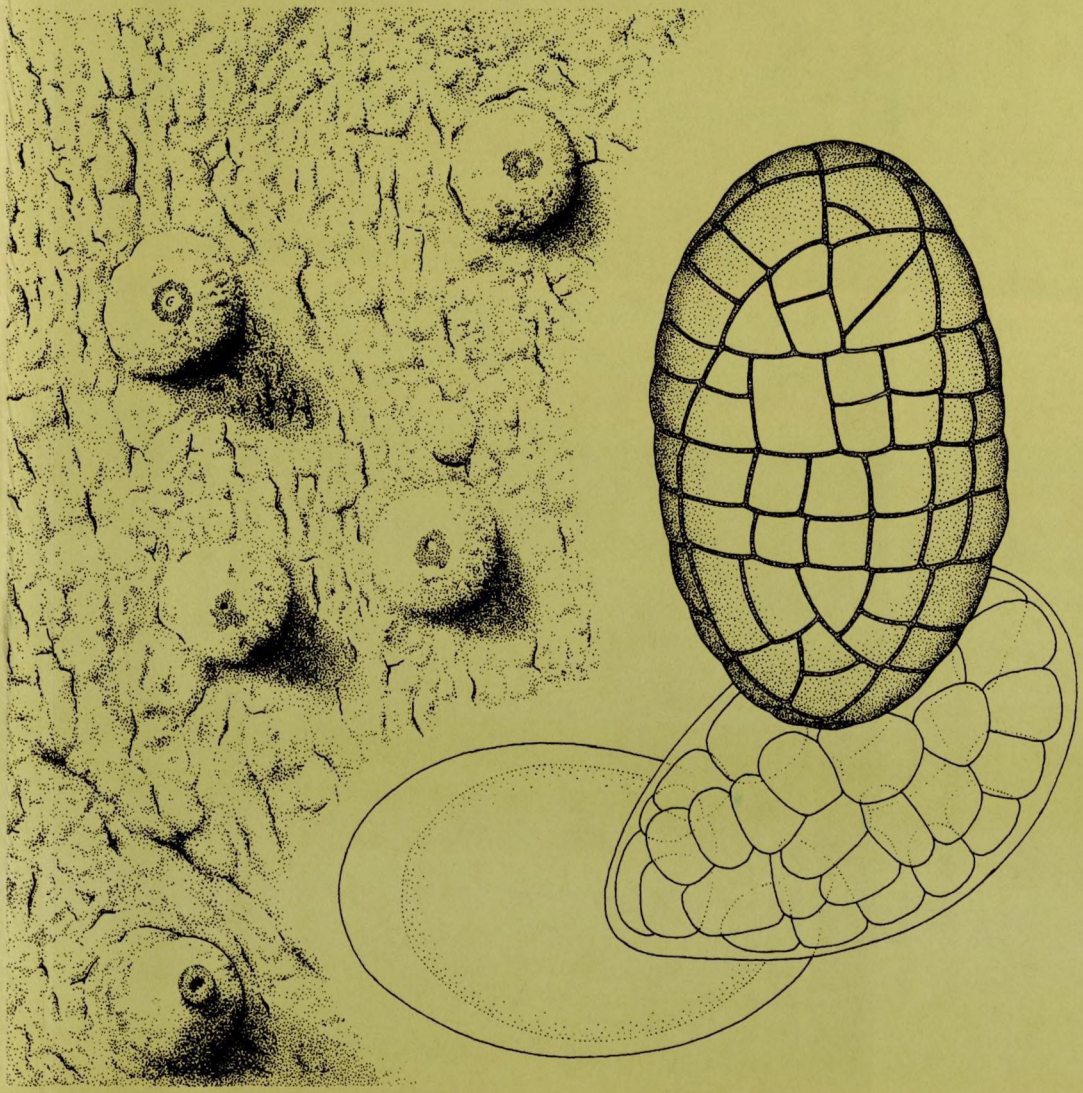
British Lichen Society Bulletin

Number 88 Summer 2001



Edited by P W Lambley

FORTHCOMING BLS MEETINGS

KINGCOMBE (*OPEGRAPHA* WORKSHOP)
Leader: Peter James — 6-13 July 2001
CHURCH STRETTON, SHROPSHIRE
Leader: Ivan Pedley — 26-29 October 2001

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SUBMISSION DEADLINE - Winter *Bulletin* September 14.
Cover Artwork *Polyblastia cruenta* by Alan Orange.

LICHENICOLOUS FUNGI IN THE NETHERLANDS OVER TIME

In this article I want to try and answer the question - is the recent increase in the diversity of lichenicolous fungi a real increase in species due to changing environmental pollution or to a greater interest in lichenicolous fungi by lichenologists? Did lichenicolous fungi disappear in the past together with their decreasing hosts? Have there always been enough hosts and did lichenicolous fungi disappear because of SO_2-pollution? Did they return as a result of changing environmental pollution? Is it a strictly Dutch phenomenon or is it also observed in other European countries?

Introduction

Lichens may have to deal with lichenicolous lichens, being parasitic on them or lichenicolous fungi (LF), fungi being parasitic on lichens.

These may behave saprophytically, parasitically or parasymbiontically, using the host's products of metabolism without visibly damaging it. These lichenicolous fungi are often so little, sunk in the thallus, that they are likely to be overlooked in the field. They are sometimes betrayed by discoloration or degeneration of the thallus, but by no means always. The most important data about LF in The Netherlands are to be found in Brand *et al.*(1988) and Aptroot *et al.* (1999). In a survey it is shown how many species of LF have been found in the several periods in The Netherlands.

- Up to 1910: 9 LF.
- Between 1911 and 1970: 5 LF.
- Between 1971 and 1988: 28 LF.
- Between 1989 and 1999: 37 LF.

Some questions arise immediately. Why are there so few finds before 1970? Has this anything to do with SO_2-pollution? Why such an increase after 1971? Is it because of a greater interest in LF or is there a real increase in species?

Methods

Dutch collections of *Lecanora chlarotera* both from the National Herbarium at Leiden and from private collections have been studied in order to determine the occurrence of *Vouauxiella lichenicola* (Lindsay) Petrak & H. Sydow, a lichenicolous fungus (Fig. 1.). Meanwhile collections from England and Austria were studied in order to compare the Dutch results. The collections are divided into five periods. From each period about

65 collections have been studied. A questionnaire was sent to five specialists who all have published works on LF and it was explained, what I am working on and they were asked for a reaction. The lichenologists were: P. Diederich, J. Etayo-Salazar, J. Hafellner, D.L. Hawksworth and R. Santesson.

The questions were:

1. Is there in your country a rapid increase in lichenicolous fungi?
2. Does this go together with a clear increase in lichen species?
3. Is there in your country also a period in which hardly any lichenicolous fungus was found?
4. Did SO_2 and NH_3-pollution also play a substantial part in your country?
5. Has heavy metal pollution played an important part in your country?
6. Do you think it is only an increasing interest in lichenicolous fungi among lichenologists?

Results

Table.1 shows how many collections of *Lecanora chlarotera* were studied and the percentage infected by *V. lichenicola* in the **The Netherlands**. Also see figs. 1-6.

Period	Number	%Infected
1869/1940	71	10%
1941/1950	64	34%
1951/1970	65	28%
1971/1990	58	24%
1991/2000	63	9%
Britain and Ireland		
1914/1970	17	23.5%
1971/1996	16	18.8%
Austria		
1936/1999	36	8%

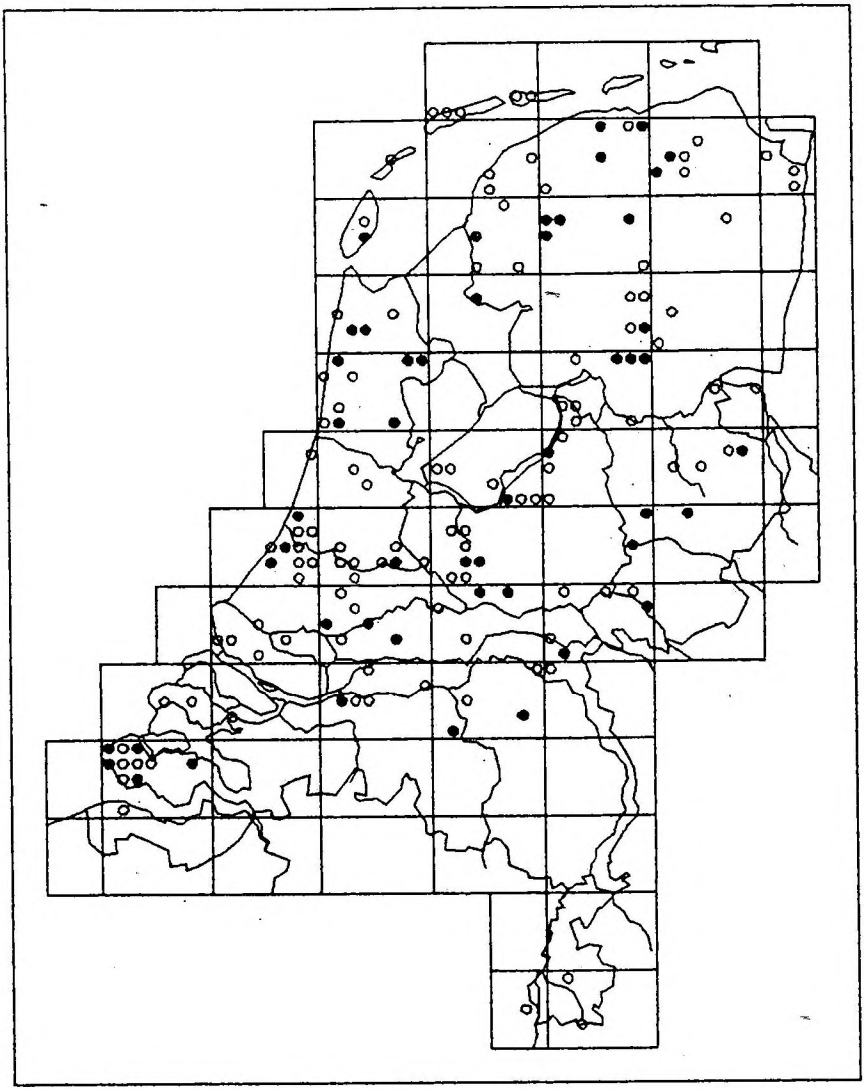

Fig 1. *Lecanora chlarotera* and *Lecanora chlarotera* infected by *Vouauxiella lichenicola* (black dot)

Fig. 1 clearly gives a completely different picture than was to be expected on the grounds of a greater interest in LF. In the last period only 9% has been infected. Moreover it has been proved that *V. lichenicola* also occurred between 1869 and 1970 in The Netherlands, which was not known until now.

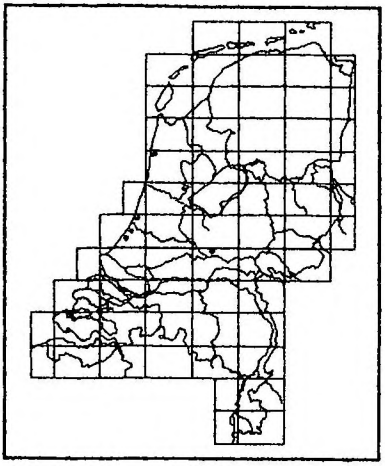

Fig. 2. *V. lichenicola* 1869-1940.

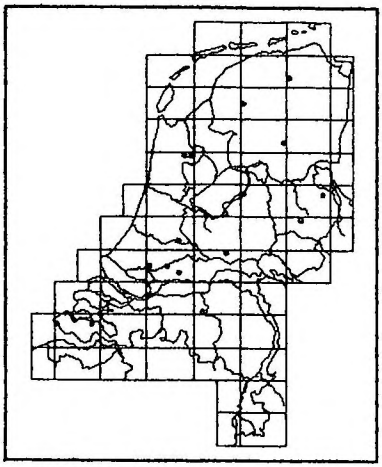

Fig 3. *V. lichenicola* 1941-1950.

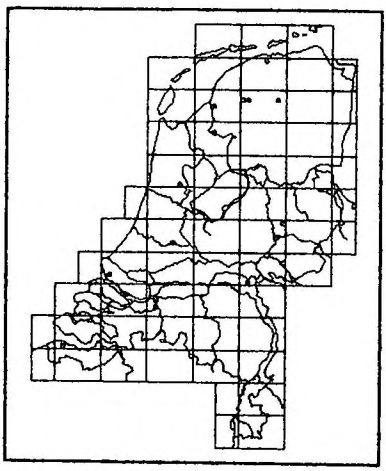

Fig. 4. *V. lichenicola* 1951-1970.

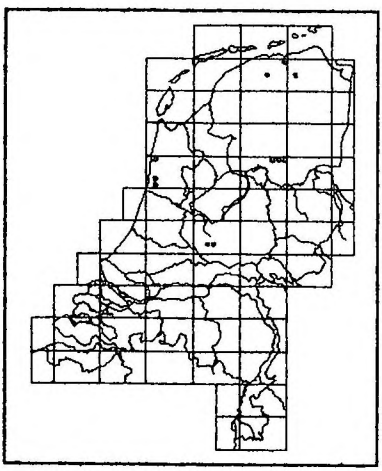

Fig. 5. *V. lichenicola* 1971-1990.

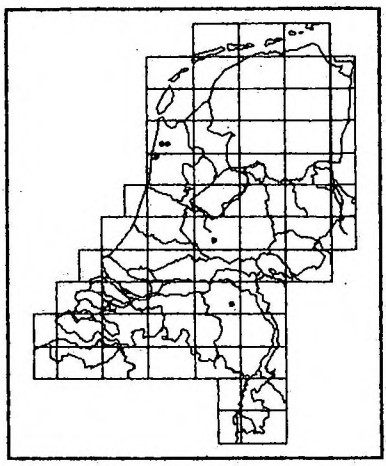

Fig. 6. *V. lichenicola* 1991-2000.

In Britain and Ireland the situation is comparable to the Dutch one. The Austrian situation might suggest that *V. lichenicola* has profited by SO_2-pollution.

There was a variety of answers from the specialists:

Four specialists stated that a greater awareness of these fungi is the main reason for an increase in the number of records. Hawksworth said: "The number known has dramatically increased since the publication of my 1983 key with 218 and currently stands at 370, an increase of 69%". He goes on: "It is also interesting to see how the number of known lichenicolous species worldwide has increased. It increased by 96% between the 1976 Clauzade *et al.* key with 457 species and January 1996, when there were 894".

Three specialists said that the healthier the ecosystem, the more LF. Healthy lichens are more liable to be attacked than decaying ones (Hafellner), although Santesson thinks that decaying lichens will be more quickly attacked.

David Hawksworth adds that after the decrease of SO_2-pollution several macrolichen species have returned, but these are generally free of LF. A long history of ecological

continuity is needed. Lichenicolous fungi spread much more slowly than their hosts: those that occur on old forest indicator species provide a second tier of refinement in attaching importance to such sites. A site that has *Thelotrema lepadinum* with *Skyttea nitschkei* is therefore a much more important site than one with the *Thelotrema* alone.

Three specialists thought that so few lichenicolous fungi were found in the past because lichenologists were not interested in them. Furthermore, they only searched for well-developed lichens, not those which were decaying.

One specialist thought that many LF have disappeared together with their hosts because of SO_2-pollution (Etayo).

Two specialists say that an increase in LF, apart from more awareness, is very highly possible in The Netherlands (Hafellner), as this this seems to be the case in other densely populated parts of Europe (Santesson).

Discussion

Protoparmelia hypotremella (Aptroot et al. 1997) was recently found in The Netherlands. *Tremella wirthii* (Diederich 1996) occurred just once on 5 collections. In Germany it was found on 4 out of 5 collections, whereas it also occurred on one collection found in Austria by Kok van Herk. *T.wirthii* seems to be widespread in Central-Europe. Although there is a chance that the Dutch collections happened to be the "wrong" ones, it is remarkable that it only occurs on one out of 35 collections. In SO_2 polluted regions - The Netherlands - it seems to be very rare. You get the same impression when reading *De Standaardlijst van de Nederlandse Korstmossen* (Brand et al.1988). Nine lichenicolous fungi have become extinct. It is remarkable that only four species are mentioned in Brand et al.(1988) between 1910 and 1970, seven out of nine extinct species date from before 1910, which happens to be the period in which SO_2-pollution plays an important part.

Is it accidental that between 1910 and 1970 both mycorrhiza-forming fungi and LF have declined, the interaction between fungus and roots being very much identical to that of the fungus and alga in a lichen? *Die Hyphen des Parasymbionten durchziehen das Flechtenlager, wo sie mit den Algen in Kontakttreten können. Ähnlich wie die Mycobiont kann auch der Parasymbiont Haustorien in die Algenzellen entzenden, die Algen umspinnen oder ohne sichtbaren Kontakt zu den Algen in der Thallusgallerte wachsen* (Henssen & Jahns 1974). Arnolds (1985) says that it is very likely that the decrease in mycorrhiza-forming fungus species is the result of changes in the ground because of pollution.

After 1970 many new LF are found, a period in which SO_2-pollution has been reduced. Is this also a European phenomenon? In recent Dutch lichenological reports, also from trips abroad, more LF are mentioned than formerly. A European development of LF or only more attention?

The idea that LF would have disappeared together with their - weakened - hosts, however obvious it seems to be, is not true. All LF species occur on hosts which are not at all rare such as *Cladonia, Lecanora, Lecidea, Peltigera, Physcia, Physconia* and *Verrucaria*, and species like *Lecanora muralis, Parmelia subrudecta, Parmelia sulcata, Schismatomma decolorans, Trapelia coarctata and Xanthoria parietina.* This conclusion is affirmed by the fact that only five species out of 33 which became extinct in The Netherlands before 1900 (Aptroot et al.1998), are possible hosts according to Hawksworth (1983). From the 83 Red List species (Aptroot et al.1998) only 5 are given as possible hosts.

It is well-known that lichens quickly react to environmental changes. SO_2 pollution has been reduced. Many epiphytic lichens gradually return such as *Parmelia borreri, Parmelia caperata* and *Parmelia soredians* (v.Herk & Aptroot 1996). This hardly contributed to the number of hosts, as Hawksworth also stated above. However, that after 1970 so many new LF have been found, cannot be accidental and cannot be a matter of just more interest, which - no doubt - also exists. More LF would have been found in the Herbarium at Leiden, if during this period (until 1970) lichens would have been richer in LF. Before 1910 only nine LF were to be found on different lichen species in Leiden!

Conclusion

To summarise, the few finds of LF in Leiden between 1910 and 1970 certainly were not due to a lack of hosts or to the fact that only uninfected and well-developed species would have been collected. While studying herbarium-material I have most certainly not got this impression. Kok van Herk told me exactly the same after studying the WHEN and Barkman collections.

Most lichenicolous fungi have certainly not disappeared together with their hosts. The commonest lichen species have always been possible hosts. Triebel (e-mail) stated that strong host specific taxa have disappeared together with their hosts. In The Netherlands *Lichenomyces lichenum* has most certainly disappeared together with *Lobaria pulmonaria*, but she has a strong impression that in Central Europe species of *Scutula* have much more diminished than their hosts being *Peltigera canina* and *P. horizontalis*, which might be through climatic and ecological changes.

Decrease in SO_2-pollution plays an important part in both the increase and decrease in LF species in The Netherlands, and possibly all over Europe. Most parasites will have benefited by less SO_2-pollution, *Athelia arachnoidea*, *Lichenoconium erodens* and *Vouauxiella lichenicola*, however, have profited by more pollution. *V. lichenicola* has decreased after the decrease of SO_2-pollution.

It cannot be denied that a greater awareness plays a part. More lichenicolous fungi will be found. It is, however, only part of the truth. Nothing can be said about a possible increase or decrease in LF species without studying herbarium-material and/or monitoring. *Hobsonia christiansenii* is certainly an example, where more awareness does not play a part. Kok van Herk has been investigating oak (*Quercus* sp) in several provinces since 1989, but he did not find *H .christiansenii* until 1998, when he found it in large quantities. The orange-red colour cannot have been overlooked in the past. The same holds good for *Athelia arachnoidea* and *Lichenoconium erodens*, being pollution-tolerant species. More awareness does not play a part here.

Most probably there has been a real increase in LF during the last few decades as a possible result of decreasing SO_2 pollution, as both Santesson and Hafellner state independently. *Tremella wirthii* and *Hobsonia christiansenii* may be examples, although the latter is possibly reacting to the tremendous increase of *Physcia tenella* because of NH_3 pollution.

Acknowledgements
I am grateful to Mark Seaward, André Aptroot and Kok van Herk for critically reading this paper, for their valuable comment and for the loan of their *Lecanora chlarotera* collections, to Othmar Breuß, Maarten Brand and Laurens Sparrius for lending me their material for closer study, to P. Diederich, J.Etayo-Salazar, J. Hafellner, D.L. Hawksworth and R. Santesson for answering my questionnaire and to D. Triebel for answering my letter. I thank Gerard Thijsse, curator of the lichen herbarium at Leiden, and last but not least Marianne Spier for helping me with time-consuming work.

