combined species pool (Fig. 3). The lichen flora of Breakachy Bridge is characterised by the Aspen specialists, *Arthonia patellulata* and *Lecanora populicola*, and species typical of more basic substrate, e.g. *Caloplaca cerinella* & *C. holocarpa*, *Physcia aipolia* & *P. tenella* and *Xanothoria parietina*. In contrast, the epiphyte flora at Creagan Breugach is similar to that found on relatively more acid-barked Birch and Pine, e.g. *Bryoria fuscescens*, *Hypogymnia physodes* and *Platismatia glauca*. A difference in the epiphyte flora of Aspen at closely occurring sites is tentatively explained by bark pH; that of the Aspen at Creagan Breugach (pH = 4.36) being relatively low compared to Aspen at Breakachy Bridge (pH = 5.17). Field observations and musings with Brian Coppins in the tap-room of the Suie Arms Hotel (NH 828057) have thrown light on a possible relationship between Aspen clonality and bark chemistry. Analyses on a wind-blown tree also suggest that an increase in the bark pH of Aspen upwards along the trunk is matched by a corresponding gradient in species composition.

Further Work

The study will continue to visit Aspen stands in Scotland, inventory lichens and refine the broad ecological analyses discussed in this paper. It will also include research to examine the lichen flora of the upper trunk and tree canopy and to explain the relative effect of clonality and environment (e.g. soil conditions) on bark pH.

Acknowledgements

The work in progress described here is carried out in collaboration with Brian Coppins, who I thank for his companionship in the field and patient training in lichen identification. The work is made possible by a grant to RBGE from the Esmée Fairbairn Foundation.

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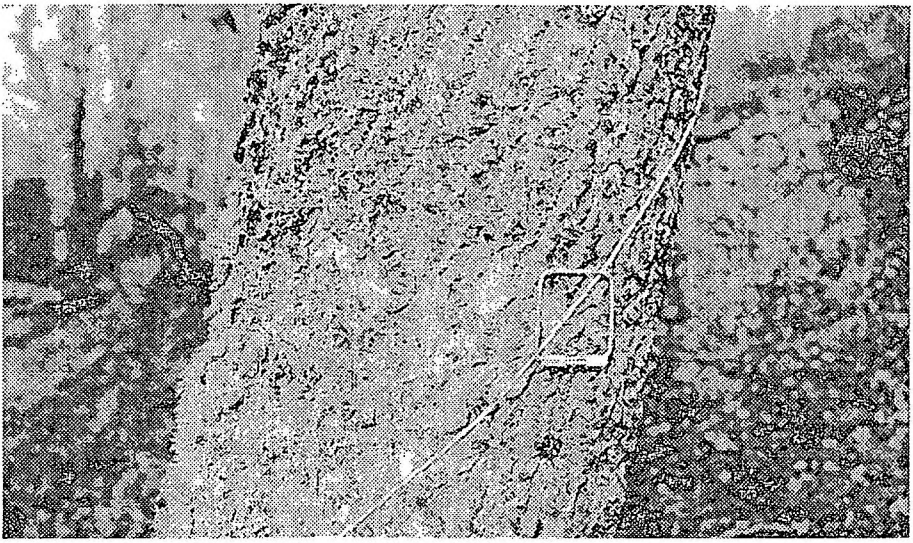

Plate 1 The transect on an Aspen Tree, showing the spiral arrangement and the quadrat used to describe species presence-absence. The quadrat moves upward at 20cm intervals along the transect (from left to right).

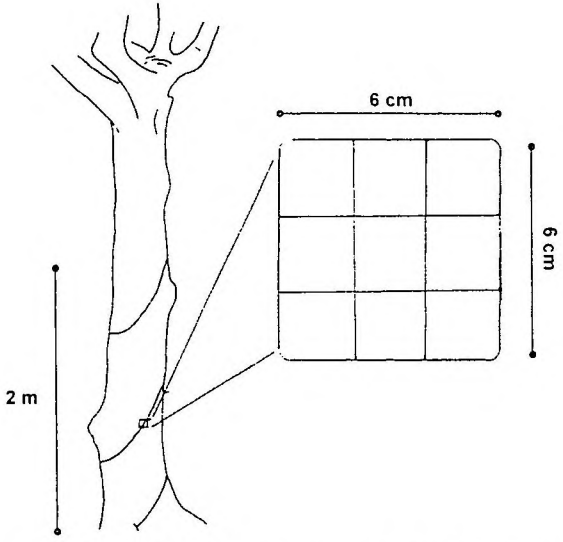

Fig. 1 The spiral -transect method of sampling lichens on a tree trunk (se text for description).

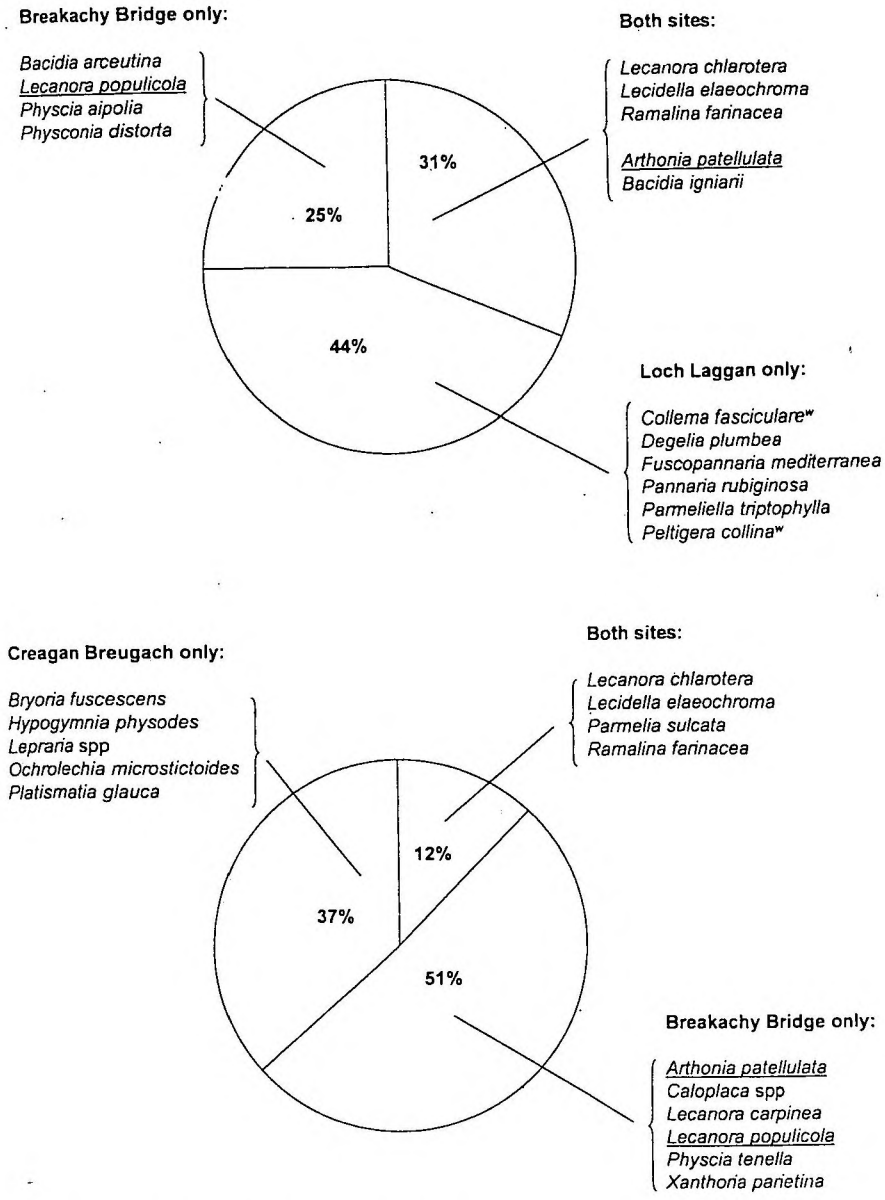

Fig. 2 & 3 Percent of the combined species pool occurring at Breckachy Bridge only, Loch Laggan only, or at both sites. Examples of species are given for each category. Aspen specialists are underlined and indicators for woodland continuity deliminated by a 'w'.

Field Meeting

On the Sunday many members attended a field meeting led by Brian Coppins along the shores of East Lothian at North Berwick. In the morning we concentrated on the coastal rocks where the highlight for many was genuine *Anaptychia ciliaris* var *mammilata* growing on low rocks on an islet accessible at low tide. After lunch in a cafe and visitor centre with spectacular views out towards the Bass Rock we visited a nearby hill and rock outcrop where th highlight seen by some was *Ramalina polymorpha*.

URSULA DUNCAN AWARDS

The Uraula Duncan Awards were presented to two distinguished members of the Society.

OLIVER GILBERT

It goes without saying that that the name of Oliver Gilbert is one of the most highly respected in British lichenology and it is most appropriate that we have chosen to honour him with the Ursula Duncan Award in Edinburgh rather than in London.

Oliver was born in Lancaster only a stone's throw from the Scottish Borders and from the age of three knew he wanted to become a Botanist. His athletic build as a youngster and healthy appetite endowed him with boundless energy much of which was burned off exploring the high-level scenery of Britain and Europe with his twin brother Christopher. By way of Exeter University and Imperial College he landed his first botanical post as Deputy Warden of Malham Tarn Field Centre. It was here that Oliver first met Arthur Wade whose passion for lichens was infectious. His curiosity aroused, Oliver joined the staff at the Botany Department at Newcastle University where for his PhD he began his pioneering work on air pollution and lichens. This work brought him face to face with the two leading lichenologists of the day, Arbroath based Ursula Duncan and her protégée Peter James.

His membership of the British Lichen Society was a huge boost to morale at a time when the study of lichens was just beginning to recover from a long period of neglect. Anyone who was determined enough to have hitch-hiked to Connemara to attend a BLS field meeting had truly arrived on the scene. It wasn't long before he was serving the society as *BLS Bulletin Editor*, President and as a major player on Council and various other committees. He has probably led more society field meetings than anyone, including particularly memorable ones to Coll and Tiree and to the Lizard. The sense of 'brotherhood' within the BLS strongly appealed to Oliver and his commitment to the cause. For his valuable service to the society he was made an Honorary Member in 1997.

Among his achievements has been unravelling the ecology of many complex and otherwise misunderstood lichen habitats. Nowhere has this been more satisfactorily achieved than in Scotland, where, over 15 years, he almost single-handedly, pioneered work on the lichen flora of Britain's highest mountains which paved the way for the more detailed studies of Alan Friday and others. Furthermore, his important contribution to our knowledge of the lichens of the Scottish Islands such as Eigg, Rhum, North Rona, The Flannan Isles and St. Kilda, and Scottish loch margins, is equally impressive. He is never happier than when in the field, and developed a new discipline, that of 'Adventure Lichenology'!

Unselfishly, Oliver has always encouraged others to join his expeditions, the two Brian's: Foxy and Coppins, Alan Fryday, William Purvis, I and many others, have all revelled in his companionship. His New Naturalist Book on 'Lichens' written by a master storyteller in the true New Naturalist tradition is, for a lichenologist, not only a good read by which to while away many a dark winter evening, but also an inspirational journey which, it is hoped, will move and captivate many of the next generation of lichenologists.

PETER JAMES

Peter James is internationally one of the most influential and respected lichenologists and, in this country, its most cherished. Résumés of his long and distinguished career have appeared at times in both *The Lichenologist* and *The Bulletin*: he was a founder member of The Society and a past President; he was the first President of the International Association of Lichenologists, and in this role not only fostered the twin ideas of lichen taxonomy and systematics as being world based but also helped and encouraged many foreign lichenologists to visit the British Natural History Museum and share their expertise; numerous papers bear his stamps of excellence and learning [his pioneering research and writings about the photomorphs of *Sticta filix* in New Zealand lead to an understanding of the importance of the photobiont in the final morphology of the lichen]; he was for fourteen years the editor of *The Lichenologist* and enhanced the international reputation of this journal by encouraging scientists from all over the world to contribute their research and to offer an international perspective of lichenology; he was a major contributor to The Flora, although in content devoted to the British species, still used extensively by our European colleagues because of its valuable information about world distributions; finally, he has been awarded our highest accolade, that of Honorary Member. This last requital does not, however, reflect or recognise his more recent contributions to lichenology, particularly since his retirement from the post of Head of the Lichen Section at the Natural History Museum. He has, of course, taken on the mantles of "senior statesman" and "wise counsellor"—his experience, high regard, and good nature

uniquely fit him for these roles—but his energy and enthusiasm have, if anything, increased since retirement and have been focused upon those most fundamental aspects of The Societies raison d'être: encouraging beginners, offering support to the less confident, and raising standards of identification. It is for his continued dedication to lichenology, particularly its international aspect, that we honour him today.

This enthusiasm for encouraging the serious study of lichenology has been no where more clearly seen than in his willingness each year to lead identification workshops and field meetings, and his presence at these now guarantees high numbers of participants, particularly from our colleagues in other countries. The popularity of these workshops not only reflects his international academic standing but also his outstanding communication skills. Peter is a person who lectures with seeming natural ability and confidence, and yet, he insists, he is one who has had to work hard to develop these skills. This makes it is even more impressive that his workshop presentations are so memorable, spoken, as they are, from the briefest of notes with a coherence and spontaneity that are remarkable. His descriptions of habitat and morphology, often accompanied by summary tables and vignettes, have a clarity that stems from many years association with our lichen flora and its world perspective. His commitment to excellence during these meetings is impressive; he is always first into the lecture room in the morning and often the last to leave at night. It is this determination to give of his very best that is so laudable, particularly over recent years when his health has been less than robust. The value of these in depth looks, at such groups as the *Caloplacae, Cladoniae, Opegraphae, Parmeliae, Usneae* and the Graphidaceae, culminating in a number of genera of the *Physciaceae* in 2003, in terms of extending the recognition of the more difficult taxa to a wider group of colleagues, is impossible to quantify.

In the field Peter's patience and good humour, even at the end of a tiring day are enviable, and his energy seems to be imbibed by those around him and to actually encourage discovery. No beginner, no improver, no expert has any qualms in seeking his council or opinion for he is that rarest of academics, one without reserve or pretence who is completely approachable This remarkable influence on others, in both the U.K. and throughout the world, to take a more serious interest in these organisms that we find so absorbing, will be a lasting legacy. However, we as a society have a more tangible reward for those who serve its ideals with such dedication: the Ursula Duncan award. It is more than fitting that one who knew Ursula Duncan so well—about whom she commented that her *Introduction to British Lichens* could not have been written without his help—should now be honoured by this award that bares her name.

Ivan Pedley

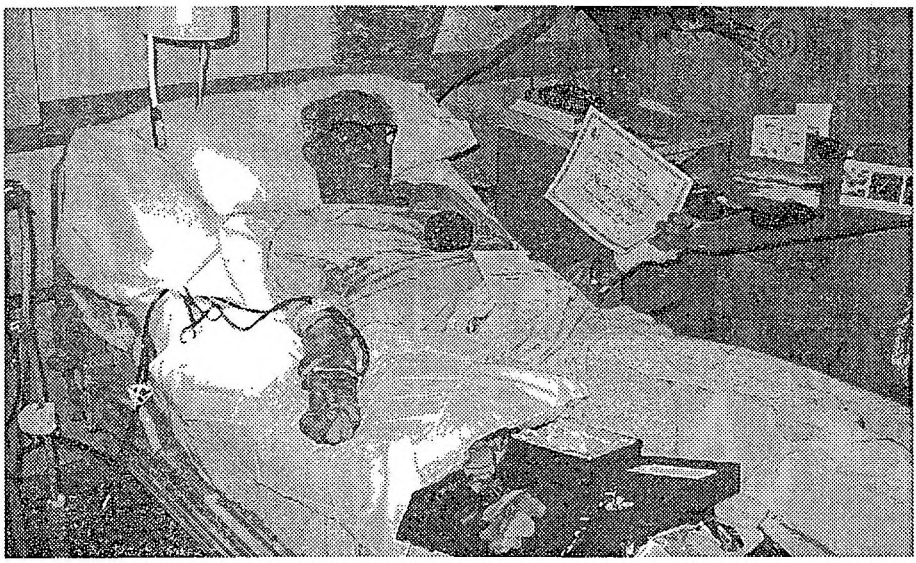

Plate 1 Oliver Gilbert receiving his Ursula Duncan Award in Sheffield Hospital

Plate 2 Peter James receiving his Ursula Duncan Award at the AGM

WANTED: A NEW ASSISTANT TREASURER/MEMBERSHIP SECRETARY

The Society is looking for someone to take on the responsibilities of Assistant Treasurer and Membership Secretary. This is a very important job in the Society and involves interaction with most members of the Society during the year. The incumbent manages the membership database and ledger, co-ordinates applications and renewals of membership, works closely with Cambridge University Press and the BLS Bulletin, providing the Editor of the Bulletin with copy such as new members and subscription renewal inserts, etc.

The Society's database is maintained and updated regularly from which an annual review of members and subscribers to the Lichenologist and the Bulletin, other membership statistics and reports to Council are generated. The membership secretary notifies the President of all new members and generates mailing labels for the Bulletin. All new members are welcomed with a New Member Pack. The Assistant Treasurer handles all membership cheques and payments apart from overseas member renewals that are coordinated with the American and European Associate Treasurers.

The incumbent is expected to attend the AGM and two other Council meetings. Travel costs can be covered if necessary. The greatest rewards are that one gets to know the majority of the membership, interact with Council and participate in developing the Society's programs and future direction.

LICHENS IN SHETLAND CEMETERIES

In contrast to the exceptionally rich lichen floras of gravestones in the Midlands and Southern England, those of Shetland are very species-poor. The first lichen recording from Shetland cemeteries that I know of were those made by Peter James in his monitoring studies around the oil terminal at Sullom Voe in 1980 onwards. He and W.J.Syratt used gravestones as air pollution monitoring sites in several sites, but especially usefully at Ollaberry, Northmavine, just 6 km NW of the terminal. His records relate to a small number of specifically located sites selected for exposure to possible pollution from the terminal. My wife Claire and I have visited some further 35 burial grounds in the last few years (these include almost all on Mainland and Whalsay) and we are now in a position to generalise about lichens in Shetland cemeteries overall. It has not been possible to treat all sites equally thoroughly, also some small crustose species have evidently been under- recorded in this study (the result of inexperience and adverse weather - small scrapings needed for identification are almost inevitably immediately blown away).

Burial grounds in Shetland (as in other northern areas) are often distant from churches, frequently being located near the sea for ease of access by boat in earlier times. Gravestones may thus be found in the most diverse of sites (perhaps on cliff edges as memorials to mariners lost at sea). Some are of historic value, such as at Lunna Kirk, Lunnasting, where they commemorate the Norwegian resistance members lost in the second World War. In general they are meticulously maintained, with the grass trimmed, weeds removed and (excellent for lichenologists) the stones not cleaned or disfigured. An essential introduction is given by Beattie (1998). Most cemeteries belong to the Church of Scotland, and are the northernmost in the British Isles. In several places the older graveyards are now filled and newer sites have been developed - the stones in these do not carry any significant lichen cover as yet. My database lists about 65 species from gravestones in Shetland.

In this account I concentrate on the lichens of the stones themselves and their footings, but exclude more substantial vaults and also the graveyard walls - these latter are derived from local materials and do not differ from the floras of nearby croft buildings, field dykes or bedrock outcrops. Shetland gravestones are constructed almost entirely from three materials: (1) Devonian sandstone flags (the oldest, mostly extracted from now-abandoned quarries at the north end of Bressay) - these are frequently visibly micaceous and are easily fissile , (2) imported granite, almost always white and with with one face polished, the others 'rough hewn' using a mason's hammer, and (3) marble, also imported, with highly polished surfaces. Wooden grave markers soon weather and disintegrate, but if they are still in existence they carry an impoverished flora of species otherwise encountered on lignum or driftwood - these are omitted here.

Thalli on polished surfaces tend to be very small, in contrast to those of the same species on rougher substrates. A common example is that of *Caloplaca saxicola*. This is almost certainly because polished surfaces retain little water and dry fast, so restricting thallus growth. Shaded stones (perhaps by shrubs or walls) often bear extensive red-brown sorediate crusts of *Belonia nidarosiensis* (I found over 200 apothecia on a natural outcrop at Whiteness in 2003, but none yet on gravestones). At low levels near the ground where the air is permanently moist, *Verrucaria maura* often blackens the stone surfaces.

Marble: This is the poorest substrate for lichens in both cover and species diversity. Characteristic species are *Caloplaca saxicola, Lecanora albescens* and *L. crenulata*. *Psorotichia schaereri* has also turned out to be widely distributed on marble, though almost always as minute brown irregularly papillose thalli, in contrast to the much more vigorous growths seen on calcareous harling on old croft house walls. Blueish arachnoid prothalline growths are frequent on polished marble - they appear to be *Lecania* or *Lecanora*.

Granite: *Lecidea diducens* is the most characteristic here and can be detected at some metres distance. The relatively large black apothecia accompanied by green algal colonies, contrast with the white feldspars and quartz. It favours rough-hewn stone surfaces, where blows from the mason's hammer bruise the stone surface and so allow hyphae to grow a short distance below the surface. It is often easy to prise off a stone flake carrying *Lecidea* apothecia by finger pressure alone, revealing green algal growths beneath. This is comparable to *Polysporina simplex* where again the hyphae grow between the mica flakes. Other common species on granite are *Lecanora rupicola, Ochrolechia parella, Melanelia fuliginosa* subsp. *fuliginosa, P. saxatilis* and *Rhizocarpon reductum*.

