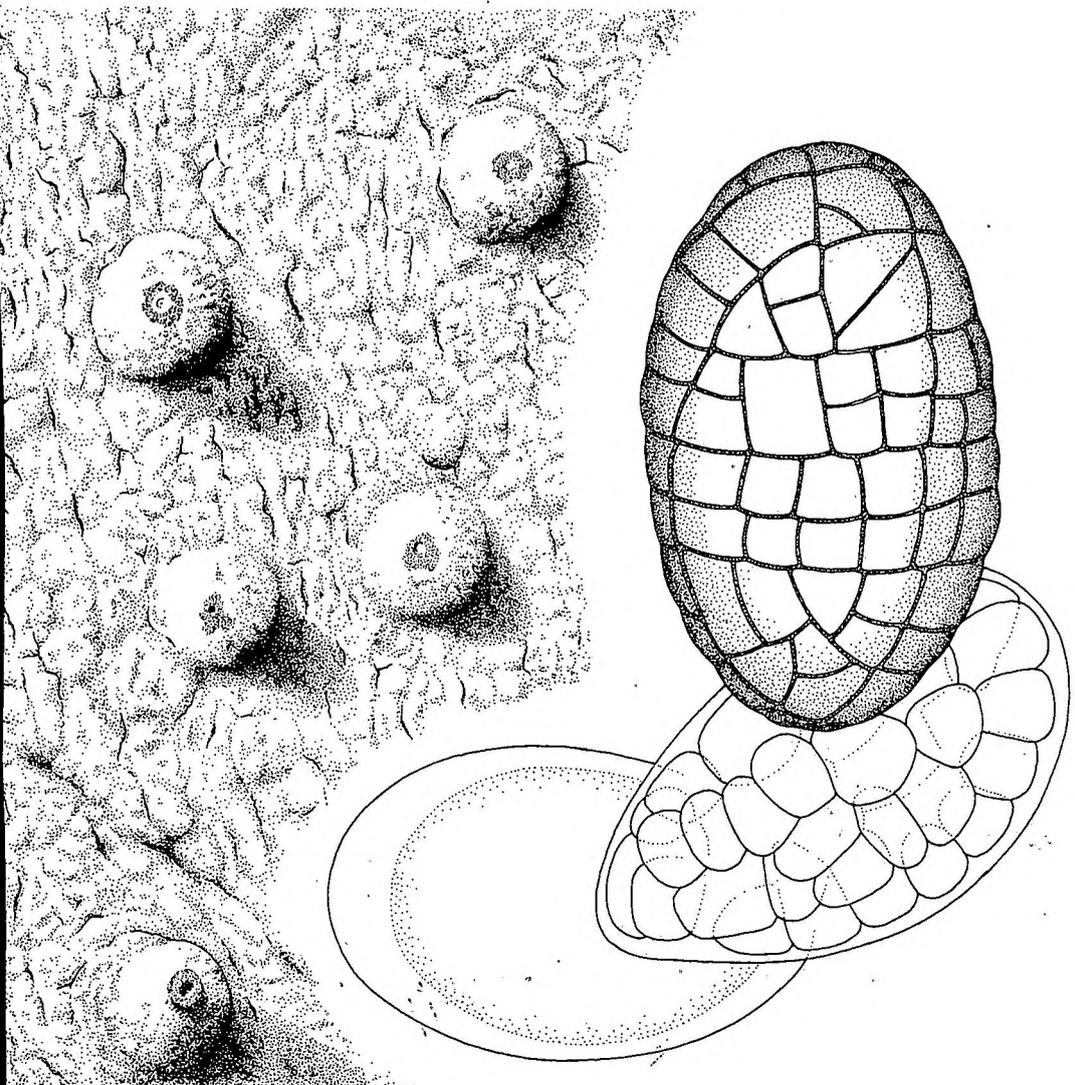


British Lichen Society Bulletin

Number 86, Summer 2000



Edited by P W Lambley

FORTHCOMING BLS MEETINGS

CALEDONIAN PINE FOREST
Leader Brian Coppins
THE COTSWOLDS
Leader Oliver Gilbert

9-15 July 2000

27-29 October 2000

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SUBMISSION DEADLINE - Winter Bulletin September 23.

Cover artwork *Polyblastia cruenta* by Alan Orange.

LICHENOMETRY IN A PATAGONIAN WILDERNESS

Patagonia, a region covering the whole tip of South America, is bedevilled by storms and extreme conditions of every sort. On the west coast up to 4 metres of rain can fall in a year while 40 km to the east over the Cordilleras the landscape becomes a semi-desert. In southern Chile where I work, large parts of the Andes are virtually unexplored, mapped only from aerial photographs, leaving out the bits covered in cloud. Here *Homo sapiens*, along with a few deer endearingly called huemuls (*Hippocamelus bisulcus*), are endangered species. To survive in this environment you need absolutely waterproof clothing, a tent that can't blow away, a petrol lighter, enough dried food to last and, preferably, a tame medic and a strong man to hand (or haul) you up and down rocks. So why, you may ask, should anyone in their right mind want to practice lichenometry (a technique for dating rock surfaces) in Patagonia?

My interest in southern Chile is because it is ideally placed for Southern Hemisphere climate studies and one of the most geomorphologically active areas in the world. My main aim, with my colleague Stephan Harrison from Coventry University, is to establish former positions of the North Patagonian Icefield (centred on 47°S and currently some 4,200 km²) and its glaciers (figure 1). We are also investigating rockfalls and rates of slope movements and attempting to date other landscape features associated with glaciation. However, dating is not a simple matter in this wilderness.

The problem with lichenometry is that it is based on a set of very partial assumptions that are difficult to verify. The technique, in its original form (Beschel 1961), relies on establishing lichen growth rates from size/age correlations, but species growth rates vary both over time and space and sensitively depend on habitat and climate. A further complication for the technique is that there are also widely differing delays before a rock is colonized after its exposure.

The accepted indirect method for resolving these difficulties is to obtain growth rates and colonization periods by collecting largest axial measurements of lichens in graveyards. The colonization period is set by walking the lines of monuments starting with the most recent and noting the date of the stone carrying the first identifiable propagule of the chosen concentric species. Generally monuments are erected some six months after a burial; this time lapse is added to the date to give the delay before colonization. The lichen measurement is plotted on a graph, size against date, and the rest of the monuments are then examined and all largest specimens measured and plotted in turn. A spatter of dots will result from this exercise and the species growth rate is assumed to be that described by a curve traced through the largest size/age dots on the distribution (Gilbert, 2000). Although this may seem to be a rather questionable approach to establishing growth rates, when compared by myself and Frank Dobson with the growth of individuals of several different species directly observed over many years, rates have been found to be reassuringly similar.

However, since the derived growth rate and colonization period are only relevant for the one location; if you want to place an absolute date on rock surfaces elsewhere you must have some independent means of checking the approximate accuracy of colonization and growth rates. In other words, some alternative dating framework is required for the field site. These difficulties have led to the development of two different approaches based on the measurement of lichen populations. The first approach, supplying absolute dates, cannot be used in Patagonia because it also depends on the existence of numerous surfaces of known date (Bull *et al*, 1994, McCarroll, 1993). The second approach, based on the shapes of population size-frequency distributions, shows the relative age of a population and provides some insight into its history, with a population defined by its common rock surface (Winchester & Harrison 1994).

Unfortunately, wildernesses usually lack graveyards and Patagonia is peculiarly lacking in dated surfaces of any kind. Further problems for the aspirant lichenometrist in the region (apart from the physical ones) are the relatively fast growth of saxicolous lichens and rapid coalescence of thalli which frequently lose their centres making it difficult to tell if you are measuring a single individual (figure 2).

In southern Chile, we have used both absolute and relative approaches, within an alternative dating framework supplied by dendrochronology. However, establishing tree age from ring counts taken from tree cores also has its problems and attempts to interpret landscape events and find out how and when they evolved, can be an exercise to tease even the brain of a Miss Marples. Nevertheless, by combining the techniques, sequences and rates of events can be established and dating correlations achieved that are unlikely to be coincidences.

When we first went to Patagonia in 1991, we were fortunate to find paint marks, dated 1982-1985, left by a Japanese team to show shrinking ice surface levels of Glacier San Rafael on the icefield's western margin. *Placopsis patagonica* thalli growing between the marks supplied us with a growth rate of 4.7 mm yr^{-1} and a colonization time of between 0-2.5 years for the species. East of the icefield, in the Colonia, Arco, and Nef glacier valleys, the common saxicolous lichen is *P. perrugosa*. A size/age correlation for the species was provided by the oldest *Nothofagus nitida* (southern beech) tree growing below a forest trim line (created by an outburst flood that we estimated released some 265 million cubic metres of water) which was dated by the tree to 1881 (figure 3). The correlation suggested that the species' growth rate here was unexpectedly linear and identical to that of its related species at San Rafael, but with colonization varying from 2.5 years in the valley to 13 years in an exposed environment near the icefield. Subsequent flood levels were dated and population size frequency histograms confirmed the likelihood of numerous lesser flooding events (Winchester & Harrison, 2000). The 4.7 mm yr^{-1} growth rate extrapolated to the Nef valley provided dating which was substantiated by tree age and supported by aerial photographs of Glacier Nef showing its ice front position in 1944.

Lichenometry and dendrochronology agree on the beginning of recent glacier retreat around the icefield in the 1860s-70s. This dating is interesting because it shows that climate warming here is proceeding synchronously with that in the Northern Hemisphere, a point of much discussion and urgent relevance to modellers attempting to predict future global climates.