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JANUARY MEETINGS 2001

Evening buffet

About thirty members attended a sumptuous buffet in the rooms of the Royal Entomological Society at Queens Gate. There was a wonderful range of dishes including Saucisson Montagne, German Pepper Salami, Smoked Salmon, Chorizo Extra, several quiches, Paella de Mariscos and salads, followed by fruits of the forest pudding and cheeses. This was followed by an auction of books and other lichenological paraphenalia led by Mark Seaward and David Richardson. As usual members found themselves parting with perhaps more money than they intended but it was all in a good cause for the Society.

BRITISH LICHEN SOCIETY
ANNUAL GENERAL MEETING - 6 January 2001

The Annual General Meeting for 2001 was held at 10.30 in the PaleoDemo Room, Natural History Museum, Cromwell Road, London SW7 5BD. Present: Dr A. Fletcher (President in the Chair) and 42 members.

1. **Apologies for absence**. Received from Eileen Aldworth, Steve Chambers, Kery Dalby, Frank Dobson, Bryan Edwards, Peter Earland-Bennett, Albert Henderson, Barbara Hilton, Peter James, Ray Woods.

2. **Minutes of Annual General Meeting 8 January 2000.**
These were signed as a correct record.

3. **Matters arising**.
None.

4. **Officers's reports.**
The President welcomed the members, said that it had been a successful year, and sent their sympathies to Frank Dobson who had been taken ill suddenly the day before, also to his wife, Mary. He thanked Pat Wolseley for her work organising the LIMON meeting. Ivan Pedley, Jeremy Gray, Frank Dobson, Les and Sheila Street were thanked for the work that they had done in organising and helping at meetings. He asked people to contact the Secretary and Bulletin Editor if they were willing to offer help to them.

The Treasurer (given by the Assistant Treasurer), Senior Editor, *Bulletin* Editor, Conservation Officer and Data Committee chairman, Education Committee chairman, Field Meeting Secretary, Mapping Recorder and Archivist, Librarian and Secretary gave their reports to be published separately in the *Bulletin*.

Matters arising from the Reports.

Treasurer: Frank Dobson wished to step down soon as Treasurer and an advertisement for the vacancy would appear in the *Bulletin*.

There was discussion over an amalgamated IAL/BLS subscription. It was noted that the Treasurer of IAL, Francois Luzoni, was in the USA. The concept of a European Treasurer was rejected as unfeasible.

There would be a change of website address to **www.theBLS.org.uk**

It was suggested that the full Agenda of the AGM and details of the meetings associated with it should be put on the website as soon as they were available to enable members to make plans. A suggestion for a separate mailing to foreign members was rejected.

Senior Editor: Tony Braithwaite, Managing Editor of *The Lichenologist*, was thanked for his work. The layout of *The Lichenologist* was being digitally remastered and members would see the new version in 2001.

***Bulletin* Editor**: Thanks were extended to Peter Lambley's wife who organised the copying of the Field meetings sheet. The publication of species lists from field meetings in the *Bulletin* was welcomed and Janet Simkin was thanked for her work over this. It was suggested that there should be an IAL column in the *Bulletin*.

Data Committee: Professor Mark Seaward would be taking over the Chair of this Committee.

Frank Dobson was thanked for his work in bringing out the latest Fascicle.

Mapping Recorder and Archivist: Records should still be sent to Mark Seaward for the Mapping Scheme as well as those for Biobase sent to Janet Simkin.

Photographs and records were needed for the Archives. A suggestion was made that leaders of field meetings should deposit a copy of their handouts and list of participants with the Archivist. Another suggestion was that prominent lichenologists should keep a 'Death File' to be handed by their executors to the BLS. A need for digital archives was suggested.

Accounts were accepted nem. con. The auditor, Mr Douglas Oliver, was re-elected nem. con. and formally thanked for his work.

5. **Meetings 2001 - 2002**

There would be a Spring meeting in Jersey, lead by Simon Davey, and an *Opegrapha* Workshop in July tutored by Peter James. An Autumn meeting was needed and a BioBase workshop in Northumberland or Bristol was suggested.

A Field Survey Workshop in Cumbria for 2002 was offered by Sandy Coppins.

It was suggested that international field meetings should be added to the field meeting list.

David Richardson said there would be a lichen field meeting in conjunction with the Halifax Symbiosis Congress in 2003.

6. **Election of Officers**

Serving officers were elected nem. con. Amanda Waterfield was retiring as Secretary due to ill health.

Secretary: Pat Wolseley. Proposed William Purvis, seconded Peter Lambley

Members of Council: Dr Jenny Duckworth, Dr Paul Dyer, Mr Peter James and Ms Janet Simkin were elected nem. con. Mr Tom Chester, Prof. David Hawksworth, Dr Barbara Hilton and Dr Francis Rose were retiring from council and were thanked for their support.

7. **Any other business**

A discussion was initiated on English names and the difference between having a standard international list and collecting usages in different times and places.

It was noted that Jack Laundon's Shire book on lichens would be reprinted.

8. **Date and place of next AGM.** Saturday, 12 January 2002, at 10.30 in the PaleoDemo Room, Natural History Museum, Cromwell Road, London, SW7 5BD.

The meeting closed at 12.35.

Lectures

The afternoon session consisted of three varied talks on theme of **Frontiers of lichenology** followed by a report and discussion on progress with the revised flora and a new checklist.

Sex and Variation in Lichens

Paul Dyer
Research Fellow at the University of Nottingham

At the start of his talk Paul posed three questions which he hoped to provide some answers as a result of recent research.

1) What is lichen sex and how is it achieved?
2) Its importance for the biology of lichens?
3) How much variation is present in lichen populations?

There is a tendency when undertaking research on sexual reproduction to see it from a human perspective and therefore make certain assumptions that out breeding is predominant in a population.

In the British Isles c.90% of lichens are known to form sexual structures such as apothecia. He started by attempting to establish in what form does sex take in lichens. Sex in all organisms involves the fusion of two cell nuclei to form a zygote which undergoes cell division (meiosis). In fungi sexual reproduction can involve:

a) obligate out breeding (heterothallism) where 2 different partners are required for sex.
b) selfing where a single individual can undergo sex (homothallism), this is more common in fungi than plants and animals.

The development of new techniques of DNA analysis now provides a tool to answer some of these questions. Research initially involved the collection of individual thalli of *Graphis scripta* from a wood in Pembrokeshire. In addition specimens of *Ochrolechia parella* were collected from the Pembrokeshire coast. The technique involved taking three different lichens, dissecting 1 fruit from each thallus and then collecting 10 sexual spores from each fruit. These were then grown on in a laboratory to extract the DNA in order to produce a DNA fingerprint for each spore using the RAPD-PCR technique. The study showed that the spores of *Graphis scripta* from the same fruit had all got identical fingerprints and therefore must have been produced by selfing. The results for *Ochrolechia parella* were the same and therefore must have also been produced by selfing. The conclusion is that these lichen-forming fungi are sexually reproducing by selfing (homothallism), and this might be true of lichens in general. Possible reasons why selfing occurs in lichens include -

i) ideal if the lichen is isolated with no others around
ii) single pioneer lichens can colonise a new site
iii) successful lichen can produce further copies of themselves
iv) can out cross if the opportunity arises because are not restricted to selfing

Variation in lichens

How similar are lichens of the same species? They may look the same but are they really? Again he used the technique of DNA fingerprinting to investigate this question. Returning to the Pembrokeshire woodland, five specimens of *Graphis scripta* were collected from different parts of the wood. The other location was in Antarctica where he was present for 3 months. There he collected *Buellia frigida* and *Xanthoria elegans*. In the case of *Xanthoria elegans*, specimens were also obtained from the British Isles and North America from other lichen collectors. The same technique of extracting sexual spores, growing on and then extracting DNA to produce a RAPD fingerprint was adopted.

The work showed that all the *Graphis scripta* from the wood had different DNA finger prints though the specimens looked identical. When the DNA fingerprints were compared with thalli from Devon and Merioneth they were found to be more distantly related.

He then looked at *Xanthoria elegans*. All material again proved to have different DNA fingerprints, athough when he produced trees showing genetic relatedness, those from a similar geographical origin were closer than those from other areas. For instance, those from the British Isles were more closely related to each other than other world isolates, whilst in North America they were related within regions. The Antarctic material proved to be quite distinct. Work is ongoing with *Buellia frigida* with initial results suggesting little variation.

Conclusion

1) Lichens have sex by selfing which is an adaptation for living in a hostile environment.
2) Lichens are not all the same, they have different genetic variation and there is variation between geographical regions

Paul thanked his co-workers Gareth Murtagh and Peter Crittenden, and acknowledged the BBSRC and NERC for funding.

Pembrokeshire Twig Project

Pat Wolseley
Research Associate, the Natural History Museum

Introduction

This project originated in West Wales as a project to investigate twig floras in a range of conditions on woodland and field edges of Tycanol Wood NNR. It was extended to other areas of Pembrokeshire and now, with the help of website access and Field Studies Council Publications, Pat hopes to develop recording lichens on twigs as a method of monitoring recent changes in environment across Britain. The themes that she addressed in the talk included:

1. How to collect the data
2. How applicable is it to non-lichenologists
3. How could the data be used

Methodology

Each twig produces new shoots every year, so that lichen colonisation can be recorded over time on twigs. The typical twig flora in these western woods is rather rich, with species of *Usnea, Hypogymnia* & many crustose species but where there is agricultural influence the twig flora is dominated by the *Xanthorion* community. During a contract with Countryside Council for Wales Pat, Peter James and Kate Pryor decided to devise a method of sampling twigs in different conditions at Tycanol.

They began by selecting four sites in Tycanol where twigs were accessible including a glade around an iron age living site, trees on the edge of old pasture, moorland and recently improved grass ley. In order to reduce the variables it was decided to restrict the sampling to oak, (*Quercus* sp.). Sampling was randomised along a 20m transect to allow future repeats of the same site. 10 selected twigs were labelled and lichens on each year's growth recorded separately up to c. 10 years (as far as it was possible to age the twig by detecting girdle scars). Presence of fungi, algae and bryophytes were also recorded in order to interpret environmental conditions. A comparison of the 4 sites showed the difference between the dominant *Usneetum* around a glade inside the wood and the *Physciaceae* dominated *Xanthorion* on the edge of old pasture. Where recent improvement had taken place the site showed characteristics of both communities with increasing amounts of algae.

This method was used in a simplified version (1-5 years and 5+ years) along 2 transects across Pembrokeshire using lichens on twigs of mainly ash and oak in churchyards. These transects covered polluted areas around Milford Haven and former coal mining areas as well as intensively farmed areas. Lichen communities showed

a clear relation to land management conditions. The *Xanthorion* was widespread and *Physcia tenella* was present in all sites. At present it is difficult to establish the relationship with air quality due to lack of recorded atmospheric conditions in rural areas. If more lichen data were widely collected it could be used to build up information over a whole region.

Development for non-lichenologists

Ultimately to confirm lichen identification we often need to check the spores under a microscope or use chemical tests. The challenge is to allow identification of lichen species by a wide range of people and in particular school children. For this purpose a multi-access key is preferred based on easily distinguished characters, where absence of a character still allows the user to arrive at an answer. Even though growth forms are readily distinguished there are still areas of confusion, especially on young twigs with immature thalli. Is *Evernia prunastri* foliose or fruticose? Colour is an important character but can vary, for instance *Xanthoria* could range from green to yellow depending on shade and *Parmelia perlata* was a quite different colour when wet compared with when dry. However with a good photograph these are not difficult problems. Together with Diccon Alexander and Anne Hume Pat has developed a computerised key that will be available on the web so that this can be used in addition to an illustrated field key to be produced by Field Studies Counsel. This can also be used for the purpose of recording local environmental conditions and to obtain scores of nitrogen or sulphur tolerant lichens as well as gold stars for sensitive and rarer species such as *Usnea articulata*. The challenge now is to create the data collection system that will allow us to construct maps of environmental conditions using lichens.

Lichens of the Chagos Archipelago

Professor Mark Seaward
University of Bradford

Mark Seaward was a member of the 1996 Chagos expedition which attempted to assess the status of the archipelago in biogeographical terms. Much of the research concentrated on the coral reefs and marine fauna, but two entomologists and three botanists (including David Bellamy) worked on the terrestrial systems.

The Chagos Archipelago is the largest and most isolated atoll complex in the world. It lies in the middle of the Indian Ocean more or less equidistant from Madagascar, East Indies and India. Although the actual archipelago covers 37500 km^2, 98% lies below low water mark. It has a typical tropical maritime climate with an annual rainfall of about 2400mm, (though there is a big range across the archipelago), and an average temperature of c. 27°C. It is very vulnerable to sea level rise caused by global warming. However, recent research has shown that the islands appear to be not more

than 3000-5000 years old. The islands were exploited for copra from the 1790s onward, much of the native vegetation being removed to make way for coconut (*Cocos nucifera*) plantations when many of the islands were inhabited by plantation workers. The plantations were run down in 1967 and by 1973 they were uninhabited except for the large military base on Diego Garcia where three British army and 3000 Americans are based.

The survey found a total of 67 lichen species all of which could be considered to be widespread in the lowland tropics. The habitats supporting lichens were very limited; for instance no lichens were found on coral, or the poorly developed sandy soils arising from it except for a small colony of a *Siphula* species.

Most of the original forest had been cleared by the Portuguese leaving some vegetation dominated by the tree *Pisonia* and old coconut palm plantations. However, lichens readily colonise tree bark surfaces, particularly in the case of coconut. Its smooth, hard and usually dry bark supports a rich lichen flora, often dominating large areas of trunk, with mosaics of *Pyrenula*, *Collema rugosum* or cyanobacteria. In contrast the bryophyte coverage is usually low except about the tree bases, especially in humid situations. The foliicolous lichen flora was not fully investigated but two species (*Opegrapha vegae* and *Porina perminuta*) were found to occur mainly on the leaves of coconut.

For those islands not infested with rats, birds nested close to the ground, but there was little evidence of a nitrophilous flora associated with these colonies. An old graveyard on Diego Garcia supported only three lichen species.

The survey found a good relationship between the size of the island and lichen biodiversity. Most of the species were not host specific. Not surprisingly there were strong similarities in the floras of Chagos and Aldabra and of Chagos and the Maldives.

Progress on the Flora: Discussion led by Professor Hawksworth

Since last year's meeting a group had been convened to produce a new checklist and to start planning and looking for funds for a revision of the *Flora*.

Checklist

A smaller group had met more recently and had decided to progress with the checklist. It would be the same page size as the *Flora*. The first part would have a straight list of lichens and allied fungi with mapping card numbers. The typeface would distinguish lichenicolous fungi. Synonyms would be at the back, this had not been properly addressed since the 1965b list. Most of this had already been done with David Hawksworth doiing the lichenicolous fungi and Brian Coppins taking synonymy of the lichens back to 1926. It would be a straight alphabetical list and would include key literature references post 1992. The programme was to have a draft ready in March, with a May or June publication date. It would be made available electronically but names changed subsequent to publication would be shown in a different colour.

Flora

It had been decided that it was not practical to include lichenicolous fungi but it would be the same remit as before. There is an electronic version of the *Flora* and they will look to see if the format can be changed. William Purvis had already written to those who had done the earlier accounts. They were aware that there was a need to make the accounts more consistent. The BLS had already indicated its willingness to contribute £10,000 towards the initiative and would also be submitting grant applications. A small group would take it forward and there would be several official testers of the keys and text. As it was early in the process it was important to take on corrections that had been marked up in people's *Flora*s. There would be a note on this in the Summer *Bulletin*. It was thought useful to put the keys on the Web site and there would be workshops to test out keys. Descriptions of genera would also be more consistent than at present. There would be illustrations as before but also references to those in other publications.

The meeting then finished at 5pm.

LICHENS OF WEST BROMPTON CEMETERY

On 7 January 2001, following the British Lichen Society's AGM, some 15 members and friends of the Society[1] descended on West Brompton Cemetery (TQ(51)/257778). Situated 5.3 km from the accepted centre of London at Charing Cross, the site presents the largest collection of memorials in inner London. Lichen recording in the cemetery in the past has been minimal, but J R Laundon (1970) mentioned six species noted on visits in 1956 and 1960, and some dramatic increases on lichens on poplars near the underground (there overground) tube line were reported 12 years before (Hawksworth & McManus, 1989).

Fifty-five species were found (Table 1), all but seven (*Bacidia arnoldiana, Buellia punctata, Candelariella reflexa, Lecanora expallens, Lepraria incana, Parmelia sulcata* and *Xanthoria candelaria*) on memorials or the ground. Of especial interest were the finds of *Parmelia caperata* (to 3 cm diam on a single granite memorial), *P. mougeotii* (many small thalli, to 1.5 cm diam, on one granite memorial), *Peltigera neckeri* (abundant and fertile on chippings of one memorial (Fig. 1), and *Thelocarpon epibolum* (on the *Peltigera*). The record of *Peltigera* appears to be the closest report of any species of the genus to central London, and the colony was remarkable for its luxuriance and presence of the lichenicolous *Thelocarpon*; we suspect that it was imported with the chippings.

Sixteen species not reported anywhere in the London area studied by Laundon (1970) were found, but some species previously noted in the cemetery were not rediscovered; *Cladonia chlorophaea* found by Laundon in 1956; nor *Evernia prunastri, Ramalina farinacea*, and *Xanthoria polycarpa* found here by Hawksworth & McManus (1989). The loss of the last four species appears to be due to the cutting down of almost all the line of *Populus* trees on which they formerly occurred, rather than to any change in ambient sulphur dioxide levels. Indeed all those species occur in Buckingham Palace gardens, even closer to the centre of London (Hawksworth, 1999). The *Bacidia arnoldiana, Candelaria reflexa, Parmelia sulcata* (a single thallus 3 mm diam), and *Xanthoria candelaria* occurred on *Tilia*.

Especially striking was the rarity of *Lecanora conizaeoides*, found only on granite memorials and not at all on wood or trees which is clothed throughout the area in the 1970s and 1980s. This change is attributable to dramatic falls in sulphur dioxide, in accord with the observation of Bates *et al.* (2000).

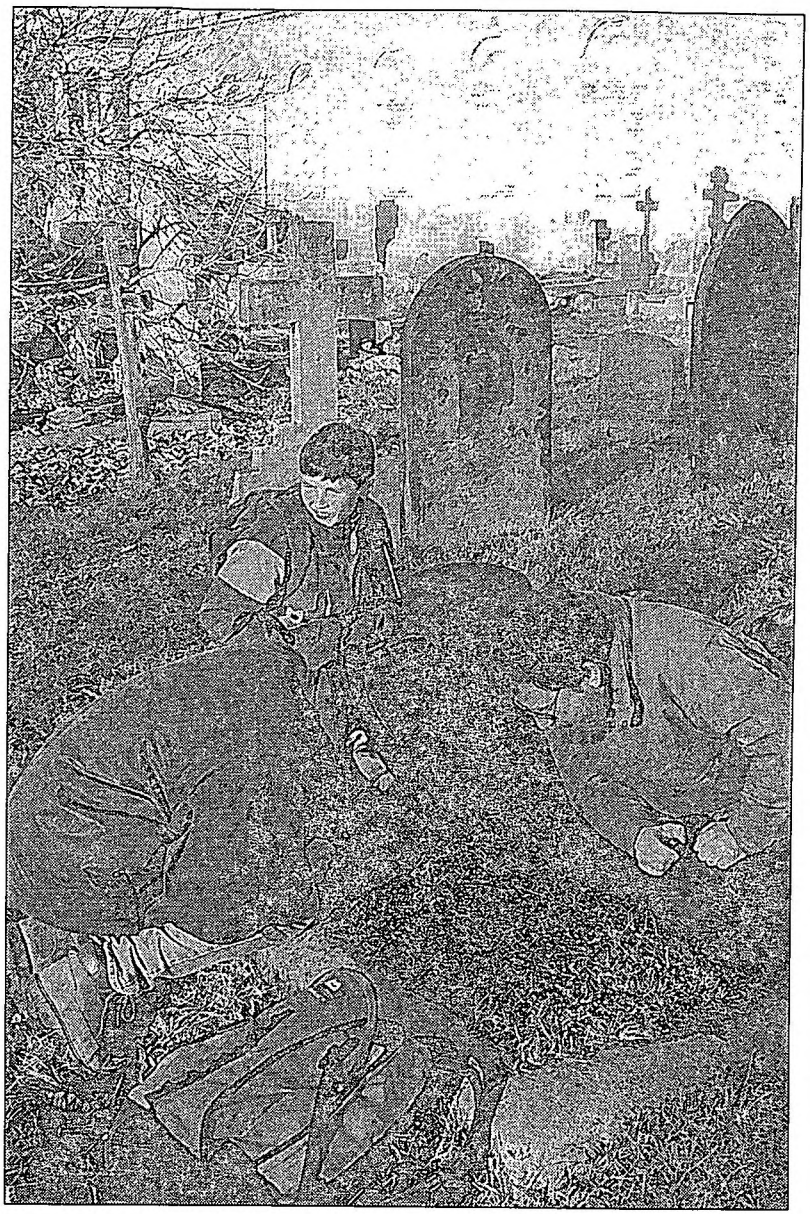

Fig. 1. The star find of the field trip, *Peltigera neckeri*, being examined by (left to right) Randolph Kricke, Stephen Purvis and Peter Scholz. [*Photograph by O W Purvis.*]

Table 1. Lichens recorded in West Brompton Cemetery on 7 January 2001. Species not listed by Laundon (1970) for London are indicated by '+'.