Sandstone: The commonest species on the Bressay Flags are *Caloplaca crenularia, Lecanora rupicola, L. sulphurea, Lecidella asema, Ochrolechia parella, Opegrapha calcarea, Melanelia fuliginosa* subsp. *fuliginosa, Ramalina siliquosa, Rhizocarpon reductum* and *Tephromela atra*. Competition between the two dominant sandstone species *Ochrolechia parella* and *Tephromela atra* is responsible for the conspicuous and highly decorative patterns seen in many Shetland graveyards (dull though they may be in colour contrast in comparison with say the oolitic limestones of southern churchyards). It seems that *Ochrolechia* usually dominates when in direct competition with *Tephromela,* though this has not been tested statistically. *Tephromela* thalli are prone to separation of the central thallus tissues from the substrate, followed by blistering and detachment. A cycle of growth, maturation and death is thus initiated with all the stages being easily visible.

These rather arbitrary groupings account for about one third of the species so far recorded from gravestones in Shetland. They are not exclusively defined in that for example *Lecanora rupicola* and *Rhizocarpon reductum* may occur on both granite and sandstone gravestones, but they do portray the general picture. Even in a species-poor area such as Shetland we still know very little of the real habitat requirements of many lichen species, and have no measure of the importance of chance in controlling the establishment of lichen thalli.

Apart from substrate-related species, we see two linked and widespread groups, one typified by *Acarospora fuscata, Candelariella vitellina, Lecanora polytropa, Physcia adscendens, Xanthoria candelaria* and *Xanthoria parietina* which favour bird-perch sites on the tops of stones, and a second group typified by *Anaptychia runcinata, Ramalina cuspidata, Rhizocarpon richardii* and *Verrucaria maura* which emphasise the ever-present proximity to the sea coast (no place in Shetland is more than 5 km from the sea - even if only from the sheltered waters of the heads of voes, and strong gales spread a sea-spray drift over the whole archipelago). *Aspicilia leprosescens* and *Caloplaca verruculifera* might, I think, be accommodated in either group.

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D H & C Dalby

IMPRESSIONS OF REGIONAL COLLECTIONS - THE HIDDEN RESOURCE

Over the past few years I have been trying to find out about lichens in small museums around the country. Some are not so small for example Manchester, where Mark Seaward has taken over from Brian Fox working on and publishing information about the collections. Another large museum, the Hancock in Newcastle, also has lichens collections. Here I learnt the vast scope a regional natural history curator has to cover, Les Jessop not only had to look after botanical and zoological collections but also ethnological ones - being a port many interesting artefacts have ended up in the Museum. The Museum is run jointly by the local Council, University and a Charity Trust. Who holds the vision? Here also I came across the division between the gentlemen's philosophical club and the workers field clubs; the social stories behind these collections are fascinating.

Reading introduced me to the need to keep collections off site - light industrial sites are now part of the museum network, this is true of Leicester too, where Tony Fletcher works. Reading was an example of integrating many aspects of the study of natural history. A discovery centre with collections to go out to schools, a room for the local history society to study specimens with the aid of a microscope, as well as a public display which integrated wildlife information and the local seed industry.

Liverpool is arguably best known for its discovery centre for which it has won awards but smaller museums like Colchester also use microscopes with monitors to show to many what before could only be seen by the individual with a handlens. The microscope, both dissecting and compound, is such a part of lichen study that it is good to see it being integrated into public museums. Essex appears to be rich in Museums, I have yet to see Chelmsford or Southend but Saffron Walden, founded by Quakers, has a few lichen collections. These collections are not on public display but they are a vital part of our heritage.

In 2003 we celebrated the Enlightenment and the founding of the British Museum, parent of the Natural History Musem (NHM), two hundred and fifty years ago. One of

the delights I have found in the NHM is the chance to see specimens collected over three hundred years ago and still recognisable. As the emphasis moves to computer records we should not forget our real heritage represented in these collections. Do let me know about collections near you. I am also interested in the demise of many local natural history societies. I would also be interested to hear about other countries in Europe and their local collections.

Amanda Waterfield, 29 Gloucester Crescent, London NWI 7DL.

FIELD MEETING NORTH CORNWALL OCTOBER 2002

This meeting was the first to combine Council and other meetings with the autumn field excursion. This resulted in a much bigger attendance than in recent years. The meeting was based close to Davidstowe Church at the Inny Vale Holiday village which provided very adequate and friendly accommodation.

The main objectives of the meeting were to explore two very different habitats: the coastal woods of Dizzard Point and the granite of Rough Tor on the north side of Bodmin Moor. In the event the forecast of a very severe gale led to the abandonment of the meeting on the second day for health and safety reasons. Though as it turned out the weather was worse slightly further north and led to the author experiencing 4 days without electricity on his return to Norfolk.

On Saturday the party went to the Dizzard Wood, because of limited parking some cars were left at Gennys Church and members ferried nearer the site. The Dizzard is included in Boscastle to Widemouth SSSI and is owned by the National Trust. It has long been known for its very rich lichen flora but it is a large site and we were hopeful that we could add to the species list.

The woods are developed on north-facing coastal cliffs composed of contorted Carboniferous slates, siltstones and sandstones which are subject to landslips. The dense wind-clipped canopy of the woods ranges between 1 to 8 metres in height, giving those who are tempted to explore the rare opportunity of standing above the canopy in places. The trunks and branches are draped in mosses and lichens and give the wood a wonderful elfin quality. Cattle get into the wood from adjacent fields and have created an intricate web of narrow tracks which allow access with care down the steep slopes. The wood is dominated by sessile oak (*Quercus petraea)* with some *Quercus robor*, holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*) and wild service tree (*Sorbus torminalis*).

During the visit 121 lichens were recorded. A particular feature being the well developed Lobarion community with *Lobaria pulmonaria*, *L. scrobiculata*, *L. virens*, *Degelia plumbea*, *D. atlantica* and *Leptogium cyanescens*. A particularly interesting find was a *Byssoloma* on *Corylus* which has yet to be identified and may yet turn out to be a new species. The twigs were worth examining with the Graphidion well represented with species like *Phaeographis inusta*, *P. lyelli* and *P. smithii*. Whilst branches were draped with various *Usnea* species including *U. articulata*, *U. ceratina*, and *U. rubicunda*. Whilst most members concentrated on working the woodland several examined the heathland on the margins and found another species of *Byssoloma*, *B. marginata* on heather stems.

Afterwards as the cloud and rain which was forecast started to gather members worked the Church at Gennys. This little church built of granite and other local stone nestles in a small hollow close to the coast and it proved to be very rich with 152 species recorded on all substrates including trees. There was a strong maritime element with species like *Lecania aipospilia*, *L. atrynoides*, *Solenospora vulturiensis* and *S. holophaea*. In addition woodland down a slope in a little valley yielded *Lauderlindsaya borreri*, *Sticta fuliginosa and S. limbata*.

Some members also explored Davidstowe Church, which has quite a large churchyard. 77 species were recorded from this site.

On the next day the visit to Bodmin was abandoned because of the weather but some members did look at Lewannick Church the tower of which is built of a serpentine-like rock from nearby Polyphant. This was relatively poor with 65 species recorded. The serpentine proving to be surprisingly poor.

Despite the disappointment of not getting to grips with a granite tor this was a very enjoyable meeting and the day in the Dizzard Woods will long be remembered by those who explored its mossy and lichen-rich interior.

Peter Lambley

Autumn Field Meeting 2002: North Cornwall.

Key to Sites and Species Lists

Dizzard : The Dizzard SX163988 - oceanic coastal woodland of oak *Quercus sp.* ash *Fraxinus* , hazel *Corylus,* and *Ilex.* Facing west on soft cliffs. A compilation of records from BLS members visiting the site over several days

The *Byssoloma* sp. recorded by Dr. B.J.Coppins is an addition to the British Flora, and perhaps new to science. As in *B. marginata,* its (dark grey to grey black) apothecia lack an obvious byssoid rim. It differs from all British species of *Byssoloma*(and *Fellhanera* and *Fellhaneropsis*) in having a red-brown,K+ intensifying purple-red hypothecium. Its spores are very characteristic in being clavate-fusiform with markedly attenuated lower half, and 3-5(-7)-septate, 21-26 x 3.5 m. The species was recorded on hazel *Corylus.*

St.G.Wd.: St. Gennys Wood. SX 150975 -- Valley woodland sloping seaward, of oak *Quercus,* ash *Fraxinus,* willow *Salix,* and some beech *Fagus.*

St.G.Ch. : St. Gennys Church. SX 149973 -- Fifteen century church overlooking the sea and headlands with a good yard. Church of granite, slate and greenstone and shale, heavily re pointed in parts. Yard of slate, granite marble and limestone. Soft slate outcrops to the east of the church. Records marked * are from previous surveys by Drs.M.A.Allan and B.Hilton.

Ds.Ch. : Davidstow Church. SX151873 --Rebuilt 1876 on the site of 13th century church. Further restoration 1994. Church of acidic stone, some granite and slate. Large yard of mainly granite and siliceous memorials.

Lew. : Lewannick Church SX 275807-- Rebuilt 1890 on 12th century site. Siliceous stone church with serpentine tower. Yard of mainly acidic substrata.

Wid. Ba. : Widemoth Bay SS196018 -- Soft unprotected sea cliffs. Surveyed by Dr. O.L.Gilbert

B.M. : Buck's Mills SS 355237 -- Soft unprotected sea cliffs (North Devon). Surveyed by Dr O.L.Gilbert.

Penhall. : Penhallam 20/22.97. --Walk from the bridge at Week Ford (c.20/225.979) along the valley to the site of Penhallam Manor. Surveyed by Dr. B.J. Coppins 25th Oct. 2002

In addition three further churchyards were surveyed by groups during the week end. **Lesnewth SX 131903 Otterham SX 168907 and St Juliot SX 129913.** Species not found at any other site during the meeting included ***Collema auriforme*** at Otterham, ***Gyalecta jenensis, Lecidea fuscoatra,*** and the lichenicolous fungus ***Weddellomyces epicalopismum*** on ***Caloplaca flavescens*** at Lesnewith and ***Lecanora sulphurea*** at St. Juliot. Full lists from these three yards are available from the Field Meetings Secretary if required.

Key to substrata: **bry** = bryophilous, **ct** = corticolous, **sx** = saxicolous, **T** = terricolous, **tw** = twigs, **lig** = lignicolous , **br** = branches and twigs, **Lf** = lichenicolous

Key to individual substrata :

Ac = *Acer* **Ae** = *Aesculus,* **Al** = *Alnus*; **B** = *Betula*; **C** = *Corylus*; **Cal** = *Calluna,* **Ct** = *Crataegus*; **Fx** = *Fraxinus*; **I** = *Ilex;* **L** = lignum (wood without bark); **Pp** = *Populus canadensis*; **Pr** = *Prunus,* **Q** = *Quercus*; **S** = *Salix*; **Sb** = *Sorbus* (rowan and wild service tree) **U** = *Ulmus*

Key to lichenicolous fungus host:

o1 = on *Usnea cornuta* o2 = on *Caloplaca* c.f.*dalmatica* o3 = on *Opegrapha herbarum*
o4 = on *Lecanora chlarotera* o5 = on *Flavoparmelia caperata* o6 = on *Ochrolechia turneri.*

Autumn Field Meeting 2002 North Cornwall.			Sites and Species							
BLS	Species		Dizzard	St.G.Wd.	St.G.Ch.	Ds.Ch.	Lew.	Wid.Ba	B.M.	Penhall.
10	***Acarospora***	*fuscata*			o	o	o			
21		*rufescens*			o					
25		*smaragdula*			*					
32	***Acrocordia***	*cavata*	o							
33		*conoidea*				o				
34		*gemmata*	Q							
35		*macrospora*			*					
36		*salweyi*			*		o			
26	***Agonimia***	*globulifera*						o		
38	***Agonimia***	*tristicula*				bry.	o	o		
1292	***Amandinia***	*lecideina*			o					
48	***Anisomeridium***	*biforme*	Q							Pp,Q
49		*polypori*			o					
1607		*viridescens*								C
1687	***Arthonia***	*astroidestra*	I							
72		*cinnabarina*	C,Q							C
56		*didyma*	Q							Fx
58		*elegans*	o							Q
64		*lapidicola*					o			
1700		*muscigena*		o						
68		*punctiformis*	Q		o					
69		*radiata*	Fx		* Pp	Fx				I,Pp-br
70		*spadicea*	Q							I,Q
1540	***Arthopyrenia***	*analepta*	B,Q							
1648		*fraxini*	B,Q							
1542		*punctiformis*			o					Al-br
102	***Aspicilia***	*caesiocinerea*			o					
103		*calcarea*					o			
107		*contorta*					o			
109		*epiglypta*			*					
155	***Bacidia***	*laurocerasi*			Q					Fx,Pp
1583		*viridifarinosa*	Q							
176	***Baeomyces***	*rufus*							o	T
178	***Belonia***	*nidarosiensis*				o	o			
Lf	***Biatoropsis***	*usnearum*	o1							
Lf	***Bispora***	*christiansenii..*			o2					
200	***Buellia***	*aethalea*			o	o	o			
204		*disciformis*	C							
207		*griseovirens*			o					
219		*ocellata*			o		o			
216		*stellulata*			o					
	Byssoloma	*sp.*	C							
221		*subdiscordans*	Cal							
1644	***Caloplaca***	*ceracea*			*					
247		*citrina s. lat.*			o	o	o			
253		*crenularia*			o	o	o			
249		*crenulatella*			o					
285		*dalmatica*			o		o			
259		*flavescens*			o	o	o			
2315		*flavocitrina*			o	o	o			
255		*flavovirescens*			o					
261		*holocarpa*			o	o				

271		*obscurella*		o						
277		*saxicola*			*					
283		*ulcerosa*		?Fx						
289	***Candelaria***	*concolor*				Ac				
291	***Candelariella***	*aurella*			o	o	o			
292		*coralliza*			o					
297		*reflexa*			ct.					
298		*vitellina f. vitellina*			o	o	o			
1608	***Catapyrenium***	*squamulosum*						o		
696	***Catillaria***	*aphana*			*					
1609		*atomarioides*			o					
306		*chalybeia* var. *c.*			o	o	o			
311		*lenticularis*			o	o	o			
354	***Chrysothrix***	*candelaris*	Q		*					Pp
364	***Cladonia***	*caespiticia*								T
371		*chlorophaea* s. lat.	o							
375		*coniocraea*	Q							T
384		*fimbriata*								S
376		*humilis*						o		
410		*pyxidata*	Q			Ac				S
359		*ramulosa*	o							
412		*rangiformis*						o		
751	***Clauzadea***	*monticola*			*					
429	***Cliostomum***	*griffithii*	QL		Ac					Pp
433	***Collema***	*auriforme*			o					
440		*crispum* var.*cris.*			o	o	o			
449		*furfuraceum*			o					
463		*fuscovirens*			o					
459		*tenax* var. *tenax*			o		o			
912	***Cyrtidula***	*quercus*	Q							
Lf	***Dactylospora***	*parasitica*			o6					
1027	***Degelia***	*atlantica*	Q							
1029		*plumbea*	Q							
490	***Dimerella***	*lutea*	Q							
489		*pineti*	Q							
491	***Diploicia***	*canescens*			o	o	o			
492	***Diploschistes***	*caesioplumbeus*			*					
496	***Diplotomma***	*alboatrum*			o	o	o			
497		*chlorophaeum*			*					
500	***Dirina***	*massiliensis f. sore*			o		o			
504	***Enterographa***	*crassa*	C,Q				o			Q
967		*zonata*			*	o				
1616	***Eopyrenula***	*grandicula*	C							Pp
511	***Evernia***	*prunastri*	Q		o	ct.				I
987	***Flavoparmelia***	*caperata*	Q	o	o	Fx	o			Pp,U-br
521	***Fuscidea***	*lightfootii*	Fx,Sb							I
529	***Graphina***	*anguina*	Q							C
532	***Graphis***	*elegans*	Q,Sb							
533		*scripta*	C			Ac				C
541	***Gyalecta***	*truncigena*	Q							
548	***Gyalideopsis***	*muscicola*	Q							
582	***Hypogymnia***	*physodes*	Q	o						S,U-br
583		*tubulosa*		o						S
986	***Hypotrachyna***	*britannica*			*					

1002		*laevigata*	o							
1013		*revoluta*	C,Q,Sb	o	o	o				I
Lf	***Laeviomyces***	*opegraphae*								o3
1946	***Lauderlindsaya***	*borreri*	o	Fx						
592	***Lecanactis***	*abietina*								U
606		*subabietina*	Q							
609	***Lecania***	*aipospila*			o					
611		*atrynoides*			*					
613		*cyrtella*		o						
616		*erysibe*			o	o				
1708		*rabenhorstii*				o				
1691		*turicensis*			*					
627	***Lecanora***	*albescens*			o	o	o			
635		*campestris* subsp.c			o	o				
636		*carpinea*								Pp-br
639		*chlarotera*	C,Q		lig	o	o			Fx,I,Pp
640		*conferta*			o		o			
641		*confusa*	Q		lig.					
644		*crenulata*			o					
646		*dispersa*			o	o	o			
649		*expallens*	Q		lig		o			Q
653		*gangaleoides*			*					
2287		*hagenii f. zosterae*						o		
658		*jamesii*	Cal							
757		*orosthea*			o					
667		*polytropa*			o	o	o			
674		*rupicola*			o					
679		*soralifera*				o				
783		*sulphurea*			*					
688		*symmicta*			o					
804	***Lecidella***	*asema*			*					
796		*carpathica*			*					
797		*elaeochroma f. e*	C		lig.					S
798		*elaeochroma f. s*	o		o					
802		*scabra*			o	o	o			
803		*stigmatea*			o	o	o			
820	***Lepraria***	*incana* s. lat.	C,Q		o	o	o			U
1693		*jackii*								U
1628		*lesdainii*			o	o				
1629		*lobificans*	C,Q		*	o	o			Q,S,T
1715		*rigidula*	o							S
1604	***Leproloma***	*vouauxii*			*					
829	***Leptogium***	*britannicum*						o		
834		*cyanescens*	o							
846		*gelatinosum*				o				
843		*plicatile*			*					
1717		*subtile*			o					
848		*teretiusculum*		o	*					
857	***Lobaria***	*pulmonaria*	Q,Sb							
858		*scrobiculata*	o							
856		*virens*	Q							
318	***Megalaria***	*pulverea*	o							Pp,S
998	***Melanelia***	*fuliginosa* subsp. f			o	ct.	o			
997		*fuliginosa* subsp. g	Q		Ac					

1020		*subaurifera*	Fx		Pr					l
873	***Micarea***	*bauschiana*	Sx							
875		*cinerea* f. *cinerea*	o							
877		*denigrata*			lig.					
2359		*micrococca*	B							S
886		*peliocarpa*	o							
887		*prasina* s. lat	o							
906	***Moelleropsis***	*nebulosa*						o		
75	***Mycoporum***	*antecellens*	Ct							
165	***Myxobilimbia***	*sabuletorum*				o	o			sx
1026	***Neofuscelia***	*verruculifera*					o			
917	***Nephroma***	*laevigatum*	Q	o						
920	***Normandina***	*pulchella*	C,Q	o	*	ct.				Pp
926	***Ochrolechia***	*parella*			o	o	o			
929		*turneri s. lat.*			o					
937	***Opegrapha***	*areniseda*			o					
938		*atra*	C,Q		Ps.Cr.Ae					l,Pp-br
959		*calcarea*			o	o	o			
947		*gyrocarpa*					o			
948		*herbarum*	C,Q							Pp,Q
962		*sorediifera*	C,Q							Pp
964		*varia*	C,Q							
965		*vermicellifera*	o							
943		*vulgata*	C,Q,Sb		Pr.					Fx,Q
1722		*xerica*	Q			Ac				
1015	***Parmelia***	*saxatilis*	o		o					
1022		*sulcata*	Q	o	Pr					Pp,U-br
1028	***Parmeliella***	*parvula*	Q							
1008	***Parmotrema***	*chinense*	C,Q		o	ct.				l,Pp
1043	***Peltigera***	*hymenina*	o			ter.	o			
1047		*membranacea*	o							
1049		*polydactylon*						o		
1050		*praetextata*	Q	o						
1056	***Pertusaria***	*albescens* var. *a*	o							
1057		*albescens* var.*cora*				o				
1058		*amara* f. *amara*	Sb		o					Pp
1072		*flavicans*					o			
1076		*hymenea*	C,Sb	o						Pp,Q
1079		*leioplaca*	C,Q,Sb	o						
1083		*multipuncta*	Q,Sb							Pp
1087		*pertusa*	C		Pr		o			Pp
1089		*pseudocorallina*			o	o				
1100	***Phaeographis***	*dendritica*	C,Q,Sb			Fx				l
1101		*inusta*	C,Q							
1102		*lyellii*	Q							
1103		*smithii*	C,Q							Fx
1109	***Phlyctis***	*agelaea*								Pp,Q
1110		*argena*	Q			ct.				Pp,Q
1112	***Physcia***	*adscendens*			o					
1113		*aipolia*	Fx		*Ae					l-br,Pp-br
1115		*clementei*				o				
1118		*leptalea*			* Po					Pp-br
1120		*tenella*	Fx		Ac	ct.				l
1122		*tribacia*				o				