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V Winchester

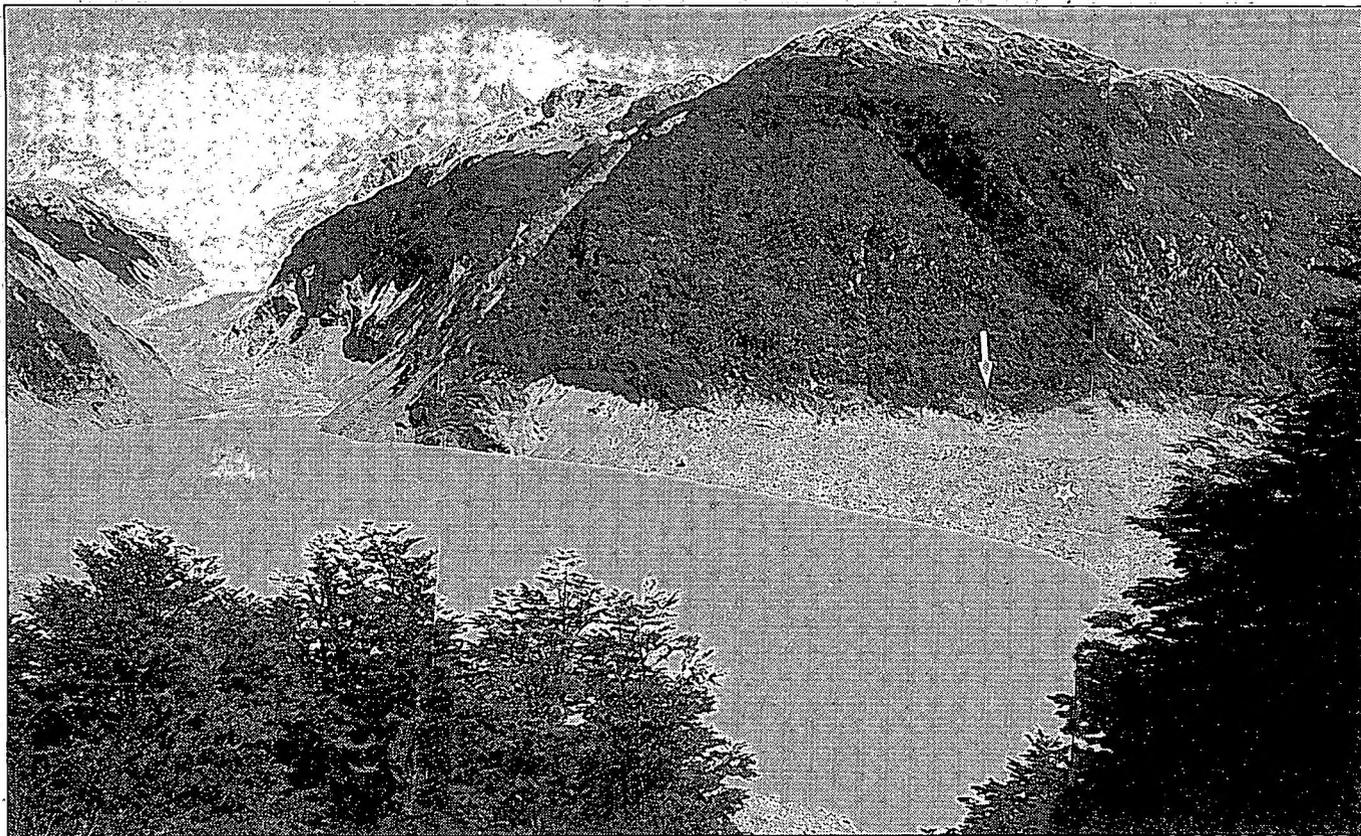


Fig. 3. Glacier Arco and its lake showing the forest trim line (arrowed) created by a former high-level lake above the 90 metre high terminal moraine (starred) left by the glacier after the 'Little Ice Age'.

NEW HONORARY MEMBER OF THE BRITISH LICHEN SOCIETY

Teuvo ('Ted') Ahti has had a lifelong interest in plants: even as a schoolboy he was employed by the Forest Research Institute for his floristic knowledge. After military service, he commenced his studies at Helsinki University, completing his MSc in 1957; during this time he studied Finnish peat bogs, and the wintering range of Canadian caribou and their associated lichen stands - his first detailed study of reindeer lichens; these still continue to be his major lichenological interest. Not surprisingly this led to him obtaining a doctorate on 'Taxonomic studies on reindeer lichens' in 1961. In 1963 he was appointed curator of cryptograms at Helsinki Botanical Museum, being promoted to Head Curator in 1969. At the same time he was a senior lecturer in the Botany Department of Helsinki University, becoming its Professor of Cryptogamic Botany in 1979. In 1991 he was appointed Research Professor of the Academy of Finland. He was President of the International Association for Lichenology, 1975-1981. Although a world authority on the Cladoniaceae, he has wider botanical and mycological interests as manifested by his very extensive publications; the most recent is his 363-page *Flora Neotropica* monograph on Cladoniaceae. His scientific achievements are internationally recognised through his lecturing, field courses, leadership of expeditions, field projects and detailed investigations of herbaria. He is an outstanding teacher and speaks several foreign languages, including Russian, fluently. Not only is he a frequent visitor to Britain, but he has also played an active role in the British Lichen Society, being an Associate Editor of *The Lichenologist*, 1991-1996, a referee of its papers for many years and a major contributor to its pages. His taxonomic skills are frequently called upon by our members, and we warmly thank him for the generosity of the time he devotes to our requests and the promptness of his replies. In proposing him for honorary membership of our Society at the 2000 AGM I had the honour of speaking for lichenologists worldwide.

Mark Seaward

JANUARY MEETINGS 2000

The meetings were held in the elegant and historic rooms of the Linnaean Society, Piccadilly on the evenings of Friday 7 and Saturday 8 January.

Dougal Swinscow Memorial Lecture and Evening Buffet

The meeting began with the Dougal Swinscow memorial lecture which was given by Professor Pier Nimmis of Trieste University on the subject of Bioindication with lichens: progress and problems. A full account of this fascinating and stimulating lecture can be found on page 7.

Following Professor Nimmis' lecture about thirty members attended a sumptuous buffet with cold salmon, cold meats and salads followed by delicious desserts.

2000 Annual General Meeting

In keeping with previous meetings the minutes are circulated as a separate sheet.

Lectures

The afternoon session consisted of three talks on recent research into various aspects of lichens. All three talks were to a high standard with many interesting and thought provoking ideas being presented. After tea there was a departure from tradition with discussion on the Flora which gave members an opportunity to air their views and contribute to the future direction of this important project.

THE THIRD DOUGAL SWINSCOW MEMORIAL LECTURE

Professor Pier Luigi Nimis
University of Trieste

Bioindication with lichens: progress and problems.

Percy William Briggman Nobel prize winner for physics in the 1920s may not be known to many of you but coined the terms 'operational definition of concepts'. He regarded words like shells and for a concept to be scientifically sound it needed to be defined by a series of operations. The term operational is a widely used concept in physics but not so much in Biology.

Most of the activity on bioindication in relation to lichens stems from the milestone publication by Hawksworth and Rose in the early 1970s. What were the problems we had to face in Italy? There was little previous work on bioindication and lichens in Italy. The whole literature c.400 titles was published in Italy during the last ten years, most in Italian and therefore not as well known abroad. We began by arranging courses in Ferrara where our first invited guest lecturer was Peter James.

It is very easy to get misleading results using bioindication. For instance when measuring metal content in lichens very different results can be obtained depending on the sampling technique. Thus when we investigated *Parmelia caperata* we found the older parts of thallus (i.e. in the centre), had a far higher metal content than the new growth on the margins. If you analyse lichens of different ages then the measurements are meaningless. Even now most literature gives no information on the age of the lichen. We investigated the metal content of *Parmelia caperata* in a narrow zone 20m x 20m for mercury and manganese. We found variations in manganese content between 20-68 p.p.m. This obviously could make an enormous difference in any

mapping project if you only selected individual specimens for analysis. However, taking many measurements is expensive both in time and therefore cost. If a mixture of ten thalli is sampled in the same spot and analysed to obtain an average value this will significantly improve data quality and minimise sampling error. It is also important to understand the spatial component if meaningful results are to be obtained. For instance in the case of lead from vehicles the levels drop off very quickly from the source so that at 10 metres the curve has flattened out. Therefore it is important to study data variability so that sampling protocols can be developed to counter this.

The findings of our studies linking lichen distribution to lung cancer mortality rates are now well known. It came about through our work on lichens as bioindicators. We measured lichen biodiversity using a standard protocol using a grid to count the number of different lichen species and their frequency on trees. We then calculated a lichen biodiversity index by adding up the frequency values of all lichens in the grid on each tree and dividing the number of trees examined. Our method does not assume that *Parmelia caperata* for instance was less or more sensitive than other species. Mapping was undertaken of the area in the region of Venice and through it was possible to trace the flow of polluted air. It was then repeated after about five years. These findings were presented at a conference where someone noted the apparent similarity of the patterns with lung cancer rates. This was confirmed by follow up research. The relationship was highest in relation to levels of SO₂ which is a product of all combustion. However, it is only one of a cocktail of several thousand chemicals emitted by combustion through chimneys and the cause of lung cancer is not therefore necessarily SO₂. It is however a tracer to which lichens are sensitive. The relationship only works for young people up to 55. There are one or two clusters in our analysis which do not conform to the chemical data but these can be explained by historic population movements after the war.

We used two bioindicators, man and lichens, supported by instrumental data. The measurement of pollution is both difficult and costly and such studies show that bioindication, if properly used, is a powerful method of revealing patterns in nature. Going back to Percy William Brigman and his operational definition of concepts. Terms like air quality are not definable. Bioindication techniques assess biological variation. Normal conditions may vary from area to area and we can therefore build several scales. It is how much our data deviates from the norm that is important.

We considered this approach in relation to metals from one hundred measurements in areas of Italy which include urban and non urban areas. We plotted the distribution of concentrations, in particular mercury and manganese. We developed a table of metal concentrations taking care not to consider it as pollution, interpreting it rather as degrees of environmental alteration or naturalness. When we started the Government Agency had a simple idea for us to give them an index of air quality. We said that was impossible as air quality does not exist - 'air quality is a thing which is assessed by indicators of air quality'. More correct, is that biomonitoring techniques assess the

effects of pollution on the biotic component of ecosystems. They 'assess the deviations from normal conditions of pollution-reactive components of the ecosystem'. They generate biological data and any bad situation can then be monitored with instruments. It also provides a useful planning tool to help regulate new emissions in an area.

As a result of this work the Italian Government has decided to use bioindicators as monitoring tools and lichens in particular involving 22 environmental agencies throughout Italy. As part of the programme of setting this up we are in the process of organising a series of training courses. We have also produced a map of lichen biodiversity and are developing several interpretation scales depending on climate areas which divert from the norm. There is also a project in schools which has produced a much greater awareness of lichens. This was well illustrated when a group of students and I were examining some rocks for lichens in a small town in the Appennines. We were approached by a policeman who asked us what we were doing. When we explained he said 'fantastic is that a *Caloplaca*?' His interest and knowledge had come as a result of his son studying them at school.