Bacidia arnoldiana+
Buellia aethalea+
B. punctata
Caloplaca citrina
C. decipiens
C. flavescens
C. flavocitrina
C. holocarpa
C. teicholyta
Candelariella aurella
C. medians
C. reflexa+
C. vitellina
Catillaria chalybeia+
C. lenticularis
Cladonia coniocraea
C. fimbriata
C. humilis+
C. pyxidata
Lecania erysibe (with f. *sorediata*)
Lecanora albescens
L. conizaeoides
L. expallens+
L. flotowiana
L. muralis
L. polytropa
Lecidea fuscoatra
Lecidella scabra
L. stigmatea +
Lepraria incana
Parmelia caperata+
P. mougeotii+
P. sulcata
Peltigera neckeri+
Phaeophyscia nigricans
P. orbicularis
Physcia adscendens
P. caesia
P. tenella+
Placynthiella icmalea
Porpidia soredizoides+
P. tuberculosa+
Protoblastenia rupestris
Psilolechia lucida
Rinodina gennarii
Sarcogyne regularis
Scoliciosporum chlorococcum
S. umbrinum
Thelocarpon epibolum+
Verrucaria hochstetteri+
V. muralis
V. nigrescens (with f. *tectorum*)
V. viridula
Xanthoria candelaria+
X. parietina

The event also afforded members of the Society an excellent opportunity to exchange experiences, enjoy some of the delicious food and wine left over from the Society's reception the preceding Friday (thoughtfully recycled by Patricia Taylor-Hawksworth), and to welcome Simone Louwhoff - the new curator of lichens at The Natural History Museum in London who was to start work officially the next day (and found the depauperate lichens quite a culture shock to her experiences in Australia).

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[1] Andrej Brzezina, Ishpi Blatchley, David Hawksworth, Chris Hitch, Ceri Leigh, Linda Davies, Randolph Kricke, Simone Louwhoff, Stephen Purvis, William Purvis, Peter Scholz, Patricia Taylor-Hawksworth, Amanda Waterfield and Pat Wolseley.

David L Hawksworth, Chris J B Hitch & O William Purvis

SECRETARY'S REPORT

The new millennium saw the Society participating in a variety of activities. The NATO sponsored lichen monitoring workshop at Orielton brought together 66 people from 22 countries, members and non-members, from around the world. The atmosphere was friendly and relaxed due to good organisation by the Crumps, the Director and his wife, and the enthusiasm of Pat Wolseley.

A meeting to take forward the discussion on a new, revised, edition of the Flora brought the participation of members of the British Mycological Society and I hope further collaboration will be fruitful. A new checklist should be available in 2001. The BLS website, where the list of accepted lichen names and a synonyms list is available, is regularly updated and expanded thanks to Jeremy Gray - so is worth checking out. The web address will soon be changed to http://www.the BLS.org.uk/. The website is an important component of the outreach of the Society, registering over 5,000 'hits' last year.

To bring the benefits of the Society to a wider audience we exhibited at the Natural History Museum's special millennium meeting "Nature's Treasurehouses" and at the two days of the NHS Cambridge Conversazione. I also participated in a meeting organised by Save British Science, on the future of science funding. The 'Decline in Mycology' was a theme pursued at various meetings. This relates to a decline in research into whole organisms in universities and museums and the lack of appreciation of collections which, together with the growing gap between professionals studying molecular biology and field workers, needs to be addressed. Our past President was instrumental in co-ordinating a letter, from a selection of cryptogamic and botanical societies, to be sent to the new Government Chief Scientist, Professor David King.

2000 has been a good year for books for the British amateur lichenologist - following George Baron's "*Understanding Lichens*" we have seen a New Naturalist "*Lichens*" by Oliver Gilbert; a colourful popular NHM publication "*Lichens*" by William Purvis; and the long awaited new edition of "*Lichens: An Illustrated Guide to the British and Irish Species*" by Frank Dobson - now with colour pictures. Atlas Fascicles continue to be produced and this year we have a bumper edition, No 5, on Aquatic Lichens and more *Cladonias*.

Field meetings were well attended in Dolgellau, where *Parmelia robusta* was found in a new site. Peter James's 70th birthday had to be celebrated without his presence due to illness but many enjoyed Mary Hickmott's splendid cake. Brian Coppins lead a very successful Caledonian Pine Forest Workshop at Nethy Bridge that inspired participants to see more than the predominant *Hypogymnia* and *Evernia*, deadwood snags becoming

the focus of interest. The final meeting of the year in the Cotswolds was spent battling with the weather during what has been recognised as the wettest autumn since records began. The publication of species lists, using BioBase, in the *Bulletin* enables everyone to enjoy the wealth of lichens found on these meetings - thanks to Ivan Pedley and Janet Simkin.

Congratulations to Francis Rose on the award of the MBE for his services to botany and conservation. Congratulations also to Peter James for his award from Plantlife. Thanks to Frank Brook for donating his *Lichenologists* to be sent to researchers in the Far East where Pat Wolseley has done much to encourage the study of lichens. If you would like to find a good home for books and journals you no longer need, please do contact the secretary. Many will be sad to hear that Jack Laundon has not been well, both he and his wife have been suffering from cancer, but it was good to see them at the AGM. Next year the AGM will be preceded by a Swinscow lecture at the Linnean Society, given by a past President, David Richardson, so will be a pleasant opportunity to catch up on old friends or meet new ones. The AGM will again be held at the museum, which gives people an opportunity to relax over coffee and see some of the exhibits.

The past two years have given me an opportunity to find out how much the Society does and how many people participate in its running and I would like to encourage more people to take an active part. Thank you to those people for their encouragement and I am sorry I have not felt well enough to continue but I hope Pat Wolseley will find the job as interesting as I have. I would like to thank the Natural History Museum for its support during my two years in office as Secretary. I hope that the close link with the museum will continue. Members are always welcome in the Herbarium. The Society, the museum and the internet can provide a useful platform for public participation and learning.

Amanda Waterfield

REPORT OF THE ARCHIVIST

To date, only material from the estates of Ursula Duncan, Peggy Cayton and Brian Fox have been given to the Society. If the Archives are to be a useful resource for the Society, members are strongly urged to submit material relating to its history and personalia in the form of correspondence, manuscripts and photographs. All donations will be acknowledged and duly conserved.

Mark Seaward

MAPPING RECORDER REPORT

The flow of completed mapping cards from many sources, a reminder of the interest generated by this aspect of the Society's programme, was reduced to a dribble over the past year, mainly due to the confusion arising from the creation of BIOBASE. Members should note that those records passed to the Mapping Recorder are mainly for the purpose of generating maps for a wide variety of uses, more particularly for the production of the Lichen Atlas, the 5th fascicle of which was published in December 2000. In future, **all mapping cards should be sent in the first instance to the Mapping Recorder** who will forward copies to Janet Simkin in charge of the Society's BIOBASE. Despite the above problem, a reasonable number of cards were received, mainly from Brian Coppins, and as a consequnce the total numbers of 10km x 10 km squares covered to date are as follows: 2774 (1647 with more than 100 spp.) for England, Scotland, Wales and the Channel Isles, and 721 (164 with more than 100 spp.) for Ireland.

Mark Seaward

FROM THE ASSISTANT TREASURER

The withdrawal of the U.K. from the Eurocheque scheme has added to the problems of members in Europe wishing to avoid excessive commission charges when paying BLS subscriptions. An alternative arrangement might be for the annual subscriptions of members in one country to be collected by one individual in that country and sent as a single payment. If you would consider, either paying your BLS subscriptions through a 'Banker' in your country and sharing commission charges, or if you would be willing to act as 'Banker' for BLS subscriptions for your country, please contact me, preferably by e-mail. As many overseas members do not receive their Winter Bulletin until the New Year full details of the BLS Annual General Meeting, held early in January each year, will be published on the BLS website soon after the September Council meeting.

Jeremy Gray

DATA COMMITTEE REPORT FOR 2000

The committee met three times during the year co-ordinated by the acting chair.

The committee has continued to produce the Atlas of the British Lichen Flora. Map Fascicle 5 is now available dealing with Freshwater Lichens and the outstanding species of *Cladonia* which were excluded from Fascicle 2. Fascicle 6, devoted to *Caloplaca* will appear later in 2001. Further fascicles on *Alectoria* and allies, Ancient Woodland lichens and *Peltigera* and allies will appear in later years.

Mark Seaward and Frank Dobson are especially thanked for producing these important volumes from the BLS 10-km mapping scheme, together with the text writers, principally Vince Giavarini, Oliver Gilbert, Tony Fletcher and Brian Coppins.

The computer system BIOBASE, now adopted by the BLS for site recording is now co-ordinated by Dr Janet Simkin. Copies have been purchased or distributed to various members but progress is slow. It is hoped that anyone interested in recording lichens at the level of individual sites will contact her. An introductory article appeared in the BLS Bulletin, Winter 1999. Dr Simkin is also the BLS contact on the National Biodiversity Network.

The committee takes responsibility for mapping cards. The general site card and churchyard cards are being reviewed and no new cards have been proposed. It is intended that these two cards be placed on the BLS web site so that members can download master-copies for photocopying. However, those members requiring hard copies will be serviced as usual.

Finally, Prof. Mark Seaward has generously agreed to chair the committee from the AGM 2001. I should also like to thank all members of the committee for their hard work and support, including the BIOBASE experts Jeremy Gray and Janet Simkin, and Brian Edwards who compiles the minutes.

Anthony Fletcher

A CHALLENGE RENEWED!

A decade ago in the early days of the Churchyard Project I issued a challenge. Having produced a list of what, to my knowledge, were the Top Twenty churchyards in Britain based on species totals (*Bulletin* **69**:22), I asked colleagues who knew of richer sites to submit their own lists. As a result, a year later a revised list was published (*Bulletin* **71**:22). The initial list had nine sites with 100 or more species. It was easily topped by Mickleham in Surrey with 150 species, followed by Trotton in West Sussex, with 125. Neighbouring Stopham and Tedburn St Mary in South Devon were equal third with 116. Following a BLS meeting, Great Walsingham in Norfolk scraped into bottom place with 84 species. When the list was revised, there were as many as seven new entries with Mickleham still holding on to top spot with 153. Meanwhile, for reasons I don't wish to comment on, Helmdon, Northants (131) had, pushed Trotton (129) and Tedburn (127) into third and fourth places, while Stopham had plummeted to a lowly seventh. At least, by this time, all twenty yards had over 100 species.

Now, ten years on, I thought it might be interesting to repeat the exercise. In the current list shown below, the totals, as one might expect, are much higher. Only four yards, Stopham and Trotton in West Sussex, and Wappenham and Helmdon in Northants have survived the three lists. Even Mickleham and Tedburn St Mary are now missing. This is because changes in circumstances and management procedures result in losses as well as gains. When some of us revisited Mickleham in 1993 (*Bulletin* **73**: 51-53), we found that the elms had gone, the grass had been allowed to grow (possibly in the name of conservation) obliterating most of the terricolous species, while the removal of a rotting fence had eliminated one of only two churchyard records of *Xylographa vitiligo*. Similarly, while the saxicolous total at Tedburn had increased, the disappearance of the elms again had depressed the overall total. Having visited Helmdon many times over twenty years, I have seen individual species come and go. Two thalli (probably *R. canariensis*) have fallen from the flaky local limestone of the church and a relatively large area of *Anaptychia ciliaris* has been reduced to a tiny patch. On the other hand, there has been colonisation as headstones have grown in age and discoveries made as knowledge has increased. In 1992, the total was 131 giving it second place, whereas it has now fallen to 129 and twelfth. Nearby Wappenham during the same period has increase from 122 to 148 and moved up a place.

In more recent years, the front runner for a time was Stackpole Elidor in Pembrokeshire with 160 species. This high total was achieved on a BLS Field Workshop at Orielton in 1995 when many pairs of eyes were available and much expertise (*Bulletin* **77**:21-22). The site is in a shaded valley and the total was augmented by the richness of the surrounding epiphytes and the skills of Neil

Sanderson. Widecombe was the discovery of Vince Giavarini. His initial list of 152 species included the rare *Lecanactis dilleniana* on the north side of the church and prompted a brief visit by three of us on the way to a Slapton Workshop. I returned later with Bettina Weber from Germany who, as part of her research project, wished to look more closely at the granite species of the church. We were accompanied by Barbara Benfield. The list was increased to the present 168, although there may be further additions when Bettina's study is completed. In all, at least 84 species were found in this thorough, systematic examination of the lower church walls - a record number for a single church (*Bulletin* **85**:25). On my way home from a Dorset excursion in 1994, I called in at Iwerne Courtney and was immediately struck by the rich colonisation on the greensand of the church. I alerted Vince to its possibilities and, subsequently, he has made a number of visits and continues to add species. Early notables include a still unspecified *Endocarpon* on the roadside boundary wall, the most westerly *Lecanora pannonica* and the only churchyard records of *Thelidium pyrenophorum*, *Gyalideopsis anastomosans* and *Pyrenocollema monensis* (*Bulletin* **81**:21). A phone call just last evening added two further relative rarities: *Bacidia egenula* and *Sarcogyne privigna*. We all like to think that our local yards are the best and I suspect this sudden burst of activity was in part a response to the news from the Jersey Meeting that the treasures of St Brelade's would outshine all others! As collected scrapings are yet to be determined, for the time being however this yard still malingers in twelfth place. I understand that the extension yard includes a veritable woodland housing untold riches. However, I am inclined to support Oliver Gilbert opinion that, in assessing churchyards, it is the saxicolous total that should hold sway. Accordingly, I now always include this additional column. I have, of course, a vested interest in supporting Oliver's argument because I too am possessive of my own! Wappenham with 135 species on its stonework (and less than a dozen epiphytes) would then rank higher than Widecombe with 122 and Stackpole with 108! The sub-totals, incidentally, at Iwerne Courtney (or Shroton as it is also known) are: saxicolous - 141; corticolous - 30; lignicolous - 6 and terricolous - 2.

One of the saxicolous habitats that, for obvious, reasons remains relatively unexplored is the upper reaches of the church itself - towers, parapets, roofs and the like. Ivan Pedley and I now habitually carry small ladders in our cars and these help us to access high sills, low porch roofs and the horizontal branches of small trees. The only drawback is that we are occasionally accused of breaking and entering by the local Neighbourhood Watch. Most churches in any case house a longer ladder which, while often unwieldy, allows access to the more dizzy heights. One was used to good effect on our last ChyLIG visit to Flitwick in Bedfordshire in October. Martin Butler, who organised the meeting, also arranged for us to spiral our way up the tower in order that the less vertiginous among us might enjoy a splendid view and examine the parapet at close quarters. Three species new to the site resulted. Occasionally, scaffolding

erected to carry out repairs provides a means of access. Fortunately, we were notified that such work was to be carried out at Slapton. This prompted a further visit by Ann Allen and Barbara Benfield and again three species were added. Norman Hammond tells me that his churchyard visits are so well known in Cumbria that he invariably hears of any restoration work and makes the most of such opportunities. A notable example was at Cartmel Priory where the BLS meeting of 1996 (*Bulletin* **81**:20) produced a total of 111 species and this has now been increased to 133 largely as a result of scaling the heights. With exquisite timing, I have just received an article on the *Ramalina/Roccella* communities of windswept church walls written by Vince Giavarini and cleverly entitled *Ivory Towers*! It will appear in the next edition of *Stone Chat*, the biennial newsletter for churchyard enthusiasts.

In the last *Stone Chat* (November 2000), I was able to announce that the total number of sites with a 100 or more species had also just reached the century mark. A short time later, I had a letter from Norman Hammond (together with tables and distribution maps) indicating that there were a further 51 such sites in Cumbria and 12 in S.W. Scotland (Dumfries, Kirkcudbright and Wigtown). So the current total of 'ton-up churches' is now over 160. Cumberland is the top vice-county with 32, followed by Northamptonshire with 27, Westmorland with 19, West Sussex with 13, Dorset with 12 and South Devon with 7. There is clearly a case for having a churchyard field meeting the north-west!

Exercise such as this, although relatively light-hearted, do teach us certain valuable lessons and five, at least, are worth mentioning. The first is that many pairs of eyes help considerably. It is not without significance that half of the top twenty sites have been visited on BLS field meetings. We all have our particular blind spots and it is only after our brains have been made aware of the existence of a particular species that our eyes begin to see it - *Psilolechia leprosa*, *Lecanora conferta* and *Pertusaria lactea* are but three examples. I could not have achieved so many high totals locally without considerable help and I continue to dream of the first Coppins visit to the vice-county! I have left out the column of recorders' initials this time because I don't wish inadvertently to omit any contributors and, in any case, there are so many that the table would be too wide for the page. Apart from five sites in the north-west, all have been visited by at least four BLS members.

The second lesson is that when a churchyard has been visited once we can't rest on our laurels and claim that it has 'been done' for all time. While it is comforting to report that a church in every 10-k square has been surveyed, it is also dangerous. Such minimal covering is only a beginning, a base line, and not an end, an achievement to rest upon. Further visits invariably lead to new discoveries simply because we look in new places or with new eyes informed by new knowledge. Furthermore, although

lichens exude an air of permanency, changes **do** take place and it is important that these are monitored. The death of trees and the destruction of habitats have already been mentioned but there are also more subtle comings and goings that are less easy to explain. Why has *Aspicilia subcircinata* all but disappeared from a local yard having once been so conspicuous and well-developed that it merited a star on my mapping card and why has a single thallus of *Parmelia soredians* recently appeared on a headstone here in my home village - the only known record either for this 100k square or the next to the north? Only if repeated visits are made can such changes be noted.

The third lesson is the need to be systematic. One of the advantages of churchyards is that they lend themselves to this approach. Almost always they have definite boundaries and there is an orderliness about the layout and the structures that encourages such an approach. Some of us have developed the habit of starting at the south-east corner of the church and working round it in a clockwise direction. We then move out to cover, if possible, all the gravestones and then the boundary walls, both inside and outside. It is important not to omit any distinctive habitats such as pathways, the often pebble-filled soakaways at the base of the church walls and short-cropped grassy areas between the tombstones. There are, of course, disadvantages of always starting in the same place and one needs to be aware of these. The outer fringes, for example, could be relatively neglected through tiredness or lack of time. Nevertheless, a careful, ordered approach is much more likely to bear fruit than an aimless wandering. And there is a tendency out of sheer laziness for most of us to take in only the church species that are conveniently at eye level and to examine the tops of headstones and walls much more thoroughly than the sides and bases. The distinctive habitats listed above require us at least to bend our backs and it is somehow fitting, bearing in mind that we are on ground regarded as sacred, that the churchyard group should have introduced the kneeler as an essential aid to this exploration. I would never have discovered the first churchyard record of *Bacidia fuscoviridis* had I not been lying at full length in damp grass among the sheep droppings! In short, to find the more elusive lichens, we need to seek both high and low.

The fourth lesson is really an extension of the ordered approach. It is the value to be gained from using a churchyard mapping card or, at least, some comparable, relatively short checklist of one's own devising. This is because such a list (and a full, general mapping card won't serve nearly as well for most lesser mortals) tells us not only what we have found but, as importantly, what we have so far failed to find. Unless one is able to go back later, it is essential to leave time to seek out these often overlooked species. A well-designed habitat mapping card should be designed, in part at least, to jog the awareness. Whenever I receive a card from Francis Rose (and there are few better role models), as well as the ticks (some curiously reversed!) and annotations,

there are dots or tiny dashes against those species that are expected but not yet realised. One can almost see the mind processes at work! Again, the orderliness of the site assists. Many species have a favoured churchyard niche and, if we return and look again, the dot frequently becomes a tick. 'Seek and ye shall find!'

A fifth lesson, likewise, is an extension of the fourth. Many of the richer sites occur in clusters and this in part reflects quality of air, and quality of local materials and building traditions. It also reflects quality of looking by enthusiastic and diligent observers. An important ingredient is getting to know not just isolated sites but the churchyards of an area and regularly visiting and revisiting them. In doing this, one begins to learn area assemblages as well as site assemblages and the gap-filling technique mentioned above is thus extended. One day, for example, after many visits and hours of looking, I noticed for the first time some tiny lirellae on the south-facing mortar of my village church. Finding them again in the same place at another site suggested the glimmerings of a pattern and I began actively to seek them out elsewhere. So far, they have turned up at 12 sites in the local deanery. I believe the species belongs to the *Opegrapha varia* complex and look forward with anticipation to the July Workshop for confirmation.

Please note that the 5th Knuston Hall residential weekend Exploring Churchyard Lichens will take place on 5-7 October. Because of unforeseen circumstances, it was not possible this year to publicise the course at the AGM and, at the time of going to press, no enquiries have been received. The main brochure is still to be published but further details are given on the accompanying Field Meetings sheet.

Tom Chester

[Since this article was written, I have been informed that the St Brelade's total is 187 and rising!]