1130	***Physconia***	*distorta*		o	o					
1735	***Placynthiella***	*dasaea*								L-fp
732		*icmalea*								L-fp
1139	***Placynthium***	*nigrum*								sx
1167	***Polysporina***	*simplex*			o	o	o			
1168	***Porina***	*aenea*	C							
1171		*chlorotica f. c*			o	o				
1181		*leptalea*								B,I
1690	***Porpidia***	*soredizodes*			o	o				
572		*tuberculosa*			o	o	o			
1189	***Protoblastenia***	*rupestris*			o	o	o			
1637	***Psilolechia***	*leprosa*				o	o			
1200		*lucida*			*		o			T
1021	***Punctelia***	*subrudecta*	Q	o	*					Ct
92	***Pyrenocollema***	*subarenisedum*						o	o	
1221	***Pyrenula***	*chlorospila*	o		Pr.	Ac				Fx
1224		*macrospora*	C,Q,Sb	o	o	Ac				Fx
1228	***Pyrrhospora***	*quernea*	Q	o	o					
1231	***Ramalina***	*calicaris*			o					S
1230		*canariensis*		o	o	o				
1234		*farinacea*	Q		Fx					I,S
1235		*fastigiata*	Fx	o	Pr					S
1246		*fraxinea*			ct.					
1240		*siliquosa*			o		o			
1257	***Rhizocarpon***	*geographicum*			o					
1266		*reductum*			o	o	o			
1250		*richardii*			*					
1305	***Sarcogyne***	*privigna*				o				
1306		*regularis*			o		o			
1307	***Sarcopyrenia***	*gibba*				o	o			
1317	***Schismatomma***	*niveum*	Q							
1585		*quercicola*								B
1320	***Scoliciosporum***	*chlorococcum*								S-br
1322		*umbrinum*			o					
1324	***Solenopsora***	*candicans*					o			
1325		*holophaea*			o					
1326		*vulturiensis*			o					
1349	***Steinia***	*geophana*						o		
1563	***Stenocybe***	*pullatula*								Al-tw
1367	***Sticta***	*fuliginosa*	Q	o						
1368		*limbata*	Q	o						
1369		*sylvatica*	o							
1372	***Strangospora***	*moriformis*		o						
1373		*ochrophora*		Fx						
630	***Tephromela***	*atra*			o	o	o			
1410	***Thelotrema***	*lepadinum*	o							B,I,U
1565	***Tomasellia***	*gelatinosa*	Q							
1415	***Toninia***	*aromatica*			o	o	o			
1431	***Trapelia***	*coarctata*	Sx							
1432		*involuta*	Sx							
1434		*obtegens*							o	
692	***Trapeliopsis***	*flexuosa*			lig					
727		*granulosa*	o							
1456	***Usnea***	*articulata*	Q		o					

1458		*ceratina*	Q							
1469		*cornuta*	Q							Pp,U-br
1816		*esperantia*			Pr					
1461		*flammea*	o		o					
1462		*florida*								U-br
1468		*hirta*	ct,	lig						
1470		*rubicunda*	Q							
1471		*subfloridana*			o					
1871	***Verrucaria***	*elaeina*			o	o	o			
1491		*fusconigrescens*			o		o			
1492		*glaucina*			o	o	o			
1495		*hochstetteri*			o		o			
1519		*macrostoma f. f*			o	o	o			
1502		*macrostoma f. m*			o	o				
1507		*muralis*			o	o	o			
1510		*nigrescens*			o	o	o			
1513		*praetermissa*	Sx							
1518		*viridula*				o				
Lf	***Vouauxiella***	*lichenicola*	o4							
Lf	***Vouauxiomyces***	*truncatus*	o5		o					
988	***Xanthoparmelia***	*conspersa*					o			
1005		*mougeotii*			o	o	o			
1526	***Xanthoria***	*calcicola*			o					
1538		*ectaneoides*			o					
1530		*parietina*	Ct,Fx	o	o	o				Pp-br
1531		*polycarpa*	Ct		o					

REPORT OF THE *GRAPHIDION* WORKSHOP CONNEL BRIDGE, ARGYLL 25th to 30thMAY2003

In May 2003, 34 Participants arrived at Connel Bridge near Oban to take part in the *Graphidion* Workshop to be lead by Dr Brian Coppins. Peter Quelch joined us for a day during the week, making a total of 35. The large number of people attracted to this meeting to study some the less dramatic lichen species speaks volumes for the charismatic attraction of western Argyll to lichenologists, and not least the anticipation of a workshop lead by Brian and Sandy Coppins. Argyll is not noted for its fine weather, and anyone with a personal knowledge of this part of the world in summer will have a healthy fear of midges. Midges can make life unbearable for field naturalists in the damp, stillness of a Western Scottish Woodland. The meeting attracted a record number of participants, and in spite of the misgivings of many, the weather was kind, and the midges off-duty.

During the week, not only did participants receive patient guidance from our leaders into the mysteries of the *Graphidion,* but we were also privileged to see some of the finest ancient woodlands in the whole of Western Europe. This report will show the large number of sites which were visited, several hitherto not subjected to the scrutiny of a lichenologist's hand lens. The planning and preparation to make this possible by our leaders must have been very considerable.

Apart from the first day when we visited Ballachuan Hazelwood on the island of Seil, the workshop was strictly informal. Participants could either make use of the extensive lab facilities at Dunstaffnage, or arrange to go off to one of the many sites suggested. Apart from the Ballachuan trip and his 'free' day on the Thursday, Brian forewent the delights of 'the hunt' and remained in the lab to give individual tuition with microscopy - a vital necessity when studying *Graphidion* lichens. This was much appreciated by all who attended.

Scottish Natural Heritage made a very generous donation, which paid for the hire of the laboratory. It is hoped that the copious records resulting from our visit will go some way to thanking them. Warm and sincere thanks are also due to both Brian and Sandy whose patience, knowledge and hard work made our visit to Scotland so very successful. Thanks go also to: Anna Griffith for selecting many of the sites, obtaining permissions, checking on access and providing maps; the many landowners who willingly granted us permission of access; John Holmyard for providing a 'loch taxi' for some of us to visit parts of the north shore of Loch Etive; Robin Harvey and his colleagues of the Dunstaffnage Marine Laboratory for arranging our use of their excellent teaching lab; local mycologist Peter Wilberforce for suggesting our visit to South Shian; the Royal Botanic Garden Edinburgh for supplying a minibus, and to

Chris Ellis for doing most of the driving; and finally, to the proprietors and staff of the Falls of Lora Hotel for their hospitality and the unforgettable Scottish Banquet on the final evening.

A total of 540 taxa gives some indication of the success of the meeting. A huge amount of data was amassed, and most of the records were inputted during the meeting into BioBase for Lichens by Janet Simkin, or under her expert guidance.

The following is a list of those who attended:- Andy Acton, Lesley Balfe, Steve Chambers, Brian and Sandy Coppins, Andy Cross, Maria Cullen, Simon Davey, Frank Dobson, John Douglass, Trevor Duke, Chris Ellis, Damien Ertz, Howard Fox, Vince Giavarini, Jeremy Gray, Anna Griffith, Jeanette Hall, David Hill, Deborah Isocrono, Peter James, Sharon Parr, Ivan Pedley, Peter Quelch, Sonia Ravera, Sheila Reid, Joy Ricketts, Ken Sandell, Neil Sanderson, Janet Simkin, Cliff Smith, Heinrich Walter, Stephen Ward, Amanda Waterfield and Pat Wolseley.

Dunstaffnage - GR: 17(NM)/88.34, *25th–30th May*
This area around the laboratories proved to have considerable attraction for lichenologists, and was enjoyed by many people who wanted a short break from microscope work to take a breath of fresh air and enjoy some lichens The gravel surrounding the car park to the labs offered such delights as the taxonomically enigmatic '*Moelleropsis*' *humida,* and *Peltigera didactyla* - the latter hosting the recently described parasitic lichen *Scutula dedicata* (second British record). A little further afield notable finds were made on the partially calcareous basaltic rock faces at Dunstaffnage Castle, including *Caloplaca cirrochroa* and *Physcia tribacia*, both rare species in Scotland, and much rewarding pottering was had in the policy woodland and on the coastal rocks.

Ballachuan Hazelwood, Seil GR: 17(NM)/76.14, *25th & 28th May*
Our first fieldwork was in the Ballachuan Hazelwood, Scottish Wildlife Trust (SWT) Reserve on the island of Seil, a superb coastal hazel wood, considered by the BLS to be of International Importance. Here Brian showed us the *Graphidion* community at its very best development, as well as a very rich *Lobarion* (which, despite our focus on the *Graphidion*, we could not help but notice). Ballachuan has few large trees, but the development of hazel is unparalleled. Brian pointed out the differences in the flora with aspect, and degree of shade. After lunch, we were introduced to some of the site's treasures including the Scottish endemic *Graphis alboscripta* (at its type locality), *Arthothelium macounii* with its parasite *Arthonia cohabitans* (another Scottish endemic at its type locality). For some, this was an introduction to the world of lichen parasites. On one hazel pole, Brian indicated with biro *Opegrapha thelotrematis* (on *Thelotrema macrospora*) and *Arthonia graphidicola* (on *Graphis scripta*) within an inch of one another. Brian also expressed the view that "the only good *Lobaria*

pulmonaria is dead *Lobaria pulmonaria*, except perhaps in Sussex", after he had shown how many interesting parasites could be found on moribund thalli of this lichen.

Glen Nant NNR GR: 27(NN)/019.273, *26th & 28th May*
On the 26th May we divided into two groups, the first group visiting Glen Nant in the morning and the second in the afternoon. We alternated the day looking at material in the laboratory under the guidance of Brian. Although largely former oak coppice that served the nearby Bonawe iron works, Glen Nant is a superb area of ancient, mixed deciduous woodland with fine areas of both hazel and willow carr. The morning group visited a different part of the site from the afternoon one, and an extensive list of species was made. Before visiting the site, we were encouraged to collect material for lab identification, and never to rely on field identification of *Graphidion* species. As suspected, this proved to be a site with a well-developed *Graphidion*. Two *Graphidion* species not found elsewhere during the meeting were *Arthothelium lirellans* and *A. orbilliferum*. A follow-up visit by Vince Giavarini and Peter James on the 28th May added many saxicolous species, from rocks and old walls, to our list.

Airds Park GR: 17(NM)/99.33, *27th May*
Many visited Airds Park (part of Airds Park and Coille Nathais SSSI) in the morning, and a few decided to stay on into the afternoon. Airds Park is patchy, containing areas of indifferent, rather recent woodland. However, the woodlands of mixed oak, birch and hazel, with occasional alder, did contain some very fine areas with a well-developed lichen flora, and the coastal rocks and old walls also proved of considerable interest. Hazel was well developed, and resulted in a good number of *Graphidion* species being recorded.

Kerrera GR: 17(NM)/82.27(–8), *27th May*
This island, which lies opposite the mainland town of Oban, was visited by foot ferry, and the areas surveyed were along the Sound of Kerrara between Ferry House and Port an t'-Struthain. The areas surveyed encompassed a variety of habitats, including hazel-ash wood on a basalt cliff at Horse Shoe Bay, where *Graphis alboscripta* was found. Other corticolous habitats included wych elm, rowan, hawthorn and oak, as well as blackthorn scrub and farmland trees, the most important being ash and elder. Apart from scattered trees along the coast, there were areas of scree of volcanic breccia as well as rocks of limestone, schist and basalt. With his previous first-hand knowledge of the species in western Ireland, Howard Fox discovered *Cladonia stereoclada* (new to Scotland) on mossy scree. This species resembles a scrawny *C. furcata*, but when split open the podetia reveal a solid 'core' filled with what closely resembles silicon sealant!

Glasdrum NNR GR: 27(NN)/00.45, *27th & 28th May*
This fine site situated on the north shore of Loch Creran was already well known before this meeting, and graded as of International Importance by the British Lichen

Society. The ancient stands of woodland on a south-facing slope are varied, and (for an equivalent area) support one of the richest epiphytic lichen floras known in the British Isles. Perhaps the best areas for corticolous lichens are those which support ash, hazel and wych elm on or near basaltic intrusions. Notable lichens seen during the meeting included *Collema nigrescens*, *Gomphillus calycioides*, *Leptogium hibernicum* and *Wadeana dendrographa*. Encouraging management is in place at Glasdrum, with adjacent areas of planted conifers having been felled as a woodland restoration scheme.

Benderloch GR: 17(NM)/90.41 (South Shian woods, including SWT Reserve), *27th May*

The coastal area of Benderloch visited (South Shian) includes woods around the knoll of An Sidhean (plus woodland to the south west) and contains some excellent hazel. The habitat consists mostly of wet woodland on gentle slopes, with ash, oak, birch, alder, hazel, willow, rowan and holly. Like most sites visited, it was generally rich though little outstanding (in an Argyll context!) was found. It was, however, the only site in which *Japewiella tavaresiana* was found.

Glen Stockdale GR 17(NM)/94.50, *28th May*

This was a completely unknown site lichenologically, and proved to be the 'star site' discovery of the whole meeting. Glen Stockdale is not a Site of Special Scientific Interest (SSSI), but was suggested as a potential site by Anna Griffith, and certainly came up trumps. It is a steep, linear valley with north-west, and south-east facing slopes. There is a layer dominated by hazel, with emergent ash and the occasional oak. There are also areas with alders. The ground flora is characteristic of ancient woodland, with *Sanicula*, *Ajuga reptans*, *Conopodium majus*, *Primula vulgaris*, *Viola* species, *Hyacinthoides*, *Oxalis acetosella*, *Phegopteris* and *Gymnocarpon robertianum*. (Ben Averis - pers. comm. - also acknowledges this site to be of prime importance as an Atlantic bryophyte location, with the single highest score of oceanic-calcicolous bryophytes in western Scotland). The site contains rocky outcrops of granitic rocks and Dalradian limestone. With well-developed hazel, the lichen flora includes rich *Graphidion* and *Lobarion* communities. Highlights included two very rare species, namely *Lecanora cinereofusca* (second British record) and *Pyrenula hibernica* [*Parmentaria chilensis*] (third British record), both being speciality *Graphidion* species of deep ravines.

Loch Melfort complex GR 17(NM)/80.13, *29th May*

The Loch Melfort site consists of some exceptionally fine oak and ash woodland on the S-facing slopes above Loch Melfort. The site was 'discovered' for lichenology by Francis Rose in 1972, and on his recommendation was graded as of National Importance by the BLS. 48

One of the non-lichenological highlights in passing was a very fine stand of Sword-leaved Helleborine *Cephalanthera longifolia*. Three areas, all differing in character were visited. The first was a *c.* 150 year old oak woodland on E side of Fearnach Bay at 17(NM)/835.133; the second was valley woodland with oak, ash, hazel, alder, rowan, birch, old fence posts at 17(NM)/816.135; and the third, a S-facing ash-elm wood with oak, hazel, boulders at 17(NM)/800(–2).130(–1). The second site had the best hazel stands, and notable finds included *Mycomicrothelia atlantica,* and *Opegrapha brevis* (on *Thelotrema petractoides*). The last site has what must be one of the largest populations of *Wadeana dendrographa*, at least in Scotland, with this species seen abundantly on at least ten large ash trees. Also on these trees were *Fuscopannaria mediterranea* and *Leptogium cochleatum*. Found here also was *Leptogium hibernicum*, which is probably what Francis Rose recorded as '*L. saturninum*' in 1972 - *L. hibernicum*, which also has a tomentose underside, was not described (by Michael Mitchell) until 1973. The sheltered, coastal rocks supported a rich *Lobarion*, including the free-living green morph of *Sticta canariensis*. The high conservation importance of the Loch Melfort woodland complex, recognized by Francis Rose 30 years ago, is fully endorsed, even though it still does not have SSSI status.

Loch Etive (part of Bonawe-Cadderlie SSSI) GR: 27(NN)/0.3,
29th May

By the courtesy of marine biologist and local mussel farmer, John Holmyard, a small boat party crossed Loch Etive from Taynuilt to Craig. There appear to be no previous lichen records from the studied area along the north shore of Loch Etive, from near Craig Point (27(NN)/031.342) north 3 km to Camas na Cuirte (27(NN)/045.365). The varied terrain included ESE-facing woodland and valleys, dominated by oak, with alder and occasional ash, hazel, holly and rowan, and with areas of slope alderwood. Coastal and inshore rocks were also examined. The wide range of habitats seen resulted in a substantial list of 219 taxa.

Isles of Mull and Iona, *29th May*

The party who went on this excursion took the ferry from Oban across to Mull. A direct drive in the minibus along the Ross of Mull was undertaken, and then we disembarked for the foot ferry across to Iona. This small island is an ancient religious centre of the Celtic church, founded by St Columba in the 6th century. Lists were made from a range of habitats on Iona, including the graveyard and Abbey, local walls, wayside trees and coastal rocks. People on the trip were delighted to hear Corncrakes calling near the village, but few (including Ivan Pedley) were lucky enough to see one. On leaving Iona and disembarking on Mull, we had a little time looking at moorland close to Fionnphort (17(NM)/300.232). Here, Peter James gave a short 'tutorial' on typical western Scottish coastal heathland, and pointed out *Cladonia strepsilis* and (most interestingly) *Cladonia rangiferina* at sea level.

We then drove off and stopped to look at some scrubby oak woodland with good hazel growing amongst rocks at Pottie on the Ross of Mull (17(NM)/323.226). Permission was gained from local crofters through the good services of Bob Black. Highlights at Pottie included *Arthonia ilicinella* (a British endemic of the *Graphidion*). We then drove east to Ardura SSSI (17 NM/677.299), where Sandy had some difficulty in finding the shaded ravine in which we were to pay our respects to *Parmentaria chilensis* [=*Pyrenula hibernica*]. It was quite a struggle, but a number of the party did make it to the site, where we saw several strong colonies shining like thick lime-green paint (to a custard-yellow colour) on the hazel poles. The common name of this rare lichen is very apt - 'Blackberries in custard'.

Dun Fadaih GR: 17(NM)/773.130, *30th May*
A woodland site on west-facing slopes and cliffs on the mainland by Seil Sound. There is hazelwood with scattered ash and elm to the north, grading to denser ash-elm-hazel to the south. There are many old trees in an old-growth stand. Birch woodland is present higher up on a cliff. A good range of species were found here, but the highlight was the discovery of another new site for *Graphis alboscripta*.

Woodland north of Ardmaddy Castle GR: 17(NM)/78.17, *30th May*
These fine woods are situated on a west-facing slope on the mainland along Seil Sound. The woods contain ancient, gnarled ash trees in a fairly open situation, supporting a very rich flora. Species found include *Porina rosei* and *Leptogium cochleatum*. On rocks in the wood, large growths of independent thalli of the green morph of *Sticta canariensis* were found. A rich and varied lichen flora was also found below the wooded slopes on rocks between the wood and the sea.

Clachan Sound GR 17(NM)/787.202, *31st May*
This site was looked at by one or two members after the majority of us had left. It consists of hazelwood on steep, W-facing slopes, with oak and birch on higher ground. The woodland is situated above a raised beach and also contains patches of sallow. A good range of *Graphidion* and *Lobarion* species, typical of woodland in this part of Scotland, were found, though nothing outstanding for the area.

A thoroughly satisfying Field Meeting was enjoyed by all, and the results further emphasize the overall international importance of the lichen communities of western Scotland, Argyll in particular.

Simon Davey

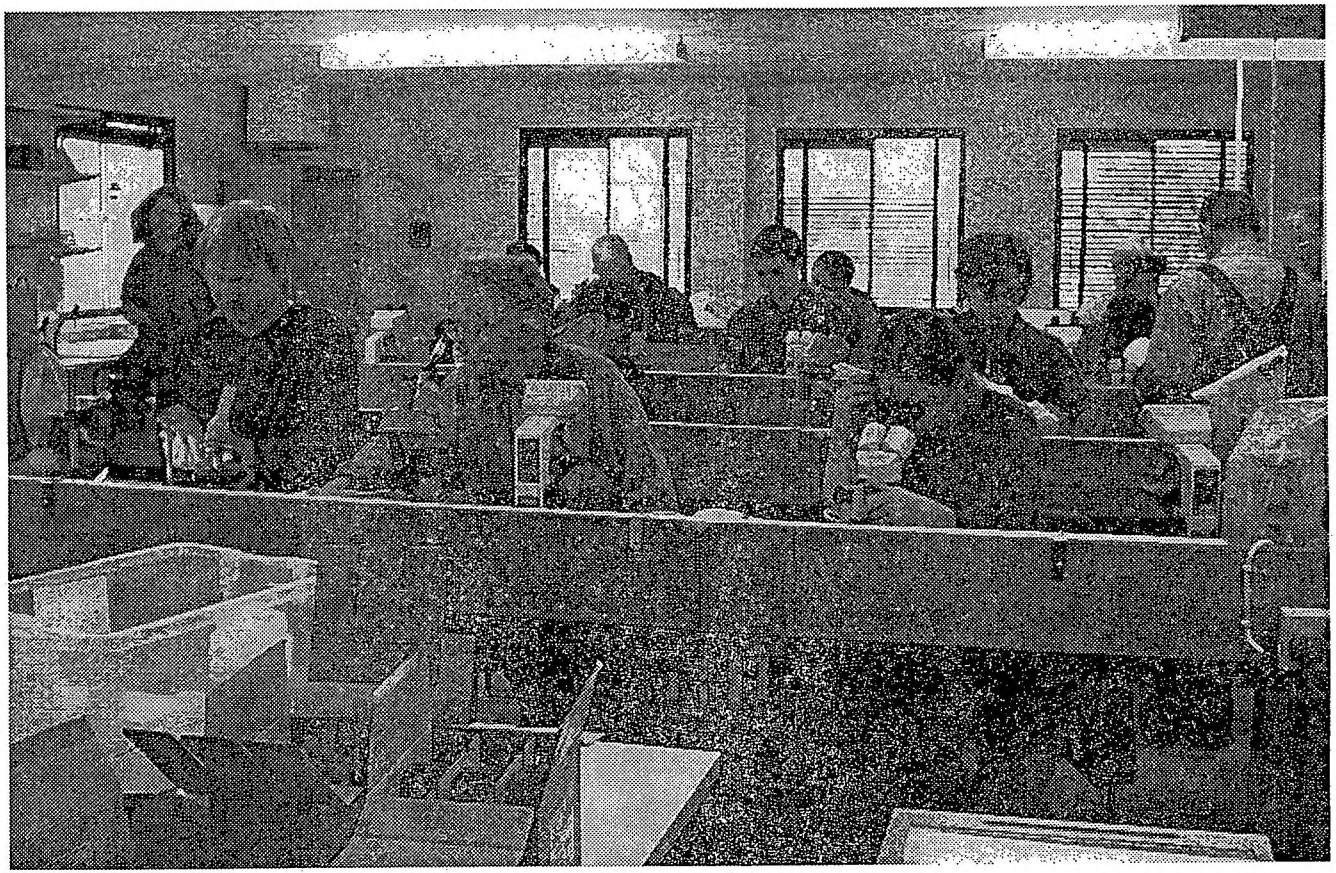

Plate 1 Graphidion workshop laboratory session

	Aird Park	Ardmaddy Castle, North of	Ardura	Ballachuan	Benderloch	Clachan Sound	Dun Fadaih	Dunsaffnage	Fionnphort	Glasdrum NNR	Glen Nant	Glen Stockdale	Iona	Kerrera	Loch Etive	Loch Melfort	Pottie
Abrothallus bertianus					X									X		X	
Abrothallus microspermus																X	X
Abrothallus welwitschii	X			X							X				X	X	
Acarospora fuscata	X												X				X
Acrocordia conoidea													X				
Acrocordia gemmata	X	X					X	X		X				X		X	
Agonimia tristicula	X	X			X									X		X	
Amandinea punctata	X												X			X	
Amygdalaria pelobotryon	X																
Anaptychia runcinata	X	X						X	X				X		X	X	
Anisomeridium biforme	X												X		X	X	
Anisomeridium polypori					X					X				X		X	
Anisomeridium ranunculosporum	X	X	X	X	X		X			X	X	X		X	X	X	
Anisomeridium viridescens				X							X					X	X
Arthonia anambrophila																X	
Arthonia cinnabarina	X	X		X	X	X	X			X	X	X		X	X	X	X
Arthonia cohabitans				X													
Arthonia didyma				X										X	X	X	
Arthonia elegans	X	X		X	X	X	X			X	X			X		X	X
Arthonia graphidicola	X			X			X				X			X		X	
Arthonia ilicina	X	X		X		X	X			X	X	X			X	X	X
Arthonia ilicinella											X					X	X
Arthonia muscigena												X					
Arthonia punctiformis	X			X	X	X		X		X		X	X	X		X	
Arthonia radiata	X			X	X		X	X		X	X		X	X		X	X
Arthonia spadicea													X		X	X	
Arthonia stellaris				X							X	X		X			
Arthopyrenia analepta	X			X	X		X			X	X	X				X	
Arthopyrenia carneobrunneola	X	X		X	X	X	X				X			X	X	X	X
Arthopyrenia cerasi				X						X							
Arthopyrenia cinereopruinosa	X	X		X							X	X		X	X	X	
Arthopyrenia fraxini															X	X	
Arthopyrenia nitescens																X	X
Arthopyrenia punctiformis	X				X							X	X			X	
Arthopyrenia salicis	X	X		X	X	X	X			X	X			X		X	X
Arthrorhaphis aeruginosa																X	
Arthothelium lirellans											X						
Arthothelium macounii				X													
Arthothelium orbilliferum											X						
Arthrorhaphis citrinella															X		
Arthrorhaphis grisea										X							
Aspicilia caesiocinerea	X							X							X	X	
Aspicilia calcarea	X																
Aspicilia contorta													X				
Aspicilia grisea	X							X									
Aspicilia leprosescens	X								X			X					