We have also been developing a lichen database with species name and synonyms, distribution, altitude range, ecological indices e.g. pH etc. This can be searched for on the www. By doing this it is possible to make virtual phytosociological releves by putting in a series of environmental parameters and thus getting a list of probable species. This was tested by studying a beech forest in the Appennines and then using the data to produce virtual releves on the computer which confirmed the presence of six communities. Whilst it works for releves it does not necessarily work for the species. It does allow us to make predictive models which allow you to build a map of *Cetraria islandica*, for instance. Whilst at the moment we can only get a species list, it will be possible in the future to reconstruct possible environments.

I will finish by once again emphasising that this work is further evidence that applied science had to be based on an investment in basic research.

Nitrogen as a factor in lichen ecology

There are three principal mutualistic symbioses: mycorrhizal associations between fungi and higher plants, legume/actinorrhizal associations and lichens. We still know least about the lichen symbiosis. In the case of mycorrhizas and nodule forming vascular there is a two-way exchange of nutrients: the vascular plant hosts supply carbon to the microbial symbiont while the plant benefits from an improved supply of key nutrients such as nitrogen and phosphorus. In the case of lichens, while we know a great deal about movement of carbon from the photobiont to the fungus, we know very little about metabolite movement in the reverse direction. Moreover, the N and P relationships of lichens are generally poorly understood. A search through the

literature shows that there is a large amount of information on primary carbon metabolism but relatively little on nitrogen and phosphorous. Our view of the lichen symbiosis is still very carbon orientated. An analysis of the literature on nitrogen and phosphorous relationships in lichens shows that more than 50% of published papers deal with nitrogen fixation, relatively little on other aspects. This contrasts with the situation for mycorrhizas where there is far more information on the nitrogen and phosphorous relationships of mycorrhizal plants than carbon.

Why do lichenologists concentrate on carbon metabolism? This may stem from the fact that photosynthetic responses are used as indicators of physiological status. It is also widely believed that lichen growth is carbon-limited. It has been estimated that there are 4.4×10^6 sq km of lichen woodland in the Canadian boreal-arctic region. While plant ecologists view these ecosystems as being nutrient (primarily nitrogen) limited, a lichenologist would consider the extensive carpets of ground dwelling lichens as being carbon limited! However, of all the 'plant' resources in these ecosystems the non-nitrogen fixing lichens contain the lowest concentrations of N and P, being comparable to those in woody materials of vascular plants. In fact the N concentrations in mat-forming lichens are comparable with those in fungi growing in nitrogen-deprived conditions. If lichens are nutrient-limited then one would expect to find mechanisms in lichens for efficient capture and conservation of key nutrients.

As part of our work we have looked at the effects of artificially enhanced levels of nitrogen resulting from various types of pollution. Discharges of nitrogen compounds into the atmosphere reach the ground in acid rain. Lichens are still efficient at capturing nitrogen from this artificial source. Nitrogen concentrations in *Cladonia* in Europe have been shown to mirror pollution conditions. We examined this relationship in the UK by collecting *C. portentosa* as near as possible to sampling stations in the precipitation composition monitoring network operated by AEA NETCEN. There happens to be a very good relationship between total wet deposited N across the UK and lichen N concentration. Nitrogen concentrations in *C. portentosa* are highest in the apices. But in fact the N concentration in the basal parts of the thallus was found to correlate best with N deposition. Other chemical changes in *C. portentosa* were found to be correlated with rainfall acidity. In northern Russia we looked for evidence of acid deposition along a c.250km transect from boreal forest to tundra. We found that the nitrogen concentration in *Cladonia stellaris* falls quite markedly on moving northwards into the tundra. We examined snow chemistry in winter but found no comparable trend in nitrate concentrations. However, annual precipitation along the transect decreases from c.1200mm in the south to c.600mm in the north. Could low rates of wet-deposited nitrogen control the distribution of this important lichen which is less common in northern tundra? What happens to nitrogen trapped in snow when it melts? Can lichens beneath snow pack capture nutrients during snowmelt? In Antarctica I found that *Usnea sphacelata* very efficiently captured nitrate and ammonium from summer snow showers when the snow melted.

In Antarctica, one of the few sources of nitrogen is ammonia emitted from animal colonies. I found evidence that ammonia emitted from penguin colonies was dry deposited onto snow and then absorbed by *U. sphacelata* during snowmelt. In the future we want to investigate a comparable situation in Namibia where lichen fields dominated by *Teloschistes capensis* may be associated with a major seal colony.

Peter Crittenden

Phylogenetic, ecological and population studies on the genus *Diplotomma*

Since the name *Diplotomma alboatrum* (Hoffm.) Flot. (1849) was introduced, over 170 other names have been published in *Diplotomma* world-wide. The epithets have also been used in *Lecidea*, *Buellia* and *Rhizocarpon* in some cases. Much of the herbarium material actually belongs in *Buellia* or *Lecidea*. The species are saxicolous, often on calcareous or maritime rocks, corticolous or lignicolous, often on *Ulmus*, mature trees of which are now virtually absent in the United Kingdom.

Macrophotographic evidence shows slow growth rates, but interesting mosaic relationships with other lichens.

It is difficult to separate the British species *D.alboatrum*, *D.epipolium*, *D.chlorophaeum* and *D. murorum* by morphology. With white areolate thalli, often pruinose black apothecia, amyloid Lecanora-type asci, brown 1-euseptate to muriform rugulose spores ($15 \times 8 \mu\text{m}$). The spore wall and septum structure has been studied using light microscopy (LM), scanning electron microscope (SEM) and transmission electron microscopy (TEM); these still leave difficulties in separating the species, as does detailed spore size analysis. Only *D. chlorophaeum* has distinctive chemistry with thin layer chromatography (TLC).

Polymerase chain reaction (PCR) and random amplified polymorphic DNA analysis (RAPD) techniques were applied to DNA extracted from apothecia of four *Diplotomma* species, *Buellia disciformis*, *B. punctata* and *Rhizocarpon geographicum*. Sequences of the small subunit of the nuclear ribosomal DNA (SSU: rDNA) were analysed by maximum parsimony with 19 homologous ascomycete sequences in a cladistic study using the computer software Phylogenetic Analysis Using Parsimony (PAUP). Several introns were found in the *Diplotomma* sequences. The resultant matrix of amalgamated RAPD results were analysed with the computer software Numerical Taxonomy and Multivariate Analysis System (NTSYS-pc). A population study with RAPDs, analysed with NTSYS-pc, indicated *D. alboatrum* to be homothallic.

Initial interpretation of the PAUP and NTSYS-pc results shows *Diplotomma* to have close affinities to *Buellia*, but to be a discrete group. There is also some indication that

D. alboatrum and *D. epipolium* are very close and may not merit separation, as also with *D. chlorophaeum* and *D. murorum*.

R Ashwell

Flora Discussion

The final session of the day was a discussion on what developments members would like to see in relation to the Flora. It was introduced by Professor David Hawksworth who suggested that there were three elements which might be considered:

- 1) a checklist
- 2) a field pocket guide
- 3) a revised Flora

The Checklist

There were issues such as should the authority be included, especially when it was not as claimed. There was the problem of confused names where the same name had been applied to different species. Despite the problems it was felt that there was the need for a full synonymy. JNCC did have a synonymised checklist. Brian Coppins had a list of synonyms which filled 60 pages of hard copy. (Simon Davey made point that when going through Francis Rose cards to put on BioBase he would like to have known when his concept of species had changed and which list he was following.) The 1965 Checklist had synonymy but different interpretations. An added complication according to Professor Nimis was that names were used differently in different countries.

There was some discussion on how it might be published. The problem of having the checklist on the Web was the publication date. Ray Woods suggested that we should use the new Recorder standard. Howard Fox asked for a systematic sequence as in Watson. Jeremy Gray said if it was in an electronic format it could switch from one to another and be printed in special issue of *The Lichenologist*.

A Field Pocket Guide

Oliver Gilbert suggested a slimline 'baby Stace' with keys that would be a 'friendly' book. There were models for this approach such as A L Smith's book, Gams Cryptogam Flora, Poelt's key, Wirth's 'Flechtenflora', Harris 'More Florida Lichens' and the New Zealand checklist. Another approach was to follow the model of the BSBI Plant Crib which dealt only with difficult groups. In Spain there was a lateral key - if a new species was to be included it only required adding a string. It appeared daunting but was easy once learnt. Frank Dobson had been working for last two years with Plymouth University on computer key using Excel. He had written a CD key to Flora. Professor Nimis suggested with the demise in taxonomy a probability value was more useful. Dennis Brown pointed out that can get an answer with a key but was it the

right one! Peter James thought this was the fault of the compiler and went on to point out that whilst keys and a flora should be designed in tandem they were two different things.

The Flora

The copyright of the Flora is with the Society but it will be out of print in four to five years. A reprint with supplement was suggested as with Dennis's *Ascomycetes*. Problem of microscopic characters in a revision of the keys. References to illustrations elsewhere could be included. There was also a need for more illustrations in the Flora. Whilst an attractive cover was also important. It was agreed at the end of the meeting that a Flora Group should be set up. Members were invited to write to Professor Hawksworth with comments and suggestions.

PRESIDENTIAL ADDRESS

It is customary for the President to address the Society at least once during his term of office. In this address I will briefly make some observations on the general health of the Society.

During my term of office I believe that the Society can justly claim to have been impressively active towards one of its principal objectives i.e. promoting lichenology. To this end it has produced:

- A symposium on 'Taxonomy, Evolution and Classification of Lichens and Related Fungi' (January 1998).

- A Swinscow Memorial Lecture

- Two fascicles of lichen distribution maps

- Eight field meetings - most, if not all, very well attended.

- Five sets of leaflets on Churchyard Lichens

- The full compliment of the *Bulletin* and *The Lichenologist*

Our various committees are very active and are doing a tremendous amount of work. Our membership is stronger than it has ever been before with a total of 604 members with a worldwide distribution (52% of our membership is overseas) and the Society is financially sounder than it has ever been before. Therefore, I feel that we have much on which to congratulate ourselves. At the same time I fear that all is not well.

When I was the editor of the *Bulletin* I became concerned about the demise of lichenology in UK universities and museums. I invited Sir David Smith, a former BLS president, to comment on the current state of British lichenology. This he did in an article entitled 'What future for lichenology' in which he made the point that in the past subject areas have frequently go through peaks and troughs of activity. The general thesis of the article is that lichenology is currently entering a trough. I would like to briefly elaborate on this problem.