	CHURCHYARD	VC	VICE-COUNTY	SX TOTAL	GR TOTAL
1	Iwerne Courtney	9	Dorset	142	179
2	Widecombe-in-the Moor	3	S Devon	122	168
3	Stackpole Elidor	45	Pembroke	108	160
4	Wappenham	32	Northampton	135	148
5	Slapton	3	S Devon	133	147
6	Brigham	70	Cumberland	*	143
7	Stopham	13	W Sussex	129	135
8	Cartmel Priory	69	Westmorland	*	133
9=	Byfield	32	Northampton	122	132
	Kirkcudbright Cemetery	73	Kirkcudbright	*	132
11	Marston St Lawrence	32	Northampton	108	131
12=	Helmdon	32	Northampton	118	129
	St Brelade's, Jersey	113	Channel Islands	c93	129
	St Mary's, Scilly	1	Cornwall	c91	129
15	Glasserton	74	Wigtown	*	128
16=	Dalry	73	Kirkcudbright	*	127
	Ousby	70	Cumberland	*	127
	Trotton	13	W Sussex	c113	127
19	Droxford	11	S Hants	115	126
20	Old Struan	88	Mid Perth	108	125

* species lists not yet available

THE COMMON NAMES OF BRITISH LICHENS

Introduction

There is currently a move in the field of natural history to promote the use of common names, where these exist, in the cause of popularisation. Consequently, we were asked by the Conservation Committee of the British Lichen Society to search the literature for appropriate names and to come up with guidelines to coining new ones. This is the first phase of a project that should be looked on as dynamic and on-going and which, we hope, will involve the views of as many members as possible.

Very few lichens have truly 'popular' or 'folk' names because the group has never appealed sufficiently to the British at large. To make up common or English names for all 1800 British lichens would be very controversial, contrived and almost meaningless. There is, however, a legal requirement for species mentioned under Schedule 8 of the Wildlife and Countryside Act 1981 to have a common name. As a result, 30 of our rarest lichens have recently been given names devised with varying degrees of success. It is rumoured that the first 26 were made up by three people sitting round a table, only one of whom was a lichenologist.

History of Common Names

The earliest common names of British lichens pre-date Latin names and are found in herbals and the literature relating to dyeing. Unfortunately these concern themselves with only a few species. First mentioned is Lungwurt or Lungmosse (*Lobaria pulmonaria*) by William Turner (1568); then later in the sixteenth century Gerard (1597) lists Lungwoort or Wood Liverwort, Tree Mosse, Mosse of the Trees, and Flowering Branched Moss. The latter three were types of *Usnea* that cannot be tied down to species. The enlarged Gerard (1633) adds Cup Mosse or Chalice Mosse (*Cladonia pyxidata*), while Parkinson (1640) calls *C. pyxidata* the Cup-like Moss, recognises the Knotted Oak Mosse (*Usnea articulata*) and a dye lichen called Corke or Archall (*Ochrolechia tartarea*). Plot (1686) adds the Scarlet-headed Cup Mosse (*Cladonia coccifera*), while Ray contributes nothing of value. This is an unpromising beginning: few taxa are involved, every author employs his own names (or at least spelling) and, worse, most are referred to as moss, their fungal nature as yet unrecognised; the term lichen did not come into use until the following century. Obtaining a satisfactory list of English names involves more than selecting the earliest offerings, these being so bedevilled with archaic terms, spellings and uncertainties of identification.

For most names it is necessary to turn to the first popular floras, such as Hudson's *Flora Anglica* (1778) with 102 common names and Smith and Sowerby's *English Botany* (1790-1814) with 392 names along with its four Supplements containing 59

names; every species mentioned in these works is given a common name. A perusal of these shows that while many names were devised by the authors, they had properly consulted the literature for earlier names and used these where appropriate. These volumes, now mostly over 200 years old, have been the major source of common names. Later authors mostly followed their nomenclature, but a few extra have been gleaned from works such as Wallis (1769), Withering (1818) and Lindsay (1856). After mid-Victorian times, the use of common names declined sharply, and they have remained unpopular ever since; even such well-loved books as *The Observer's Book of Lichens* (Alvin & Kershaw 1963), the *Introduction to British Lichens* (Duncan 1970), and *Lichens* (Dobson 2000) contain from none to half a dozen common names each. During the modern period we know of just two successful new common lichen names that have emerged: Tar Spot (*Verrucaria maura*) and River Jelly Lichen (*Collema dichotomum*).

As many suggested common names have nothing to recommend them, it is easy to appreciate their falling into disuse. Some are more complicated than the Latin, e.g. Confused Black and Olive Lichen (*Immersaria athroocarpa*), Target-fruited Leathery Lichen (*Peltigera collina)*, Greenish Horny-tubercled Lichen (*Bacidia sabuletorum*). Others are a disappointing direct translation from the Latin, e.g. Papillary Lichen (*Pycnothelia papillaria*), Stygian Lichen (*Parmelia stygia*). Yet others are misleading: Yellow Wall Parmelia (*Xanthoria parietina*), Earthy Marsh Lichen (*Placynthiella uliginosa*), Clumsy Indented Cup-lichen (*Cladonia deformis*). Some come dangerously close to describing medical conditions, for example Insignificant Wind Lichen (*Hypogymnia physodes*) and Rising Intestine Lichen (*Physcia adscendens*). An annoying habit is that most end in the word 'lichen'; we do not talk about the bluebell plant or the robin bird. From several hundred candidates we have selected the following 52 common lichen names that seem to us to be imaginative and worth resurrecting as they are short and emphasise a distinguishing feature of the lichen involved. Occasional adjustments have been made to render them less archaic, such as changing 'shielded' to 'shield', omitting the word 'lichen', and adding the suffix 'wort'. For traditional reasons the word 'moss' has been retained for pre-Linnean names.

Anaptychia runcinata	Sunburn
Bryoria spp.	Rock Hair
Caliciales	Pin-head Lichens
Candelaria concolor	Yellow Candles
Cetraria islandica	Iceland Moss
Cetraria nivalis	Snow Moss
Cetraria pinastri	Golden Pine Lichen
Cladina (sect.)	Reindeer Moss
Cladonia coccifera(agg.)	Scarlet-cup Lichen, Scarlet cups
C. pyxidata (agg.)	Pixy-cups
C. furfuraceum	Bat's-wing

Collema spp.	Jelly Lichens
Cyphelium inquinans	Sooty Fruits
C. tigillare	Yellow Rail Lichen
Dermatocarpon miniatum	Little Clouds
Evernia prunastri	Oakmoss
Graphis spp.	Scripture-wort, Scriptwort
Hypogymnia physodes	Heather-rags
Icmadophila ericetorum	Heath Lichen
Lasallia pustulata	Grey Blister
Lichina confinis	Seaweed Lichen
Lobaria virens	Green Lungwort
L. pulmonaria	Lungwort
L. scrobiculata	Pitted Lungwort
Ochrolechia parella	Crab's-eye, Parelle
O. tartarea	Cudbear
Ophioparma ventosum	Blood-spot
Parmelia omphalodes	Purple Crottle
P. saxatilis	Crottle
Peltigera apthosa (agg.)	Thrushwort
P. canina (agg.)	Dog-tooth
Pertusaria amara	Bitter Crust
P. corallina	Coral Crust
Placynthium nigrum	Ink Blot
Pseudephebe pubescens	Black Wool
Pseudevernia furfuracea	Treemoss
Pseudocyphellaria crocata	Golden-edge
Ramalina siliquosa	Sea Ivory
Rhizocarpon geographicum	Map Lichen
Roccella phycopsis	Orchil, Canary-weed
R. fuciformis	Flat-leaved Orchil
Sarcogyne regularis	Frosty-shields
Solorina crocea	Mountain Saffron
S. saccata	Sockets
Sphaerophorus spp.	Globe Lichen
Teloschistes chrysopthalmus	Golden-eyes
Tephromela atra	Black shield
Trapeliopsis granulata	Four coloured Lichen, Quadricolor
Umbilicaria spp.	Rock Tripe
Usnea	Beard Lichens
U. subfloridana	Old Man's Beard
U. articulata	Necklace Lichen

A further phase of work will be an investigation of regional variation, such as

Grigson's for higher plants in his *Englishman's Flora* (1958). *Lobaria pulmonaria,* for example, which went by the name of Lungwort throughout most of England, was known as Rags in Herefordshire and Hazel Crottle in Northern Ireland. *Ochrolechia tartarea,* Cudbear in England, was called Cork or Korkir in Scotland and Korkalett in the Shetland Isles. *Parmelia saxatilis* has been known as Crottle, Scrottyie, Stane-raw, Staney-rag, Staney-raw and Stone-raw but regional use needs further research.

Coining modern Common Names

We believe that there is a corpus of widespread species that should have easily remembered English names for use in general conservation, in the press, in brochures, on field courses, etc. Some of these will have to be specially coined and a method of devising them is proposed below.

1) Check all previously suggested names which may, on occasion, be overseas English or foreign.

2) Translate the scientific name by consulting Latin/Greek dictionaries, including W.T. Stearn's (1983) *Botanical Latin* (3rd ed.), Newton Abbot: David and Charles; and such etymological source-books as Jaeger, E.C. (1944) *A Source-book of Biological Names and Terms*, Springfield, Illinois: Charles C. Thomas; Nybakken, O.E. (1959) *Greek and Latin in Scientific Terminology*, Iowa: Iowa State College; Sayers, N.F. (1951) *A Biological Glossary*, London: University of London; Emmet, A.M. (1991) *The Scientific Names of the British Lepidoptera; Their History and Meaning*, Colchester: Harley Books; and although in German, Feige, G. -B. (1998) *Etymologie der Wissenschaftlichen Gattungsnamen der Flechtem*, University of Flechten, Botanical Institute.

3) Throw in any inspirational ideas of one's own.

4) Lichenologists with knowledge of the species in the field should then select the best name in the light of:

    1) Tradition, folklore, local usage.
    2) Memorability.
    3) Degree of information imparted concerning appearance, habitat, distribution.
    4) Euphony and ease off the tongue.
    5) Poetic quality.

Examples of our own devising

Anaptychia ciliaris	Crown of Thorns, Woolly Bear
Fulgensia fulgens	Golden Coins, Sovereigns
Hypocenomyce scalaris	Jacob's Ladder, Oyster Shells
Icmadophila ericetorum	Heath Pink (an alternative to Heath Lichen)
Lichina confinis	Tideweed (an alternative to Seaweed Lichen)
L. pygmaea	Pygmyweed
Menegazzia terebrata	Gunshot
Mycoblastus sanguinarius	Draw-blood
Pannaria hookeri	Snow Queen
Peltigera didactyla	Dog-scales
Pseudocyphellaria	Speckled underbellies (BJ & AM Coppins)
Psilolechia lucida	Green-glow
Solorina saccata	Sunken Eye (an alternative to Socket Lichen)
Ramalina fraxinea	Ash Straps
Ramalina thrausta	Crosier Tip
Xanthoria parietina	Golden Shields

Summary

We regard the use of common names as a helping hand up the ladder of lichenology for beginners likely to take things further, or as an easy way to learn a number of lichens for those likely to remain on the fringes of the subject. Our belief is supported by a recent lichen exhibit shown by one of us (A.H.) at a Science Fair, where labelling included both scientific and vernacular names. This definitely eased and encouraged communication with the many non-lichenologists visiting the stand. Those for whom lichenology becomes a serious pursuit, will, of course, have no need of them.

Oliver Gilbert and Albert Henderson

For references to early Floras see: Hawksworth, D. L. & Seaward, M. R. D. (1977) *Lichenology in the British Isles 1568-1975*. Richmond: Richmond Publishing Co.

Acknowledgement

We thank M.R.D. Seaward who made available a preliminary list of common names for lichens of the British Isles on which he had been working for sometime.

[Members are urged to write to the Bulletin expressing their views on the use of common names]

NATIVE PINEWOOD FIELD MEETING BASED IN STRATHSPEY, 9th TO 15th JULY 2000

The meeting started informally on Sunday afternoon as those arriving early made the short journey to Dell Woods NNR (grid ref: NJ 013192), only a few hundred metres from the Heatherbrae Hotel and Nethybridge Village Hall which formed our base for the week. Dell Woods was a modest site compared with what was in store, but it did make a useful starting place to begin familiarisation with the localised special suite of Scottish pinewood lichens. Folk were soon getting to grips with the genera of *Hypocenomyce, Xylographa,* unfamiliar species of *Ochrolechia* and *Cladonia* and the minute *Calicium, Chaneotheca* and *Chaenothecopsis* pin-heads.

At first glance Native Scottish Pinewood lichens seem commonplace. It is only after working down in size from the showy macro-species to the small dots, smuts and pin-heads that its true diversity becomes apparent. The other feature that everyone soon learnt was that the best substrata are the decorticated dead or fallen pines so that a bee-line was made for these and live trees mostly avoided.

On Monday we explored the Rothiemurchus woodlands just to the west of the main road leading to Cairngorm (centre of site approximately grid ref: NN 925078). Among the unusual species seen here were *Bryoria lanestris, Lecanora mughicola* and RDB lichen *Chaenotheca xyloxena.* Tuesday we spent the first of our two days at Abernethy Forest. The ancient woodland of Bognacruie (NJ 042148) produced a stunning range of species. The site is mostly composed of huge Scots pines over three hundred years old with many standing and fallen dead trees known as 'bones' for their toughness. A distinctive sound in the wood was that of heavily hit knives ringing against this hard substrate. The 3rd and 4th world specimens of *Xerotrema megalospora* were found. Two RDB lichens *Bryoria furcellata* (also schedule 8) and *Chaenotheca xyloxena* plus the discovery of a species new to Britain by Dr Brian Coppins: *Lecidea leprarioides* added to the excitement, so much so that a huge male cock capercaillie was barely given a second glance. Bognacruie holds over 140 lichen taxa, three of which are RDB (not counting the two newly described species), 40 are 'rare' or 'scarce' and nearly 30 are 'native pinewood indicator species' - quite a place!

A high altitude pinewood tackled on Wednesday was Allt a Mharchaidh which lies on the north-west flank of the Cairngorms NNR (NH 885042). Fortunately Forest Enterprise allowed us vehicle access along their forest tracks to a start point at 400 metres ASL. The wood straddles a steep sided burn and rises to about 600 metres, the natural tree line in this cold part of Britain. Peter James found another new species to Britain: *Micaria eximia* and some old willows hosted scarce species in this locality such as *Lobaria pulmonaria* and *L. scrobiculata, Nephroma laevigatum and N. parile.*

Fig 1. Bognacruie Wood. Photo: L & S Street.

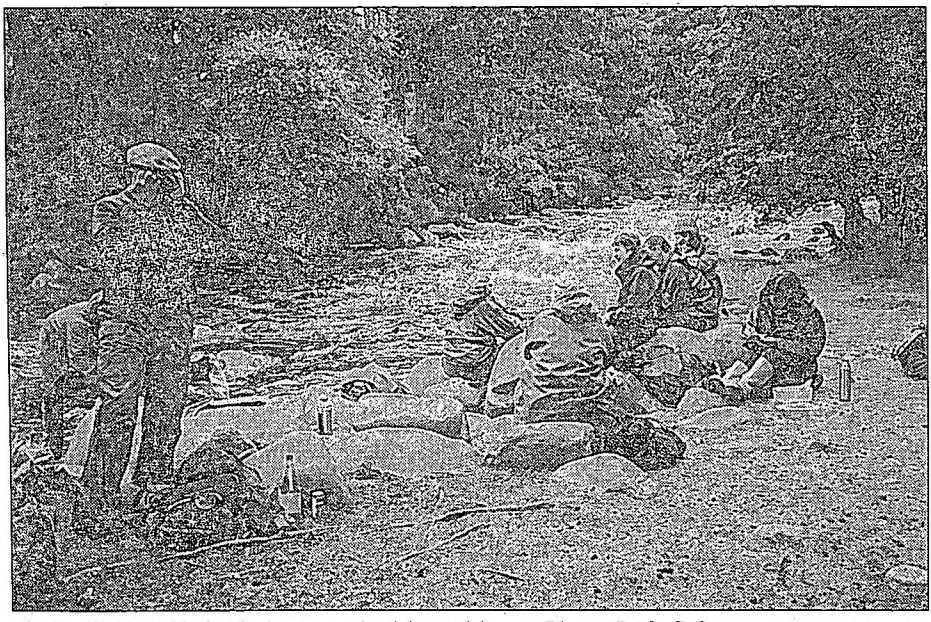

Fig 2. Trevor Duke being attacked by midges. Photo L & S Street.

Pinewood specialities included *Ptychographa flexella* and *P. xylographoides, Ochrolechia szatalensis, Hypocenomyce sorophora* and *Chaenothecopsis pusiola*. Even the drive home though the dull serried ranks of lodgepole and Sitka plantations was rewarded with the sighting of *Cyphelium tigillare* on a fence post; a pinewood speciality perversely more common on man-made lignum than natural substrata.

Native Scottish pinewood lichen communities have been shown to fall into distinct eastern and western types. Strathspey clearly belongs to the 'eastern' group so, to widen our study, we were welcomed on Thursday by Forest Enterprise to their Glen Affric Reserve (NH 197232 and 282828) which holds a mixture of western and central species. *Platismatia norvegica, Cavernularia hultenii* are a couple of characteristic examples of these 'western' species seen there plus oceanic genera such as *Degelia.* Lichens uncommon in Strathspey such as *Bryoria furcellata* and *B. capillaris* were locally frequent at Glen Affric.

The final full field day on Friday was spent again at Abernethy starting at the enigmatically named Ice Wood (NJ 031129). Its plantation-like, unprepossessing appearance of straight, even-sized Scots pines belies an interesting history. It is one of the very few completely unmanaged native pine woodlands and has existed as such since 1869 when it was abandoned as pasture. Since then no thinning or other similar human work has been carried out. The pines have 'self-thinned' so that as much as 45% of the wood is composed of dead trees. This dead wood, as well as being a good lichen substrate, also provides suitable habitat for crested tits, a Strathspey bird speciality, to excavate their nest-holes in.

Cyphelium tigillare was located on a natural piece of pine lignum (at last!) and yet another specimen of *Xerotrema megalospora* found so that Abernethy has half the known world population of this species. Other pinewood specialities included *Ptychographa flexella* and *Thelocarpon intermediellum.* This was followed by a visit to a small area with very large, old Juniper bushes (NJ 024137) which turned up an old 'western' woodland indicator species *Arthonia leucopellaea* and RDB(V) *Hypocenomyce xanthococca.*

The day was penultimately rounded off by visiting a completely different forest habitat and the stable shingle near a ford across the river Nethy (NJ 021124) forced the group to re-set their brains back to saxicolous species.

RDB lichen *Stereocaulon glareosum* was the most unusual species but the massive numbers of fruiting *Placopsis gelida* drew the most camera attention. The final chapter of the week was a visit to the best British site (NJ 031159) for the exacting little *Cladonia botrytes,* a transient species only found in Britain on large cut Scots pine

stumps during a period about ten to twenty years after felling.

A super week was had by all, assisted in no small part by the proprietor of the Heatherbrae Hotel who took care of the logistics of organising accommodation throughout the village and the hotel and for splendid fare. The village hall was an excellent spacious place for evening discussion, talks and lab. work for a group numbering over thirty. The rangers and wardens at FE, Rothiemurchus and RSPB helped greatly in terms of transport and advance information. Most of us learned a great deal and the more able among the group really did manage to add substantially to the lichen database of this large internationally important and scenically beautiful group of ancient native woodlands.

Shelia and Les Street

THE DORSET FLORA : A REVIEW

The Flora of Dorset Humphry Bowen (2000) Pisces publications.

Dorset has been well served both by floras of the vascular plants and also those on lichens (Bowen, 1976). However, it is rare to find a Flora which attempts to cover all groups including mosses, algae, fungi and lichens. Humphry Bowen has attempted to do this in the latest Flora to cover the county.

Dorset is an important county for a variety of reasons, it is phytogeographically on the cross roads between the east and the west and has one of the largest lichen floras of an English county. It largely missed high air pollution levels in the 19th and 20th centuries and it still retains some large sympathetically managed estates. It has a varied geology with limestone and Tertiary sands and has an interesting coast with both hard rocks, sand dunes and shingle. Over 650 lichen species have been recorded including rarities such as *Parmelia minarum, Teloschistes flavicans* and *Catapyrenium psoromides*.

The sections of the *Flora* of most interest to the lichenologist are the introductory chapters which cover such subjects as physical features, vegetation and the effects of man and the species account of lichens. The chapter on lichens is a species list for the County with localties given for the rare species but no grid square and for the more common ones the number of 10km squares in which they occur. This is accompanied by some ecological information. It is a pity that grid squares could not have been included as this would have considerably increased the usefulness of the list. For those who do not know the geography of the County this makes the information difficult to use especially as there is no full gazetteer. The *Flora* is well produced and has some good colour photographs including several of lichens.

References

Bowen H J M (1976) *Lichenologist* **8** 1-33

Peter Lambley

AUTUMN FIELD MEETING 2000: THE COTSWOLDS

The Cotswolds, stretching south-eastwards from the border uplands of Northamptonshire to the vale of the River Severn and the Midland Plain, is an area renowned for its scenic beauty and natural history. The essential character of the area is determined by limestones of Jurassic age. These are varied in composition, often of shell fragments mixed with coral but also of a structure known as Oolitic (Greek-'egg stone') which is composed of minute spheres of calcium carbonate resembling fish roe. This 'free stone' is easily cut when newly quarried and hardens on exposure. Its colour also darkens to varied and attractive tints of yellow and brown that gives such a delightful character to the villages and field boundaries built from this rock. The stone has been a source of considerable wealth for the area and this, together with sheep farming in the Middle Ages that generated riches almost beyond comprehension for a few landowners, prompted the building of large country houses and exquisite churches. The Lord Chancellor still sits on a woolsack to remind us of this area's contribution to the exchequer. More relevant to the Society the fine ecclesiastical buildings form an important habitat for lichens across the region and many have been recently surveyed.