Bacidia absistens	X				X										X				
Bacidia arceutina	X																		
Bacidia arnoldiana													X						
Bacidia biatorina					X											X			
Bacidia caesiovirens											X					X			
Bacidia inundata															X				
Bacidia laurocerasi	X																		
Bacidia phacodes	X							X					X			X			
Bacidia rubella									X		X					X			
Bacidia subcircumspecta																X			
Bactrospora hormalotropum	X	X	X	X			X							X		X	X		
Baeomyces rufus	X	X	X		X				X	X		X	X	X	X	X			
Belonia nidarosiensis															X				
Biatora epixanthoides	X	X					X			X				X		X			
Biatora sphaeroides		X					X			X		X		X		X			
Biatoridium delitescens				X															
Bryoria fuscescens								X											
Buellia aethalea	X												X	X	X				
Buellia disciformis				X	X			X		X	X	X			X		X		
Buellia griseovirens															X				
Buellia ocellata	X																		
Buellia schaereri																			
Buellia stellulata	X																		
Bunodophorum melanocarpum	X						X			X	X	X			X		X		
Calicium glaucellum															X	X			
Caloplaca arenaria																X			
Caloplaca arnoldii								X					X						
Caloplaca ceracea	X														X				
Caloplaca cerina	X							X					X	X					
Caloplaca cirrochroa								X											
Caloplaca citrina	X						X	X					X	X	X		X		
Caloplaca crenularia	X	X											X	X	X	X			
Caloplaca ferruginea		X		X	X		X			X		X		X		X			
Caloplaca flavescens	X							X					X						
Caloplaca flavocitrina		X						X					X						
Caloplaca flavovirescens	X	X						X								X			
Caloplaca holocarpa								X					X				X		
Caloplaca marina	X												X		X				
Caloplaca microthallina	X												X						
Caloplaca phlogina		X																	
Caloplaca saxicola	X							X					X						
Caloplaca thallincola													X	X	X				
Candelariella aurella													X				X		
Candelariella reflexa	X																		
Candelariella vitellina	X												X	X	X	X			
Catillaria chalybeia	X												X		X				
Catinaria atropurpurea	X	X			X					X	X			X		X	X		
Celothelium ischnobelum				X										X			X		
Cetraria aculeata					X										X				
Cetrelia olivetorum	X	X		X	X	X				X		X		X	X				
Chaenotheca brunneola										X					X				
Chaenotheca furfuracea										X									
Chromatochlamys muscorum										X		X			X				
Chrysothrix candelaris					X			X								X			
Chrysothrix flavovirens					X			X								X			
Cladonia arbuscula squarrosa		X			X				X										

Cladonia caespiticia	X								X							
Cladonia cervicornis	X	X			X			X					X	X		X
Cladonia cervicornis verticillata														X		
Cladonia chlorophaea	X				X	X	X		X		X			X		X
Cladonia ciliata ciliata	X	X														
Cladonia ciliata tenuis	X				X			X					X	X		X
Cladonia cornuta									X							
Cladonia coniocraea	X				X	X			X		X		X	X	X	X
Cladonia digitata	X															
Cladonia diversa	X				X			X	X	X	X			X		X
Cladonia fimbriata				X	X								X	X		
Cladonia floerkeana	X				X				X	X	X					
Cladonia foliacea																X
Cladonia furcata	X	X			X					X			X	X	X	X
Cladonia gracilis														X		
Cladonia macilenta	X				X						X			X	X	
Cladonia ochrochlora									X							X
Cladonia polydactyla	X				X				X	X	X			X	X	
Cladonia portentosa	X	X			X			X		X				X		X
Cladonia pyxidata	X	X			X	X	X		X	X	X		X	X	X	X
Cladonia ramulosa	X													X	X	
Cladonia rangiferina								X								
Cladonia rangiformis											X		X		X	
Cladonia squamosa	X				X				X	X			X	X	X	X
C. squamosa subsquamulosa	X															
Cladonia stereoclada													X			
Cladonia strepsilis								X								
Cladonia subcervicornis	X	X	X		X			X	X				X	X		X
Cladonia subulata											X					
Cladonia uncialis biuncialis					X			X			X			X		X
Clauzadea immersa											X					
Clauzadea monticola	X							X								
Cliostomum griffithii	X						X	X			X				X	
Cliostomum tenerum												X				
Collema auriforme	X							X				X				
Collema crispum	X							X				X				
Collema fasciculare	X			X	X						X	X	X		X	
Collema flaccidum	X	X						X				X			X	
Collema furfuraceum				X			X	X		X	X	X		X	X	
Collema nigrescens		X													X	
Collema subflaccidum	X	X		X			X			X		X			X	
Collema tenax ceranoides	X															
Collema tenax tenax	X							X				X				
Cotricifraga fuckelii								X								
Cyrtidula quercus	X				X					X					X	
Cystocoleus ebeneus															X	
Dactylospora lobariella															X	
Degelia atlantica	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Degelia plumbea	X	X		X	X	X	X			X	X	X		X	X	X	X
Dermatocarpon luridum															X		
Dermatocarpon miniatum								X						X			
Dibaeis baeomyces											X				X		
Dimerella lutea	X	X		X	X	X	X			X	X	X		X	X	X	X
Dimerella pineti	X	X			X					X	X						
Diploicia canescens								X				X	X				
Diplotomma alboatrum	X							X				X					

Dirina massiliensis sorediata		X					X										
Enterographa crassa		X		X		X	X								X	X	
Enterographa zonata															X		X
Eopyrenula grandicula		X		X		X	X			X			X	X	X		
Eopyrenula septemseptata				X									X				
Ephebe lanata			X										X	X			
Epicladonia sandstedei													X				
Evernia prunastri	X	X		X	X	X	X	X			X	X		X	X		X
Fellhaneropsis myrtillicola					X												
Flavoparmelia caperata	X		X	X	X	X	X	X		X			X	X	X	X	X
Fuscidea arboricola	X																
Fuscidea cyathoides	X	X		X	X				X			X	X	X	X	X	X
Fuscidea intercincta															X		
Fuscidea lightfootii	X			X			X	X			X	X		X			
Fuscidea lygaea	X				X				X				X				
Fuscopannaria leucophaea	X	X						X						X	X	X	
Fuscopannaria mediterranea												X				X	
Fuscopannaria sampaiana	X				X		X			X	X	X			X	X	
Gomphillus calycioides										X		X					
Graphina anguina				X		X	X							X		X	
Graphis alboscripta				X			X							X			
Graphis elegans	X		X		X	X	X			X	X	X		X	X	X	X
Graphis scripta	X	X		X	X	X				X	X	X		X	X	X	X
Gyalecta derivata													X			X	
Gyalecta truncigena		X					X	X						X		X	
Gyalideopsis anastomosans				X												X	
Gyalideopsis muscicola	X										X						
Haematomma ochroleucum	X	X						X		X							X
H. ochroleucum porphyrium		X														X	X
Halecania ralfsii	X																
Halecania viridescens																X	
Herteliana taylorii																	X
Homostegia piggotii	X			X		X	X			X				X	X	X	
Hyperphyscia adglutinata								X					X				
Hypocenomyce scalaris											X						
Hypogymnia physodes	X	X		X	X	X		X		X	X	X	X	X	X	X	X
Hypogymnia tubulosa	X			X	X					X	X	X		X	X	X	X
Hypotrachyna endochlora		X								X							X
Hypotrachyna laevigata	X			X	X	X	X			X	X	X		X	X	X	X
Hypotrachyna revoluta	X			X	X	X	X	X		X				X	X	X	
Hypotrachyna sinuosa	X			X	X	X				X		X			X	X	X
Hypotrachyna taylorensis	X				X	X	X			X		X		X	X	X	X
Icmadophora ericetorum					X										X		
Ionaspis lacustris	X																
Japewiella tavaresiana					X												
Lauderlindsaya borreri											X						
Lecanactis abietina					X					X	X	X				X	
Lecania cyrtella	X							X									
Lecania cyrtellina							X										
Lecania erysibe													X				
Lecania hutchinsiae		X						X									
Lecania naegelii		X						X									
Lecanora actophila													X		X		
Lecanora albescens	X												X				
Lecanora argentata															X		
Lecanora campestris	X	X						X					X		X		

Lecanora carpinea	X							X									
Lecanora chlarotera	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Lecanora cinereofusca												X					
Lecanora conferta													X				
Lecanora confusa	X				X		X	X				X	X			X	X
Lecanora crenulata													X				
Lecanora dispersa													X	X			
Lecanora epanora														X			
Lecanora expallens	X				X	X	X					X		X	X	X	
Lecanora gangaleoides	X	X											X	X		X	
Lecanora helicopis	X														X		
Lecanora intricata					X								X		X		
Lecanora jamesii	X			X	X	X	X				X	X	X	X	X	X	X
Lecanora muralis								X									
Lecanora persimilis																X	
Lecanora polytropa	X	X	X		X								X	X	X	X	
Lecanora pulicaris	X																
Lecanora rupicola													X				
Lecanora sulphurea	X	X											X			X	
Lecanora symmicta	X							X									
Lecidea fuscoatra	X	X			X								X				
Lecidea lithophila	X				X								X		X		X
Lecidea sanguineoatra	X	X														X	
Lecidea swartzioidea	X																
Lecidella anomaloides		X															
Lecidella asema	X												XS	X	X	X	
Lecidella elaeochroma	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X
L. elaeochroma soralifera	X	X		X	X						X						
Lecidella scabra	X							X				X	X			X	
Lecidella stigmatea	X												X				X
Lepraria caesioalba															X		
Lepraria incana S lat					X										X		X
Lepraria incana S str	X															X	X
Lepraria jackii					X					X						X	
Lepraria lesdainii								X									
Lepraria lobificans	X	X		X	X	X		X		X	X		X	X		X	X
Lepraria rigidula	X			X							X					X	
Leproloma membranaceum										X							
Leproloma vouauxii		X												X			
Leproplaca chrysodeta		X															
Leptogium brebissonii	X	X		X	X					X						X	
Leptogium britannicum	X	X					X							X	X		
Leptogium burgessii	X	X		X	X		X			X	X	X		X	X	X	
Leptogium cochleatum		X														X	
Leptogium cyanescens	X	X		X	X	X	X	X		X	X	X		X	X	X	
Leptogium gelatinosum	X	X						X				X	X		X	X	
Leptogium hibernicum										X				X		X	
Leptogium lichenoides		X			X	X	X	X		X		X		X		X	
Leptogium plicatile	X							X					X				
Leptogium teretiusculum								X					X			X	
Leptogium turgidum	X																
Lichina confinis	X												X		X	X	
Lichina pygmaea													X				
Lobaria amplissima	X	X		X		X	X	X		X	X	X		X	X	X	
Lobaria pulmonaria	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Lobaria scrobiculata	X			X	X	X				X	X	X		X	X	X	X

Lobaria virens	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Lopadium disciforme					X					X							
Loxospora elatina	X				X	X	X	X		X	X	X		X	X	X	X
Marchandiomyces corallinus														X	X		
Massalongia carnosa	X																
Megalaria grossa		X					X							X		X	
Megalaria pulverea	X	X		X	X	X				X	X	X		X	X	X	
Melanelia exasperata	X							X						X			
Melanelia fuliginosa glabratula	X	X		X	X	X	X	X		X			X	X	X	X	X
Melanelia fuliginosa	X			X				X					X	X	X	X	X
Melanelia laciniatula	X																
Melanelia subaurifera	X			X	X			X				X	X	X	X	X	
Melaspilea atroides															X		
Menegazzia terebrata	X				X		X			X	X	X			X		X
Micarea alabastrites	X				X		X								X	X	
Micarea cinerea					X												
Micarea coppinsii	X																
Micarea leprosescens																	X
Micarea lignaria					X										X		X
Micarea melaena	X									X	X						X
Micarea micrococca											X					X	
Micarea myriocarpa					X											X	
Micarea peliocarpa	X				X						X						
Micarea prasina	X				X	X	X			X		X		X	X	X	
Micarea stipitata	X				X					X	X				X	X	
Micarea synotheoides										X	X						
Micarea xanthonica											X						
Miriquidica leucophaea	X														X		
Moelleropsis humida								X									
Muellerella lichenicola		X															
Mycoblastus caesius	X				X			X		X	X	X		X	X	X	X
Mycoblastus fucatus	X				X			X		X					X		X
Mycoblastus sanguinarius					X						X	X			X		
Mycoglaena myricae	X							X							X		X
Mycomicrothelia atlantica				X												X	
Mycomicrothelia confusa	X	X	X	X	X	X	X				X	X		X	X	X	
Mycoporum antecellans	X	X		X	X		X									X	X
Mycoporum lacteum										X							
Myxophora leptogiophila										X							
Myxobilimbia sabuletorum	X				X				X				X				
Nanostictis christiansenii				X													
Nectrinopsis lecanodes				X													
Neofuscelia loxodes													X		X		
Neofuscelia pulla													X				
Nephroma laevigatum	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Nephroma parile					X	X	X			X		X		X		X	
Nigromacula uniseptata																	X
Normandina pulchella	X	X	X	X	X		X	X		X	X	X		X	X	X	X
Ochrolechia androgyna	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ochrolechia inversa										X							
Ochrolechia parella	X	X							X				X	X	X	X	X
Ochrolechia subviridis	X	X			X		X							X		X	
Ochrolechia tartarea	X									X	X	X	X		X		X
Omphalina ericetorum					X										X	X	X
Omphalina hudsoniana										X					X		
Omphalina luteovitellina															X		

Opegrapha atra	X	X		X	X	X	X	X		X			X	X	X	X	X
Opegrapha brevis																X	
Opegrapha calcarea								X					X				
Opegrapha gyrocarpa		X			X											X	
Opegrapha herbarum				X										X			
Opegrapha ochrocheila							X										
Opegrapha pertusariicola				X													
Opegrapha sorediifera					X											X	
Opegrapha thelotrematis	X			X		X	X			X	X						
Opegrapha varia		X					X							X		X	
Opegrapha vermicellifera		X					X	X								X	
Opegrapha vulgata	X			X		X				X			X	X	X	X	
Ophioparma ventosa									X								
Pachyphiale carneola	X	X		X	X	X				X	X	X		X	X	X	
Pannaria conoplea	X			X	X		X			X	X	X		X	X	X	
Pannaria rubiginosa	X	X		X	X	X	X			X	X	X		X	X	X	X
Parmelia omphalodes	X				X	X			X			X	X	X	X	X	X
Parmelia saxatilis	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X
Parmelia sulcata	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Parmeliella parvula	X				X		X			X	X	X		X	X	X	X
Parmeliella testacea	X	X		X	X		X			X	X	X		X	X	X	
Parmeliella triptophylla	X	X	X	X	X		X			X	X			X	X	X	
Parmelina pastillifera	X							X									
Parmentaria chilensis			X									X					
Parmotrema chinense	X	X		X	X	X	X			X	X		X	X	X	X	X
Parmotrema crinitum	X	X		X	X	X	X	X		X		X	X	X	X	X	X
Parmotrema reticulatum															X	X	
Peltigera collina	X			X	X					X	X	X				X	X
Peltigera didactyla								X									
Peltigera horizontalis	X	X			X		X			X	X	X		X	X	X	
Peltigera hymenina	X	X			X			X	X	X	X	X	X	X	X		X
Peltigera membranacea	X	X		X	X	X		X		X	X	X			X	X	X
Peltigera polydactylon							X										
Peltigera praetextata	X			X	X	X	X			X	X	X		X	X	X	
Peltigera rufescens													X	X	X		
Pertusaria albescens albescens		X			X					X		X			X	X	
Pertusaria albescens corallina					X			X							X		
Pertusaria amara	X			X	X	X	X	X		X	X	X	X	X	X	X	X
Pertusaria amara pulvinata							X										
Pertusaria aspergilla		X											X	X			X
Pertusaria corallina	X	X			X							X	X	X	X		X
Pertusaria flavicans		X															
Pertusaria hemisphaerica	X																
Pertusaria hymenea	X	X		X	X	X	X	X		X		X	X	X	X	X	X
Pertusaria lactea		X		X	X												
Pertusaria leioplaca	X	X		X	X	X		X		X		X			X	X	X
Pertusaria multipuncta	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Pertusaria ophthalmiza										X							
Pertusaria pertusa	X	X		X	X	X	X	X		X		X	X	X	X	X	X
Pertusaria pseudocorallina	X				X				X			X	X	X	X		
Pertusaria pupillaris				X				X		X	X						X
Phaeophyscia orbicularis								X					X				
Phacopsis oxyspora															X		
Phlyctis argena	X			X	X			X		X		X	X	X	X	X	X
Phyllopsora rosei										X						X	
Physcia adscendens					X			X					X				

Physcia aipolia	X	X		X	X			X		X			X	X	X	X	X	X
Physcia caesia	X													X		X		
Physcia tenella	X				X			X			X			X	X			X
Physcia tribacia								X										
Physconia distorta	X							X						X	X		X	
Physconia grisea	X							X										
Placopsis gelida															X	X		
Placynthiella dasaea										X	X						X	
Placynthiella icmalea					X					X	X	X	X				X	
Placynthium nigrum	X	X						X						X				
Platismatia glauca	X			X	X	X	X	X		X	X	X	X	X	X	X	X	X
Plectocarpon lichenum		X		X			X								X		X	
Polyblastia cruenta	X																	
Polychidium muscicola	X							X									X	
Polysporina simplex					X									X				
Porina aenea	X				X											X	X	
Porina ahlesiana		X																
Porina borreri				X												X		
Porina chlorotica	X	X															X	
Porina lectissima	X															X	X	
Porina leptalea	X																	
Porina rosei		X																
Porpidia cinereoatra	X				X									X		X		X
Porpidia crustulata	X				X					X				X		X		X
Porpidia hydrophila	X									X						X		
Porpidia macrocarpa										X		X				X		
Porpidia platycarpoides	X																	
Porpidia tuberculosa	X	X	X		X			X	X			X	X	X	X	X		
Pronectria fissuriprodiens				X														
Protoblastenia calva												X						
Protoblastenia rupestris	X							X						X		X		
Protonectria anisospora																X		
Protopannaria pezizoides		X										X						
Pseudevernia furfuracea S str																		X
P. furfuracea ceratea																X		
Pseudocyphellaria crocata	X			X						X	X	X						
Pseudocyphellaria intricata		X		X						X		X				X	X	
Pseudocyphellaria norvegica	X	X		X						X	X	X		X		X		
Punctelia subrudecta	X							X		X				X			X	X
Pycnothelia papillaria									X			X				X		
Pyrenula chlorospila		X						X						X				
Pyrenula laevigata	X	X	X	X		X	X			X		X		X			X	X
Pyrenula macrospora	X	X	X	X	X	X	X	X		X	X	X	X	X			X	X
Pyrenula occidentalis	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X
Pyrrhospora quernea	X							X			X	X					X	
Ramalina calicaris	X	X						X							X		X	X
Ramalina cuspidata															X		X	
Ramalina farinacea	X	X		X		X	X	X				X	X	X	X	X	X	X
Ramalina fastigiata	X	X		X			X	X					X				X	X
Ramalina portuensis								X										
Ramalina siliquosa	X	X											X	X	X	X	X	X
Ramalina subfarinacea													X					
Rhizocarpon geographicum	X				X							X	X	X	X	X	X	X
Rhizocarpon hochstetteri	X																	X
Rhizocarpon infernulum										X					X			
Rhizocarpon lavatum	X														X			