In the university sector in Britain (in which I am employed), the performance of individual institutions and even departments is charted in league tables that are published at 4-5 yearly intervals (viz. the Research Assessment Exercise). The principal performance indicators are income of research grants and output of published papers. When new staff are recruited, a major consideration (and sometimes the only consideration) in making appointments is the potential productivity of the candidates in terms of the 'money in - papers out' yardsticks. Molecular biology, genetic manipulation and ecotoxicology are some of the subjects that currently attract major funding - these are areas in which new appointments are frequently made. Complementation of teaching and contributing to the diversity of expertise within a department are not usually major considerations.

A lichenologist is unlikely to be recruited to a UK university department in the current management climate. A broadly similar situation exists in the museum sector. Consequently, as lichenologists who were appointed in the 1950s and '60s retire they are not being replaced. If current trends continue, then when I retire there will be no one in post in a UK university with a good grasp of lichen biology, let alone lichen systematics. Lectures to undergraduates on lichens are now probably quite unusual and inevitably there are fewer staff able to competently supervise post-graduate research on lichens.

At the last AGM, Mary Hickmott asked 'where are the young people in the Society?'. I joined the Society when I was an undergraduate in about 1969/1970. As a student in London I was very fortunate in being able to attend an evening lecture course on lichens given by Peter James. I also attended Society AGMs regularly throughout the 1970s. At these meetings I encountered several undergraduate and postgraduate students such as John Farrar and David Hill who were both in David Smith's group at Oxford, Tony Fletcher and Alan Pentecost who were then research students at Bangor, Chris Hitch and others working with John Millbank at Imperial College, Jeff Bates then working with Dennis Brown at Bristol, and Brian Coppins who was a research student with Francis Rose. There was an active research group at Bedford College (as it was then) and Peter Earland-Bennett had just begun working at the Halifax Museum. Undoubtedly there were others too. In the 1970s BLS meetings provided a stimulating environment for an undergraduate or postgraduate student. But I wonder how many students are here today? (*In fact there was only one student present - this is a symptom of the problem.*) In the near future there may be insufficient expertise within the Society to provide editors for *The Lichenologist*, to keep abreast of new developments in systematics and to produce new floras. By these comments I do not intend to belittle the role of the amateur members of the Society; they are our lifeblood. Amateur members more or less run the Society and if it is to survive they will increasingly do so. But lichenology as a science is becoming progressively impoverished in the UK.

Can we do anything about this situation? Possibly not. However, this is not an issue that we face alone. Bryology, mycology, pteridology, phycology and even to an extent vascular plant biology are all facing the a similar problem to varying degrees as are many disciplines defined by animal groups. Perhaps by co-operating with other societies we could bring the general issue to the attention of policy makers. One of the functions of a university system is to provide society with a knowledge base. Surely it must be in the Nation's interest to have a base-line expertise in the biology, if not the systematics, of these groups of organisms. I hope that in the future, societies might cooperate in raising awareness over this issue at the highest level.

So in conclusion, I believe that the Society has achieved much and that it will continue to do so - in this we can take heart. However, we should be aware that we are entering a trough and understand the underlying reasons.

Peter Crittenden

SECRETARY'S REPORT

The last year of the millennium is a time to look back not only to the year but the achievements of the years. The Society was founded almost 42 years ago and in that time its membership has grown, now 604 for the second year. Our journal, *The Lichenologist*, has also grown. This year we sadly say goodbye to Dr Dennis Brown who has nurtured it and encouraged its expansion to six parts, as next year we will have a new editor when our current President, Dr Peter Crittenden, takes over.

1999 has seen the sad loss of Brian Fox, a previous President and Chair of the Data Committee, who will be much missed. He has generously donated £1,000 to the Society as well as many books. The gathering of data goes on as we enter a new millennium with a new system, BioBase, and new plans. The website, looked after by Jeremy Gray, now carries much information about the Society as well as an up to date checklist. The churchyard project has completed a decade under the inspiring leadership of Tom Chester. Arthur Owen Lloyd, a past member of Council and the maker of a memorable video shown at a recent AGM, died on November 1999.

Field meetings have always been a feature of the Society, and a very successful one, combined with a *Pertusaria* Workshop led by Peter James, was held in the Scilly Isles in the spring. The summer meeting in Helmsdale gave the participants the opportunity to see *Hypogymnia vittata*, featured at the last AGM exhibition, as well as other Scottish specialities. The autumn meeting in Kirkby Stephen was also popular.

The library has been moved to the Mycology Section at Kew and is available through the BLS librarian. Kew also holds a good collection of lichens although no lichenologist is employed there. I have tried to bring the British collection there up to

date with the 1994 checklist. It is well worth looking in herbaria for new species as we work towards a revision of the Flora.

The Flora was a major achievement by the Society and its revision will be one of the most important things we have to do as we enter a new millenium. The situation of lichenology in Britain, as with much in the sciences, is not strong. There is currently only one lichenologist employed at the BM. However, we hope that this situation is only temporary and that we will see the science of lichenology grow in Britain in the new millenium.

A Waterfield

CONSERVATION COMMITTEE REPORT

The Conservation Committee is an invited forum, currently of 28 members, not only from the BLS but also including representatives from other societies and agencies. There were, as usual, three meetings of the committee in 1999, all in London.

Publicity: A fact sheet has been prepared and submitted to the Education & Promotions Committee, dealing with aspects of conservation of mineral-rich sites. A letter has been sent to all Dioceses listing lichen conservation concerns and key churchyard sites. Lichen interests have been submitted to and included in the BSBI 'Code of Conduct (1999)'. An internet WEB site is in preparation which lists and updates the conservation status of all British lichens.

Advice: The UK Biodiversity Steering Group published 'Tranche 2' of the Habitat and Species Action Plans. One volume includes many lichens, while another has many important lichen habitats, including maritime cliffs. A list of lichens which are potential candidates for further species action plans has been drawn up. The Committee has and will continue to advise lead partners and agencies, including Plantlife, which is co-ordinating lead partner actions for lower plants. The Conservation Officer was invited to attend the workshop on 'ex situ Bryophyte conservation' at Kew. This workshop offers potential for the freeze-drying and hence conservation of lichen thalli felt to be particularly under threat. Thalli could later be released into the wild when suitable habitats have been prepared. However, the method is as yet untested on lichens and the aspect of cultivation, in the lab and in the wild, needs serious attention. Neil Sanderson co-organised an awareness-raising workshop on behalf of the Ancient Tree Forum, and issued comments to several enquirers. Brian Starkey reported back on the Plantlife 'Volunteers Training Workshop'. Several new sites thought to be candidates for SSSI status were surveyed in southern England. Major comments were prepared for the SNH and DETR's proposals for revising the systems for designation and management of SSSIs, the progress and problems of the current operation of the Wildlife and Countryside Act, Forestry Enterprise's Woodland Action Plans, and

Environment Agency's 'River Jelly Lichen Action Plan', and various regional annual management plans for waterway management.

Databases: The committee has supported BioBase developments and copies of the software are now with several members. It is expected that the Conservation Site files will shortly be transferred to the new system. Little response was forthcoming to the general request for a database of English names for lichens. However, many Welsh and Gaelic names have been accumulated.

Symposia: The Lichen Habitats Management Book is regrettably overdue, but new arrangements for its completion in the coming year are underway. The follow-up symposium entitled 'Aspects of Lichen Monitoring' is scheduled for August 2000 at Orierton Field Study Centre.

Threats: Major threats to an important mineral-rich lichen site near Aberystwyth were averted by scheduling it as an SSSI. A short note detailing lichens thought to be threatened appeared in the BLS Bulletin, Winter 1999. It is hoped that members will offer timely updates.

Finally: The committee has undergone some rearrangement, pending the Conservation Officer's Presidency of the Society. Enquiries on certain aspects of lichen conservation can now be addressed directly to the following:

General responses and PLANTLIFE/LINK rep.	-	Ray Woods
Churchyards	-	Tom Chester
International aspects of lichen conservation	-	Pat Wolseley
Woodlands	-	Neil Sanderson
Minutes	-	Brian Starkey

Warm thanks are extended to all Conservation Committee members for their hard work, and to those who have helped the cause of lichen conservation during the past year.

Anthony Fletcher

DATA COMMITTEE REPORT FOR 1999

With great sadness we heard in April of the death of Brian Fox who was the founder and chair of the committee. Coming at a critical time in the work programme, the chair has been temporarily assumed by Anthony Fletcher, while Bryan Edwards is secretary. Despite the potential disruption, the committee has maintained its schedule and held three meetings during the year.

Lichen Atlas: Work continues on further fascicles of the Atlas. Volume 4, dealing with *Pannariaceae* and allies appeared at the January 2000 AGM. Fascicle 5 devoted to *Caloplaca* is well underway, while further fascicles will deal with lichens of Ancient Woodland, Freshwater, *Alectoria* and allies, and others. Some fascicles will additionally include 'odds and ends' such as the 13 outstanding *Cladonias* and revisions of some outdated species accounts.

BIOBASE: The software adopted by the society is now being distributed. Several BLS project officers have copies and a small number have been sold to individuals. Some testing and setting-up of files has continued through the year. A pricing and distribution policy has been agreed and publicised in the BLS Bulletin. Major projects incorporating output from BioBase are being discussed and opinions on this are welcomed. Jeremy Gray is particularly thanked for the enormous work he has done on this project.

Mapping Cards: No new cards are projected but some are being revised.

Warm thanks are extended to all Data Committee members for their hard work during the past year.

Anthony Fletcher

CONFERENCE

The NERC Centre for Ecology and Hydrology and the Environmental Change Research Centre, UCL, have issued a preliminary announcement for a conference on the topic of Detecting Environmental Change: Science and Society, to be held in London on 16-20 July 2001.

The conference "will focus on applications involving the detection and understanding of long-term changes in natural and disturbed environmental systems. It will review methods of environmental change detection across different disciplines by bringing together scientists and stakeholders concerned with monitoring in terrestrial, freshwater, marine, hydrological, atmospheric and social systems."

FROM THE ASSISTANT TREASURER

Members are reminded that claims for *The Lichenologist* should be addressed to Academic Press, Foots Cray, SIDCUP DA14 5HP, U.K. or by email to <jenny_jakes@harcourtbrace.com>, not to the Assistant or the Americas Treasurer.

Please be sure to notify us of changes of address at least six weeks in advance to ensure uninterrupted receipt of publications.

Stocks of Bulletin 85 and the Winter 1999 Membership List sent to the Assistant Treasurer were 'lost in the post'. I am, therefore, unable to supply Bulletin 85 as hard copy to any members who have not received it, but the text could be made available on disk or, exceptionally, for those who do not have access to a computer, as a photocopy.