The most striking topographical feature of the Cotswolds is a cuesta of scarp and dip slopes. The uplifted limestones to the west terminate in a steep scarp slope formed by the weathering of softer clays of the Lias exposed under the lip of the edge and the subsequent slumping and collapse of the overlying strata. This scarp contrasts with the long gentle dip slope to the east. Rivers such as the Frome, flowing rapidly down the steep incline to the Severn and the Bristol Channel have cut back into the scarp to produce quite a different type of relief compared with that formed by the rivers flowing east down the more gentle incline to the Thames Basin.

Natural outcrops are infrequent and have not recently been visited by lichenologists. Consequently, the lichen flora of this area of Jurassic limestone is not well documented although the churchyards contain an abundance of this stone and have been better studied. They are known to be characterised by certain species. H.J.M.Bowen (1980) in his review of the lichen flora of Berkshire, Buckinghamshire and Oxfordshire discussed the limestone communities of these counties and questioned whether the generalisations made in his paper also apply to the Gloucestershire Cotswolds, which were outside his area of study. This question will be addressed in the present account.

It was to the Cotswolds of Gloucestershire that members of the Society were attracted during the autumn meeting 2000 and over a weekend a variety of saxicolous and corticolous habitats were surveyed from a base in the village of Bourton-on-the-Water. Unfortunately, the visit coincided with a period of quite ferocious weather with high

winds and heavy rainfall making the identification and recording, particularly of saxicolous species, difficult. Consequently, many of the sites were not covered thoroughly. The fact that lists were produced at all is a testimony to the resilience and enthusiasm of all the members who attended. In terms of survival alone, this was a memorable meeting!

Saturday October 28th 2000

Crickley Hill (SO 925162)

The approach to this outcrop from the east ascends the dip slope of the Cotswolds across a landscape tamed by drystone walls and irregular fields. This extraordinary countryside has long been the stimulus of artists and poets but today the storm clouds and rain inspired bleaker thoughts and those walls with *'the trick of keeping the lost sunlight for centuries glimmering upon them'* (J B Priestly) reflected nothing but perhaps too much poetic licence. From the scarp the impressive vista to the west embracing the Severn estuary, the granite of the Malvern Hills and beyond to the mountains of Wales was shrouded in mist. High winds prevented all but the most intrepid from surveying below the edge. Sufficient sheltered outcrops were found however to give a comprehensive insight into the major species present. The yellow and orange of *Caloplaca aurantia, C. citrina, C. flavescens* and *C holocarpa* together with *Protoblastenia rupestris* were outlined against a pale mosaic of *Aspicilia calcarea* and *A. contorta, Verrucaria baldensis* and *V. hochstetteri.* The darker colour of *Toninia aromatica* and *Verrucaria nigrescens* completed the overall coverage and added contrast. A number of less common species were also present *Acrocordia conoidea, Caloplaca dalmatica* and *Opegrapha saxatilis* occupied west-facing underhangs, no doubt encouraged by the shade and higher humidity. *Caloplaca variabilis* and *Lecanora crenulata* favoured the horizontal surfaces of the outcrops with *Protoblastenia calva* and *P. incrustans. Petractis clausa, Solonopsora candicans, Thelidium decipiens* and *T. incavatum* were also recorded. A number of corticolous species were found on oak (*Quercus spp.*), ash (*Fraxinus excelsior* L.) and elder (*Sambucus nigra* L.) to the lee of the scarp. *Hyperphyscia adglutinata* was growing abundantly on an elder below the cliff face.

There is still work to be done on these west-facing outcrops given better weather conditions; a comparison of the lichen flora of the massively bedded 'freestone' and the thinly bedded 'ragstone' would be particularly instructive.

The question posed by Bowen and outlined in the introduction to this write up may now be answered. The *Caloplacetum heppianae* of James *et al.* (1977) does extend westwards to these Gloucestershire limestones and is broadened to include *Acrocordia conoidea and* species of the genus *Collema* where suitably humid conditions are available. The 'Cotswold Group' of species is reflected in the occurrence of

Solenopsora candicans and members of the genus *Thelidium.* There was no evidence of the *Dirinetum stenhammarii* James *et al.* (1977) on this natural outcrop of rock.

Chedworth Airfield (SP 039132)
A visit to this disused airfield was planned for the afternoon but it was awash with surface water and given the unrelenting downpour the survey was abandoned. During a previous reconnoitre *Caloplaca crenulatella* was found to be frequent on the fragmenting surface of the runways.

Chedworth Church (SP 052123)
Conditions here were relatively benign and attired in waterproofs, with umbrellas unfurled, and fortified by victuals and strong beverage from the village hostelry, a profitable hour or so was spent looking over the chest tombs and headstones in this lovely churchyard. The porch proved to be an invaluable shelter for the completion of mapping cards, which outside rapidly resembled papier-mâché. At times many of the Society were pressed so close together in this refuge that the physical contact was unnerving!

The church itself was a remarkable structure of rubble limestone with ashlar dressings; the yard, clinging to the steep sides of the valley, contained an interesting range of memorials. Local limestone was the predominant stone but there were also a number constructed from sandstone and granite. The presence on these of a variety of calcifuge species illustrated how important churchyards are to the overall saxicolous flora of this region, dominated as it is, by calcareous substrates. The calcifuge component included the familiar early colonisers of acid stone: *Buellia aethalea, Candelariella vitellina, Lecanora expallens, Lepraria incana, Porpidia tuberculosa and Rhizocarpon reductum.* Other species included *Buellia ocellata, Lecanora orosthea* and *Psilolechia lucida.* On more basic stone, many of the species found at Crickley Hill were recorded together with *Bacidia sabuletorum, Caloplaca lactea, Dirina massiliensis forma sorediata, Physcia adscendens* and *P. caesia. Psilolechia leprosa* was present in its preferred niche associated with copper run off from the lightning conductor.

Rhizocarpon concentricum was found on a sandstone block reared against the north wall of the chancel and benefiting from rainwater washing from the mortar. Two exciting finds were *Hymenelia prevostii*, on a bale tomb and *Petractis clausa* at ground level on a ledger.

Chedworth Wood (SP 060134)
Undeterred by the atrocious conditions this site was visited during the late afternoon. From the famous Chedworth Roman Villa, a designated footpath (The Monarch's Way) was followed through this lovely mixed woodland of beech (*Fagus sylvatica*) ash and oak bordering the River Coln - it was a place where history could be sensed in the stillness.

Francis Rose had recorded *Lobaria pulmonaria* here in 1980, it was not refound but *Pachyphiale carneola* was still present on oak. A number of mature trees had a good covering of *Bacidia rubella, Chaenotheca ferruginea, Enterographa crassa, Evernia prunastri, Hypogymnia physodes, Lecanactis abietina and Ochrolechia subviridis. Anaptychia ciliaris* was a good record on ash close to the flood meadows and to broaden the interest a little owl (*Athene noctua*) was surprised from an ash by the river.

The survey was completed in gathering darkness - more species will undoubtedly be found given a longer visit in more congenial conditions!

Sunday 29th October 2000
Sapperton Wood and Churchyard (SO 947037 and SO 946035)
With the weather forecasters threatening mayhem, and worse, the party started the morning in the shelter of the steep valley of the River Frome north-west of Sapperton. It proved to be a fortuitous decision. The rain abated and even the sun appeared for an hour or so. The wood in the valley bottom, of ash, beech and oak with an understory of lime (*Tilia cordata*) birch (*Betula sp.*) and hazel (*Corylus avellana*), was delightful, if somewhat boggy in places. The corticolous species included many of those found at Chedworth but with a few additions: *Arthonia radiata, A. spadicea,* and *A. vinosa* were seen on ash and oak together with *Chaenotheca brunneola* and *Cliostomum griffithii. Graphis scripta* was fairly common on hazel and birch. On low branches, *Platismatia glauca* was frequently recorded and on the eastern valley side fertile *Pseudevernia furfuracea* was found, growing on a young oak. Five members of the genus *Pertusaria* were recorded throughout the wood and the recently recognised *Parmelia ulophylla* prompted some discussion about those characteristics which distinguish it from *P.subrudecta* (pruinose lobe tips and marginal soralia). Several members recorded *Usnea subfloridana.*

Fording the river higher up the valley took on an almost biblical scene, but despite fervent exhortation the waters refused to be parted. A number of members exhibited individual fording techniques of considerable skill and ingenuity that brought forth gasps of admiration and the expectation of immersion from the onlookers. A wiser majority decided to retrace their steps!

The party was reunited back at **Sapperton Church** where Tom Chester, who had been surveying the yard, was keen to give a guided tour of the notable species. As with most Cotswold churchyards, limestones formed the dominant substrate and this was reflected in the number of calcicoles recorded, *Collema auriforme, C crispum* and *C tenax* and notably *Peltigera rufescens* were found on low limestone tombs. A number of imported acid memorials produced the usual flora of calcifuge species. *Porpidia soredizodes*, now recognised as a very much-overlooked species, was common, its characteristic oval excavate soralia easily noticeable.

In addition to Sapperton and Chedworthy, two other churches were visited during the weekend, Coln and Bourton-on-the-Water being the other two. The calcareous flora of all four yards reflects that generally found across the region. A number of species are known to characterise Cotswold limestone and this is a feature of the churchyards. Of this suite of species *Acrocordia conoidea, Dermatocarpon miniatum, Thelidium papulare, Protoblastenia incrustans, P rupestris, Leproplaca xantholyta, Caloplaca aurantia, Hymenelia prevostii,* and *Petractis clausa* were all recorded in at least one of the yards during the meeting, their presence being almost certainly due to several factors acting together. The main ones being air quality, temperature and rainfall, and also the composition of the Jurassic limestone itself. The purer forms of this stone lend themselves to the skill of the mason and the characteristic ornately crafted 'bale' and chest tombs so common in the Cotswolds, produce an unusually wide range of aspects for lichens to exploit. It is no coincidence then, that *Dermatocarpon miniatum* was recorded from a bale tomb at Bourton and *Hymenelia prevostii* from chest tombs at Chedworth and Sapperton. The iron content of Jurassic limestone increases as one moves north-east across England. This has an obvious effect on the surface composition and texture of the memorials, which will, in turn, effect lichen colonisation. There is an interesting study here for the lichenologist and rarely will one be studying in such delightful surroundings.

Other lichens forming part of the 'Cotswold Group' that were not recorded in the churchyards included *Collema polycarpon, Leptogium plicatile, Solenopsora candicans,* and *Protoblastenia calva,* but with only four yards visited and, given the difficulty of the working conditions, this was to be expected.

Sapperton churchyard was the final site for most members attending the meeting. With the wind increasing and the rain once again beginning to fall, the majority decided to make an early start on their homeward journeys.

Oakley Wood (970045)
This mixed woodland in Cirencester Park was briefly visited. Notable records were the presence of *Pseudevernia furfuracea* on oaks bordering the western edge of Overley Ride and also *Chaenotheca brachypoda* in abundance and beautifully fertile, on a number of elder trees bordering the same ride. With the evening light beginning to fade and structural damage occurring to the wood by storm force gales, prudence and a distinct nervousness forced a retreat back to car and home.

In spite of the awful weather, perhaps even because of it, this was a most enjoyable meeting. The company was, as always, delightful and the guest house welcoming and ready to serve at a moments notice; notably when the central heating system, in league with the tempest outside, decided to burst and flood a bedroom. The Cotswold Hills even managed at times to show that exquisite beauty for which they are famous. To Oliver Gilbert, who led our forays with that cheerfulness of spirit and boundless enthusiasm, which are his trademarks, we offer our sincere thanks.

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I am grateful to Tom Chester for his thoughts on the Cotswold churchyards and their lichen flora.

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Key – CH – Crickley Hill, **CA** – Chedworth Airfield, **CW** – Chedworth Wood, **SW** – Sapperton Wood, **OW** – Oakley Wood, **CC** – Coln Church, **Ch** – Chedworth Church, **BC** – Bourton-on-the-Water church, **SC** – Sapperton Church

Species	CH	CA	CW	SW	OW	CC	Ch	BC	SC
Acarospora fuscata							o		o
smaragdula									o
Acrocordia conoidea	o					o	o	o	o
Anaptychia ciliaris			o						
Anisomeridium nyssaegenum				o					
Arthonia radiata				o					
spadicea				o	o				
vinosa				o					
Aspicilia calcarea	o					o	o	o	o
contorta	o					o	o	o	o
Bacidia rubella			o						
sabuletorum						o	o		
Belonia nidarosiensis							o		
Buellia aethalea						o	o	o	o
ocellata							o		o
punctata	o					o	o		
Calicium viride				o					
Caloplaca aurantia	o						o	o	o
citrina	o					o	o	o	o
cremulatella		o							
dalmatica	o								
flavescens	o					o	o	o	o
holocarpa	o						o	o	o
lactea							o		o
saxicola								o	
teicholyta	o					o	o	o	o
variabilis	o								
Candelariella aurella	o						o	o	o
medians								o	
vitellina						o	o	o	o
Catillaria lenticularis	o					o	o	o	o
Chaenotheca brachypoda					o				
brunneola				o					
ferruginea			o						
Chrysothrix candelaris			o	o	o				
Cladonia chlorophaea	o		o						
coniocraea	o		o	o					
fimbriata	o								
macilenta				o					
Cliostomum griffithii				o					
Collema auriforme	o						o		o
crispum									o
tenax morphs	o								o
Dermatocarpon miniatum								o	
Dimerella pineti					o				

Diploicia canescens	o					o	o	o	o
Diplotomma alboatrum	o					o	o	o	o
Dirina massiliensis f.*sor.*						o	o	o	o
Enterographa crassa			o	o	o				
Evernia prunastri	o		o	o	o	o	o		
Graphis scripta				o	o				
Haematomma ochroleucum var. *ochroleucum.*							o		
Hymenelia prevostii							o		
Hyperphyscia adglutinata	o								
Hypogymnia physodes			o		o	o	o		
tubulosa			o	o	o	o			
Lecanactis abietina			o	o	o				
Lecania erysibe								o	o
turicensis							o		
Lecanora albescens	o					o	o	o	o
campestris	o					o	o	o	o
chlarotera	o			o	o	o	o		o
conizaeoides	o					o		o	o
crenulata	o					o	o	o	o
dispersa	o					o	o	o	o
expallens	o		o		o	o	o		o
muralis	o					o		o	
orosthea						o	o		
polytropa						o		o	o
rupicola									o
soralifera						o			o
sulphurea							o		
Lecidea fuscoatra							o		
Lecidella elaeochroma	o		o		o		o		
stigmatea	o					o	o	o	
Lepraria incana	o		o		o	o	o		o
Leproloma vouauxii							o	o	o
Lepraplaca chrysodeta							o	o	o
xantholyta						o		o	
Leptogium gelatinosum	o								
schraderi	o								
Ochrolechia subviridis			o						
Opegrapha herbarum				o					
saxatilis	o					o			o
varia			o	o					
vulgata			o						
Pachyphiale carneola			o						
Parmelia caperata	o		o.	o	o	o			
glabratula sub *fuli*						o		o	
glabratula sub *glab*	o		o	o	o	o			
mougeotii								o	
revoluta						o		o	
saxatilis			o	o	o	o			
subaurifera	o			o		o			
subrudecta	o		o	o	o	o			
sulcata			o	o	o	o	o	o	o
ulophylla				o					
Peltigera lactucifolia				o					

praetextata				o					
rufescens									o
***Pertusaria** albescens*			o	o					
albescens var.*cor*						o			
amara			o	o	o	o			
hymenia			o	o	o				
leioplaca				o					
pertusa			o	o					
***Petractis** clausa*	o						o		
***Phaeophyscia** orbicularis*	o		o			o	o	o	
***Phlyctis** argena*			o	o	o				
***Physcia** adsendens*				o		o	o	o	o
aipolia				o					
caesia							o	o	
tenella	o		o	o	o	o	o	o	
***Physconia** grisea*			o			o			
***Placynthium** nigrum*								o	o
***Platismatia** glauca*				o	o				
***Polyblastia** albida*	o								
***Polysporina** simplex*								o	o
***Porina** linearis*	o								
***Porpidia** soredizodes*						o			o
tuberculosa						o	o	o	o
***Protoblastenia** calva*	o								
incrustans	o								
rupestris	o					o	o	o	o
***Pseudevernia** furfuracea*				o	o				
***Psilolechia** leprosa*							o		
lucida						o	o	o	o
***Ramalina** farinacea*	o		o						
***Rhizocarpon** concentricum*							o		o
reductum						o	o	o	o
***Sarcogyne** regularis*	o								
***Schismatomma** decolorans*			o						
***Scoliciosporum** umbrinum*						o			
***Solenopsora** candicans*	o								
***Tephromela** atra*						o	o	o	o
***Thelidium** decipians*	o								
incavatum	o								
papulare							o		o
***Toninia** aromatica*	o						o	o	o
***Trapeliopsis** flexuosa*					o				o
granulosa	o								
pseudogran.				o					
***Usnea** subfloridana*				o	o				
***Verrucaria** baldensis*	o					o	o	o	o
caerulea	o								
glaucina						o		o	o
hochstetteri	o					o	o	o	o
macrostoma						o			
macro f. furf.	o					o	o		o
muralis	o					o		o	o
nigrescens	o					o	o	o	o
viridula						o			o
***Xanthoria** calcicola*						o		o	
candelaria								o	

parietina	o		o	o	o	o		o	o
polycarpa	o			o	o	o			
TOTAL	63	1	33	42	29	64	60	54	60

SMALL ECOLOGICAL PROJECTS GRANT: THE GROWTH AND DEVELOPMENT OF *THELOCARPON LAURERI* AND *CLADONIA HUMILIS*, AND OBSERVATIONS ON THE RECOVERY OF *CLADONIA* PODETIA FROM SIMULATED GRAZING

Introduction

Regular observations were made, over two years, on the growth and development of several lichen species occurring in the vicinity of Sheffield. This has enabled growth to be correlated with definite times of the year, the life span of certain species to be determined, lichen succession was observed, and through experimentation, the rate of recovery from simulated grazing was assessed.

Thelocarpon laureri

Two populations of this species, each covering c. 4cm^2 and growing on adjacent cut stumps in a coniferous plantation, were monitored by counting the number of fruit bodies of all sizes present at six weekly intervals over the two year period 11/1998 - 10/2000. The results are shown as a graph in Fig.1. One population was already established at the start of the project, the other appeared after 4 months. In both populations the number of fruit bodies peaked in April 1999 declining to very few or none by October 1999. The older population then died out and became over grown by gelatinous algae but the younger one performed another growth cycle, again peaking in April, before dying out in late summer and becoming swamped by algae. It appears that colonies at this site persist for about 18 months or two fruiting seasons. At the start of the observations the older colony had fruit bodies of all sizes suggesting that it was in its second fruiting season, while the new colony, when it appeared, had only small ones. Only about 20% of the fruit bodies enlarged, turned from bright to dark green, then collapsing having shed their spores.

Lichen succession on the stumps was observed to occur. Five months after the older colony had died out and the site had become algified, the goniocysts and fruit bodies of *Micarea prasina* appeared among the algal scum, lasted for the summer but became overgrown by algae in early autumn. By then small patches of *Trapeliopsis granulosa* had started to invaded the site.

Cladonia humilis

Podetial growth in three wall top colonies of this lichen were monitored over 2 years by measuring with a ruler marked in 0.5mm divisions. At the start, one had 8 mature, fully developed podetia (scyphi) the others being chosen because they had each 4 to 5 tiny podetial initials. The aim of the monitoring was to determine how long initials take to turn into mature podetia. At this site about 15 months. All nine initials showed a similar pattern of development, a sample is recorded in Fig. 2. Two periods

of height growth, both associated with the autumn/winter took them through to maturity. At a height of 6 to 8 mm the scyphi stop growing. Monitoring eight mature podetia over the 24 months showed that they put on no height or diameter growth after a height of 6 to 8 mm had been reached but three out of the eight disappeared in spring 2000. This was almost certainly due to mollusc grazing as a further one was left half eaten and slime trails were present.

Simulated mollusc grazing

Monitoring a *Cladonia fimbriata* colony had to be abandoned early on as the colony was devastated by mollusc grazing which removed the podetia down to their bases. To investigate whether lichens can recover from this level of damage the podetia on wall top colonies of *Cladonia humilis* and *C. macilenta* were snipped off at the base using surgical scissors. A cushion of *C. macilenta* had its entire crop of 46 podetia removed in March 1999. By July 1999 the ends of the cut bases had turned black, in September 1999 a crop of around 50 small initials appeared on squamules all over the cushion and grew at the following rates. By March 2000 they were 2-4 mm tall; by April 3-4 mm tall, by July 3-4 mm tall, by Sept 4-5 mm tall and by the end of October 6-7 mm tall. In September 2000, for the first time, 20% were seen to be carrying small red apothecia, two months later 80% were fruiting. Recovery had taken 18 months but compared to adjacent control thalli fully mature podetia at this site are usually 8-10 mm tall so a few more mm of height growth will probably take place in autumn 2000. There was a notable summer pause in growth and development.