Rhizocarpon oederi					X								X				
Rhizocarpon petraeum	X																
Rhizocarpon reductum					X				X				X	X	X		
Rhizocarpon richardii	X												X				
Rinodina atrocinerea	X							X							X		X
Rinodina efflorescens				X													
Rinodina gennarii	X							X									
Rinodina isidioides															X		
Rinodina oleae														X			
Rinodina roboris																X	
Rinodina sophodes	X												X				
Rinodina teichophila								X									
Ropalospora viridis	X																
Schaereria cinereorufa	X																
Schaereria fuscocinerea	X														X		
Schismatomma quercicola	X				X						X					X	X
Sclerococcum sphaerale	X	X													X		
Sclerophyton circumscriptum														X			
Scoliciosporum chlorococcum	X																
Scoliciosporum pruinosum					X												
Scoliciosporum umbrinum	X												X				
Skyttea lecanorae	X			X													
Skyttea nitschkei										X	X	X		X			
Solenopsora holophaea														X			
Sphaerophorus fragilis																	X
Sphaerophorus globosus	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
Stenocybe pullatula	X	X		X	X					X		X				X	
Stenocybe septata	X				X					X					X		
Stereocaulon dactylophyllum																	
Stereocaulon evolutum															X		
Stereocaulon pileatum														X			
Stereocaulon vesuvianum	X														X		X
Sticta canariensis		X								X						X	
Sticta canariensis dufourii				X		X	X			X				X		X	
Sticta fuliginosa	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Sticta limbata	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Sticta sylvatica	X	X		X	X	X	X	X		X	X	X		X	X	X	X
Stigmidium degelii		X		X												X	
Stigmidium microspilum				X		X								X		X	
Stigmidium sp on *B. disciformis*																X	
Strangospora microhaema	X			X													
Strangospora ochrophora		X														X	
Strigula diederichiana																X	
Strigula taylorii																X	
Strigula sp. On *Peltigera*								X									
Syzygospora physciacearum				X													
Tephromela atra	X							X					X	X	X	X	
Thelopsis rubella		X								X						X	
Thelotrema lepadinum	X		X	X	X	X	X			X	X	X		X	X	X	X
Thelotrema macrosporum	X	X		X		X	X			X	X			X	X		X
Thelotrema petractoides	X	X		X	X	X	X			X	X	X		X	X	X	X
Tomasellia gelatinosa	X	X		X	X	X	X				X	X		X	X		
Toninia aromatica	X	X						X					X			X	
Trapelia coarctata	X				X					X			X				
Trapelia corticola	X					X	X			X	X			X		X	
Trapelia involuta					X					X							

Trapeliopsis flexuosa				X	X											X
Trapeliopsis gelatinosa									X							
Trapeliopsis granulosa								X								X
Trapeliopsis pseudogranulosa	X	X		X					X	X	X				X	X
Tremella coppinsii										X						
Tremolecia atrata				X										X		
Tuckermannopsis chlorophylla	X															
Tylothallia biformigera	X	X														
Umbilicaria cylindrica														X		
Umbilicaria polyphylla														X		
Unguiculariopsis manriquei			X													
Usnea cornuta	X	X	X	X	X	X	X		X	X		X	X		X	X
Usnea esperantiana			X													
Usnea filipendula	X									X						X
Usnea flammea	X	X		X	X	X	X	X			X	X	X	X	X	X
Usnea fragilescens	X			X							X					
U. fragilescens mollis			X											X		X
Usnea rubicunda	X		X	X	X				X		X			X	X	X
Usnea subfloridana	X		X	X	X	X	X		X	X	X		X	X		X
Verrucaria baldensis											X		X			
Verrucaria dolosa	X															
Verrucaria elaeina		X														
Verrucaria fusconigrescens												X	X			
Verrucaria glaucina							X					X				
Verrucaria hochstetteri	X															
V. macrostoma furfuracea	X											X				
V. macrostoma macrostoma												X				
Verrucaria maura	X						X					X	X	X	X	
Verrucaria mucosa	X											X		X		
Verrucaria muralis	X											X				
Verrucaria nigrescens							X				X	X		X		X
Verrucaria viridula	X						X					X				
Vezdaea aestivalis	X															
Vezdaea leprosa	X															
Vouauxiella lichenicola														X		
Vouauxiella uniseptata																X
Wadeana dendrographa									X				X		X	
Xanthoparmelia conspersa	X						X				X	X	X	X		X
Xanthoparmelia mougeotii														X		
Xanthoria calcicola												X				
Xanthoria candelaria	X						X					X				
Xanthoria ectaneoides	X	X					X					X				
Xanthoria parietina	X	X					X					X	X	X	X	X
Xylographa parallela									X							X
Xylographa trunciseda																X
Xylographa vitiligo							X									

DESIGN OF HERBARIUM LABELS

Introduction

The herbarium of Michigan State University was recently awarded a grant from the U.S. National Science Foundation to database the label data of its complete lichen collection. We hired several student employees to enter the data written on herbarium sheets and packets into the database. To date, they have entered over 40,000 records, and this has given them a unique insight into the issues surrounding what to include on a label, and how to arrange this important information. Discussing these issues with the students has been very instructive in helping us redesign our own labels (see below). Believing that their expertise deserves a wider audience, they were encouraged to write down their comments to share with you in the hope that it will help you produce better labels – and also help us in trying to interpret them! Most of this information may seem obvious but, believe me, we've seen it all!

Make your labels legible:

Many issues have arisen due to the way labels are created and arranged. Consistency in the design and layout of your labels would leave less room for error. Handwritten labels are the biggest problem that we face. We have one full cabinet (over 500 collections) just for specimens with labels that are illegible due to poor handwriting. You may think that you are creating your labels solely for your own benefit, but if your collection is to have any lasting value, sooner or later, someone else is going to have to read what you have written, and that person may not be a lichenologist or even have any scientific training at all. None of us have any prior knowledge of lichens, and most of us did not even know what a herbarium was until we stepped into it. It is understandable that not all labels and annotations can be typed, but they must be legible and easily interpreted. If you use standard printing instead of cursive and take some extra time writing to make sure it is completely legible, it would make a large difference to the next person reading the label. Consider using a pro-forma that can be photocopied, with the main headings typed or printed.

Organize your data:

One point that is often overlooked is that the species name is the least important piece of information on the label. This is just someone's opinion and, in any case, can always be replicated by checking the specimen. The other information on the label (locality, habitat, date, collector, etc) is fact and, if it is lost or is illegible, it can never be replaced. This important information is the most commonly misinterpreted.

Clearly separate your data under named headings. We spend quite a lot of time trying to decide if an illegible scrawl is a species name, or a locality. The species name of one *Alectoria* that we were having trouble deciphering turned out to be "Australia, victoria"! Locality, Habitat, and Substrate should be kept separate. Many labels

combine all of this information into one sentence, and it takes time separating this information. It can also be very confusing as to which is which. One label had just "Jamaica: Parish of St. Ann, Bamboo". Was the lichen growing on bamboo (substrate), was it growing on something else in a patch of bamboo (habitat), or was this the name of a place (locality)? Actually it is the name of a place. The locality should also include its geopolitical units in order from largest to smallest, *i.e.* Country, State/Province, County, City, etc.

If you put additional information on a separate piece of paper, make sure it is firmly attached to the label. Over time, typed annotations sometimes fall off because they are not well enough secured. We also find labels inside packets, instead of being attached to the outside.

Many collections have more than one species on them. These should be individually identified by numbers or letters so that it is clear whether a determination has been changed or an additional species identified.

Date:
All annotations should include a complete and understandable date. The way dates are written can vary from country to country, and this has created some problems of interpretation. For example, a date written like 4-9-65 could be September 4 or April 9, and either 1865 or 1965. The month should never be given in arabic numerals, but should be written out in full, abbreviated, or given in roman numeral. Another issue we have is when the date is typed wrong and the writer goes back to change the date by writing over it. This can make it very hard to distinguish what the actual date should be. This applies to the entire label; never try to change something, cross it out and write it again.

Personal Notes:
A variety of information is typically put on a sheet. We often find information that is unnecessary; for example, detailed anatomical data. We have also found that many people write notes to themselves on labels and herbarium sheets. This can be confusing and should be avoided because other people may assume it is just another annotation. If you must write notes on your packets, use a 'Post-it' so it can be understood as not being an annotation.

Abbreviations:
Personal names should never be abbreviated on a label because, after time, it will be forgotten who that person was. We have several collections in which the collectors used just their initials or abbreviated their names and now we do not know who they were. Short hand and abbreviations should also not be used to fit information on the

label. An abbreviation may appear obvious to you, but it may not be as obvious to someone else.

Numbers:
Collections are sometimes separated from their packets and it is then often impossible to know to which they belong. This could be eliminated if the collection number from the packet is included with the specimen. This is also a good reason for mounting your collections on card.

It is not a good idea to include non-numeric characters in a collection number, (ie. the year followed by a "/" and then the number, or pefixed by "L" for lichen) because when these are digitized they will have to be entered into a database as a text string and cannot then be searched with numerical operators (ie. =, <, >, etc) to find all the collections in a required range.

Chemical Tests:
Chemical tests should include the name of the test as well as the result. Many chemical test results and spore dimensions have been handwritten on our sheets with no author or date and often include incomplete data. Annotations are also sometimes written very close to each other making it hard to determine if they are separate or part of another annotation. A solution could be to put a mark on the sheet or draw a box around the annotation.

Conclusion:
We hope you will take these suggestions into consideration for future collections. In the ever-changing world of information technology it is more convenient to provide data such as this over the Internet without people having to physically visit the collection. Even if you are collecting for personal use, if your collection is going to have any lasting scientific value, someday some other person is going to have to interpret your data. There is no better way to increase the value of your collection and hard work than by making it legible and understandable to all.

Acknowledgements
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Thomas Powell
Alan Fryday

LICHENS OF SWEDEN

1. *Rhizocarpon cinereovirens* (Müll. Arg.) Vainio
2. *Porpidia melinodes* (Körber) Gowan & Ahti

Locality: *Lycksele Lappmark*: Tärna, Lake Stor-Björkvattnet, by the stream Gejmån. 65°35'N, 15°11'E, 420 m.

Habitat: Close to a stream in a *Picea*-dominated forest
Substratum: On rock

Collected by: Per G. Ihlen, 1196
Date: 14 June 2003

Determined by: Alan M. Fryday
Date: 10 October 2003

Notes: Duplicate. Original in UME

MICHIGAN STATE UNIVERSITY HERBARIUM (MSC)

Fig 1. Example of our ideal label.

MORE THOUGHTS ON SPOT TESTS

Short articles on spot tests in the Bulletin (No 88, summer 2001) gave rise to a number of enquiries that, it is hoped, can now be resolved through this article. Several people queried the length of time for which the chemicals remained active. This varies depending on the substance being used and the storage conditions. It is a general rule that, as far as possible, air should be excluded from the bottles containing the chemicals. A smaller air space will extend their usable life. However, the cold contents of a full bottle placed in a warm pocket will expand and possibly leak. Further information on storage times and other information for specific chemicals is given below.

Para-phenylenediamine (PD) solution made from powder and alcohol, such as methylated spirits, in an open dish will oxidise very quickly and become useless, or worse, give false results. Dripping alcohol on to a crystal of PD is slightly more useful as each addition of alcohol will dissolve a fresh surface from the crystal and this liquid may then be used for the test. Nevertheless, it is not recommended that this substance is used in an open dish as minute particles are very easily spread around and can then be breathed in or contaminate the person or the surroundings. If used in this manner great care should be taken to safely dispose of the remains of the chemicals and the lichen sample tested. Due to the possible carcinogenic and allergic reactions that may

be caused by this substance, it is best to avoid its use as far as possible. If para-phenylenediamine must be used, a stable solution such as Steiner's (formula below) is the most satisfactory in terms of active storage time.

Para-phenylenediamine	1 gm
Sodium sulphite	10 gm
washing-up liquid	0.5 ml (one or two drops)

The dry constituents should be dissolved in 100 ml of distilled water (at least use boiled water as boiling will expel most of the dissolved oxygen). The washing-up liquid is then added. It acts in the Steiner's solution as a wetting agent allowing the solution to be absorbed more rapidly by the specimen. The sodium sulphate slows the oxidation of the para-phenylenediamine. After a few months it will become exhausted and the solution will become dark brown and will no longer show accurate colour changes. This solution may stain the sample and appear to give an immediate false positive orange result. It can be tested on the medulla of *Parmelia saxatilis* or *P. sulcata* where it should produce a bright orange to red colour after a few seconds. Alternatively any lichen containing fumarprotocetraric acid such as *Cladonia pyxidata* should give a rust-red reaction.

Potassium hydroxide (K) pellets dissolved in water is usable in a wide range of concentrations and about 10% w/v (see article in this *Bulletin* by I. Pedley) is the most usual. It will work down to a concentration of about 3% w/v and for safety reasons use as low a concentration as possible. Concentrations above about 20% will actually slow down the reaction as the liquid is inclined to form a drop that sits on the surface of the specimen and is not rapidly absorbed. Before use always test the solution on a *Caloplaca* or *Xanthoria* species to ensure that it does produce a crimson reaction. Potassium hydroxide usually comes in the form of small pellets and these should be added slowly to the water. **Never** add water to the pellets as a dangerous and violent reaction may take place due to the heat generated as the pellets dissolve. It is often difficult to obtain potassium hydroxide and sodium hydroxide (caustic soda) will give similar reactions. Caustic soda may be obtained from most DIY stores where it is sold as a cleaning agent. It will work in concentrations of as low as half a teaspoon in 100 ml of water (see I. Pedley for further information). Either of these solutions should remain active for many months but eventually break down into other chemicals. Potassium hydroxide absorbs carbon dioxide from the air and this eventually separates out as a cloudy precipitate of potassium carbonate. The 'K' solution will continue to work until the concentration of potassium hydroxide is very low indeed. If you are using a soft bottle with a fine capillary outlet the precipitate is inclined to block the tube. The build up of pressure as the bottle is squeezed harder may cause the top to come off distributing the contents over the surroundings. The main breakdown product of caustic soda is sodium carbonate (washing soda) which eventually may produce a

cloudy precipitate. If you wish to use as safe a product as possible, washing soda is less caustic and a 5-10% solution will give similar, but slower and less coloured, 'K' reaction. It has a major disadvantage, the slightly yellow-brown reaction that may be obtained with potassium or sodium hydroxide on some *Candelariella* species is a crimson colour with washing soda, negating the much used difference in chemical reaction between these species and *Xanthoria* and *Caloplaca*.

Sodium Hypochlorite (C) until recently was easily and cheaply obtained as it was sold as household bleach. Almost any brand would do for lichenology. Unfortunately, many manufacturers are now adding other substances including sodium and potassium hydroxide. These additions improve the domestic use of the bleach but it is no longer suitable for use with lichenology. They cause it to give K, KC or CK reactions. Before purchase examine the list of contents and buy only those without additives. In most cases, these are the cheapest, thin bleach products sold by super-markets. Always test a new bleach on the medulla of *Parmelia saxatilis* or *P. sulcata* or on the cortex of *Lecanora campestris*. The result should be negative, if there is a yellow or orange colour change the bleach is not suitable for 'C' tests.

In performing any of these tests, always use as little of the chemical as necessary and, if possible test a detached fragment of lichen as it usually kills part of the lichen under the test drop and it is important not to pollute the environment more than is absolutely necessary. After testing the contaminated fragment should be disposed of with care.

All these chemicals should be handled with great care. Hands should always be washed after using them. Carefully follow all the manufacturer's warnings on the packaging. They should be carried in small, clearly labelled bottles and care should be taken to avoid spillage on eyes, skin or clothes. They must not be swallowed and also kept out of the reach of children.

One of the most useful books on microchemical tests is the BLS publication *Microchemical methods for the identification of lichens* by Orange A., James P.W. & White F.J. (2001).

Frank S. Dobson.

HOW DILUTE IS DILUTE?

Many books express liquid concentrations just in terms of percentages. This is a method that is now defunct in most branches of chemistry, or at least it is well past its sell by date. It is based on the unit parts per hundred and may mean three separate things! For this reason it is little used today.

1. **For mixing liquids**. The volume in millilitres (ml) of a smaller quantity of one liquid which is dissolved in 100ml of water is expressed as a percentage. This method is used in the wine and spirit industry. So for example, if in a bottle of wine 13 ml of ethanol (alcohol) is dissolved in every 100ml of water in the bottle, this is termed 13%. It **should** have the unit v/v after it but the brewing industry shortens it to 'vol'.

2. **The mass of a solid, in grams, in 100 grams of a solvent.** The mass of a solid in grams dissolved in 100 grams of liquid (often water); e.g. a 10% solution in these terms would be 10 grams of solid in 100 grams of solvent. This is written as 10%w/w. Notice the w/w unit, w = weight, although weight is strictly measured in 'Newtons'. Although the non-scientist may use phrases such as 'weight in grams'; to a scientist this is heresy. Kilograms and grams are units of mass i.e. The amount of matter (atoms etc) in an object. This figure remains the same throughout the universe. Weight is the force of the attraction of gravity on an object and is measured in 'Newtons'. It can change and the object can become heavier and lighter depending on where in the universe - close to zero out in space, high on the earths surface and even down a mine shaft as gravity increases towards the earth's core.

3. **The mass of a solid, in grams, in 100 ml of water.** This is the one usually meant in most books and when water is used as a solvent. This has an identical meaning to **2** above because 100 grams of water is equal to 100 millilitres. The percentage should be followed by w/v (e.g. 10%w/v).

Therefore to mix a 10%w/v solution of potassium hydroxide in 100 millilitres of water you should dissolve 10gms of potassium hydroxide in 100millilitres of water. The problem for most people who are working from home is that they do not have equipment accurater enough to find the mass (weigh out!) of a few grams of material. Sodium hydroxide is more easily available than potassium hydroxide and an approximate measure for this substance is that one level teaspoon has a mass of between 4 and 5 grams (depending on the teaspoon!). Therefore two level teaspoons dissolved in 100 millilitres of water should give an approximate concentration of 8-10%w/v. Most kitchens have measuring jugs that are good enough to give a volume of 100 mililitres of water. As with all chemical solutions used in lichenology great care should be taken and the manufacturers advice on the bottle followed. Health and Safety in schools advise that sodium or potassium hydroxide can be particularly nasty to the cornea of the eye. It advises that after contact with these substances the eye should be washed out (with a rubber tube attached to a tap) for at least an hour.

I Pedley

'K' (POTASSIUM HYDROXIDE) BY POST

Members who are finding it difficult to obtain 'K' (potassium hydroxide) may be interested to note that D J & D Henshaw are able to supply this chemical by post. They are a general entomological/microscope accessory/label supplier and have a small catalogue in which 'K' is priced at £1.75 for 25gms.
Their contact details are D J & D Henshaw, 34 Rounton Road, Waltham Abbey, Essex EN9 3AR. Tel/fax 01992 717663 email djhagro@aol.com

I have previously used them for entomological supplies and they have proved efficient and reliable.

Stockist for Lugols Iodine & UV torches
I also have details of stockists for Lugols Iodine and UV torches. They may also be of interest to members.

Lugol's Iodine (£5.96 / 250ml) available by post (UK only) ffrom Brunel Microscopes. www.brunelmicroscopes.co.uk.
Tel. 01249 462655

UV torches (mains and battery driven – both £9.99) available by post from Maplins Electronics. www.maplin.co.uk Tel. 0780 429 6000

PROGRESS ON MICAREA IN TASMANIA

The announcement in 1998 that the BLS was instigating a travel fund for overseas members was received with considerable interest by this particular member of the Society. My links with British lichenology were strong, having been supervised in my PhD by Peter James (all by mail and *before* the days of email and faxes) and since then developing strong connections and friendships with several other British lichenologists. Besides, any chance to visit British herbaria was to be seized upon, for they, and especially the Natural History Museum in London, are of major significance to Australasian botanists, being the repository of many early collections and Types from that part of the world. Although Tasmania has a wonderful environment, landscape and flora, it is about as far as one can get from a comprehensive library and a well-stocked herbarium of Types and other reference material, things that many in Europe probably take for granted.

So an application was rapidly prepared, with the intention being to work on Tasmania's *Micarea* with Brian Coppins at the Royal Botanic Garden, Edinburgh. Brian and I had already made a preliminary foray into this group, describing four new Tasmanian

species in 1990, but this was but a light dusting on a clearly very large iceberg. Subsequent correspondence and the occasional snatched moment together during some of my visits to the U.K. inevitably revealed more and more new and interesting species, all of which were consigned to a special box "to be looked at again later".

The application was successful but it took until November 2002 for the plan to bear fruit and for Brian and me to actually get together to work on the project. It had been no mean feat to overcome the difficulties of busy lives, demanding work, disparate seasons, and the tyranny of distance, and get me and several hundred specimens to Edinburgh at a time when Brian was 'free'.

The first specimen examined on that first bleak autumn day in Brian's lab was greeted with an enthusiastic "yes, this is something new", as was the second, third and so on. Over the next four weeks, we worked through about 350 specimens that had come on loan from the Tasmanian Herbarium, not to mention lots of other packets that were lurking under Brian's benches. Evenings were spent, "chez Coppins" at East Linton, writing up descriptions, notes and keys, with the warming fire, an equally warming sip of Scotland's finest, and excellent companionship.

The result is a considerable advance in the knowledge of *Micarea* in Tasmania: a further seven new species described, several of which are also known from Australia, New Zealand and/or Chile, and 12 species reported for Tasmania for the first time. This will bring the total number of named species of *Micarea* for Tasmania to 25. We hope to complete and submit a paper by the end of the year. However, many more specimens (mostly new collections since my Edinburgh visit) remain to be looked at, that box of interesting collections is by no means empty, and the 'iceberg' is still considerable. At a superficial level, the similarities between Tasmania and Britain with respect to macroclimate, ecology and landscape are remarkable, and on that basis alone, one might expect similar levels of diversity in *Micarea* (perhaps about 40 species).