The 1999 Membership List has been reprinted and is available but there have been so many address changes since 1st October that I have published a supplement which is enclosed with this Bulletin.

Jeremy Gray

TRADITIONAL BOTANY RULES FOR THE NEW MILLENNIUM

At the 16th International Botanical Congress at St Louis, Missouri, USA, in July 1999, members voted at the Nomenclatural Section to retain the present traditions of the botanical *Code*. Radical proposals to reform the naming of plants and fungi, including the lichens, were overwhelmingly rejected.

The proposal for the protection of names in current use was defeated by 74% of botanists in a preliminary mail ballot. All registration provisions for names were deleted from the existing *Code*. The proposed introduction of a BioCode for names first published in the new millennium was also thrown out. The use of aggregate names was banned despite having a narrow majority in the vote. A proposal to substitute English descriptions for new taxa in place of Latin was banished by 95%. The thrust to restrict the use of author citations was discarded.

Many members now hope that all delegates will take a forward view, and that they will have finally heard the last of "names in current use" and similar innovations! With the introduction, in the *Tokyo Code* in 1993, of provisions for the conservation of species names, the nomenclature of organisms is now more stable because authors are able to conserve an existing name instead of correcting it, as was mandatory before 1993.

Jack R-Laundon

GROWING LICHENS

In 1962 my wife and I moved to a small flat near Reading and began to take an interest in wild plants generally. I became particularly interested in mosses. Knowing no better, I tried growing them in a glass tank of peaty soil in a shady corner in the garden. In 1963 we moved to our present address near the centre of Reading, and the following year I built a set of glass frames in the garden to house the now fast expanding collection of mosses and liverworts. By 1966 I was deliberately seeking out new habitats and species to grow, and in 1968 I joined the British Bryological Society. By now I had learnt that proper Botanists did not grow these plants but squashed them into paper packets and wrote Latin names on them. Nevertheless, I persevered.

The moss collection soon took its present form, in a garden near the centre of Reading. Until 1982 it was in raised glass frames resting on a timber framework. Since then it has been on aluminium shelves in an aluminium-framed greenhouse on the same site. It was mostly shaded by a large lime tree, felled in 1995.

The plants were in flower pots either clay or plastic, on natural substrates, and sprayed by hand with a large pump-up gardener's pressure spray, using rainwater collected in a plastic butt off the slate roof of our house.

Inevitably I began to notice lichens also, visiting the acid heathlands south of Reading (as near Crowthorne) I soon found a variety of colourful common *Cladonias*. These were grown, like associated mosses such as *Campylopus* spp., on peat, or in a few cases, on acid clay. These pots of lichens were simply put among these other mosses.

However, there are many ways of killing lichens, even hardy *Cladonias*. They are less shade-tolerant than almost all mosses and quickly decay in poor light, especially in warmer summer weather. The podetia will only grow if moist, cool and in good light. They soon become unhealthy if exposed to hot sunshine if moist, or if there is any free water in the substrate, so they need a north aspect and well-drained conditions (use clay pots!). Squamules will only establish on a fresh surface if it is firm. Like most mosses, they need to be completely moistened by overhead spraying. Tap water in Reading contains lime and soon damages them.

More vigorous, more shade tolerant, and larger, were *Peltigera* spp. A thallus 20-30 mm long can develop in a season. I found that like mosses, they needed complete moistening with an overhead spray of rainwater to stay healthy. *Peltigera aphosa*, *P. canina*, *P. polydactyla* and *P. spuria* all grew reasonably well for several years.

A large pump-up pressure spray is an essential piece of equipment. For some terrestrial species, acid clay, loam or peat is appropriate, for others, more basic soil containing chalk or limestone. I did not use garden soils or composts, but gathered a wide variety of contrasting natural soils and other substrates a plastic bag at a time.

Such a collection is easily made. For soil-growing mosses and lichens only a teaspoon of the chosen soil is usually needed sprinkled onto a pot-full of ordinary peat, firmed down.

At the time, Reading had only the beginnings of the smokeless zones which now cover the town centre. Sulphur dioxide levels at the University site were quoted in Bowen as about 0.03 mg. m^{-3} in summer and about 0.13 mg. m^{-3} in winter. My efforts to keep these little plants alive were, I suspect, dismissed at first as ridiculous. I was sufficiently puzzled by the successes to look at some air pollution literature. It seemed that SO_2 is an unstable gas, quickly filtered out of the air in an enclosed space, so it seemed likely that the mosses and lichens in an enclosed frame or greenhouse, even in the centre of Reading, were largely protected from it.

This perhaps explains why I have kept allegedly sensitive mosses like *Antitrichia curtipendula* alive and growing well from 1968 onwards. Nevertheless there were many failures. In the 1960s, there were few lichens on brick walls in Reading, yet even the hardiest of these, such as *Physcia* species and *Lecanora muralis* decayed in culture in my frames, just as did the more delicate ones. Worse, unlike most mosses they would not regenerate once damaged, and unhealthy lichens quickly attracted large numbers of mites and springtails which disfigured and then devoured them.

Though I kept many mosses and hepatics of rock surfaces, the method I used was not suitable for most lichens. I simply wedged pieces of suitable rock into a flower pot. However, woodlice lurking in the pots soon destroyed the lichens and no insecticide eliminated them. During the 1980s I began, more and more to make 'mounted' cultures, grating or crushing the substrate, and gluing a layer of it to pieces of expanded polystyrene tile, with waterproof glue, which could then be wedged, vertical, sloping or level in to plastic flower pots. Grated tree bark was especially useful and in this way I made many cultures of *Physcias* and *Parmelias*. Some grew for 2-3 years, and in a few I watched soredia start to form new thalli. I grew *Lobaria pulmonaria* in this way for over five years, and new lobes formed, growing up to 10 mm a year.

Eventually, only a minority of the lichens were on the soil at all. I found, for instance that most *Collemas*, even terrestrial ones, grew much better on mounted cultures, on a lime-rich substrate, than most soils. Most of that genus also absorbed more water from sprayings, and grew better, if the mount was level, and if the water did not drain away immediately. Conversely many species like *Parmelias* were more likely to decay if kept level, than if steeply sloping.

By 1982 the old glass frames had become very ramshackle, and the whole collection very neglected. They were replaced by a conventional greenhouse. In the next seven or eight years I was sent or given large numbers of mosses and hepatics from other countries, and was so occupied with them that I have never properly explored the possibilities of growing lichens in this way. I kept most of the *Peltigeras* and *Collemas*

and a few *Lobarias*, but did not collect more lichens, nor replace lost ones. Eventually my membership of the Lichen Society lapsed.

In 1986 I published a book on growing mosses. Whilst it only mentioned lichens in passing it described the methods used to keep or grow the lichens I have mentioned. A second edition of that book in 1995 was interrupted by a personal upheaval. In 1996 I became seriously ill and until recently I have been unable to look after my plant collections. Astonishingly, a large proportion of the mosses survived, but so far as I can see most of the remaining lichens have been lost. Yet I think this experience shows that some lichens, at least may be cultivated, using methods and equipment within the reach of an amateur gardener.

Michael Fletcher
70 South Street, Reading, Berkshire, RG1 4RA

LICHENS DECLINING ON THE ISLE OF WIGHT

Many relict species which are no longer able to colonise new sites are in decline on the Isle of Wight. A few clear examples are as follows:

Anaptychia ciliaris spp. *ciliaris*

Not seen since 1988 and feared extinct. It was refound in a non-fertile state in 1999 on a single ancient parkland oak at a site (Swainstone Park) which was a former stronghold for the species, where it was known to occur on both English elm and ash.

Lobaria pulmonaria

Known from a total of nineteen trees in four sites on the Isle of Wight in 1975. Now known from just nine trees in three sites. Its loss has been due to several causes: inadvertent tree felling, death of trees and overgrowth of ivy.

Anaptychia runciata

A species with a relict distribution at the edge of its range, confined to a small handful of natural boulders along the south coast. Recently I was surprised to find a rapid decline at its main site, a large boulder at St Catherines Point, where it used to grow luxuriantly. Other species growing with it seem not to have been affected and there is no obvious cause for its decline there.

Colin Pope

LICHENOLOGY IN ESTONIA IN 1998-1999

The greatest undertaking in Estonian lichenology during the last few years - a collective project of revising the local checklist of lichens, lichenicolous and allied fungi - was completed in 1999. This project was started in 1995 to verify or re-identify all available herbarium specimens collected from the area that is now known as Estonia, determine the taxa for which herbarium materials are not preserved or cannot be located, and thus compile the updated, critically revised checklist of lichenized and lichenicolous taxa. Although c. 26,000 specimens in the herbarium of the University of Tartu (TU), the biggest collection of Estonian lichens in the world has been looked through, as well as some additional thousands in other Estonian (ICEB, IE, TAA, TAB and TAL) and foreign (H, LD, RIG, S, UPS) herbaria. 13 local specialists and students were involved in the project: Inga Jüriadó, Piret Lõhmus, Jüri Martin, Ljudmilla Martin, Eva Nilson, Taimi Piin, Tiina Rändlane, Andres Saag, Lauri Saag, Mari Sarv, Ave Suija, Marina Temina and Hans Trass; two master papers, two diploma papers and one course paper concerning the lichen flora of Estonia have been written and defended during these years by the students of the University of Tartu. "Second checklist of lichenized, lichenicolous and allied fungi of Estonia" (Rändlane & Saag 1999) was published as a separate volume of the local journal *Folia Cryptogamica Estonica* as the final result of the project. The first checklist of our country was compiled by Hans Trass (1970) and it included 677 species. The second checklist, composed about thirty years later, presents 851 species and 12 infraspecific taxa from 200 genera altogether; 790 species of them are lichenized, 39 species lichenicolous and 22 species non-lichenized but systematically closely allied to the former; 54 species which were included according to literature data only (herbarium material not seen) are considered doubtful for Estonia; 40 species are treated as extinct or probably extinct (not recorded after 1950). All the Estonian names of lichens, some more widely used synonyms, and the abbreviations of herbaria where the respective materials are kept are also added to the list. Furthermore, the substrata from locations where the species have been collected in Estonia, as well as the distributional and frequency data for every species are shortly introduced. However, we experienced once again that scientific research is never complete - the new checklist was published in summer 1999 and in the following September, during the excursions of the XIV Symposium of Baltic Mycologists and Lichenologists, carried out in south-eastern Estonia, 17 taxa were found, which were new to the local lichen flora (Halonen et al. 2000, in press). Today, about half a year after the publication of the checklist we have data concerning about ten other new species. To make the latest information continuously available, the list of taxa (without any additional information) has been published in the internet (<http://www.ut.ee/lichens/fce.html>) and will be constantly revised. The whole project of the checklist of Estonian lichens was mainly financed by the Estonian Science Foundation (research grants No. 1297 and No. 3920) and partly supported by the Swedish Threatened Species Unit.