Recovery of clipped *C. humilis* followed the same course with initials appearing the following September, these then grew, mainly during the autumn and winter, until they reached their full height of 6 to 9 mm by October 2000. The fact that they were unnaturally thin and deformed for this species which typically has short, stout scyphi, could account for some of the variability of this species in the field.

It should be recalled that Jahns (1970) and Ahti (1982) interpreted a podetium as 'a lichenized, stem-like portion [of a thallus] bearing the hymenial discs and sometimes conidiomata in a fruticose, simple or compound apothecium'. They regard the entire podetium as a generative part of the fruiting body, so studying their production is akin to investigating fruit body development rather than somatic thallus development.

Discussion

Poelt and Vežda (1990) have reviewed the sparse literature on ephemeral lichens. They reported that a population of *Thelocarpon laureri* growing on the cut surface of a two year old fence post in a garden in Brno, Czechoslovakia carried 30 unripe fruits in Autumn 1983; they remained in this condition throughout the following winter and spring. The fruit bodies ripened during May then disappeared under the influence of

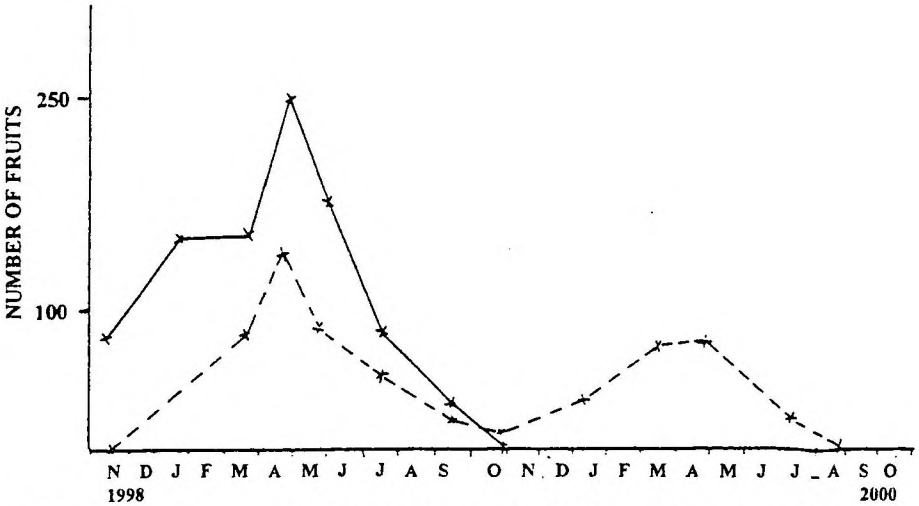

Fig. 1. Apothecia numbers in two populations of *Thelocarpon laureri* monitored over twenty-four months.

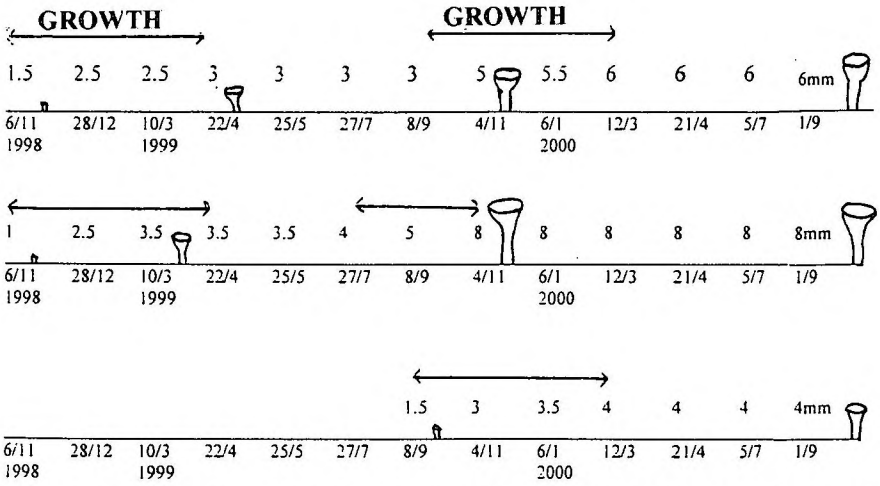

Fig. 2. The development of selected *Cladonia humilis* podetia from initials to maturity. Numerals refer to podetia height. Periods of growth are indicated. Scale x1.

the dry summer. Another half-year life-cycle was repeated the following winter but a further repetition was prevented by the colonisation of *Lecanora conizaeoides*. These are very similar to my findings for *Thelocarpon laureri* near Sheffield except that in the Continental type of climate experienced in Central Europe the *Thelocarpon* behaved as winter ephemerophyte while under the British climate it behaved as a summer one. Poelt and Vežda report that certain lichens such as *Vezdaea* sp., function as winter ephemerals in the European lowlands and at higher altitudes as summer ones. My results suggest that this switch to being active during the summer may also relate to an oceanic climate. Basic meteorological data are provided for Brno and Sheffield in Table 1.

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Oliver Gilbert

TABLE I. *Meterological data comparing the climate in Brno, Czechoslovakia with that of Sheffield, U.K.*

Brno	J	F	M	A	M	J	J	A	S	O	N	D
Max Temp C°	1	3	8	15	20	23	25	25	21	14	7	3
Min Temp C°	-5	-5	-1	4	9	12	14	13	9	4	2	-1
Precipitation mm	30		32	22	36	49	67	81	73	42	36	38
Sheffield												
Max Temp C°	7	7	9	12	16	18	21	21	17	16	9	7
Min Temp C°	2	2	3	4	7	10	12	12	10	7	4	3
Precipitation mm	87	63	70	61	56	66	51	63	59	70	81	88

THE PROBLEMS AND DANGERS OF USING PARA-PHENYLENEDIAMINE

Over the past few years here has been much discussion amongst lichenologists concerning the dangers inherent in using para-phenylenediamine. It is known to be carcinogenic but recent evidence seemed to suggest that the dangers were remote and that it was only a very weak carcinogen.

However, the latest work on this compound indicates that it should be treated by lichenologists with great care. Articles in *The Times* (January 6 and 22) and the *British Journal of Dermatology* emphasise the inherent dangers of para-phenylenediamine. An especial danger is present in its easy absorption through the skin. A study in the United States found that people who used this, or similar products, as permanent hair dye can treble their risk of bladder cancer. A survey reported in the *British Journal of Dermatology* of 612 people suffering from eczema, gave a result whereby 4.2% of them developed contact dermatitis of the scalp after using para-phenylenediamine as a hair dye. A woman in Birmingham recently died from anaphylactic shock after her hair was dyed using a mixture that contained para-phenylenediamine. However, there is no other record of a similar death in the literature and one cannot therefore be certain that this substance was the cause.

Other cases do have a direct link to para-phenylenediamine. For instance, it is a custom in the Middle and Far East to produce intricate patterns on the hands and face using henna. The henna dyes the skin and the patterns remain visible for some weeks forming a temporary tattoo. Tourists to these areas often pay to have such temporary tattoos painted on their skin. Genuine henna is a rather expensive substance and unscrupulous artists have substituted para-phenylenediamine as it is considerably cheaper to purchase. A seven year old girl from Newcastle was on holiday on Greece where she had such a temporary tattoo of a four inch long dolphin painted on her upper arm. Her arm swelled up and developed large blisters. She also found that subsequent exposure to sunlight caused her to come out in a rash. Dr Aileen Taylor, the consultant dermatologist that she saw on her return, stated that this was the fourth case that she had seen in a year. She said that this patient was sensitised to para-phenylenediamine and would have to be careful about exposure to sunlight for two years and probably would never be able to wear make up. Dr Celia Moss, a consultant dermatologist at Birmingham Children's Hospital, stated that she had seen numerous children who had had allergic reactions to dyes that contained para-phenylenediamine.

With its simple passage through the skin, these and other cases suggest that great care should be used when working with para-phenylenediamine. Even when extreme care is taken in removing a crystal from a bottle, minute brown stains from this chemical

will often appear at a later date on the paper where the test was carried out, demonstrating how easily it can be spread. Especial care must be taken when dissolving it in alcohol. The alcohol rapidly evaporates and leaves a fine deposit that can easily be blown about and then breathed into the lungs.

A. W. Archer (The *Bulletin* No. 60 Summer 1987) mentions Santesson's idea of using o-dianisidine but this is also thought be a carcinogen. He suggests using the photographic developer known as 'colour developer 4' in a solution with anhydrous sodium sulphite. The article includes a list of the colour reactions given by this solution compared with those produced by para-phenylenediamine. Further work is required on substitutes for para-phenylenediamine but until then, do not let your interest in lichenology be the death of you.

Frank S Dobson

SUBSTITUTES FOR POTASSIUM HYDROXIDE AND DILUTE ACID

The simple spot tests are a great assistance in separating superficially similar species in the field. A newcomer to lichenology often finds these tests indispensable as they struggle to identify specimens. Since COSHH and a general tightening of safety standards, many people find it almost impossible to obtain some of the necessary reagents. Sodium hypochlorite (C) presents no problem as it is found in most domestic bleaches. The use of para-phenylenediamine (Pd) is probably best avoided in the early stages of lichenology due to its possible health risks. However, it will be found that many keys depend on the spot reactions given by potassium hydroxide (K). An easily obtained alternative for this chemical is therefore needed. A good substitute may be found in a solution of caustic soda (sodium hydroxide). Caustic soda powder may be purchased at any DIY store and a solution should be made up with water. The strength is not critical but about 10% caustic soda to 90% water by volume should work well. If too strong a solution is made the reaction is very slow and it is difficult to get it to transfer on to the lichen. The solution should be tested on *Xanthoria* or an orange *Caloplaca*, if there is an almost instant crimson reaction, the strength is suitable. As it is caustic, strictly follow the warnings on the bottle and observe the usual precautions to prevent it getting on the skin or in the eyes, mouth etc.

For the beginner in lichenology, another problem with keys, is that they often have to decide whether a stone is siliceous or calcareous. The two standard methods are to use dilute acid to see if it fizzes. If it does it can then be considered calcareous. Alternatively it may be assumed to be calcareous if it has orange, crustose, K+ crimson species. A rather circular argument if you cannot yet identify any lichens. Acids are also now difficult to purchase but a good substitute can be found by using lemon juice

as purchased in a plastic lemon. This gives fewer bubbles than in the reaction with hydrochloric acid but sufficient should be seen to give an identification. The reaction is more easily observed if the drop of lemon juice is examined under a hand lens. Vinegar may also be used, but this gives a weaker reaction and usually only works on dry stone. Any dampness causes the vinegar to spread out and become so dilute that no reaction takes place. This does not happen with a lemon squeezer, unless the rock is running with water the lemon juice remains as a drop and the fizzing can be seen.

The early steps in becoming a lichenologist are not easy and it is hoped that these two chemical substitutes may assist the beginner as they start to learn the joys of lichenology.

Frank S Dobson

LICHEN ATLAS: FASCICLE 5

Due to the short time-scale the editor and publisher/printer had to produce the most recent fascicle in order for it to take a 2000 imprint and to be available for sale at the BLS AGM, there was no time for a final proof read. As a consequence, a few errors have been noted for the rubrics above and below the maps, for which we are duly sorry:

Absconditella delutula	Giavarini (not Giavarina)
Cladonia cariosa	Sprengel (not Spreng.)
Collema dichotomum	Gilbert, O L, Coppins, B J & Coppins, A M (not solely Gilbert)
C. glebulentum	Crombie (not Crombia)
Dermatocarpon rivulorum	486 (not 4486)
Porina chlorotica	Giavarini (not Giavarina)

Mark Seaward

BIOBASE

After a slow start, the implementation of BioBase is gathering pace. We now have eight people actively using it for lichen recording, and another nine who are setting the system up and expect to be using it soon. Between us we have recorded more than 1200 sites. Another two large databases, mainly churchyard records, are being converted on to BioBase which will add a further 1600 sites. Records are being passed from local systems to the central system, and paper records sent in to the Mapping Scheme are also now being loaded on to BioBase.

During February all the users were surveyed to gather feedback on the strengths and weaknesses of the system. Their responses were generally positive, and they give a clear view of what we need to do now to get the system into wider use. Over the next few months I hope to concentrate on:

1. Writing a series of "user friendly" guides to Getting Started with BioBase, Advanced Use of BioBase, and Reporting with BioExt and DMAP.

2. Individual training visits and regional workshops, covering setting up the system, how to use the various code and note fields, and reporting and data analysis with BioExt and DMAP.

3. Software changes, including an interface to Recorder 2000, more standard reports (with the BLS number shown on species lists), and an improved site selection mechanism.

4. Review of the code tables to ensure that they cover the full range of habitats, and are structured to support the analysis of data. This review is an inevitable part of the development of a new system, and is best done when there has been enough live use to reveal any shortcomings, but before the codes have been too widely used to make any changes. Any proposed changes will be circulated to all BioBase users and anyone else who wishes to be involved for comment before they are implemented.

5. Updating the species table.

Finally, almost every user made the point that lichenologists are busy people and getting up and running on a new system takes time. Most also made the point that it was well worth the effort!

As the volume of records on the central system builds up we will also have to resolve some legal issues of ownership and access to data. All the national societies and local record centres are having to deal with this, and we are working together with them through the National Biodiversity Network.

Further information about BioBase can be found on the BLS website. If you wish to be involved in the review of BioBase coding, or would like to know more about the system, do please get in touch.

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LICHENS IN LITERATURE: 7

Lord Peter hung his hat on the extended hand of a stout cherub engaged in perusing a lichenous book.

Dorothy L Sayers Busman's Honeymoon, Gollanz, 1937.

(At Buckfastleigh) we arrived at dusk and found that in early February at that hour, the white lichen on the tombs became luminescent.

Mariner Warner on South Devon in the English Landscape, ed. Ted Smart, Profile Books, 2000

Threshold to Elysian Fields
Our country churchyards have become increasingly precious as little havens for wildlife. .... As generations come and go, memories in stone pass gently into nature's embrace where the velvet of the mosses and the gold and silver tracery of lichens spreads over the crumbling rock slabs of the tombs. For centuries churchyards have been hallowed places of beauty and contemplation where poets lingered and sorrows were healed with the coming of spring.

Ted Ellis, Eastern Daily Press April 6 1971

Humphry Bowen & Peter Lambley

SLOVAK LICHENOLOGY IN 2000

The small group of Slovak lichenologists ("*Cladonia*") and allied fans of lichenology had a rich programme in the year 2000. A seminar on the occasion of 140th birthday of Alexander Zahlbruckner opened the new lichenological year, followed by an excursion to the largest park of Bratislava.

Both public and experts were pleasantly surprised by the exhibition "Alexander Zahlbruckner and Lichens", prepared and realized by E. Lisická and A. Lackovicová. It was installed in Malokarpatské múzeum (museum of the region Malé Karpaty Mts), the birthplace of the great lichenologist - in Svätý Jur near Bratislava. Alexander Zahlbruckner´s life and work, as well as the objects of his research were presented on 20 posters, 6 museum show-cases and a leaflet. At the opening on June 8 the relatives of A. Zahlbruckner and representatives of scientific institutions from Slovakia and from abroad were also present. The Natural History Museum in Vienna, where he spent the whole of his working life was represented by Dr. Harald Riedl. The exhibition lasted three months and was greatly appreciated by the visitors, to judge by the comments written in the visitor´s book kept in the Museum.

In August, A. Lackovicová and A. Guttová had possibility to participate in a very interesting workshop on lichen monitoring in Pembroke, Wales, organized by members of BLS, especially Pat Wolseley. Thanks to sponsorship from NATO, they were pleased to present results of their investigations and to learn of further trends in the world of lichen monitoring. Both participants would like to thank once again for the support from the organizers.

A portion of the time was given to popularisation of lichens among young people - viz student excursions (A. Guttová, V. Orthová), lectures and determination courses for teachers within the project "The Blue of the Sky" (A. Lackovicová) and forestry students at Technical University, Zvolen (A. Guttová). We are happy to welcome a newcomer in the branch - a student of ecosociology and physiotactics, Faculty of Natural Sciences, Comenius University, Bratislava - Alica Košúthová. She started work on her thesis "Lichens on down-hill runs" with E. Lisická as a supervisor.

In October a trip to native mixed fir-beech forest in Malé Karpaty Mts took place. Pity that the area was polluted even 100 years before.

V. Orthová spent November on the island of Andros when she started to study local lichens there within the project "Biodiversity of Lichens of the Island of Andros, Greece".

Lichenological year was ended and summarized in December during the seminar on the project "Flora of Slovakia - Non-vascular Plants". The seminar was in honour of the anniversaries of our highly respected teachers and colleagues Prof. Dr. Z. Cernohorský, DrSc. (90 years), Dipl. Ing. Dr. A. Vezda, PhD., awarded by the Acharius medal (80 years) and Dr. I. Pišút, DrSc. (65 years). On this occasion, 5

lichenological lectures on the work within the first volume on "The Lichen Flora of Slovakia" were presented.

Selected papers by Slovak lichenologists in 2000

Guttová, A 2000. Genus *Solenopsora* (lichenized Ascomycetes) in Slovakia. *Biologia, Sect. Bot.* **55**: 363-367.
Guttová, A 2000. Three *Leptogium* species new to Central Europe. *Lichenologist* **32**: 291-293
Guttová, A 2000. Epiphytic lichens used in evaluation of forest quality within selected areas in Slovakia. NATO Advanced research workshop "Lichen Monitoring" 16-22nd August, Pembroke, p. 20.
Lackovicová, A 2000. Use of epiphytic lichens for evaluation of air pollution in forests nearby Bratislava (SW Slovakia). NATO Advanced research workshop "Lichen Monitoring" 16-22nd August, Pembroke, p. 36.
Lackovicová, A & Guttová, A 2000. Lišajníky [Lichens]. In: Maglocký Š. et al.: Ochrana flóry v Slovenskej republike [Conservation of Flora in Slovak Republic]. PríF UK Bratislava, Slovenská polnohospodárska univerzita, Nitra, pp. 53-84 [in Slovak].
Lackovicová, A & Guttová, A 2000. Ochrana diverzity lišajníkov Slovenska [Conservation of lichen diversity in Slovakia]. *Acta Environmentalica Universitatis Comenianae (Bratislava),* **10**: 85-91 [in Slovak with English summary].
Lisická, E 2000. Gefährdete Flechten des Nationalparks Tatry, Slowakei. Ein Beitrag zur Aktualisierung der lokalen "Roten Liste". *Acta Environmentalica Universitatis Comenianae (Bratislava),* **10**: 93-97 [in German with Slovak abstract].
Lisická, E & Lackovicová, A 2000 Alexander Zahlbruckner a lišajníky [Alexander Zahlbruckner and lichens]. A leaflet to exhibition. Ed. SNM-PM, Bratislava, Botanický ústav SAV, 6 pp. [in Slovak].
Lisická, E, Lackovicová, A, Lisický, M J & Guttová, A 2000. First lichen species in NATURA 2000? *British Lichen Society Bulletin* **87**: 37-42.
Orthová, V 2000. New findings of *Parmelia pastillifera* (Harm.) Schub. et Klem. and *P. submontana* Nádv. ex Hale and their distribution in Slovakia. *Bryonora* **25**: 13-17 [in Slovak with English abstract].
Pišút, I 1999. Lišajníky Polany [Lichens of Polana Mts]. *Ochrana Prírody* **17**: 5-15 [in Slovak].
Pišút, I 2000. Dobrá správa pre Bratislavu: lišajníky sa vracajú! [Good news for Bratislava: lichens are coming back!]. *Chránené Územia Slovenska* **44**: 3-5 [in Slovak].
Pišút, I & Lisická, E 2000. Epiphytes on permanent plot in the vicinity of Bratislava (SW Slovakia). *Biologia, Sect. Bot.* **55**: 369-373.
Pocubayová, A, Guttová, A & Orthová, V 2000. On contemporary state of lichen-flora of NP Slovenský raj. *Ochrana Prírody* **18**: 29-39 [in Slovak with English abstract].

The translation of the article by Dr. Anna Guttová is greatly acknowledged.

Anna Lackovicová & Eva Lisická

BRITISH ISLES LIST OF LICHENS

4th April 2001 update to list of 28th May 1999.

In addition to this update a fully corrected and inclusive list has been published on the BLS web site (http://www.theBLS.org.uk) both as text and as a CSV file.