It was also a privilege to be part of Brian and Sandy's household for a month, and to nestle in their warm hospitality and soak up some of their vast accumulated experience of life, lichens, vegetation and the many things that make life good. Fond memories of living and working with them both will be with me forever.

My sincerest thanks to the them, and to the British Lichen Society for their support in this venture. From the point of view of this member, the Overseas Members Travel Fund is an excellent initiative, and one that makes a real contribution to lichenology in distant places like Tasmania.

Gintaras Kantvilas

LICHENS IN LITERATURE: 10

TheHitchhiker's Guide to the Galaxy has this to say about the planet of Golgafrincham: It is a planet with an ancient and mysterious history, rich in legend, red, and occasionally green with the blood of those who sought in times gone by to conquer her; a land of parched and barren landscapes, of sweet and sultry air heady with the scent of the perfumed springs that trickle over its hot and dusty rocks and nourish the dark and musty lichens beneath; a land of fevered brows and intoxicated imaginings, particularly among those who have learned to forswear the lichens and find a tree to sit beneath; a land also of steel and blood and heroism; a land of the body and of the spirit. This was its history.

From; D Adams (1980) The Restaurant at the End of the Universe.
Part 2 in the 5 part trilogy "The Hitchhiker's Guide to the Galaxy."

Contributed by A. Aptroot

AMBIGUOUS talk tonight. Across the tundra
A gray moss grows on craniums of stone
The artic lichen in alchemic riot
Spills jewelled colors in a blackened pot.
Wind tampers here with wards of locks.

And she confides her dreams of torturers
Men masked as birds, masked cardinals
Who peck her flesh. She pets the cat.
And I say nothing. While the wind
Crosses the artic plains, cold, cold

That jabbers here, jabbers with iron tongues
Insinuate secrets as she smiles, "It's nothing,"
She says. "It shows no scars." She laughs.
"I've fantasies far worse..." The cat holds
me with such a gaze I scrape my chair, rise. go.

Michael Mott from CORDAY

THE SHAMPOO

The still explosions on the rock,
The lichens, grow

By spreading, gray, concentric shocks.
They have arranged
To meet the rings around the moon, although
Within our memories they have not changed.

And since the heavens will attend
As long on us,
You've been, dear friend,
Precipitate and pragmatical;
And look what happens. For time is
Nothing if not amendable.

The shooting stars in your black hair
In bright formation
Are flocking where,
So straight, so soon?
- Come, let me wash it in this big tin basin,
Battered and shiny like a moon.

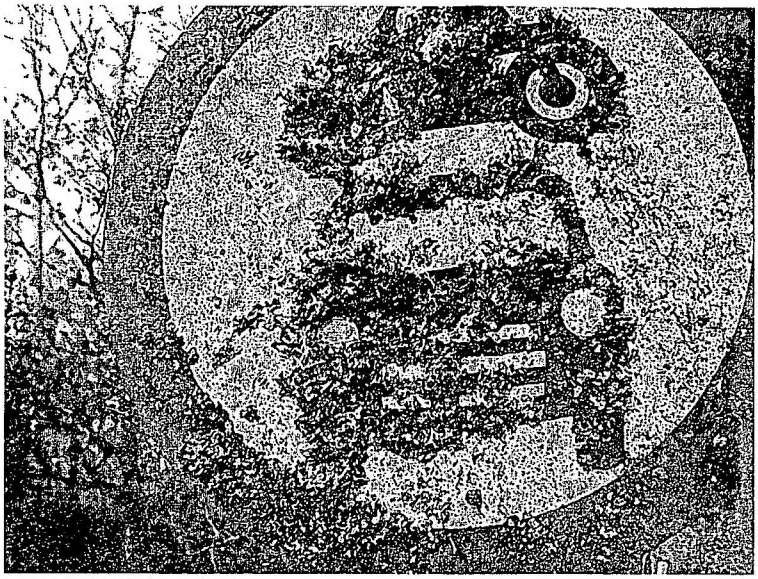
Elizabeth Bishop. The Complete Poems
Farrar Straus & Giroux. New York 1970

Contributed by Michael Mott.

FROM MID WALES A NEW TAKE ON:-

Lichens on Vehicles!
Note the preferential colonisation by mostly *Platismatia glauca* and *Hypogymnia physodes* of the black paint.
The sign is on a wooded verge near Beulah, Brecknock.

Possibly also the first record of lichens on motor cycles!



Armchair Lichenology
Photographed in an old quarry at Halfway near Trecastle, Brecknock by Tony Cross, Peltigera sp. show a predeliction for the arms of this wonderful old chair.

Ray Woods

SUMMER EDUCATION PROJECTS

Just in time for the *Bulletin* we hear of two exciting initiatives. First, it seems likely that the Society will award its first Summer Vacation Scholarship, for advanced and very topical work to be carried out by a recent post-graduate student. Watch this space for more information in the next *Bulletin*.

Second, we have just been received information about an exciting programme of workshops for children, to be held in St Andrews:

Children's Lichen Workshops: 2 July to 24 August 2004

WHAT IN THE WORLD IS MORE BEAUTIFUL.....

St Andrews Botanic Garden, The Crawford Arts Centre, St Andrews, Fife

Lucky children in Fife: workshops will be held during the summer holidays, with the aim of promoting interest in the world of lichens and their significance as indicators of pollution.

Adults too can join a scientific study/recording day to be held during the Workshop. This will be the first time the lichens in the Botanic Garden have been systematically recorded.

These summer opportunities are being organised by The St Andrews Botanic Garden in conjunction with local organisations and the support of the Fife Rangers Service. The context is the exhibition - ***'What In The World Is More Beautiful....'*** by Judy Spark, artist and lichenologist at the nearby Crawford Arts Centre (see also p.75 of this *Bulletin*). This centre (curated by Gair Dunlop) brings together artists who are working with the theme of the garden or related subjects. A variety of educational projects is planned to run alongside the exhibition.

St Andrews Botanic Garden dates from 1889 and has been in its present site from 1960. It covers 18 acres and is now quite mature with mixed wooded areas - conifers and deciduous trees - as well as peat, rock and water gardens and glasshouses which range from tropical to alpine and house plants from moist temperate to arid succulents. The rainfall is about 24" and so is quite a contrast from the wetter west. Being about a mile from the sea and in a non-industrial area, there is little pollution, and plenty of habitats for lichens. The Garden is owned by the University and managed by Fife Council. The Friends of the Garden have established a very successful schools education programme which is currently focused towards primary aged children. A

dedicated team attracts schools the length and breadth of Fife and beyond into Angus and Perthshire. Easter and summer vacation programmes are popular.

Further information can be obtained from Bob Mitchell, the Honorary Curator of The St Andrews Botanic Garden. He would also be delighted to hear from local lichenologists who would like to be involved in this exciting opportunity to enjoy lichen diversity both from botanical and artistic view points. Bob can be reached at The St Andrews Botanic Garden, Canongate Street, Fife, KY16 8RT, or at his e-mail address, kingscroft@care4free.net.

WHAT IN THE WORLD IS MORE BEAUTIFUL? ARTISTS AND THE GARDEN

The Crawford Arts Centre, 93 North Street, St. Andrews and
St. Andrews Botanical Gardens 2nd July -22nd August 2004

A unique opportunity to see the work of seven artists who engage with the idea of the garden. The artists include Mike MacDonald from Nova Scotia, who will build a butterfly garden in St. Andres and talk about his work in art, ecology and butterfly conservation in Canada.

Cath Keay will make new sculptural work in collaboration with bees and beekeepers, while Judy Spark explores a little-noticed feature of the environment; the lichens. The other artists are Susanne Nielsen, Gair Dunlop, Jennifer Beattie and Pat Naldi.

Over the last eighteen months, Glasgow based artist Judy Spark has been making detailed drawings from the complex and often overlooked lichen family. In contrast to traditional notions of the 'garden', this work examines the significance of these plant forms which are not so easily cultivated.

Measured time to look is needed in order to make for ourselves the connections between what we do and what happens as a result around us, especially since often the smallest details have huge implications.

Like ripples in water, ourselves as the stones.

Today this space for contemplative time is rarely available.

Spark's minutely observed explorations are seen isolated from their natural context and alered in scale. They are therefore accurate in detail but rendered a little like the

strange topographies of non-existent lands – a bit like maps which we usually trust to orient ourselves.

For this exhibition, Judy is researching lichens on the JNCC 1996 Red Data List of vulnerable, endangered, or extinct species.

A lichen recording project will run as part of the education programme linked to the exhibition.

The exhibition is curated by Gair Dunlop and Susanne Nielsen. Contact 0141 229 1704 or giar@easynet.co.uk for more information or visit www.gairspace.org.uk.htm/gdnFR.html

LITERATURE PERTAINING TO BRITISH LICHENS - 34

Lichenologist **35**(1) was published on 27 February 2003, **35**(2) on 17 June 2003, **35**(3) on 30 July 2003, **35**(4) on 10 October 2003, **35**(5&6) on 14 January 2004, and **36**(1) on 27 February 2004.

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

NB. Authors of articles on British and Irish lichens, especially those including records and ecological observations, are requested to send or lend me a copy so that it can be listed here. This is particularly important for articles in local journals and newsletters, and magazines.

BURGAZ, A R & MARTÍNEZ, I 2003. Peltigerales: Lobariaceae, Nephromataceae, Peltigeraceae. *Flora Liquenológica Ibérica*. Murcia: Sociedad Española de Liquenológica (SEL). Pp 61. This is the first volume of the new 'Iberian Lichen Flora', and contains a short introduction to the series. The main part involves detailed treatments of all iberian members of the Peltigerales (excluding the Placynthiaceae), belonging to *Lobaria*, *Pseudocyphellaria*, *Sticta*, *Nephroma*, *Peltigera* and *Solorina*. The descriptions are supported by very useful drawings of diagnostic features, e.g. venation and rhizines of *Peltigera* species.

COLE, M S & HAWKSWORTH, D L 2004. *Lichenoconium christiansenii* sp. nov. from *Nodobryoria abbreviata* (Parmeliaceae) in the Pacific Northwest, with a key to

the known lichenicolous species. *Lichenologist* **36:** 1–6. Includes a key to all lichenicolous species of *Lichenoconium*.

DIEDERICH, P 2003. New species and new records of American lichenicolous fungi. *Herzogia* **16:** 41–90. **Carbonea aggregantula* (Mull. Arg.) Diederich & Triebel comb. nov. (*Lecidea aggregantula* Mull. Arg. (1974)) is reported as new to the British Isles, with two specimens cited from Skye. This species differs from *C. supersparsa*, which grows on the same host [*Lecanora polytropa*] in having strongly convex apothecia, a dark brown hypothecium, and narrower ascospores (8.5–12 × 3–4 µm) with rounded apices. *Laeviomyces* D. Hawksw. is considered to be a synonym of *Lichenodiplis* Dyko & D. Hawksw., necessitating the following new combinations: *Lichenodiplis opegraphae* (D.. Hawksw.) Diederich (*Laeviomyces opegraphae*) and *Lichenodiplis pertusariicola* (Nyl.) Diederich (*Laeviomyces pertusariicola*). A key is provided to all described species of *Lichenodiplis* and *Minutoexcipula*. The opinion that *Nesolechia* be considered a synonym of *Phacopsis* is adhered to, and *Phacopsis oxyspora* var. *fusca* Triebel & Rambold [which mostly grows on *Xanthoparmelia* spp.] is raised to species rank as *P. fusca* (Triebel & Rambold) Diederich. With a lengthy discussion, *Xenonectriella streimannii* is retained in *Pronectria*.

ELIX, J A & JAYANTHI, V K 2003. 5-methoxylecanoric acid, a new despside from *Melanelia glabratula*. *Australasian Lichenology* **53:** 10–13. This new substance identified in minor/trace amounts from *M. glabratula* [= *M. fuliginosa*] is probably the unidentified substance "TE-12" mentioned in Esslinger's 1977 monograph of the 'brown Parmeliae'.

ETAYO, J & MARBACH, B 2003. *Hafellia alisioae* and *H. gomerana* (lichenized Ascomycetes, *Physciaceae*), two new species from the Canary Islands, with a key to all known corticolous species. *Lichenologist* **35:** 369–375. The species of *Buellia* s. lat. related to *B. disciformis* are treated in the genus *Hafellia* Kalb, H. Mayrhofer & Scheid. in anticipation that a current proposal to typify the genus *Buellia* De Not. with *B. aethalea* will be ratified. Apart from *B. disciformis*, the key also includes (as *Hafellia*) *B. arnoldii* and *B. sanguinolenta*.

GIORDANI, P, BENESPERI, R, RELLINI, I, FRATI, L, BRUNIALTI, G, PAOLI, L, ISOCRONO, D & ELIX, J A 2003. The lichen genus *Neofuscelia* (Ascomycota, *Parmeliaceae*) in Italy. *Lichenologist* **35:** 377–385. The key (and notes) includes all British members of the genus, including the 'recent' segregates from *N. pulla*: *N. luteonotata* and *N. perrugata* (Nyl.) Elix (2002).

HAWKSWORTH, D L & COPPINS, B J 2003. *Bryoria tenuis* (*Parmeliaceae*) new to the British Isles, and either awaiting rediscovery or extinct. *Lichenologist* **35:** 361–364.

JØRGENSEN, P M 2003. A new species of *Arctomia* from Sichuan Province, China. *Lichenologist* **35:** 287–289. Includes a key to the three accepted species of *Arctomia*.

JØRGENSEN, P M 2003. Conspectus familiae Pannariaceae (Ascomycetes lichenosae). *Ilicifolia* **4:** 1–79. A listing of all accepted names and synonyms, with their types. Also includes an introductory key to genera.

PALMER, K 2003. Lichen report 2002. *Bull. Kent Field Club* **48:** 68–69. A report of notable finds in the county.

PALMER, K 2003. In "Reports of outdoor meetings 2002". *Bull. Kent Field Club* **48:** 19–52: Godinton Park, Ashford (pp 20–21); Mark Beech and Cowden (pp 21–22); Monkton and Hoath Churchyards (p 48). The first site was visited as part of a resurvey of parklands and woodlands in the county, last comprehensively surveyed by Francis Rose some 30 years ago.

POPE, C 2003. Lichens. In POPE, C, SNOW, L & ALLEN, D *The Isle of Wight Flora:* 218–233. Wimborne: Dovecote Press in association with The Isle of Wight Natural History & Archaeological Society. A list of the 393 lichens recorded from the island, in addition to 33 species considered to be extinct, but whose former presence is supported by herbarium material. For each lichen, an entry gives brief information on substrata and habitats, and lists the 10 km grid squares from which it is reported. For more notable lichens there is added information on localities, collectors and dates. [In addition to this main chapter, further lichen information can be found in Colin Pope's chapter 'Island Habitats – Past and Present (pp 49–63)].

SÉRUSIAUX, E, DIEDERICH, P, ERTZ, D & VAN DEN BOOM, P 2003. New or interesting lichens and lichenicolous fungi from Belgium, Luxembourg and Northern France. IX. *Lejeunia* **173:** 1–48. The name *Aposphaeria stenospora* Harm. (= *Epicladonia stenospora*) is neotypified. The new combination **Tremella caloplacae* (Zahlbr.) Diederich (basionym: *Lindauopsis caloplacae* Zahlbr.) is made [for British records see 'New, Rare or Interesting...' in this *Bulletin*]. *Pronectria anisospora* is transferred to *Trichonectria* as *T. anisospora* (Lowen) Van den Boom & Diederich, and *Nectriopsis rubifaciens* [as '*rubefaciens*'] is also treated in that genus [as *T. rubifaciens* (Ellis & Everh.) Diederich & Schroers (1999)].

SØCHTING, U & FRÖBERG, L 2003. *Caloplaca asserigena*, the correct name for a small lichen with a unique chemistry. *Bibliotheca Lichenologica* **86:** 47–51. Includes description of a species recently identified from Britain (See 'New, Rare or Interesting...' in this *Bulletin*).

SPARRIUS, L B & APTROOT, A 2003. *Bacidia adastra*, a new sorediate lichen species from Western Europe. *Lichenologist* **35:** 275–278. The newly described **B. adastra* Sparrius & Aptroot is reported from Worcestershire. [Additional British records are given in 'New, Rare or Interesting...' in this *Bulletin*.]

SPARRIUS, L B, DIEDERICH, P, SIGNORET, J & SÉRUSIAUX, E 2002. The lichen flora of the Boulonnais (France, Pas-de Calais). *Belg. J. Bot.* **135:** 50–75. The author citation for *Caloplaca maritima* is corrected to '(de Lesd.) de Lesd. (1953)' [although written as "B. de Lesd.) B. de Lesd."]. Some useful notes are provided for entities within the *Opegrapha calcarea* complex, with the dimensions of pycnidia and conidia shown to be potentially important characters.

TEHLER, A 2002. On the typification of two misunderstood *Roccella* (Lichenized fungi) names, *R. tinctoria* and *R. fucoides*. *Taxon* **51:** 787–790. *Roccella phycopsis* Ach. is shown to be a superfluous name for what should be called *R. fucoides* (Dicks.) Vain. (1901). [**NB:** This has since been shown not to be so because *Lichen fucoides* Dicks. is an illegitimate name – see Tehler (2003) below.]

TEHLER, A 2003. *Roccella phycopsis* the correct name for *R. fucoides* (lichenized fungi). *Taxon* **52:** 621.

VAN HERK, C M & APTROOT, A 2003. A new status for the western European taxa of the *Cladonia cervicornis* group. *Bibliotheca Lichenologica* **86:** 193–203. The three subspecies within the *C. cervicornis* complex are given species rank: *C. cervicornis* s.str., *C. pulvinata* (Sandst.) van Herk & Aptroot (*C. cervicornis* subsp. *pulvinata*), and *C. verticillata* (Hoffm.) Schaer. (*C. cervicornis* subsp.*verticillata*).

WATERFIELD, A 2003. Lichens in the 'Magnificent Seven' cemeteries – a baseline survey of seven cemeteries in London. *The London Naturalist* **82:** 51–57. Lichen lists (104 taxa in total) are provided for the seven cemeteries, which were founded in the mid-nineteenth century.

WATLING, M 2003. In "Reports of outdoor meetings 2002". *Bull. Kent Field Club* **48:** 19–52: Stodmarsh NNR (pp 22–24). A notable terricolous flora with 16 species of *Cladonia*, including *C. cariosa*.

Corrections to Literature pertaining...33 (*BLS Bulletin* **93:** 59–63):

LAUNDON, J R 2003. Six lichens of the *Lecanora varia* group. *Nova Hedwigia* **76:** 83–111. For "The new combination **Lecanora ecorticata* (Hue) J.R. Laundon is introduced..." read "The new species **Lecanora ecorticata* J.R. Laundon is introduced..."

LAUNDON, J R 2003. The status of *Lecanora zosterae* in the British Isles. *Lichenologist* **35:** 97–102. For "*Lecanora hagenii* (Ach.) Ach. is shown to be an illegitimate name,..." read "*Lecanora hagenii* (Ach.) Ach. is shown to be a wrongly applied name,..."

Brian Coppins

BOOK REVIEW

***The Lichen Flora of Cheshire & Wirral.* By Brian W Fox & Jonathan Guest. Photographs by Andy Harmer.** August 2003. Nepa Books, 79A High Street, Frodsham, Cheshire, WA6 7AN.
A5, PP. 92. Eight coloured plates. ISBN 0 9545998-0-2 [Paperback]. Price: £9.50 + £1 p&p. [£7.50 to BLS members]

Three county lichen floras have appeared since the start of the millennium, a remarkable spate of publication and a valuable increase in our knowledge of the distribution of the lichens in Devon [Benfield 2001], Brecknock [Woods 2003] and, with this latest publication, Cheshire. The Lichen Flora of Cheshire & Wirral by the late Brian Fox, updated and brought into print by Jonathan Guest, deserves to find a place on the bookshelves of all British lichenologists. It is the slimmest of the three floras, its A5 pocket sized format making it easy to carry in the field by lichenologists visiting Cheshire and eager to "bag" new records, for this is a county where fresh discovery is very possible. Its compact appearance is not that surprising given the much smaller Cheshire flora – around 300 species—when compared with the largess found in the south-west and in mid-Wales, but it is also due to a much more condensed content. Those inquiring in this volume about climatic information, or wishing to be supported by geological or topographical maps, will need to consult other references. There is however a useful and very readable summary chapter of lichen habitats in the county, the effects on the flora of industrial pollution and also the recent changes in the distribution of species in response to the improved air quality. This flora provides a clear base-line summary of the present distribution of those lichens recorded within this vice-county and Jonathan Guest is to be congratulated for completing and updating

the work of the late Brian Fox. I have little doubt that it will, as the living author hopes, provide a catalyst for new workers to make valuable contributions in the future.

Give its concise format, and the fact that Jonathan Guest initially undertook to complete this lichen flora without any particular lichenological expertise and after the death of the senior author, there are some weaknesses. Recent advances in the recognition of a number of common species such as *Caloplaca crenulatella* or *C. flavocitrina* have been overlooked and although these must be widespread on older concrete structures in the county, they are not recorded in the Systematic list. *Lepraria lobificans* is also notable by its absence as are several other species. Perhaps more critically, the changes in nomenclature present in the latest Checklist [Coppins 2002] have not been incorporated, so the systematic list of taxa has a somewhat dated appearance. The names of almost twenty genera and over thirty species require updating. *Caloplaca festiva* [now *C. crenularia*], mentioned in the text, has not been an accepted name for many years. Typographical errors are few [*Ophioparma ventosum=O.ventosa* and *Lecanora helicopsis=L helicopis* were noted] and the general layout clear and pleasing. The lovely coloured plates of the Cheshire landscape and its lichens, in particular, which contribute so well to this publication, will do much to attract lichenologists to this neglected region.