Besides the floristic research, other main lichenological activities in Estonia during recent years have been connected with ecological studies of lichens in different types of forests, including the identification of hemerophobic and indicator species of primeval forests and other key habitats (I. Jüriado, P. Lõhmus, J. Martin, L. Martin, H. Trass). The red list of Estonian macrolichens which includes 110 species has been compiled (Randlane 1998). Andres Saag defended his PhD thesis in spring 1998 on the systematics of cetrarioid lichens (Saag 1998); two master's theses - by Inga Jüriado and Piret Lõhmus - are expected this spring. Four volumes of the Journal "*Folia Cryptogamica Estonica*" which publishes papers on mycology, lichenology and bryology have been issued during 1998-1999 (fasc. 32-35), and two further are being edited. The XIV Symposium of Baltic Mycologists and Lichenologists, as mentioned above, was held in September 3-8, 1999 in Järvselja, Tartumaa County, south-eastern Estonia with about 50 participants from Estonia, Latvia, Lithuania, Poland, Finland and Sweden (see also Thell 2000; Halonen et al. 2000, in press).

A lot of attention has been paid to the curation of the lichenological herbarium of TU recently (Saag et al, 1998). Today its collections are estimated to contain about 65,000 specimens. The section of Estonian lichens with c. 26,000 specimens is re-arranged according to the latest taxonomy and has been partly databased using the computer program BRAHMS. The comparison herbarium (c. 9,000 specimens, incl. exciccatae) and geographical collections (c. 30,000 specimens) are currently under re-arrangements, in the course of which nomenclature is carefully checked and one entire Herbarium General is formed. As a result, all the species are arranged in the alphabetical order while the specimens of one species are ordered according to the localities (parts of the world and biggest regions). Still, due to technical difficulties, large collections - altogether c. 19,000 specimens - from the Russian Siberia and Far East will continuously be kept separate for a while.

Selection of papers published by Estonian lichenologists or about Estonian lichens 1998-9.

Halonen, P, Kukwa, M, Motiejunaite, J, Lõhmus, P & Martin, L (2000) Notes on lichens and lichenicolous fungi found during the XIV Symposium of Baltic Mycologists and Lichenologists in Järvselja, Estonia. *Folia Cryptogamica Estonica* 36: (in press).

Jüriado, I (1998) A revision of the *Lecanora subfusca* group in Estonia. *Folia Cryptogamica Estonica* 32: 15-20.

Liiv, S & Sander, E (1998a) Bioindication of air quality by lichens in a small town Viljandi in southern Estonia. *Folia Cryptogamica Estonica* 32: 37-42.

Liiv, S & Sander, E (1998b) Distribution of epiphytic lichens indicating air pollution in Estonia. *Sauteria* 9: 289-293.

- Lõhmus, P (1998) List of Estonian calicioid lichens and fungi. *Folia Cryptogamica Estonica* 32: 43-46.
- Martin, L & Martin, J (1998) Epiphytic macrolichens in Estonian forests. *Folia Cryptogamica Estonica* 32: 47-55.
- Martin, L, Temina, M & Martin, J (1999) Supplement to the list of lichen species of Naissaar Island (Gulf of Finland, Estonia). *Folia Cryptogamica Estonica* 34: 43-45.
- Nilson, E & Piin, T (1998) Lichens of the islets of Kolga bay (Gulf of Finland, Estonia). I. Distribution and frequency of epiphytic lichen species. *Folia Cryptogamica Estonica* 32: 57-62.
- Parmesto, E. (1998) *Athelia arachnoidea*, a lichenicolous basidiomycete in Estonia. *Folia Cryptogamica Estonica* 32: 63-66.
- Piin, T & Lensment, L (1998) The first record of *Ochrolechia szatalaënsis* in Estonia. *Folia Cryptogamica Estonica* 32: 67.
- Randlane, T (1998) Red list of Estonian macrolichens. *Folia Cryptogamica Estonica* 32: 75-79.
- Randlane, T & Jürjado, I (1999) Lichen flora of Osmussaar Island (north-western Estonia). *Folia Cryptogamica Estonica* 34: 47-53.
- Randlane, T & Saag, A (1998a) Changes in systematics of cetrarioid lichens. *Sauteria* 9: 43-50.
- Randlane, T & Saag, A (1998b) Synopsis of genus *Nephromopsis* (fam. *Parmeliaceae*, lichenized *Ascomycota*). *Cryptogamie, Bryologie Lichenologie* 19: 175-191.
- Randlane, T & Saag, A (eds) (1999a) Second checklist of lichenized, lichenicolous and allied fungi of Estonia. *Folia Cryptogamica Estonica* 35: 1-132.
- Randlane, T & Saag, A (1999b) Biogeographical survey of Estonian lichen flora - with references to conservation strategies. In *International Conference on Lichen Conservation Biology, Licons*. Abstracts. P. 53. Birmensdorf.
- Saag, A (1998) Evolutionary relationships in some cetrarioid genera (lichenized *Ascomycota*). *Dissertationes Biologicae Universitatis Tartuensis* 34. 196 pp. Tartu.
- Saag, A, Randlane, T & Suija (1998) Lichenological collections in TU. *Folia Cryptogamica Estonica* 32: 81-84.

Saag, L & Saag, A (1999) The genus *Lepraria* (*Lichenes imperfecti*) in Estonia. *Folia Cryptogamica Estonica* 34: 55-63.

Sander, E (1999) Comparison of the lichen flora of different broad-leaved trees in Estonia. *Folia Cryptogamica Estonica* 34: 65-69.

Suija, E (1999) Lecideoid lichens from Estonia - an annotated checklist. *Folia Cryptogamica Estonica* 32: 107-112.

Temina, M (1998) Growth of lichens on limestone outcrops in northern Estonia. *Sauteria* 9: 173-179.

Thell, A (2000) Report from the 14th symposium of Baltic mycologists and lichenologists in Järvselja, eastern Estonia, September 3-8 1999. *Graphis Scripta* 11(2):40.

Thor, G & Nordin, A (1998) 16 lichens new to Estonia. *Folia Cryptogamica Estonica* 32: 123-125.

Trass, H (1998a) Lichen mapping in Europe: an experience with two species. *Sauteria* 9: 181-196.

Trass, H (1998b) List of physcoid macrolichens of Russian Far East and Siberia. *Folia Cryptogamica Estonica* 33: 147-151.

Trass, H (1999) Primeval Forest Hemerophobic Lichens: Conservation Strategy. In *International Conference on Lichen Conservation Biology, Licons*. Abstracts. P.77. Birmensdorf.

Trass, H, Vellak, K & Ingerpuu, N (1999) Floristical and ecological properties for identifying of primeval forests in Estonia. *Annales Botanici Fennici* 36: 67-80.

Tiina Randlane



Fig. 1. Celebration of the 70th birthday of prof. em. Hans Trass on May 2nd, 1998 in Tartu - presentation of *Folia Cryptogamica Estonica* fasc. 32 (dedicated to H. Trass). From the left: Hans Trass, Jüri Martin, Ljudmilla Martin, Inga Juriado, Ave Suija, Piret Lohmus, Siiri Liiv, Enel Sander, Erast Parmasto, Eva Nilson; Tiina Randlane in the front.

LICHENS IN LITERATURE: 5

Of a thatched cottage in Devon

'Nothing to my mind can be more beautiful than the moss and the lichens, yellow, green, white and blue that grow on the old thatched roof, making it look finer than a slated roof could possibly be.'

From *Maurice or the Fisher's Cottage* by Mary Wollstonecroft Shelley, 1820 unpublished until 1987.

Humphrey Bowen

(Can lichens be blue without a touch of iodine? Ed.)

AN INTERESTING PIECE OF LICHEN HISTORY

The December 1999 number of *The Scots Magazine* published a popular article, of general interest, on "Lichens". This attracted the following letter to the Editor in the February number:

29c King Street,
Stanley
By Perth

Dear Sirs, - Reading the interesting article on lichen in December's issues took me back to 1946. I had just been demobbed from the ATS and was jobless. In a local paper *The Ross-shire Journal* I noted people were wanted for collecting lichen!

A van would uplift the bags. The lichen was used in a perfume in France but they could not get it during the war. I enjoyed combing the trees for the greeny-grey lichen and several bags of it brought in a few pounds. Thank you lichen!

C Mackinnon

I was so fascinated that I wrote to Mrs Mackinnon for further details, to which she courteously replied.

She does not remember who organised the Ross-Shire collection, but "a man opened a tin tobacco box, showed us the lichen we were to collect; it was called *Evernia*

prunastry. The small van also had the words "Evernia prunastry" inscribed on the side. We were not given any instruments to scrape off the lichens, but used our bare hands."

The areas collected were in the Black Isle district of Ross-Shire - Munloch Bay, Avoch, Fortrose and Rosehaugh Estate (near Munloch, where there was formerly a fine garden).

Her collecting was done in the months of April, May and June of 1947. She was married soon after and moved to Glasgow, so cannot give more details of people concerned.

I wrote to *The Ross-shire Journal* to ask if they could trace the original advertisement but unfortunately, after several weeks, I have received no reply.

It might be interesting to follow up the present distribution of *Evernia prunastry* in this area at some future BLS field meeting.

Ian Pennie
5 Badcall, Scourie Lairg, Sutherland, IV27 4TH

FULL CIRCLE

For some time now, when keen beginners have asked where they can get hold of a good introductory book on lichens such as the Observer, the Jarrold or the Shire, the inevitably depressing reply has been: "Sorry, it's out of print". Suddenly, the dirth has turned into a plethora and, within the short span of three months, we now have two splendid books to while away the midnight hours, even perhaps to push the latest detective novel to one side. And a third, Dobson in full colour, is well on the way, although, in this case, it will be a book more for the field bag than the bedside. The authors in question, George Baron and Oliver Gilbert, as well as sharing a delightful sense of humour, are both wonderfully skilled communicators. Largely because of this, they have shared something else in common as, between them, they have written all the lichen reports in *British Wildlife* from Volume 1 No. 3 (1990) to the current edition - the first appearing more or less as the Churchyard Project was taking its first faltering steps. From time to time churchyards have received honourable mention and it is interesting to set side by side somewhat contrasting quotations from the two authors. In Volume 3: No. 6 (August 1992), when the project was still in its infancy, George wrote:

"It was recently reported in *The Times* that unfortunate sufferers from a newly diagnosed disorder, Asperger's syndrome, tend to be 'loners' and to devote themselves to such esoteric interests as 16th-century Spanish wars or churchyard lichens."