DELETE

795 *Lecidella bullata - Lecidella bull*

2207 *Skyttea fusispora # - Skyttea fusi #*

ADD

7	*Acarospora benedarensis*	838	*Micarea viridileprosa*
7	*Acar bene*	838	*Mica viridilep*
9	*Acarospora anomala*	1577	*Toninia fusispora*
9	*Acar anom*	1577	*Toni fusi*
12	*Abrothallus caerulescens #*	1820	*Verrucaria fuscella*
12	*Abro caer #*	1820	*Verr fuscella*
23	*Agonimia repleta*	1912	*Fellhanera ochracea*
23	*Agon repl*	1912	*Fellhanera ochr*
26	*Agonimia globulifera*	1922	*Rinodina ericina*
26	*Agon glob*	1922	*Rino eric*
206	*Polyblastia philaea*	1996	*Lecanora compallens*
206	*Polyblastia phil*	1996	*Lecanora comp*
768	*Lecidea leprarioides*	1997	*Unguiculariopsis manriquei #*
768	*Lecidea lepr*	1997	*Ungu manr #*
773	*Micarea eximia*	2121	*Lecanora barkmaniana*
773	*Mica eximia*	2121	*Lecanora bark*
795	*Lecanora formosa*		
795	*Lecanora form*		

2207 *Skyttea caesii #*
2207 *Skyttea caes #*

2300 *Skyttea pyrenulae #*
2300 *Skyttea pyre #*

2301 *Skyttea lecanorae #*
2301 *Skyttea leca #*

2302 *Rhymbocarpus pubescens #*
2302 *Rhym pube #*

2303 *Unguiculariopsis lesdainii #*
2303 *Ungu lesd #*

2304 *Peltigera scabrosella*
2304 *Pelti scabrosella*

2305 *Myxophora leptogiophila #*
2305 *Myxo lept #*

2306 *Roselliniella microthelia #*
2306 *Roselliniella micr #*

2307 *Hemigrapha atlantica #*
2307 *Hemig atla #*

2308 *Stigmidium lecidellae #*
2308 *Stig leci #*

2309 *Taeniolella beschiana #*
2309 *Taeniolel besc #*

2311 *Pertusaria leucosora*
2311 *Pert leucosora*

2312 *Lecidea obluridata*
2312 *Lecidea oblu*

CHANGES

171 *Fellhanera vezdae - Fell vezd*
NOW
171 *Fellhaneropsis vezdea - Fellhanerop vezd*

305 *Fellhanera bouteillei - Fell bout*
NOW
305 *Fellhanera bouteillei - Fellhanera bout*

1052 *Peltigera scabrosa - Pelti scab*
NOW
1052 *Peltigera scabrosa - Pelti scabrosa*

1266 *Rhizocarpon obscuratum - Rhizoc obsc*
NOW
1266 *Rhizocarpon reductum - Rhizoc redu*

1269 *Stereocaulon plicatile - Stereo plic*
NOW
1269 *Stereocaulon plicatile - Ster plic*

1754 *Fellhanera subtilis - Fell subt*
NOW
1754 *Fellhanera subtilis - Fellhanera subt*

1829 *Fellhanera myrtillicola - Fell myrt*
NOW
1829 *Fellhaneropsis myrtillicola - Fellhanerop myrt*

1989	*Parmelia ulophylla ##* - *Parmelia ulop ##*	2152	*Physalospora lecanorae #* - *Physal leca #*
NOW		NOW	
1989	*Parmelia ulophylla* - *Parmelia ulop*	2152	*Zwackhiomyces lecanorae #* - *Zwac leca #*
2068	*Guignardia olivieri #* - *Guig oliv #*	2205	*Skyttea cruciata #* - *Skyttea cruc #*
NOW		NOW	
2068	*Telogalla olivieri #* - *Telogalla oliv #*	2205	*Rhymbocarpus cruciata #* - *Rhym cruc #*
2106	*Llimoniella neglecta #* - *Llim negl #*	2285	*Fellhanera viridisorediata* - *Fell viri*
NOW		NOW	
2106	*Rhymbocarpus neglecta #* - *Rhym negl #*	2285	*Fellhanera viridisorediata* - *Fellhanera viri*

Jeremy Gray

NEW, RARE AND INTERESTING LICHENS

Contributions to this section are always welcome. Please 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 Records Centre Instructions for Recorders*, ITE, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, PE17 2LS, 1974], Grid Reference (GR), altitude (alt), where applicable, in metres (m), date, comments, Determined/confirmed by. New to/the. Finally recorder. An authority with date after species is only indicated when the record is new to the British Isles. *In the interest of accuracy, typescript is much appreciated. Please use only one side of the paper. Copy should reach the subeditor at least a fortnight before the deadline for the* Bulletin. Records of lichens listed in the *RDB* are particularly welcome, even from previously known localities.

Absconditella sphagnorum: on moribund *Sphagnum* on peat hag, Loch Wharral, Glen Clova, VC 90, Angus, GR 37/36-74-, alt 650 m, July 2000. Look for dark spreading stains on the dying moss; when wet, the fruits are easily overlooked, but when dry they are clearly visible with a hand lens. New to Angus.

R C Munro

Acarospora benedarensis: on soil of sea-cliff. Arbroath, VC 90, Angus, GR 27/66-41-, July 2000. Confirmed by B J Coppins. New to East Scotland.

R C Munro

Acarospora veronensis: on coarse sandstone plinth at base of headstone, Aghamore cemetery, Kilkelly, VC H26, Co Mayo, GR 12/45-87-, June 2000. Only three other records for Ireland, from Kerry and Dublin.

M J Simms

Adelolecia pilati: on the upper south-facing side of a well-lit quartzitic boulder in a streamside fluvial outwash deposit. Blaenycwm, Cwmystwyth, VC 46, Cardiganshire, GR 22/82-75-, alt 310 m, July 2000. Outwardly appearing to match subsp. *pachythallina ad int.* (small apothecia and thick thallus), but without zeorin by thin layer chromatography. TLC and confirmation by A Orange. New to Cardiganshire.

S P Chambers

Arthonia arthonioides: on sandstone outcrop overhanging river, wooded valley of River North Esk, Newhall, VC 83, Midlothian, GR 36/17-56-, alt 240 m, February 2001. New to South-east Scotland.

B J Coppins

Arthonia molendoi: on thallus of *Xanthoria parietina* on a low concrete wall in rabbit-grazed fixed dunes, Landguard Common Nature Reserve, VC 25, East Suffolk, GR 62/28-31-, September 2000. Confirmed by B J Coppins. New to Suffolk.

P M Earland-Bennett & C J B Hitch

Arthonia pruinata (Syn. *A. impolita*): (i) on wall of church, Hamsey Church, VC 14, East Sussex, GR 51/41-12-, November 2000; (ii) on Greensand (sandstone) of wall of castle, Pevensey Castle, VC 14, East Sussex, GR 51/64-04-, November 2000. Apparently first reports of this species on saxicolous substrata. Arthoniac acid by TLC. Confirmed by B J Coppins.

V J Giavarini

Arthonia pruinata: (i) on large *Quercus* (girth 3.75 m), east side of Reireach Burn, Cawdor Wood, VC 96, GR 28/85-48-, alt 130 m, October 2000; (ii) on large *Quercus*, east of the Allt Dearg burn, East Inverness-shire, GR 28/84-48-. Most northerly British records.

A M & B J Coppins

Bryoria capillaris: on two trunks of *Betula*, outside southern fence of Pressmannan Wood, on slope of Deuchrie Dod, near Stenton, VC 82, East Lothian, GR 36/62-72-, alt 220 m, January 2001. Second record for South-east Scotland.

B J Coppins

Buellia hyperbolica Bagl. (1871): recently identified from two collections in E: (i) on ancient *Quercus*, Windsor Great Park, VC 22, Berkshire, GR 41/9--7--, November 1969, collected by F Rose; (ii) on old *Quercus*, Glan Bran Deer Park, near Llandovery, VC 44, Carmarthenshire, GR 22/79-37-, January 1981, collected by R G Woods. This species resembles a well-developed *B. punctata*, with a whitish to yellowish green granular thallus, but has a PD+ orange reaction and larger ascospores with pointed apices. For a full description see Giralt et al. In *Lichenologist* **32**: 105-128. New to the British Isles.

B J Coppins

Calicium corynellum: on sandstone gravestones Whitfield Church, Allendale, VC 67, South Northumberland, GR 35/77-58-, May 2000, and in much better condition than the now much diminshed population at Bywell in Tynedale. Second British record.

J M Simkin

Calicium parvum: on bark of two large *Pinus* (girths 3.62 and 3.70 m) in 19th Century pine-larch plantation, Tomnaghuail Wood, Cawdor Wood, VC 96, East Inverness-shire, GR 28/85-49-, alt 100 m, October 2000. This the first Scottish occurrence outwith a native Caledonian pinewood.

A M & B J Coppins

Caloplaca chlorina: common on concrete window-sills of rural house, Purdysburn Hill, Belfast, VC H38, Co. Down, GR 33/34-69-, July 2000. Very few records for Ireland but probably greatly under-recorded.

M J Simms

Caloplaca teicholyta: on weathered piece of corrugated asbestos amongst shingle, Whiteness Head, VC 96, East Inverness-shire, GR 28/82-57-, October 2000. New to North-east Scotland.

B J & A M Coppins

Candelaria concolor: on sunny branch of *Salix* on south side of Melton Woods, Melton, VC 25, East Suffolk, GR 62/27-50-, November 2000. New to Suffolk.

C J B Hitch & P M Earland-Bennett

Cetraria islandica: in coastal acid heathland, associated with *Empetrum* and *Brachythecium albicans*, Whiteness Head, VC 96, East Inverness-shire, GR 28/82-57-, October 2000. Another low altitude, coastal site, and the second around the Moray Firth.

B J & A M Coppins

Cetrelia olivetorum: on branches of apple trees in abandoned orchard, Moyglass Bridge, Miltown Malbay, VC H9, Co. Clare, GR 11/08-72-, October 2000. Very few recent records for Ireland; this is the first example that Howard Fox or I have seen.

M J Simms

Chaenotheca chlorella: on bark of large *Quercus* by path, Cawdor Wood, VC 96, East Inverness-shire, GR 28/84-48-, alt 120 m, October 2000. Third Scottish record.

B J & A M Coppins

Chaenothecopsis subparoica (Nyl.) Tibell (1995): on thallus of *Haematomma ochroleucum*, on shaded sandstone cliff in wooded gorge of River Derwent, Crooked Oak (East Crag), VC 67, South Northumberland, GF 45/05-49-, alt 150 m, September 1989. Distinguished by its very short stalks and 1-septate ascospores. Determined by B J Coppins. New to the British Isles.

D E McCutcheon

Cladonia caespiticia: on main branch of *Quercus* in the canopy, Dodd's Wood, Sweffling, VC 25, East Suffolk, GR 62/35-63-, May 2000. As Brian Coppins said, see last issue, "an unusual niche for this species". The record was made soon after the tree was felled from living bark, where a good flora often exists, due to the much higher light intensities. New to Suffolk.

C J B Hitch & P M Earland-Bennett

Cladonia stygia: two specimens have been recently identified among the collections of *C. rangeferina* in E. These are: (i) on damp peat, Dun Moss, near Corb, Moor of Alyth, VC 89, East Perthshire, GR 36/16-56-, July 1967, collected by U K Duncan; (ii) heathy ground, Dubh Lochs of Shielton, near Kensary, VC 109, Caithness, GR 29/2--4--, August 1974, collected by D G Long. This species is now removed from the list of extinct species in the British Isles. It should be searched for, especially in large, deep bog habitats in the Eastern Highlands, habitats not often frequented by lichenologists!

B J Coppins

Cliostomum flavidulum (syn. *Lecanora navarrensis* Etayo): frequent on relatively sheltered riverside *Quercus* and *Tilia cordata*, River Dart, Holne Chase, Buckland-in-the-Moor, VC 3, South Devon, GR 20/72-71-, September 2000. Sterile with farinose soredia and distinctive Pd+ orange reaction. Easily overlooked in the field, for green sorediate species of *Lecanora expallens*. Atranorin and fumarprotocetraric acid by TLC. Determined by B J Coppins. New to England.

V J Giavarini

Collema subflaccidum: five patches on large *Fraxinus* (?pollard) on alluvial shelf in wooded valley of River North Esk, Newhall, VC 83, Midlothian, GR 36/17-56-, alt 240 m, February 2001. A remarkable occurrence only 20 km from the centre of Edinburgh.

B J Coppins

Cyphelium notarisii: on lignum of gate, Shingle Street, VC 25, East Suffolk, GR 62/3--4--, August 1958. This material was discovered by C J B Hitch, whilst going through the herbarium of the South London Botanical Institute. A nice record for Suffolk.

F H Brightman

Cyphelium tigillare: on fence post at edge of unimproved pasture, Whiteness Head, VC 96, East Inverness-shire, GR 28/83-56-, October 2000. Most northerly British record, and first Scottish record outwith the Cairngorm area.

B J & A M Coppins

Dermatocarpon leptophyllodes: on tops of boulders in River South Esk, VC 90, Angus, GR 37/37-64-, alt *c*200 m, August 2000. Fifth Scottish record. Confirmed by B J Coppins.

R C Munro

Fellhanera bouteillei: on stems of *Calluna* in coastal heathland, Whiteness Head, VC 96, East Inverness-shire, GR 28/82-57-, October 2000. An unexpected substratum.

B J & A M Coppins

Fellhaneropsis myrtillicola: on leaves of *Rhododendron ponticum*, Cheriton Bottom, Stackpole Estate, VC 45, Pembrokeshire, GR 11/98-96-, alt 15 m, August 1997. Second record for Wales.

B J & A M Coppins

Fellhaneropsis myrtillicola: on top of horizontal branch of *Corylus*, wooded valley of River North Esk, Newhall, VC 83, Midlothian, GR 36/17-56-, alt 240 m, February 2001. New to Scotland.

B J Coppins

Gyalideopsis scotica: in shallow crevice of mica-schist at fluvial mesic/xeric junction, Allt Fionn Ghlinne, Glen Falloch, VC 87, West Perthshire, GR 27/32-22-, alt 240 m, May 2000. First reported occurrence of this species growing directly on rock; also from an unusually low altitude - is this species more common than we thought?

V J Giavarini

Hobsonia christiansenii: (i) on *Physcia tenella* on rotting farm cart, Pond Farm, Worlingworth, VC 25, East Suffolk, GR 62/21-69-, October 2000; (ii) on *Physcia tenella* and algal crust/*Scoliciosporum chlorococcum* on *Salix*, Pontins Pakefield Holiday Centre, Lowestoft, VC 25, East Suffolk, GR 62/53-90-, February 2001.

P M Earland-Bennett & C J B Hitch

Hobsonia christiansenii: on *Physcia tenella* on bridge over ditch, Greenways, Newton Flotman, VC 27, East Norfolk, GR 62/19-98-, December 2000. Determined by C J B Hitch. New to Norfolk.

P Negal

Lecania cyrtellina: an extensive patch on *Sambucus* in woodland near the lake, Kimberley Park, VC 28, East Norfolk, GR 63/08-04-, October 1999. Confirmed by B J Coppins. New to Norfolk.

D F Strauss

Lecania suavis: on clay barn, Mendlesham, VC 25, East Suffolk, GR 62/0--6-- or 62/1--6--. December 1913, donated to the Natural History Museum, London, February 1919 as *Lecania nylanderiana*. See Coppins, B J and Lambley, P W (1974) Changes in the lichen flora of the parish of Mendlesham, Suffolk, during the last fifty years. *Trans. Suffolk Nats. Soc.* **16**: 319-335. Redetermined by M Mayerhoffer 1983. New to Suffolk.

A Mayfield

Lecidea leprarioides Tonsberg (1992): on bark near base of large *Pinus*, Bognacruie, Abernethy Forest, VC 96, East Inverness-shire, July 2000. This species is related to *L. turgidula* but has a white, diffusely sorediate thallus containing pseudoplacodiolic acid and not placodiolic acid as in *L. tugidula*. New to the British Isles.

B J Coppins

Lempholemma radiatum: abundant on track down towards pipeline, Creag an Lochain, Meall nan Tarmachan, VC 88, Mid-Perthshire, GR 27/60-38-, alt 480 m, June 2000. An unusual 'secondary' habitat for this montane species; it is frequent on the nearby cliffs of Creag an Lochain.

A M & B J Coppins

Lempholemma radiatum: locally abundant down flushed chutes of base-rich, bedded pyroclastic rock, partly eroded into pinnacles, "The Horns", east of Crib Goch, Snowdonia, VC 49, Caernarfonshire, GR 23/63-55-, alt 500 m, February 2001. The locality is 3 km south-east from, and at a lower altitude than, Cwm Glas-bach where it was first seen in Wales [see Fryday, A M (1996) *Lichenologist* **28**(6): pp.521-541].

S P Chambers

Leptogium brebissonii: a small colony forming a narrow streak down the north-east-facing side of a *Fraxinus excelsior*, Berth Iwyd, Dolmelynllyn, VC 48, Merionethshire, GR 23/72-23-, alt 150 m, February 2001.

S P Chambers

Leptogium byssimum: with *L. subtile* on bare patches of clay soil amongst tussock grass over a 2 metre square area on north-east slope of a bank, Landguard Common Nature Reserve, VC 25, East Suffolk, GR 62/28-31-, July 2000.

P M Earland-Bennett

Leptogium imbricatum: locally abundant on mica-schist outcrops, Creag an Lochain, Meall nan Tarmachan, VC 88, Mid-Perthshire, GR 27/59-38-, alt 570 m, June 2000. This generally rare species would seem to be locally abundant in the Ben Lawers range, but overlooked as *L. gelatinosum* in the previous surveys of the 1980s and early 1990s.

B J & A M Coppins

Leptogium subtile: for details,. See under *Leptogium byssimum*.

P M Earland-Bennett

Lichenochora coarctatae (B. de Lesd.) Hafellner & F. Berger (2000): on *Trapelia coarctata* on brick wall round tennis court, Christchurch Park, Ipswich, VC 25, East Suffolk, GR 62/16-45-, January 1995. Determined by D L Hawksworth. New to the British Isles.

P W Earland-Bennett

Lichenochora mediterraneae Calatayud, Nav.-Ros. & E. Calvo (2000): on thallus of *Pannaria mediterranea*, Guisachan House, south-west of Cannich, VC 96, East Inverness-shire, GR 28/28-25-, May 1976. See paper by Calatyud et al. in *Lichenologist* **32**(3): p.225, for a full description and illustrations. New to the British Isles.

B J Coppins

Lichenopeltella peltigericola: on underside of thallus of *Peltigera polydactyla*, low cliff of eroded mica-schist, Creag an Lochain, Meall nan Tarmachan, VC 88, Mid-Perthshire, GR 27/59-40-, alt 600 m, June 2000. New to Scotland.

B J & A M Coppins

Lichenopuccinia poeltii: on *Parmelia saxatilis*, Strome Wood, Loch Carron, VC 105, West Ross, GR 18/88-37-, October 2000. New host, previously known only from *P. sulcata*.

A M & B J Coppins

Micarea alabastrites: on bark of *Betula*, Cawdor Wood, VC 96, East Inverness-shire, GR 28/84-48-, alt 95 m, October 2000. Most easterly Scottish record.

B J & A M Coppins

Mycocalicium subtile: on gnarled dry bark of old *Quercus*, Cawdor Wood, VC 96, East Inverness-shire, GR 28/84-48-, alt 105 m, October 2000.

A M & B J Coppins

Normandina pulchella: flourishing on two *Fraxinus* boles near river, Glen Prosen, VC 90, Angus, GR 37/36-62-, March 2000. The second most easterly record of this species in Scotland, and new to Angus.

R C Munro

Opegrapha areniseda: on wood of Mac Fisheries oyster cleansing box, of the 1930s, at top of shore of tidal river, Orford, VC 25, East Suffolk, GR 62/42-49-, August 2000. With pycnidia only. Determined by B J Coppins. New to East Anglia.

P M Earland-Bennett & C J B Hitch

Opegrapha dolomitica: on north-facing limestone outcrop in wooded valley of River North Esk, Newhall, VC 78, Peebleshire, GR 36/17-56-, alt 240 m, February 2001. New to South-east Scotland.

B J Coppins

Parmelia exasperatula: (i) on branch of *Fagus*, Ballymoyer Wood, VC H37, Co. Armagh, GR 23/97-31-, November 1998; (ii) common in branches of *Acer pseudoplatanus* in rather open woodland, Ballyscullion Park, VC H40, Co. Londonderry, GR 23/97-97-, October 1999; (iii) common on twigs of *Quercus* in parkland, Belvedere Demesne, VC H23, Co. Westmeath, GR 22/42-48-, August 2000; (iv) common on twigs of *Quercus*, *Juglans*, *Taxus* and *Buxus* (even on leaves of *Buxus*!) in ornamental garden, Strokestown Park, VC H25, Co. Roscommon, GR 12/93-81-, August 2000; (v) on twigs of *Quercus* and *Populus*, Sixmiletown Church; VC H36, Co. Tyrone, GR 23/56-67-, September 2000. All new Irish vice county records of this overlooked, rather than actually rare, species.

M J Simms

Parmeliella parvula: over bryophytes, with *Massalongia carnosa*, on conglomerate rock face, Allt Dearg burn, The Grey Stone, Cawdor Wood, VC 96, East Inverness-shire, GR 28/84-48-, alt 75 m, October 2000. Unusually eastern records of these species.

B J & A M Coppins and L & S Street

Peltigera scabrosella Holt.-Hartw. (1988): over bryophytes on conglomerate rock face, Allt Dearg burn, The Grey Stone, Cawdor Wood, VC 96, East Inverness-shire, GR 28/84-48-, alt 75 m, October 2000. Otherwise known from Scandinavia (especially western Norway), Svalbard and Canada (Yukon). Recognized by its scabrous upper surface, and distinguished from *P. scabrosa* by its pale rhizines and diffuse veins. TLC: tenuiorin, dolichorrhizin, zeorin and unidentified terpenoids 6 and 18 (se Holtan-Hartwig in *Sommerfeltia* **15**: 1-77, 1993); the pink-red terpenoid '18' is very distinctive on the TLC plates and is diagnostic for this species. New to the British Isles.