In spite of the minor problems outlined above this is a flora of unique value. All the neighbouring English counties of Derbyshire, Staffordshire, and southeast through to Leicestershire and Warwickshire, are experiencing the same remarkable improvements in lichen diversity as are occurring in Cheshire. Corticolous species, in particular, are sweeping in at an ever-increasing rate, particularly over the past ten years, and there are signs that the saxicolous flora is also beginning to show improvement. Lichenologists, including myself, have been preparing their own floras of these counties, but have perhaps found it too tempting to "hold the presses", for the sake of completion, when faced with the avalanche of recent colonisation. With the publication of this work, reflecting as it does a changing flora at the very beginning of change we now have a uniquely valuable source of reference from which to judge and quantify future improvements. Jonathan Guest has done lichenology in the UK a valuable service.

Browsing through its pages and seeing the work of the late Brian Fox gave me a special pleasure. He was a charming man; no one relaxing with him in the evenings during BLS field meetings, listening to his engaging conversation, and in admiration of his taste for tropical coloured shirts and open-toe sandals, could not fail to be captivated by his warmth and joie de vivre. He would have been proud of this publication and, as one who often expressed his despair at all the seeming endless changes in nomenclature, he would also approve of its conservative appearance. This slim volume should be purchased by us all and will be essential reading for university

and sixth form biology departments who must surely now be embracing the fact that the traditional studies of lichens as monitors of pollution may be consigned to the past, and that the study of lichens as indicators of environmental improvement offers fascinating new areas for investigation.

References

Benfield, B.(2001) The Lichen Flora of Devon. Abbey Printers [Devon] Ltd.
Coppins, B.J. (2002) Checklist of Lichens of Great Britain and Ireland. British Lichen Society.
Woods, R.G. (2003) Lichen Flora of Brecknock. Powerprint, Llandrindod Wells, Powys.

Ivan Pedley

NOTICE OF NEW PUBLICATIONS

For all those collectors of Flora's there are still a number of copies of "The Lichen Flora of Cheshire and Wirral" (Brian Fox & Jonathan Guest) Price to members £7.50 Cheques payable to J.P.Guest +£1 p&p

Also I have been in correspondence with Dr Julie Medlin of Northwestern Michigan College, who has written a small A5 Book "Michigan Lichens" 120 pages featuring 87 lichens of Michigan ,half page photo of each , with description below.
These are very good photos. Many of the lichens are also found here but there are a few interesting specimens not found here. This book is now distributed by Wayne State University. The website is http:/wsupress.wayne.edu/glb/cranbrook/medlinml.htm. It may be ordered on line. $14.95
Brian Green (Publications

REQUEST

I am a member of the British Mycological Society and would like to obtain a copy of David Hawksworth's 'Key to the lichen forming, parasitic parasymbiolic and saprophytic fungi appearing on lichens in the British Isles.' I will pay reasonable price and postage.

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NEW, RARE AND INTERESTING LICHENS

Contributions to this section are always welcome. Submit entries to Chris Hitch, Orchella Lodge, 14 Hawthorn Close, Knodishall, Saxmundham, Suffolk, IP17 1XW, in the form of species, habitat, locality, VC no, VC name (from 1997, nomenclature to follow that given in the Appendix, see *Bulletin* 79, which is based on the Biological Record Centre for instructions for Recorders, ITE, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, PE17 2LS, 1974). Grid reference (GR) (please add letters for the 100km squares to aid Biobase and Recorder 2000 users), altitude (alt), where applicable, in metres (m), date, comments. Determined/confirmed by. New to/the. 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. 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, it should be on disc, or if not, typescript. Copy should reach the subeditor at least a fortnight before the deadline for the *Bulletin*.

New to the British Isles

Caloplaca asserigena (Lahm) H. Olivier (1909) BLS no **2371**: on twigs and small branches. The following collections are all in Herb. E. (i) on *Quercus* twig overhanging pasture at woodland edge, valley W of abbey, Buckland Abbey, VC 3, South Devon, GR 20(SX)/48-66-, April 1991, B J Coppins & A M O'Dare, Coppins 14039. (ii) on *Quercus* twigs at edge of wood, Black Tor Copse NNR (N end), VC 4, North Devon, GR 20(SX)/563893, alt 366 m, March 2003, B J & A M Coppins 20774. (iii) on *Quercus* twig, Westwater Linhay, VC 5, South Somerset, GR 21(SS)/852239, alt 260 m, July 2002, B J & A M Coppins 20576. (iv) on *Fraxinus* twig, James's Barrow, Hawkcombe, Porlock, VC 5, South Somerset, GR 21(SS)/86-45-, August 1992, B J Coppins & A M O'Dare, Coppins 15231. (v) on dead stems of *Rosa pimpinellifolia* in coastal dunes, Nicholaston Burrows, Oxwich Bay, Gower peninsula, VC 41, Glamorgan, GR 21(SS)/522880, alt <10 m, August 2002, B J & A M Coppins 20578. (vi) on *Calluna*, Whiteness Head SSSI, VC 96, Nairn, GR 28(NH)/82-57-, < 10 m, October 2000, B J & A M Coppins 19673. (vii) on *Salix* by road, Inverleiver Forest, VC 98, Argyll Main, GR 17(NM)/93-08-, June 1980, B J Coppins 4920. (viii) abundant on thin twigs of *Salix aurita* at edge of woodland, north of pier, Toscaig, Applecross, VC 105, West Ross, GR 18(NG)/703380, alt 20m, August 2003, B J & A M Coppins & A Orange, Coppins 20992. On *Juniperus* twigs, Eilean Dubh na Sròine, Loch Maree, VC 105, West Ross, GR 18(NG)/910720, alt *c* 15 m, May 1999, B J Coppins & V J Giavarini, Coppins 18560. On *Juniperus* twigs, Morrich More, Tain, VC 106, East Ross, GR 28(NH)/85-83-, alt <10 m, August 1987, B J Coppins 11813.

On *Salix* branch in carr, Kilturk (S), Crom, VC H33, Fermanagh, GR H(23)/37-25-, alt 50 m, July 1993, B J Coppins & A M O'Dare, Coppins 15819. The material from Applecross (Coppins 20992) was determined by Prof. Søchting. This inconspicuous species has a greyish thallus rarely exceeding 2 mm diam., with often aggregated apothecia, 0.2–0.4 mm diam., which have a dull orange to dull ferruginous [sometimes blackish in continental material] disc and a thin, quickly disappearing thalline margin. Its ascospores are 9–12 × 5–6.5 µm, with a 3-5 µm wide septum. It differs from members of the *C. holocarpa* complex in the colour of the disc, and in growing in nutrient poor habitats. It is known elsewhere from southern Scandinavia, Germany, Switzerland and Austria. Ref. Søchting & Fröberg in *Bibliotheca Lichenologica* **86:** 47–51 (2003). BLS no. **2371**. B J Coppins

Lecania dubitans (Nyl.) A.L. Sm. (1918) BLS no **2388**: on trunk of *Populus tremula*, E side B970 road, SW of Inshriach House, Speyside, VC 96, Easterness, GR 28(NH)/86930699, alt. 250 m, July 2003, leg. C J Ellis in Herb. E. This species was thought to have been incorrectly reported from the British Isles (see 'Flora', p. 286). Crombie's specimen from Morrone, Braemar in Aberdeenshire, although correctly identified, was considered to have originated from outside the British Isles, and a specimen from Somerset a misidentification. The provenance of the Morrone specimen now needs to be re-examined. *L. dubitans* closely resembles *L. naegelii* in the field, and occurred with it in the Speyside material. However, it is easily distinguished microscopically by its markedly curved, 0–1-septate ascospores, 12–14 × 4–6 µm. *L. dubitans* is essentially a 'specialist' of aspen, and other such specialists on the same tree were *Arthonia patellulata*, *Caloplaca ahtii*, *Candelariella superdistans*, and *Lecanora populicola*. BLS no. **2388** B J Coppins & C J Ellis

Lecidea alpestris Sommerf. (1825) BLS no. **2391**: (i) on boulder on southwest-facing hill-side, Caenlochan Glen (N side), valley of Glasalt Burn, VC 90, Angus, GR 37(NO)/18-77-, alt 650–720 m, August 1989, B J Coppins & O L Gilbert, Coppins 13293 (E); (ii) on top of two boulders in boulder field, Nether Craig, Glen Isla, VC 90, Angus, GR 37(NO)/171612, alt c 390 m, March 1996, R Munro (E). This species has a well-developed thallus of whitish-grey to pale grey-brown, convex areoles, c. 0.4—0.9 mm diam (K–, C–, PD–), and convex, black apothecia, 0.5–1.0 mm diam. The epithecium is dark green, and the hypothecium (especially in the lower part) is brownish orange-red, K+ purple red (in solution). The paraphyses are not swollen at the apices, and the narrowly oblong-ellipsoid, 0(–1)-septate ascospores measure 14–21 × 2.5–4 µm. Elsewhere in its range, this arctic-alpine species has been reported only as terricolous (overgrowing moribund bryophytes or plant detritus), but both the Scottish collections are from siliceous rocks. B J Coppins

Scutula dedicata Triebel, Wedin & Rambold (1997) BLS no **2394**: on upperside of thallus of *Peltigera didactyla*, on waste ground by car parking area, Dunstaffnage

Marine Laboratory, VC 98, Argyll Main, GR17(NM)/880341, alt 10m, May 2003, B J Coppins & S R Davey, Coppins 20982 (E). This lichenicolous lichen has a grey, warty thallus and, in the Scottish collection, subimmersed to almost sessile, grey to brown, ±globose pycnidia (0.2–0.3 mm diam) containing hyaline mesoconidia, 5–6.3(–7) × 2.6–3.2(–3.5) µm. It is possible that the British specimen of *Libertiella malmedyensis* Speg. & Roum. (on the same host, from Worcestershire; see Hawksworth in *Notes Roy. Bot. Gdn Edinb.* **40:** 375–397, 1982) is this species, but it could also be the mesoconidial state of another *Scutula* species (e.g. *S. epiblastematica*). From the discussions in Triebel *et al.* (*Symb. Bot. Upsal.* **32**(1): 323–337, 1997) it is clear that further collections are needed to establish with more confidence the anamorph-teleomorph connections in *Scutula*. Specimens with apothecia should be sought for in the British Isles. BLS no. **2394**. B J Coppins

Strigula phaea (Ach.) R.C. Harris (1980) BLS no **2392**:. The following collections are all in herb. E. (i) on *Quercus* at several locations, Clovelly Park and woodlands, VC 4, North Devon, GR 21(SS)/30-25- & 30-26-, October 1994, B J Coppins & A M O'Dare, Coppins 16466, 16470, 16473, 16474 & 16502. (ii) on *Fagus*, Mark Ash Wood, New Forest, VC 11, South Hampshire, GR 41(SU)/2–0–, April 1989, F Rose; (iii) also in New Forest, on *Fraxinus*, Red Shoot Wood, GR 41(SU)/1–0–, August 1989, F Rose, (iv) on base-rich old *Fagus*, Highland Water Inclosure, GR 41(SU)/252090, December 1995, N Sanderson. (v) on *Fraxinus*, north-west of Beinn Dubh, Killundine, Morvern, VC 97, Westerness, GR 17(NM)59-47-, February 1992, B J Coppins & A M O'Dare, Coppins 14838. (vi) at base of *Ulmus* in shaded underhang, Rubha Guail, Kinloch, Skye, VC 104, North Ebudes, GR 18(NG)/73-15-, May 1985, K Sandell. (vii) on roadside *Ulmus glabra*, to E of hotel, Applecross, VC 105, West Ross, GR 18(NG)/718445, August 2003, B J & A M Coppins & A Orange, Coppins 20984; (viii) also in VC 105 on mature *Fraxinus*, Rassal Ashwood NNR, GR 18(NG)/845431, June 1999, A M & B J Coppins, Coppins 18466. (ix) on *Betula*, above Galway Bridge, Galway River, VC H2, North Kerry, GR V(00)/9–8–, September 1982, P M Jørgensen 9075. (x) on *Fraxinus*, Inishfendra, Crom, VC H33, Fermanagh, GR H(23)/36-23-, July 1993, B J Coppins & A M O'Dare, Coppins 15880; (xi) also at Crom on *Quercus* by ride, Inisherk Wood, GR H(23)/35-24-, July 1993, B J Coppins & A M O'Dare, Coppins 15866. This widely distributed species (originally described from the West Indies), is apparently not uncommon on the ± basic bark of mature tree trunks in western Britain and Ireland. However, it is often inconspicuous and found only with macroconidia-containing pycnidia. In the *Lichen Flora of Great Britain & Ireland* (p 587) it was mentioned in the notes to *S. jamesii* as "a second potential undescribed species". It has previously been known under the provisional name '*S. diederichiana* Etayo, Cl. Roux & Sérus. ined.', and a description with illustrations is provided in Roux & Bricard, *Bull. Soc. linn. Provence* **44:** 117–134 (1993). An updated description will appear in a forthcoming monograph on *Strigula* in Western Europe and Macaronesia by Roux & Sérusiaux. BLS no. **2392**.

Tremella caloplacae (Zahlbr.) Diederich (2003) BLS no. **2389.**: in apothecia of *Caloplaca* spp. There are three specimens in E: (i) on *C. arnoldii* auct. brit. on pebble in old field wall, Porlock Bay, VC 5, South Somerset, 21(SS)/883479, July 1986, A M O'Dare; (ii) on *Caloplaca saxicola*, St Cyrus NNR, VC 91, Kincardineshire, 37(NO)/7–6–, December 1993, B J Coppins & A.M O'Dare, Coppins 15990; (iii) on *Caloplaca lactea* on shell fragment, Coul Links, VC 107, East Sutherland, 28(NH)/810950, August 1983, B J Coppins 9866a. See references. Diederich in *Bibl. Lichenol.* **61:** 167–169 (1996) & *Lejeunia* **173:** 31 (2003) B J Coppins

Tremella cladoniae Diederich (1996) BLS no. **2395**: on *Cladonia ochrochlora* on *Larix* × *marschlinsii* in plantation, Coed Cae Fali, near Maentwrog, Vale of Ffestiniog, V.C. 48, Merionethshire, GR 23(SH)/63964045, July 2002, A Orange 14050 (NMW.C.2001.027.119). New to British Isles. A Orange

Other records

Abrothallus caerulescens: (i) on *Xanthoparmelia conspersa* on upland Ordovician shale outcrop, Dinas, Ponterwyd, VC 46, Cardiganshire, GR22(SN)74-82-, alt 300m, August 2003. Confirmed by B J Coppins; (ii) on *X.conspersa* on dry stone boulder wall, Rhydymain, VC 48 Merionethshire, GR23(SH)80-22-, alt 150m, February 2004. First Welsh records. S P Chambers

Absconditella lignicola: on decaying litter on shaded acid bank in conifer plantation, 0.5 km west of Cwm-Ricket, Hafren Forest, VC 47, Montgomeryshire, GR 22(SN)/855867, alt 320 m, May 1991, A. Orange 8706b (NMW.C.2003.002.74). New to Wales. A Orange

Adelococcus alpestris: parasitic on *Acarospora glaucocarpa* on the side of a limestone gorge, Darnbrook Fell, near Malham, VC64, Mid-West Yorkshire, GR34(SD)/88-71-, alt 450m, August 2003. Determined by P Diederich. Probably second British record. Oliver Gilbert

Arthonia anombrophila: on *Corylus avellana* in old riparian woodland, Afon Ithon, South of Penybont, VC 43, Radnorshire, GR32(SO)11-63-, alt 230m, October 2003. First vice county record. S P Chambers

Arthonia graphidicola: parasitic on *Graphis scripta* on old *Fagus*, pasture woodland, Rushpole Wood, New Forest, VC11, South Hampshire, GR 41(SU)/31-09-, January 2004. Herb. Sanderson 623. New to Hampshire and second English record.
N A Sanderson

Arthonia invadens: parasitic on *Schismatomma quercicola* on mature *Quercus*, pasture woodland, Deazle Wood, Plaitford Common, VC8, South Wiltshire, GR 41(SU)/26-17-, February 2004. New to Wiltshire. N A Sanderson

Aspicilia aquatica: on semi-inundated boulders, Fairy Glen, Betws-y-coed, VC49. Caernarvonshire, GR 23(SH)80-54-, February 1969, Herb. LSR B".1985.1599. The specimen was collected as A. Laevata. Second record for the British Isles.
A Fletcher

Aspicilia grisea: (i) on seashore rock overhang, near Minard Castle Hotel Lochgilphead, VC 98, Argyll Main, GR 166(NR)97-94-, August 1973, Herb LSR B2.1985.1592. Collected as A. Cinerea (ii) at Craigendarroch, Ballater, VC92, South Aberdeenshire, May 1984. Herb LSR B13.1984.376. (iii) in disused granite quarry, Alter Stones, Markfield, VC 55, Leicestershire, GR 43(SK)/398185, August 1992. Herb LSR. A Fletcher

Aspicilia intermutans: (i) at Bardsey Island, VC 49, Caernarvonshire, GR 23(SH)/1200-2155-, September 1977. Herb. LSR B17.1985.107;(ii) at Bardsey Island, VC 49, Caernarvonshire, GR 23(SH)/1146-2162-, September 1977. Herb. LSR B17.1985.108; (iii) Porth Trecastell, Anglesey, VC 52, Anglesey, GR 23(SH)/323-71-, October 1971. Herb. LSR B2.1985.1589. On maritime, exposed sunny rocks. Most maritime gatherings of *A cinerea* are proving to be this, having conidia below 11μ long. Material needs collecting in the spring to be sure of conidia. A Fletcher

Aspicilia recedens (Taylor) Arold (1896): on the tops of smooth sunny Old Red Sandstone outcrops in the high flood zone of the Afon Tawe above Abercraf VC 42, Brecknockshire, GR 22(SN)/853202, October 1995. Confirmed by B J Coppins. With *Lecanora muralis, Candelariella vitellina, Lecanora polytropa* (parasitized by *Carbonea supersparsa*) and *Rhizocarpon geographicum* agg. The first modern Welsh record. R G Woods

Bacidia adastra: (i) on old inclined *Salix* by mere, Framlingham Mere, VC 25, East Suffolk, GR 62(TM)/284636, and (ii) on eutrophicated, large, slightly inclined branch of *Salix* beside mere at GR 62(TM)/283637, October 2003. Confirmed by B J Coppins. Both collections are with apothecia. Specimens in E. (iii) on exposed root of *Rhus typhina* in landscaped park of Toys-R-Us, Ipswich, VC25 East Suffolk, GR62(TM)126422, December 2003. Confirmed by B J Coppins. Fertile and fourth British record. P M Earland-Bennett

Bacidia caesiovirens: on *Quercus* trunk, 0.5 km south of Beasdale Station, Glen Beasdale SSSI, VC 97, Westerness, 17(NM)/702843, May 2003. Coppins 20981 (E). A rare occurrence of this species with apothecia A M & B J Coppins

Bacidia incompta: (i) a large patch on a wound on the base of a old *Abies* sp, churchyard, St Mary the Virgin, Netherbury, VC9, Dorset, GR 30(SY)/47-99-, 9 September 2003. Herb Sanderson 610. New substrate for this declining species. The tree also supported *Lecanactis subabietina* and *Opegrapha xerica*. N A Sanderson (ii) several new records from hollow *Ilex* in the New Forest, VC11, South Hampshire: at Rushpole Wood, 41(SU)31-09- January 2004; Undersley Wood 41(SU)/31-09-, February 2004 & Vinney Ridge, 41(SU)25-05-, February 2004,. N A Sanderson

Bactrospora corticola: On dry bark with *Lecanactis abietina* on old *Quercus*, on boundary bank between woodland & unimproved grassland, Loosehanger Copse, Redlynch, VC8, South Wiltshire, 41(SU)/21-19-, December 2003. Herb. Sanderson 604. First record for South Wiltshire. N A Sanderson

Biatora cf britannica: (i) On a fairly base rich *Quercus* trunk, *Fagus – Quercus* pasture woodland, Woodfidley Beeches, VC11, New Forest, GR 41(SU)/34-04-, June 1994. Herb. Sanderson 315. (ii) on base rich *Quercus* trunk, humid valley in relict Pasture Woodland, Hayter's Wood, Whiteparish Common, VC8, S. Wilts, GR 41(SU)/26-22-, January 2003. Herb. Sanderson 468. (iii) on base rich trunk of old *Fraxinus* in over stood coppice by ride, Eastdean Park, VC13, West Sussex, 41(SU)/90-11-, February 2003. Herb. Sanderson 498. (iv) on base rich bark on trunk of old *Fraxinus* standard in over stood coppice, Great Bradley Wood, Longleat Park/Selwood Forest meta-site, VC8, South Wiltshire, GR 31(ST)/79-41-, November 2003. Herb. Sanderson 592, retained in E. (v) on base rich *Acer campestre* trunk, riverine pasture woodland, Ivy Wood, New Forest, VC11, South Hants, GR41(SU)/31-02-, December 2003. Herb. Sanderson 606.
Sterile crustose material with Pd + orange – red, K–, C–, & UV–, punctiform to coalescing green soralia, collected 20 June 1994, from the New Forest by N A Sanderson, was originally determined as *Halecania viridescens* by B J Coppins. TLC revealed the presence of argopsin and norargopsin. Several other collections were then identified by comparison with this original specimen. Recently it has become clear that this taxa is not *Halecania viridescens*; the soralia are larger, regularly up to and over 0.3mm in diameter, and the taxa was found on sheltered base rich trunks in ancient woodlands, rich in old woodland epiphytes. In the field, less coalesced specimens have been collected as a rather too green *Lecanora jamesii*. *Halecania viridescens* is a species of branches with smaller soralia of about 0.2mm diameter. B J Coppins has now re-determined this taxa as being referable to the *Biatora efflorescens* aggregate. Habitat and distribution suggests that taxa is most likely to be *Biatora britannica*, recently described from southwest Wales (Printzen et al, 2001) but fertile material is required to confirm this. The above are the records of *Biatora cf britannica* made by N A Sanderson, some of these have previously been reported as *Halecania viridescens* in New and Interesting. It is likely that the taxa is widespread but rare in

epiphyte rich woodland in the southwest. Printzen, C., Lumsch H. T. & Orange, A. (2001). *Biatora britannica* sp. nov. and the occurrence of *Biatora efflorescens* in the British Isles. *Lichenologist* **33**: 181 – 187.