Last December, coinciding with the decennial report on the project in the last *Bulletin*, Oliver began his *British Wildlife* article (Volume 11 No. 2) somewhat differently with the words:

"Lichenology is driven by fashion. The current fashion is for churchyards."

and went on to say:

"...churchyards are currently the most vibrant area of lichenology, with their own mapping card, newsletter, field-meeting programme and logo (a stonechat)."

To be fair, both writers went on to qualify what they had said. George sugared the pill by adding:

"But surely there is enough evidence to demonstrate that enthusiasts for the latter are among the most gregarious and convivial of human beings!"

Oliver, on the other hand hinted that the fashion may not last much longer and concluded,

"there is some evidence that it may soon be the turn of another ubiquitous habitat - wayside trees."

All I can add is good luck to Sandy Coppins! I indicated in the last *Bulletin* that, after ten years of hard slog, I would much prefer in future to spend more time quietly writing and researching. Whenever the postman calls with yet another armful of requests for help, I am inclined to think that I would rather be a Baron monk than a Gilbertian follower of fashion!

After some delay, a revised set of five churchyard identification leaflets was on sale at the AGM. Although there are no plans to illustrate more than the present 60 species, some photographs may be replaced from time to time in the hope of improving them still further. I am happy also to receive any suggestions for modifications to the text. As the leaflets are advertised on the BLS web site, there has been a steady demand for them and, as I write, there are now fewer than ten sets left. There may be occasional short delays, while further batches are photocopied. Each set costs £2.50 and is available from me at 19 Lawyers Close, Evenley, Brackley, Northants, NN13 5SJ. Cheques should be made payable to 'The British Lichen Society'. An A5 stamped-addressed envelope would be much appreciated.

Other churchyard news appears in the Spring edition of *Stone Chat*, together with a Focus on *Leptogium*, and additional contributions from Barbara Benfield and Ishpi Blatchley. Copy deadline for the next issue is 1st August. If you are not on the mailing list and would like to see a specimen copy, please send me an envelope, as above.

Tom Chester

MOBILE SITES - FURTHER OBSERVATIONS ON THE CAR AND ANOTHER, MORE CURIOUS, SUBSTRATE

Some years ago there was a series of letters published in "The Times" from cat owners extolling the predatory virtues of their pets. Each letter attempted to out do the last in terms of the variety of prey species carried home to the larder by their doting feline. The correspondence eventually became vapid and tedious with little hope of ever being stifled. I share this recollection to reassure members that I am sensitive to the view that one more letter devoted to lichens growing on "The Automobile" may be thought of as being too repetitive, too prolix. I refer, of course, to the interesting article in the previous *Bulletin*. My desire is not to catalyse a cascade of paper on the topic and it also goes without saying that this second offering is not intended in any way to eclipse the item from a much respected colleague on the Cornish coast - or to disparage east European cars! However, I have recently obtained a twenty year old Ford Granada (two careful owners!) which is graced by a number of lichens growing on the rubber seals to the sun roof - where else would the photobiont prefer to be! The car was purchased for spare parts rather than with any thoughts of conservation - lichen or otherwise. What is informative is the comparison between the flora of this vehicle, which has gasped its years away in the dismal air of Britain's first environmental city, Leicester, and that of the Lada mentioned in the last *Bulletin*, having experienced idyllic years cosseted on the ambrosia of the "Costa Cornwall"! It would seem that even on mobile habitats such as these the Hawksworth and Rose (1970) scale holds true.

Three species are growing on the rubber: *Candelariella vitellina*, *Lecanora muralis* and *Lecanora polytropa*, and together they cover about sixty percent of the substrate, their distribution reflecting a fascinating interaction between what is probably a wide range of environmental factors.

Lecanora muralis is dominant and forms half of the lichen coverage. It invariably starts as a tiny thallus in the fissure between the steel of the roof and the seal and, judging from the morphology of the early rosettes, growth is quicker along this crevice than across the rubber - presumably indicating differences in moisture retention of the substrate. There is some overlap on to the metal of the roof but this is minimal, no more than one or two millimetres, and as such represents a sharp contrast with the

ability of the *Parmelias*, illustrated in the winter *Bulletin* (p.13), to spread on to adjacent substrates. All the thalli of *Lecanora muralis* are so far sterile.

Lecanora polytropa grows from the apex of the seal, with rosettes again showing an elliptical orientation along the length of the rubber. In this respect it seems to be responding to factors such as humidity, light and the availability of nutrients in a contrasting way to the previous species, developing as it does where water retention is at a minimum. Lateral growth is eventually arrested where the thallus meets the metal roof. Apothecia are frequent and seem more mature (exciple excluded) in the fissure, some distance away from the oldest part of the thallus.

Candelariella vitellina forms tiny rosettes which again favour the crevice. It is fertile, and interestingly, fruits are frequently present without a discernable underlying thallus.

Lecanora muralis grows over the other two species at a number of points and peeling back the apical lobes reveals that both *Lecanora polytropa* and *Candelariella vitellina* are able to survive this overburden for a distance of about four millimetres before they are no longer discernible.

A close inspection of the seal under the hand lens shows it to be a rubber impregnated fabric and that the smooth surface is breaking down to expose the weave, which presumably is why lichen propagules find it possible to remain on the substrate long enough to initiate growth.

As yet, I have not had the heart to to open the sun roof!

If I recall, the letters to "The Times" were eventually stifled by a reader 'trumpeting' that his monkey-eating eagle, which I took to be *Pithecophaga jefferyi*, had brought home several cats during the week. Furthermore, he was prepared to travel, with his raptor, to ensure a regular supply of such nourishing fare and thanked all the previous correspondents for thoughtfully including their addresses. No doubt somewhere there is a society member at this moment penning an article about an automobile barely able to move for the mass of lichens festooning its body work and eager that it be recognised as the first mobile SSSI. By way of discouragement, two articles on this subject surely being quite sufficient, may I mention a recent day out with Oliver Gilbert to a Leicestershire airfield. *Physcia caesia* was found growing on the flat tyre of a defunct and forlorn Harrier Jet Fighter mouldering away amongst several other ancient aircraft on the perimeter track. Only one species I'm afraid on this unusual mode of transport, which hardly breaks a record, but the associated awesome fire power must surely deter any further correspondence.

Ivan Pedley

SMALL ECOLOGICAL PROJECT REPORTS

A further project has been completed, by Nicholas Carter, and is reported on below.

Recently the following applications have been approved:

Simon Davey £250 for monitoring *Heterodermia obscurata* in Cornwall.

Neil Sanderson £250 for work on past lichen colonisation on the New Forest.

Bryan Edwards and Vince Giavarini £250 towards a project on the lichen flora of basic barked wayside trees in Dorset.

Short (half page) applications outlining costed proposals (in the range £100-£400) should be sent to Oliver Gilbert, 42 Tom Lane, Sheffield, S10 3PB; they will be dealt with promptly.

SMALL ECOLOGICAL PROJECT PROGRESS REPORT: CONTROLS ON LICHEN SPECIES DISTRIBUTION, COMMUNITY STRUCTURE AND SPECIES RICHNESS ON LIMESTONE HERITAGE BUILDINGS IN OXFORD AND THE COTSWOLDS

I would like to thank the BLS for supporting the following project. The overall aim was to examine the distribution, community structure and species richness of lichens on limestone heritage buildings in Oxford and the Cotswolds and to investigate their controls. This research develops methods for sampling lichen communities on built structures with varying architectural features so as to facilitate comparison between features and buildings at different locations. The effect of altitude (<100m or 150m/150m>), air quality (NO₂, SO₂ and NH₃ levels), height from ground, surface slope (wall, buttress or sill), aspect (north or south-facing) and substrate composition (stone or mortar) on species distribution, community structure and species richness were investigated for 15 churches in Oxford and the Cotswolds.

So far nine sites have been completely surveyed by the author with the guidance and field assistance of Tom Chester at several of the sites, leaving six left to survey in the year 2000. A total of eighteen 50 x 50cm quadrats were selected at each site (nine quadrats on each north and south-facing wall) at three horizontal locations (randomly selected using a number table and tape measure) and at three vertical locations (0.25, -75m, 1.25-1.75m, 2.00m-2.50m). Sloping surfaces were sampled using a 'timed survey' method of ten minutes sampling. Both methods were chosen following field trials and the construction of species-area and species-time charts respectively before the main period of fieldwork commenced.

More than 50 species of lichen have been identified in the field and laboratory, and a very large and detailed number of species lists have been generated for the nine sites surveyed. It is my intention in this report to give an example of some of the ecological information gathered so far. Tables 1, 2 and 3 give a summary of the ecological data

collected for Swinbrook Church. More detailed ecological analyses using computer-based ecological statistical packages will follow fieldwork completion.

An initial examination of the data gathered so far has indicated the following general patterns:

1. A difference in species richness and composition between north and south-facing walls with more species covering a larger area on south-facing walls.
2. High species richness on certain architectural features such as sill and buttress slopes and seemingly different types of community to those found on the vertical wall surfaces.
3. A significant difference between north and south-facing walls in the species richness of their sloping surfaces.
4. Differences in the types of species found on mortar compared with stone.

Nick Carter
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Quadrat No.	1	2	3	4	5	6	7	8	9
Height (m)	0.25	0.25	0.25	1.25	1.25	1.25	2	2	2
Total no. lichen species present	14	15	17	15	12	14	17	11	12
Total % lichen cover	56	68	59	47	42	27	36	22	38
Domin cover	8	8	8	7	7	6	7	5	7
Total no. of mortar species	6	10	14	9	10	9	13	2	10
Total no. of stone species	12	12	13	13	11	11	11	3	10
No. species just found on mortar	2	3	4	2	1	3	5	2	1
No. species just found on stone	8	5	3	6	2	5	3	0	2

Table 1. Summary of the ecological data collected for the south wall of Swinbrook Church.