B J & A M Coppins and L & S Street

Pertusaria melanochlora: on large schistose boulder by stream, south side of Ben Glas Burn, Inverarnan, VC 86, Stirlingshire, GR 27/32-18-, alt *c*280 m, May 2000. New to Scotland.

V J Giavarini

Plectocarpon lichenum: on large *Lobaria pulmonaria* thallus on *Acer pseudoplatanus*, west side of Reiereach Burn, Cawdor Wood, VC 96, East Inverness-shire, GR 28/85-48-, alt 125 m, October 2000. An unusually eastern record for this conspicuous parasite.

A M & B J Coppins

Polyblastia albida: on north-facing limestone outcrop in wooded valley of River North Eask, Newhall, VC 78, Peebleshire, GR 36/17-56-, alt 240 m, February 2001. New to South-east Scotland.

B J Coppins

Polysporina cyclocarpa: on knolls of Grampian limestone, Clais Fhearnaig, Mar Lodge Estate, VC 92, South Aberdeenshire, GR 37/07-93-, July 2000.

V J Giavarini

Porina grandis: on the upper surface of rock in crevices, approximately 1 m above river waterline, Quoich Water, Mar Lodge Estate, VC 92, South Aberdeenshire, GR 37/11-91-, July 2000.

V J Giavarini

Porocyphus leptogiella: **England**: (i) on boulders at edge of small tarn, Brown Cove, Helvellyn, VC 69, Westmorland, GR 35/34-16-, alt 615 m, 1990, sterile with pycnidia, collected by B J Coppins; (ii) by Small Water, VC 69, Westmorland, GR 35/45-10-, August 1997, sterile, collected by O L Gilbert. **Scotland**: (i) on rocks by lake shores - Shore Wood, Loch Lomond NNR, VC 99, Dunbartonshire, GR 26/42-87-, March & September 1980, collected by B J Coppins; (ii) Torrinch Island, Loch Lomond NNR, VC 99, Dunbartonshire, GR 26/40-89-, September 1980, collected by B J Coppins; (iii) on sloping, schistose rock by stream, by (west of) Allt Coire a'Chonnaidh, Ben Lawers, VC 88, Mid-Perthshire, GR 27/62-38-, alt 500 m, July 1989, collected by A Fryday; (iv) on basic rocks on upper shore of sheltered sea-loch, Taynish NNR, VC 101, Kintyre, GR 16/7--8--, October 1991, collected by B J Coppins & A M O'Dare; (v) in damp underhang on ± vertical basaltic rock, Quirang, Trotternish Ridge, Skye, VC 104, North Ebudes, GR 18/45-69-, alt 250 m, July 1990, collected by A Fryday. **Wales**: (i) on rocks in splash zone at edge of ephemeral pool, Henllyn Mawr, Llandeilograbam, VC 43, Radnorshire, 32/07-45-, November 1983, collected by R G Woods; (ii) on rocks at lake margin. Llynnau Cregennen, on west side of Cader Idris, VC 48, Merionethshire, GR 23/66-14-, alt 240 m, April 1997, collected by O L Gilbert & V J Giavarini. The above specimens in E have been compared with the type material in BM, with which they all agree, and with Ellis' description in *Lichenologist* **13**: 133-134 (1981). Associated species among the collections are *Collema flaccidum, Dermatocarpon meiophyllizum, Hymenelia lacustris, Staurothele fissa*, and (at Brown Cove) *Collema glebulentum* and *Phaeophyscia sciastra*. New to England, Scotland and Wales and so no longer an Irish endemic.

B J Coppins

Pyrenocollema orustense: on siliceous pebble of concrete tank trap on beach in the barnacle zone, Easington, VC 61, South-east Yorkshire, GR 54/41-18-, August 2000. Confirmed by A Orange. New to Yorkshire.

P J Cook & A Henderson

Ramonia dictyospora: on *Fraxinus* in open woodland to west of Newhall House, VC 83, Midlothian, GR 36/17-56-, alt 260 m, February 2001. New to South-east Scotland.

B J Coppins

Rhizocarpon amphibium: (i) in fluvial-mesic zone forming near perfect circular colonies on hard, smooth outcropping rock in river, Buchan Burn, Glen Trool, VC 73, Kirkcudbrightshire, GR 25/41-80-, May 2000; (ii) on broad bands of submerged rock, Quoich Water and Lui Water, Mar Lodge Estate, VC 92, South Aberdeenshire, GR 37/11-91-, July 2000.

V J Giavarini

Rhizocarpon cinereonigrum: abundant on granite rocks in river, Gairland Burn, Glen Trool, VC 73, Kirkcudbrightshire, GR 25/42-80-, May 2000. Confirmed by B J Coppins.

V J Giavarini

Sagediopsis campsteriana: on thallus of *Ochrolechia tartarea* on *Pinus*, Pollan Bhuidhe, Glen Affric, VC 96, East Inverness-shire, GR 28/19-22-, alt 250 m, July 2000. Second British record. Determined by B J Coppins.

S R Davey

Schismatomma graphidioides: on old *Salix* by stream, Allt a'Mharcaidh, Rothiemurchus Forest, VC 96, East Inverness-shire, GR 28/88-04-, alt 350 m, July 2000. Fifth Scottish locality.

B J Coppins

Sclerophora pallida (Pers.) Y. J. Yao & Spooner (1999) (Syn. *S. nivea* (Hoffm.) Tibell): 'on an old elm between S. Hinksey & the Abingdon woods, Jan^{y} 1816, W. B. [William Baxter]', VC 22, Berkshire, GR 42/5--0--. Specimen in OXF. Confirms the record of Baxter's reported by Bowen (*Lichenologist* **12**: 220 (1980), as *Coniocybe pallida*). Still the only record of this Red Data book species for southern England.

B J Coppins & M R D Seaward

Sclerophora peronella: on lignum inside split trunk of *Fraxinus* pollard, south side of Eastwater, Aller Coombe, Horner Woods NNR, VC 5, South Somerset, GR 21/89-42-, alt 230 m, June 1998. New to southern England.

B J & A M Coppins

Scoliciosporum pruinosum: on *Fraxinus* bole in fen woodland, Wheatfen Reserve, VC 27, East Norfolk, GR 63/3--0--, February 2000. Determined by C J B Hitch. New to Norfolk.

D F Strauss

Stereocaulon leucophaeopsis: on south-facing shale outcrop, south of Pinkery Farm, Pinkworthy, VC 5, South Somerset, GR 21/72-40-, alt 390 m, September 2000. New to Somerset.

B J & A M Coppins

Stereocaulon leucophaeopsis: on pebbles in shingle beach, Whiteness Head, VC 96, East Inverness-shire, GR 28/82-57-, October 2000. Apparently, the first report of this species on coastal shingle.

B J Coppins

Stigmidium arthoniae: (i) on thallus of *Arthonia radiata* on *Corylus*, valley of Dunbeath Water, VC 109, Caithness, GR 39/14-30-, August 1999 [BLS meeting]; (ii) in ravine woodland on east side of Riereach Burn, Cawdor Wood, VC 96, East Inverness-shire, GR 28/85-48-, alt 75 m, October 2000. Second and third British records.

B J & A M Coppins

Strangospora pinicola: on *Fraxinus* bole, at edge of carr by a dyke, Wheatfen Reserve, VC 27, East Norfolk, GR 63/3--0--, May 1999. Confirmed by P W Lambley. New to Norfolk.

D F Strauss

Thelidium decipiens: on north-facing limestone outcrop in wooded valley of River North Esk, Newhall, VC 78, Peebleshire, GR 36/17-56-, alt 240 m, February 2001. New to South-east Scotland.

B J Coppins

Thelomma ocellatum: on fence at edge of unimproved pasture, Whiteness Head, VC 96, East Inverness-shire, GR 28/83-56-, October 2000. Most northerly British record.

B J & A M Coppins

Usnea glabrata: on *Calluna* and *Erica cinerea* in coastal heathland, Whiteness Head, VC 96, East Inverness-shire, GR 28/82-57-, October 2000. Usnic and fumarprotocetraric acids by TLC. Fifth modern Scottish record.

A M & B J Coppins

Verrucaria elaeina: on shady cement rendering on brick bridge over ditch in woodland, Warren Wood, East Bergholt Place, VC 25, East Suffolk, GR 62/08-34-, December 2000. Determined by A Orange. New to Suffolk.

P M Earland-Bennett & C J B Hitch

Zwackhiomyces coepulonus (Norman) Grube & R. Sant. (1990): on *Xanthoria parietina* on northeast shoulder of mortar capping of basic sandstone drystone wall, on north-facing slope in rough moorland, below Mickle Fell, VC 65, North-west Yorkshire, GR 35/82-20-, August 2000. Determined by C J B Hitch, confirmed by D L Hawksworth. New to the British Isles.

A Henderson

Lichenologist **32**(5) was published on 30 August 2000, **32**(6) on 2 November 2000, and **33**(1) January 2001.

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.

AHTI, T 1998. A revision of *Cladonia stricta*. *Folia Cryptog. Estonica* **32:** 5–8. *Cladonia stricta* is divided into three species: *C. stricta* s. str., *C. trassii* Ahti and *C. uliginosa* (Ach.) Ahti. [Prof. Ahti has since informed me that the British material under the name '*C. stricta*' belongs to *C. trassii* Ahti (1998)].

BLATCHLEY, I 2000. Lichen report 1999. *Orpington Field Club Annual Report* **40:** 13–17. News on lichenological activities in this London Borough (VC 16 West Kent), including a survey of wayside trees, in particular the occurrences of *Parmelia caperata*, and a report on the lichen flora of a wall, monitored since the early 1960s. It is also reported that another search to refind *Lobaria pulmonaria* at its locality near Folkestone in East Kent proved unsuccessful.

BOWEN, H 2000. *The Flora of Dorset*. Pisces Publications. ISBN 1-874357-16-1. The chapter on Dorset Lichens (pp 303–321) gives an annotated list of 652 lichen taxa, and a few lichenicolous fungi are to be found in Dorset Fungi (pp 322–351). The annotations include frequency, substrata, number of 10 km square records, and locality, collector and herbarium location of voucher specimens for the rarer species. The 59 colour plates in the book include six of lichens.

DOBSON, F S 2000. Lichens: *An Illustrated Guide to the British and Irish Species*. Ed. 4. Slough: Richmond Publishing. 431 pp. ISBN 0-85546-093-8 (hardcovers), 0-85546-094-6 (softcovers). A thoroughly re-worked new edition, with most of the *c.* 700 species treated illustrated by colour photographs, and highly recommended. [NB: this is not a monograph so that some of the necessarily simplified synonymy should not be taken too literally. The cases most likely to cause confusion are as follows. *Parmeliopsis* is not a synonym of *Imshaugia*, but *Parmeliopsis* auct. p.p. is. *Porpidia albocaerulescens* and *Ramalina baltica*, cited as synonyms of *P. cinereoatra* and *R. canariensis*, respectively, should both be suffixed with 'auct. brit.' because both are recognized species that have been incorrectly reported from the British Isles. Similarly, *Lepraria crassissima* is not a synonym of *L. nivalis*, although most British records of it prior to about 1990 are *L. nivalis*; the true *L. crassissima* has recently been recognized

as British (see *Lichen Atlas*, Fasc. 4). *Lecanora ochroidea* is not a synonym of *L. subcarnea* – it is a good species with a very southern, coastal distribution; the description and map for the latter represents a composite of the two. Finally, the species described as *Porpidia flavocaerulescens* should be called *P. melinodes*. The former name is a synonym of *P. flavicunda* (not treated in this book), which is the fertile, esorediate counterpart of *P. melinodes*.]

DOBSON, F [S] 2000. Air pollution and the lichens of Wimbledon Common and Putney Heath. In DRAKEFORD, T & SUTCLIFFE, U (eds) *Wimbledon Common & Putney Heath: A Natural History*. London: Wimbledon and Putney Commons Conservators: 87–92. An account of the changing lichen floras of various habitats, especially in relation to lower levels of SO_2 air pollution. Includes six colour photographs of common lichens.

GAGE, T 1810. 'A List of British Plants arranged according to their Classes' – see MITCHELL (1999) below.

GAMS, W 2001. Report of the Committee for Fungi: 9. *Taxon* 50: 269–273. The Committee has voted to recommend *Bacidina* Vezda be conserved over *Lichengoldia* D. Hawksw. & Poelt and *Woessia* D. Hawksw. & Poelt. Also recommended is that Motyka's posthumously published 4-volume work on the *Lecanoraceae* be placed on the list of *Opera utique oppressa*. [NB: recommendations by this Committee await ratification at the next International Botanical Congress.]

HAFELLNER, J & BERGER, F 2000. Über zwei seltene lichenicole Pilze auf *Trapelia*. *Herzogia* **14:** 31–34. Includes a key to seven lichenicolous fungi found on *Trapelia* species.

HENDERSON, A 1999. Lichen dyes. An historical perspective. *Leeds Museums and Galleries Review* **2:** 24, 30–34. A short well-illustrated review of the cudbear and other lichen dyes. The three colour plates include one featuring a range of tweed cloths produced by present-day Hebridean dyers.

HERTEL, H 2000. Lecideaceae Exsiccatae. Fasc. 16 (no. 301–320). *Arnoldia (München)* **18:** 1–28. The following new combination is made: *Japewiella tavaresiana* (H. Magn.) Printzen (syn. *Japewia carrollii*, *Japewiella carrollii* (Coppins & P. James) Printzen (1999)). The exsiccate specimens of this species are from Ireland, as are two others in this fascicle.

HOFFMANN, N & HAFELLNER, J 2000. Eine Revision der lichenicolen Arten der Sammelgattungen *Guignardia* und *Physalospora* (Ascomycotina). *Bibliotheca Lichenologica* **77:** 1–190. This revision of lichenicolous pyrenomycetes with hyaline, non-septate ascospores describes several genera and species found in the British Isles: **Myxophora* Döbbeler & Poelt (1978); **Myxophora leptogiophila* (Minks ex G.

Winter) Nik. Hoffm. & Hafellner (on *Collema subflaccidum* from Dunbarton, Skye and West Ross); *Obryzum corniculatum* (on *Leptogium teretiusculum* from Angus and South Ebudes, and on *L. teretiusculum* from "Western...?" [= Weston-super-Mare, Somerset]); **Roselliniella microthelia* (Wallr.) Nik. Hoffm. & Hafellner (on *Trapelia* sp. from Fife); **Telogalla* Nik. Hoffm. & Hafellner; *Telogalla olivieri* (Vouaux) Nik. Hoffm. & Hafellner (syn. *Guignardia olivieri* (Vouaux) Sacc.; on *Xanthoria parietina* from Hampshire and Westmorland); *Zwackhiomyces lecanorae* (Stein) Nik. Hoffm. & Hafellner (syn. *Physalospora lecanorae* (Stein) G. Winter; on *Lecanora dispersa* agg.). *Guignardia fimbriatae* (Vain.) Keissler is shown to be a synonym of the coelomycete *Lichenosticta alcicornaria*, and the British material under the former name is considered to be a possible misidentification for *Phaeopyxis punctum*.

HUTCHINS, E 1812. 'Manuscript Catalogue of Irish Plants' – see MITCHELL (1999) below.

JAMES, P W, ALLEN, A & HILTON, B 2000. Lichens of Sark. *Rep. Trans. Soc. Guernésiaise* 1999, **24:** 657–702, plus 2 colour plates. A total of 319 lichen taxa are recorded, including **Pertusaria leucosora* Nyl. new to the British Isles, and the second modern record of *Thelenella modesta*. Apart from data on localities, frequency and substrata, additional notes are provided for several noteworthy or critical taxa. There are general descriptions and discussions on habitats, climate, etc., as well as a comparison with other islands in the southern British Isles.

JØRGENSEN, P M 2000. Studies in the lichen family Pannariaceae IX. A revision of *Pannaria* subg. *Chryopannaria*. *Nova Hedwigia* **71:** 405–414. Includes description and photograph of the bipolar *Pannaria hookeri*; the other three species of the subgenus are confined to antarctic or subantarctic regions.

JØRGENSEN, P M 2000. Survey of the lichen family Pannariaceae on the American continent, north of Mexico. *Bryologist* **103:** 670–704. On the basis of morphological and molecular data, *Pannaria* subg. *Protopannaria* Gyeln. is raised to full generic status as *Protopannaria* (Gyeln.) P.M. Jørg. & S. Ekman, and the new combination *Protopannaria pezizoides* (Weber) P.M. Jørg. & S. Ekman is made. The descriptions and keys also include many other British and European taxa of the *Pannariaceae*.

KNOPH, J-G & LEUCKERT, C. 2000. Chemotaxonomische Studien in der Gattung *Lecidella* (Lecanorales, Lecanoraceae) III. Die gesteinsbewohnenden Arten mit farblosen Hypothecium unter besonderer Berücksichtigung von europäischen Material. *Herzogia* **14:** 1–26. Further studies on saxicolous *Lecidella* species, with emphasis on central European material. Includes new data on *L. anomaloides*, *L. patavina*, *L. stigmatea* and *L. viridans*. The species hitherto known in Britain as *Lecidella bullata* is shown to belong to the *Lecanora marginata* group, and should be called *Lecanora formosa* (Bagl. & Carestia) Knoph & Leuckert (2000); *Lecidea nigroglomerata* Leight. and *Lecidea mesotropiza* Nyl., both typified by specimens from Scotland, are cited as synonyms. The genuine *Lecidella bullata*, which lacks psoromic acid, is known only from Poland.

MITCHELL, M. 1999. Early observations on the Flora of Southwest Ireland: Selected letters of Ellen Hutchins and Dawson Turner 1807–1814. *Occasional Papers* **12:** 1–124. National Botanic Gardens, Glasnevin, Dublin. A scholarly transcription of letters between two pioneers of cryptogamic botany. The letters themselves are tremendously revealing as to the working of botanists at the time and of their domestic situations and tragedies – they rival any period novel! The transcriptions are copiously annotated with notes, and a map showing Miss Hutchins' main collecting localities is provided. In addition, Appendix 1 is Miss Hutchins' previously unpublished 'Manuscript Catalogue of Irish Plants', and Appendix 2 is the list of bryophytes and lichens annotated as occuring in Ireland from Thomas Gage's manuscript 'A List of British Plants arranged according to their Classes'. For both appendices, Prof. Mitchell has provided synonyms to the listed names where necessary.

MOBERG, R & NASH III, T H 1999. The genus *Heterodermia* in the Sonoran Desert area. *Bryologist* **102:** 1–14. An orthographic explanation is give as to why the specific epithet of *Heterodermia leucomelos* should properly be spelled as *leucomela*.

NAVARRO-ROSINÉS, P, ETAYO, J & CALATAYUD, V 1999. *Rhagadostoma collematum* sp. nov. (ascomicetes liquenícolas, Sordariales) y nuevos datos para otras especies del género. *Bull. Soc. Linn. Provence* **50:** 233–241. Includes a key to all known species of the genus.

PALICE, Z 1999. New and noteworthy records of lichens from the Czech Republic. *Preslia* 71: 289–336. The new combination *Micarea lynceola* (Th. Fr.) Palice, becomes the correct name for *M. excipulata* Coppins.

PURVIS, [O] W 2000. *Lichens*. London: The Natural History Museum. 112 pp. ISBN 0-565-09153-0. Belonging to the NHM's new 'Life Series', this book is a copiously and stunningly illustrated introduction to the biology of lichens, highlighting, especially, areas of current developments in research. A highly recommended book, and a god-send for tutors!

SEAWARD, M R D 2000. Mosses, liverworts and lichens. *Trans. Lincs. Nat. Un.* **25:** 39–41. A report on recent recording in Lincolnshire, together with a map showing the level of lichen recording in the county on a 10 km grid square basis since 1960.

SIMMS, M J 1999. A Mediterranean lichen, *Parmelia soredians* Nylander and other species from Lighthouse Island, Co. Down. *Irish Naturalists' Journal* **26**: 135–136.

SIMMS, M J 2001. The lichens of Mew Island. *Copeland Bird Observatory, Annual Report for 1999*: 50–52. A total of 59 lichens are reported from this small island, which is the most westerly of the Copeland Islands, Co. Down.

SPIER, L & APTROOT, A 2000. *Fellhaneretum myrtillicola* ass. nov., the lichen association on *Vaccinium myrtillus*. *Herzogia* **14:** 43–47. One example of this newly described community is cited from Britain (Devon).

TRINKAUS, U & MAYRHOFER, H 2000. Revision der *Buellia epigaea*-Gruppe (lichenisierte Ascomyceten, Physciaceae) I. Die Arten der Nordhemisphäre. *Nova Hedwigia* **71:** 271–314. Includes description, illustrations and distribution map for *Buellia asterella*, which is considered to be Critically Endangered throughout its range. The key also includes other terricolous *Buellia* species, e.g. *B. insignis* and *B. papillata*.

Brian Coppins

ADVANCE NOTICE

Professor David Richardson will be giving the Swinscow lecture on Friday, 11th January 2002. Full details will appear in the Winter Bulletin.

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Checklist of British Lichen-forming, Lichenicolous and Allied Fungi by Hawksworth, James and Coppins (1980).
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