Blarneya hibernica: over-growing *Schismatomma decolorans*, on dry side of ancient *Quercus*, pasture woodland in marl pit, Jacks Wood, New Forest, VC11, South Hampshire, GR 41(SU)/31-02-, December 2003. Herb. Sanderson 607. Poor material first seen on November 2001 as isolated conidiophores on *Schismatomma niveum*, near *Enterographa sorediata*, since then independent thalli have developed and are overgrowing *Schismatomma decolorans*. First record for southern central England.
N A Sanderson

Caloplaca britannica: at base of dusty limestone sea cliff above sandy beach, High Cliff, Caldey Island, VC 45, Pembrokeshire, GR21(SS)/14-97-,alt c.2m, August 2003. Confirmed by B J Coppins. S P Chambers

Caloplaca ferruginea: several healthy thalli on the base of *Quercus*, Parham park, VC 13, West Sussex, GR(TQ)/06-14-, January 2004. Confirmation by B J Coppins of record first made by F Rose in 1968. S R Davey

Caloplaca lucifuga: on old *Quercus,* Maesllwch Castle Park, Glasbury, VC 43, Radnorshire, GR32(SO)16-40-, alt 190m, November 2003. New to the vice county.
S P Chambers

Caloplaca ulcerosa: on lignum with hollow ancient *Tilia,* Parham Park, VC13, West Sussex, 15(TQ)/06-14-, January 2004. Determined by B J Coppins. First record for the vice county. S R Davey

Candelaria concolor: on *Quercus* Lady Hay Wood, Groby, VC 55, Leicestershire, GR 43(SK)/51-08-, February 2004. First modern county record since Sowter. I G Pedley

Catillaria nigroclavata: in rain track on hollow *Fagus*, with *Caloplaca obscurella*, pasture woodland Wick Wood, Highland Water Inclosure, New Forest, VC11, South Hampshire, GR41(SU)/26-09-, January 2004. Herb Sanderson 619. First confirmed record for Hampshire. (There is an unconfirmed record from SU(41)/50, and information welcomed). N A Sanderson

Cecidospora cladoniicola: on *Cladonia furcata*, Raven Point, VC H12, Wexford, 31(T)/11-23-, April 1977, leg. M R D Seaward in Herb E. Determined by B J Coppins. New to Ireland.

Cliostomum flavidulum: on mesic bark on old *Fagus*, pasture woodland, Gritnam Wood, New Forest, VC11, South Hampshire. 41(SU)/28-06-, December 2003. Herb. Sanderson 616. Determined by B J Coppins. First record for Hampshire

N A Sanderson, B W Edwards & K Sandell

Collema callopismum: on vertical, slightly flushed, northwest facing limestone cliff, with *Verrucaria nigrescens*, *Caloplaca flavescens*, near Rock Farm, Creigiau Eglwyseg, Llangollen, GR 33(SJ)/22284600, March 2003, A. Orange 14359 (NMW.C.2003.002.192). New to Wales. A Orange

Cyrtidula hippocastani: on twigs of *Populus tremula* at side of road, East Hopes, Lammermuir Hills, VC 82, East Lothian, GR36(NT)/556642, alt 225 m, February 2004, Coppins 21122 (E). New to the Lothians. B J Coppins

Flavoparmelia soredians: (i) on *Fraxinus*, Ashton Business School car park, Birmingham, VC 38, Warwickshire, GR 42(SP)/07-88-, June 2003. New to Warwickshire; (ii) on seat of child's swing, Groby, VC 55, Leicestershire, GR 43(SK)/51-07-. It has been growing since 1999, but has only recently formed the characteristic farinose soredia and has tested K + y-r. _Prior to this it was K-. New to Leicestershire; (iii) on upper branch of *Fraxinus*, Groby, VC 55, Leicestershire, GR 43(SK)/52-07-, December 2003. Second county record. Confirmed by A Fletcher; (iv) on *Quercus*, Lady Hay Wood, Groby, VC 55, Leicestershire, GR 43(SK)/51-08-, January 2004. Third county record. These county records indicate a dramatic increase in sites for the Midlands, where it was previously only known from Evenley churchyard, VC 32, Northamptonshire. I G Pedley

Graphina pauciloculata: on *Betula pubescens*, near Bryn Gwynant, Nantgwynant, GR 23(SH)/639512, alt 150m, November 2002, A Orange 14259 (NMW.C.2003.002.191). New to VC Caernarvonshire. A Orange

Hymenelia heteromorpha: on steep, north-facing limestone cliff, near Rock Farm, Creigiau Eglwyseg, Llangollen, GR 33(SJ)/22114520, alt. c. 320m, March 2003, A. Orange 14333 (NMW C.2003.002.173). New to Wales. A Orange

Laeviomyces pertusariicola: on *Pertusaria leioplaca* on *Acer pseudoplatanus*, Drive Wood, Castle Hill, Llanilar, VC 46, Cardiganshire, GR22(SN)62-74-, alt 60m, November 2004, Confirmed by B J Coppins. First vice county record. S P Chambers

Lecania sambucina: on trunks of *Populus tremula*, Kinrara, Speyside, VC 96, Easterness, GR 28(NH)/863083, alt 250m, July 2003, Coppins 21059 (E).

B J Coppins & C J Ellis

Lecania suavis: on vertical faces of greywacke beds in Silurian shale sea cliff, Allt Wen, South of Aberystwyth, GR22(SN)57-79-, alt 30m, January 2003. Determined by B J Coppins. First vice county record. S P Chambers

Lecanora conizaeoides f. variola: on *Alnus glutinosa* in estuarine carr, Morfa Dyfi, VC 47, Montgomeryshire, GR22(SN)69-98-, December 2000. S P Chambers

Lecanora piniperda: on lignum of split *Quercus* trunk, Coed Frongoch, Dol-y-Bont, VC 46, Cardiganshire, GR22(SN)63-87-, alt 30m, January 2004. Confirmed by B J Coppins. First vice county record. S P Chambers

Lecanora strobilina: frequent on trunks of *Larix decidua,* on hillside above Capel Bangor, VC 46, Cardiganshire, GR22(SN)65-80-, alt 100m, December 2003. Confirmed by B J Coppins. S P Chambers

Lecanora sublivescens; on *Quercus*, Parham Park, VC 13, West Sussex, GR 51(TQ)/06-14-, January 2004. Confirmed by B J Coppins. First record for Sussex since 1989. S R Davey

Lecanora zosterae: (i) on decayed *Armeria* at the extreme edge of cliff top, Grind of the Navir, Esha Ness, Mainland, VC 112, Shetland Islands, GR 411(HJ)/21-80-, May 1980; (ii) on old and decayed rootstocks of *Armeria*, cliff top vegetation, The Houb, Tangwick, Esha Ness, Mainland, VC 112, Shetland Islands, GR 411 (HJ)/22-77-, July 1990; (iii) associated with dead *Armeria* cushions on overhanging cliff top edge The Holm, Uyea, Mainland, VC 112, Shetland Islands, GR 411(HJ)/32-92-, July 1993; (iv) loosely clustered around old stem base of *Armeria* on cliff top edge, south side of Calder's Geo, Esha Ness , Mainland VC 112, Shetland Islands, GR 411(HJ)/20-03-, July 2003. These records relate to plants found on the extreme edge of mostly vertical sea cliffs facing the Atlantic. We have not seen this species on *Armeria* in locations set back from the cliff edges, so some aspect of the cliff edge habitat may be important in controlling its distribution in Shetland. There may be other colonies along this coastline, but much of its remote and dangerous for access. They ere not referred to in Laundon's paper (*Lichenologist* **35**, 97 - 102) and constitute new records for the Shetland Islands and a northern extension to its range D H & C Dalby.

Lecidea doliiformis: on dead tree, Parham Park, VC13, West Sussex, GR51(TQ)/06-14-, March 2003. Determined by N Sanderson. First record for Sussex.
Sussex Lichen Recording Group

Lecidea hypopta: (i)on twigs of *Fraxinus* by stream at gap in valley woodland, Fennie Burn, Hopes, Lammermuir Hills, VC 82, East Lothian, GR: 36()/56-62-, alt 280 m, February 2004, Coppins 21120 (E). An unusual habitat for this species, which is

normally found on the trunks of old pines, or the dry, large stumps of pine, oak or sweet chestnut. It was associated with other acidophiles such as *Fuscidea lightfootii*, *Lecanora pulicaris*, *Scoliciosporum chloroccocum* and the normally lignicolous *Lecanora varia*. B J Coppins

(ii) on a stunted *Pinus sylvestris* in *Salix – Betula* bog woodland, Bagnum Bog, New Forest, VC11, S Hampshire, GR 41(SU)18-02-, December 2003. Herb Sanderson 603. First modern record for southern England. N A Sanderson

Lecidea nylanderi: on ± horizontal trunk of old *Betula* on south-facing wooded slope, Fennie Burn, Hopes, Lammermuir Hills, VC 82, East Lothian, GR 36(NT)/56-62-, alt 290 m, February 2004, Coppins 21115 (E); also on old juniper nearby. New to the Lothians. B J Coppins & C.J. Ellis

Lecidea promixta: locally abundant on flat Old Red Sandstone fragments exposed in erosion gullies in degrading M20 *Eriophorum vaginatum* blanket mire, between Hay Bluff and Black Hill, Black Mountains, VC 36, Herefordshire, GR32(SO)/25-35-, alt 670m, February 2004. New to Herefordshire. S P Chambers

Lecidea sarcogynoides: on well-lit, vertical side of coarse-grained, dressed sandstone block in riverbank bridge abutment, River Wye, Bridge Sollers, VC 36, Herefordshire, GR32(SO)/41-42-, alt 60m, June 2003. Confirmed by B J Coppins. S P Chambers

Lempholemma botryosum: on ledge of a basic shale cliff at Rillage Point, VC4 North Devon GR21(SS)/543486, November 2003. Determined by O L Gilbert. New for the south of England. B Benfield

Leptorhaphis atomaria: abundant on young trunks of *Populus tremula* at side of road, East Hopes, Lammermuir Hills, VC 82, East Lothian, GR36(NT)/556642, alt 225 m, February 2004, Coppins 21123 (E). New to the Lothians. B J Coppins

Lobaria pulmonaria: fertile on stunted suppressed *Fagus*, Vinney Ridge, New Forest, VC11, South Hampshire, 41(SU)/25-05-, November 2003. First record of fertile *Lobaria pulmonaria* since the 19th century from Hampshire. N A Sanderson

Melaspilea amota: on mature *Quercus*, pasture woodland, Deazle Wood, Plaitford Common, VC8, South Wiltshire, GR 41(SU)/26-17-, 29 February 2004. New to Wiltshire. N A Sanderson

Loxospora elatina: on ± horizontal trunk of old *Betula* on south-facing wooded slope, Fennie Burn, Hopes, Lammermuir Hills, VC 82, East Lothian, GR: 36(NT)/56-62-, alt 290 m, February 2004, Coppins 21114 (E). New to the Lothians. B J Coppins

Melaspilea interjecta: on flushed north-northeast facing upland rockface, Berthgoed, Strata Florida, VC 46, Cardiganshire, GR22(SN)76-65-, alt 330m, September 2003. S P Chambers

Melaspilea lentiginosa: parasitic on *Phaeographis dendritica*, on old *Ilex*, in *Quercus* pasture woodland, Lower Hooksbury Wood, Crownhill, Down, VC3, S Devon, GR 20(SX)55-59-, September 2003. Herb Sanderson 578. First modern record from South Devon. N A Sanderson

Micarea ternaria: on young stem of *Fraxinus excelsior* adjacent to sheltered rock face in woodland, with other normally saxicolous species including *Enterographa zonata* and *Cystocoleus ebeneus* , Coed Gwyn-fynydd, 3 km north of Ganllwyd, VC 48, Merionethshire, GR 23(SH)/736.278, March 2002, A Orange 13668 (NMW.C.2001.024.320). New to Wales. A Orange

Nigromacula uniseptata: on *Hypotrachyna sinuosa*, Reraig, Lochcarron, VC 105, West Ross, GR 18(NG)/839363, alt 10 m, December 2003, Coppins 21124 (E). This species normally parasitizes *H. laevigata* B J & A M Coppins

Ochrolechia microstictoides: (i) old *Betula pubescens* in bog woodland, Avon Water, New Forest, VC11, S Hampshire, 40(SZ)26-99-, 4 January 2003. Herb Sanderson 504. Det. B J Coppins. First Record for Southern England. (ii) on *Betula*, pasture woodland, Queen Bower, New Forest, VC11, South Hampshire, 41(SU)28-04-, May 2003. (iii) *on Betula* in Bog Woodland, Newpiece Moor, Burton Park, Burton Pond LNR, VC13, West Sussex 41(SU)/97-17-, June 2003. First record for Sussex. N A Sanderson

Opegrapha fumosa: on 15 *Quercus* and 1 *Fraxinus*, in humid sheltered woodland, Great Bradley Wood, Longleat Park/Selwood Forest meta-site, VC8, S Wiltshire, 31(ST)78-40- & 31(ST)79-41-, November 2003. The largest known population outside the New Forest in southern England. N A Sanderson

Opegrapha subelevata: growing on old *Armeria* tufts which have a thin covering of soil on small calcareous shale cliff, below the Coastguards' houses on the Ilfracombe to Combe Martin road at Rillage Point, VC 4, North Devon, 21(SS)543486, August 2003. Confirmed by B Benfield & V Giavarini. This record substantiates that made at a roadside cutting near, by P W James during the field meeting in connection with the International Mycological Congress held in Devon in 1971. T Holwill

Opegrapha xerica: on dry side of ancient *Quercus*, lane bank, Deazle Wood, Plaitford Common, VC8, South Wiltshire (modern Hampshire), GR 41(SU)/26-17-, February 2004. Herb Sanderson 643. New to Wiltshire. N A Sanderson

Parmelinopsis minarum: (i) on *Pinus* bark, Tyddyn Rhyddid, near Crafnant, VC 48, Merionethshire, GR 23(SH)/604294, alt 130m, May 2002, V.J. Giavarini (NMW.C.2002.018.3); (ii) on drystone wall, Coed Garth-byr, Bryn Bwbach, Talsarnau, V.C. 48, Merionethshire, GR 23(SH)/624362, 30 May 2002, A Orange 13998 (NMW.C.2001.024.481). New to Wales A Orange

Porina byssophila: on damp, lightly shaded outcrop c. 100 m from sea, with *Verrucaria maura, Leptogium britannicum*; Port Mora, Portpatrick, VC 74, Wigtownshire, GR 15(NW)/992552, April 1989, A Orange 7600 (NMW.C89.21.35). An overlooked species, on limestone or slightly basic siliceous rocks; close to *Porina linearis*, but with a distinctly epilithic thallus; differs from *P. chlorotica* in K + grey-blue pigment in involucrellum. New to Britain (known from Ireland). Also confirmed from VC 41, 46, 48. A Orange

Porina grandis: on rock in streamlet in woodland, south of Ceunant Mawr, 4 km north-east of Nantgwynant, GR 23(SH)/660.535, alt. 245 m, 3 January 1992, A Orange 9152 (NMW.C.2001.024.534). Distinguished from *Porina guentheri* by the wider ascospores and presence of a ring in the ascus apex; the perithecia are not always larger. New to Wales. A Orange

Porocyphus leptogiella: on the 45° sloping tops of smooth, sunny but seasonally wet Old Red sandstone outcrops in the flood zone of the Afon Tawe above Aberfcraf VC 42, Brecknockshire, GR 22 (SN)/853202, October 1995. Determined by B.J. Coppins. First record for the vice county. R G Woods

Protoparmelia atriseda: on south- southeast facing upland Ordovician rock outcrop, Dinas, Ponterwyd, VC 46, Cardiganshire, GR22(SN)74-82-, alt 300m, August 2003. S P Chambers

Protoparmelia oleagina: abundant and fertile on chestnut fencing, Parham Park, VC13, West Sussex, GR 51(TQ)/06-14., March 2003. First record for Sussex since 1973 and new to the vice county. Sussex Lichen Recording Group

Punctelia borreri: on well-lit trunks of *Salix cinerea* in *Salix – Myrica* carr, Cors Fochno (Borth Bog), VC 46, Cardiganshire, GR22(SN)62-92-, alt 5m, March 2002. Confirmed by A Orange by microcrystal test (gyrophoric acid present). First vice county record. S P Chambers

Pyrenopsis grumulifera: on unshaded rock in stream, mostly above a zone of *Ionaspis lacustris, Porpidia hydrophila, Stigonema mamillosum*, below Pistyll Gwyn, Afon Las,

Pass of Llanberis, V.C. 49, Caernarvonshire, GR 23(SH)/620580, May 1998, A. Orange 12099 (NMW.C.1999.011.76). New to Wales. A Orange

Ramalina pollinaria: on church wall, West Keal, VC54, North Lincolnshire, GR 53(TF)/36-63-, August 2002, [Herb MRDS 112836]. Confirmed by B J Coppins. Only the second modern record for Lincolnshire. A further record c. 1888 from Luddingdon may be this, but it is not supported by herbarium material.

M R D Seaward

Ramalina subfarinacea: on siliceous gravestones in church yard, West Keal, VC54, North Lincolnshire, GR53(TF)/36-63-, August 2002 Herb. MRDS 112837. Determined by B J Coppins. Uncommon in eastern England and new for Lincolnshire.

M R D Seaward

Ramonia chrysophaea: on spongy base rich bark, on old *Quercus* standard in coppice, Great Bradley Wood, Longleat Park/Selwood Forest meta-site, VC8, South Wiltshire, 31(ST)/78-41-, November 2003. Herb Sanderson 587. Second record for Wiltshire.

N A Sanderson

Ramonia interjecta: on base rich rough bark of a broken topped *Fagus*, with *Caloplaca obscurella*, *Orthotrichum diaphanum* and *Cryphaea heteromalla*. Glade edge, Gritnam Wood, New Forest, VC11, S. Hampshire, GR 41(SU)/28-06-, December 2003. Herb. Sanderson 613. Determined by N A Sanderson. First record for Hampshire B W Edwards & N A Sanderson

Rhizocarpon geographicum: a single thallus on table tomb in church yard, Hagworthingham, VC54, North Lincolnshire, GR53(TF)/34-69-, July 2003. Only second time recorded in Lincolnshire. M R D Seaward

Sphinctrina anglica: on *Protoparmelia oleagina* on chestnut fencing,, Parham Park, VC13, West Sussex, GR51(TQ)/060414., March 2003. First record for Britain since 1973 by B J Coppins, in East Sussex. New vice county record for West Sussex.

Sussex Lichen Recording Group

Schismatomma graphidioides: on sheltered trunk of *Acer pseudoplatanus* and *Quercus*, Drive Wood, Castle Hill, Llanilar, VC 46, Cardiganshire, GR22(SN)6--7--, alt 60m, November 2003. First vice county record. Associates included *Graphina anguina, Enterographa crassa, Opegrapha sorediifera* and an undescribed species of *Anisomeridium* with large pycnidia. S P Chambers

Staurothele hymenogonia: on church wall, Great Limber, VC54, North Lincolnshire, GR54(TA)/13-06-, September 2003. Only the second time recorded for Lincolnshire.
M R D Seaward

Stigmidium aggregatum: on *Pertusaria pseudocorallina* on weakly nutrient-enriched south-facing rock slab, Dinas, Ponterwyd, VC 46, Cardiganshire, GR22(SN)74-82-, alt 310m, August 2003. Confirmed by B J Coppins. First vice county record.
S P Chambers

Umbilicaria deusta: on flat surface of basaltic outcrop on southeast side of Bonchester Hill southeast of Hawick, VC80 rock, Roxburghshire, GR 36(NT)/59-11-, alt 310m, September 2003. A small colony c. 10 x 10 cm. New to the Scottish Borders.
R W M Corner

Verrucaria scabra Vezda (1970): on wet dripping on bank by river, Duhonw, Llanddewi'r Cwm, near Builth Wells, VC 42, Breconshire, GR 32(SO)/034488, June 1986, A Orange 4110 (NMW).C89.3.31). Similar to *V rheitrophila*, but with green, (rather than brown), thallus pigment, slightly larger and more oblong ascospores, larger and more widely spaced perithecia, and a tendency for the medulla to be more darkly pigmented. Also confirmed from VC4, 49, 64, 69. A Orange

Vezdaea leprosa: terricolous on a steep bank with bryophytes, Nyman's wood VC13 West Sussex, GR 51(TQ)/26-09-. Second record for Sussex and no noted association with heavy metal substrate. S R Davey

Corrections:

In the previous issue confusion occurred in converting 100km grid letters to numbers: 30(ST) should read 31(ST) and 40(SU) should read 41(SU)
N A Sanderson

The entry for *Fulgensia fulgens* in *Bulletin* **93** p69 should read 'Confirmed by B Benfield. Recorder T Holwill'.

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The following are for sale with 50% of the proceeds going to the British Lichen Society
Lichenologist vols 17 - 19, 27 - 36
Bulletin 56 - 60, 73 - 93
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Guide to the literature for the identification of lichens
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Symbiosis Oxford Biology Reader D C Smith
Analytical keys to British Macrolichens on foolscap sheets

Offers to Jered U Tuck, Flat 1, Kernow Court, Springfield Road, Newquay, Cornwall TR7 1RG tel. 01637 878281

SUBMISSION DEADLINE

Please would intending contributers to the Winter 2004 issue of the Bulletin submit their copy to the Editor by 21 September. It would be helpful but by no means essential for authors of longer articles prepared on a word processor to supply a copy on a 3.5inch floppy disc in addition to hard copy. This should preferably be in MS Word, but can be in RTF. Word Perfect, any format from an Apple Mackintosh. Alternatively it can be sent by e-mail to plambley@aol.com as an attachment. This should preferably be in MS Word.

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