Quadrat No.	10	11	12	13	14	15	16	17	18
Height (m)	0.25	0.25	0.25	1.25	1.25	1.25	2	2	2
Total no. lichen species present	8	10	8	10	9	8	8	7	6
Total % lichen cover	24	39	51	16	39	25	28	32	14
Domin cover	5	7	8	5	7	5	6	6	5
Total no. of mortar species	5	9	7	6	8	5	6	5	4
Total no. of stone species	8	9	8	9	8	8	7	7	5
No. species just found on mortar	1	1	0	1	1	0	1	0	1
No. species just found on stone	3	1	1	4	1	3	2	2	2

Table 2. Summary of the ecological data collected for the north wall of Swinbrook Church.

South Face						North Face					
Sills			Buttresses			Sills			Buttresses		
13	14	22	20	11	18	9	7	6	9	9	9

Table 3. Total number of species found on sloping surfaces on both the south and north walls of Swinbrook Church.

ETHNOBOTANICAL NOTES ON SOME LESSER KNOWN HIMALAYAN LICHENS

The present communication reports a less known use of four lichen species. These are used as "Havan materials" in Hindu worship by the Gaddi and other hill communities that inhabit tribal tracts and forest areas of Kangra valley, Himachal Pradesh in Western Himalaya. Basically, Havan is a Hindu practice that is performed in the Indian subcontinent for spiritual enlightenment, concentration of the mind and purification of the environment. 'Havan' involves burning a mixture of incense material prepared from the herbals.

Due to great ethnic and floristic diversity, the Indian region represents great ethnobotanical wealth. Ethnobotanical information on Gaddi tribes has been provided by Uiyal & Chauhan (1973), Kapur (1993) and Brijlal *et al.* (1996) and during the course of our studies we gathered information on lichen species growing in forest area of Kangra Valley. A recent overview of Indian Ethnolichenology, by Upreti (1996) and Upreti & Negi (1996), has provided information on lichens used by different Indian tribal communities as spices, vegetables and medicine, but it did not mention lichens used as 'Havan materials'. We determined that four species of lichens, locally known as 'Budru' and belonging to the family Parmeliaceae, are used in Havan. Specimens were collected (EBH 9808 A, B, C, D) in the month of July 1998, and were identified by applying lichenological techniques. Colour tests were performed with the usual reagents, i.e. K (5% potassium hydroxide), C (aqueous solution of calcium hypochlorite) and PD (paraphenylene diamine) and lichen substances were separated with thin layer chromatography (TLC) in solvent A (180 toluene: 60 dioxane: 8 acetic acid) using the technique of Culberson (1972) and Walker & James (1980). The specimens housed and documented in National Botanical Research Institute Herbarium Lucknow (LWG) are enumerated here with their chemical constituents based on both our observations and the published literature.

The identified lichens were:

Cetrelia collata (NYL.) Culb. & C. Culb.

Atranorin, imbricarinic acid and an unidentified substance (KC+red) ∞ - collatolic acid by Asahina, Kanaoka & Fuzikawa (1933).

Everniastrum cirrhatum (Fr.) Hale

Atranorin and salazinic acid.

Melanelia infumata (Nyl.) Essl.

Atranorin.

Parmotrema nilgherrense (Nyl.) Hale

Atranorin and \cdot - collatic acid by Rangaswami & Rao (1955).

Acknowledgements

The authors are grateful to the Director, National Botanical Research Institute, Lucknow, for providing facilities to work and to forest officers and tribal chiefs for the help rendered during the field studies.

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UNDERSTANDING LICHENS AND WHERE THEY ARE FOUND

New Books

Two books, recently published on lichens, add to our understanding of lichens and where they are found. Both are attractively illustrated. Oliver Gilbert's *Lichens* (new Naturalist Library, Harper Collins) contains a wealth of information, helps make sense of what you have seen in the field or, read from an arm chair, whets your appetite to explore new habitats. George Baron's *Understanding Lichens* (Richmond Press) is a handy introduction to lichens and a good size to pack into your case when you are planning a trip.

We have another important book to look forward to: the fourth edition will be available by summer of Frank Dobson's *Lichens: An Illustrated Guide to British and Irish Species* (Richmond Press). Those of us who carry Frank's book with us everywhere will welcome this up-to-date volume, with all photographs in colour.

Leaflets: Air Quality and Lichens

A leaflet on Air Quality and Lichens written by David Hawksworth and published by ARIC (the Atmospheric Research and Information Council) is now available from the British Lichen Society at the British Museum of Natural History. This free leaflet includes the zone scale for the estimation of mean winter sulphur dioxide levels in England and Wales, using lichens growing on tree bark as indicators. (Contact Amanda Waterfield at the British Museum of Natural History, 020 7938 9123.)

Wallchart on Lichens

The Atmospheric Research and Information Council has copyright to colour photocopy at A4 size a limited number of the colour wall chart drawn by Claire Dalby in 1981. This very beautiful and informative chart is available at this reduced size for £1. Cheques should be made out to Manchester Metropolitan University. Write to Sue Hare, Atmospheric Research and Information Council, Manchester Metropolitan University, Chester Street, Manchester, M1 5GB.

Exploring Lichens: School Projects

Many young people learn about lichens for the first time through school-based projects. Recently, primary children in Rutland have benefited from Tony Fletcher's advice on their lichen work. William Purvis has discussed the scope of experimental work with lichens at Eton College. Pat Wolseley is developing materials for Pembrokeshire school children on lichen succession on twigs. Tom Chester has helped children in many schools and over a number of years has worked with sixth formers in St Edmunds on factors affecting lichen growth on churchyard headstones. On a much larger scale, school children across Italy contributed to Professor Nimis' research on links between patterns of lichen distribution and longevity. A few years ago, Oliver Gilbert organised a successful national survey on air pollution and lichens. With the

help of the Sunday Times, 15,000 Clean Air Research Packs were distributed to children - and their results make fascinating reading.

Whether your project is large or small, others would be interested in knowing about it. The Association for Science Education regularly arranges Members' Exhibitions. The next annual meeting is in Guildford (January 2001). Before then, most Regions have meetings and welcome displays of project work - for example, posters and accounts written by students. If you are interested in displaying school projects and would like to augment your material with professional display boards showing the work of the British Lichen Society, contact Amanda Waterfield or Ceri Leigh at the British Museum of Natural History (020 7938 9123).

STOP PRESS William Purvis has recently been seen with galley-proofs of his new book, which he promises will be attractively priced, we can look forward to another well illustrated book on lichens!

Barbara Hilton for the Education and Promotions Committee
Beauregard, 5 Alscott Gardens, Alverdiscott, Barnstaple, Devon, EX31 3PT

CZECH LICHENOLOGY IN 1999

Spring field meeting was organised in Prague and surroundings where a relatively high diversity of lichen flora is present owing to diverse geological conditions (limestones, old eruptive vulcanites and non-calcareous rocks); 20 participants. Autumnal 12th Bryological and Lichenological Days were held in the Silesian Beskyd Mts (North Moravia); 24 participants. Several one-day excursions for students were also undertaken.

New printing technology resulted in an improvement in the standard of the newsletter *Bryonora*. In the *Bryonora* 23 there is an article by J Liška, Z Palice and Š Bayerová on new *Cladonia* species for the lichen flora of the Czech Republic: *C. luteoalba* and *C. norvegica*. Interesting lichens from the Bratislava area are reported by V Orthová and I Pišút. *Bryonora* 24 includes list of lichens found during a cryptogamic excursion in the Slovenský Raj National Park, Slovakia (by Z Palice, Š Bayerová and J Halda) and contribution to lichen flora of the Brdy Mts (by V Mejstík). An information on lichens and bryophytes protected by law in the Slovak Republic by I Pišút is also published here. Additions to the Czech and Slovak lichenological bibliography are also included.

A Catalogue of Lichens of the Czech Republic was published by A Vezda and Liška. This book lists all published reports on lichen species from the Czech Republic. The bibliography involves papers dealing with lichen distribution in various regions of the Czech Republic as well as papers by foreign lichenologists reporting lichen specimens.

from the territory of the Czech Republic. All lichen taxa are cited under their original name used in the literature. The catalogue also includes some lichenicolous fungi formerly treated as lichens (e.g. in *Caliciaceae*). An index of synonyms and complete bibliography are supplemented. The catalogue of lichens of the Czech Republic includes 1534 species in 255 genera; total number of names included is about 5,500. Price 28 DM (postage is not included), available from the Library of the Botanical Institute, CZ-252 43 Pruhonice, Czech Republic. Book exchange for the library is preferred.

An article by Z. Palice (*Preslia* 71: 289-336) is another important publication concerning lichen biodiversity. Altogether 82 taxa of noteworthy taxa are discussed, of which 53 are new for the Czech Republic and 10 are new for Central Europe; some species are new for other countries.

In 1999 Š. Bayerová graduated at Charles University, Prague (thesis on the evaluation of lichen flora of the Brdy Mts).

J. Halda participated in an exhibition 'Lichens - an endangered partnership' at the Slovak National Museum in Bratislava (organized by E. Lisická) with a collection of splendid photographs of lichens.

The number of members of the Bryological and Lichenological Section of the Czech Botanical Society increased to 88 persons (Dec 1, 1999).

Jiří Liška and Zdeněk Černohorský

PORINA ISIDIATA KALB & HAFELLNER, NEW TO THE BRITISH ISLES

Whilst going through the material filed as *Porina heterospora* (Fink) Harris in our herbarium (BG) recently, I came across an aberrant specimen, which I collected with Peter James and Francis Rose on a mutual excursion to Ireland in 1982. The specimen was collected on an oak in that famous locality Cromaglow in Kerry County.

This proved on closer examination to be the recently described *Porina isidiata* Kalb & Hafellner which previously is only known from Macaronesia, and to be particularly common in Madeira (Kalb & Hafellner 1985).

The species is easily recognized on the warty to partly isidiate thallus, which are not as densely isidiate as that of *Porina hibernica* P. James, and has a cream-coloured thallus (and perithecia without periphyses). The spores are fusiform, 7-10 septate, 50-65 x 12-15 µm, usually less fusiform than in *P. atlantica* (Erichs.) P. M. Jørg (= *P. heterispora*). It is superficially rather like *Porina rosei* Ser., but has more scattered, unbranched isidia and quite different, longer spores.

This newly discovered species can be added to couplet 19 of the Key in the *British Lichen Flora* (Purvis & James 1992, 489) in the following way, also taking into account the necessary name-change for *Porina heterospora* (Jørgensen in ed.):

19(16)	Ascospores 7-14 septate, 50-80 x 10-15 μ m	20
	Ascospores 6-7 septate, 25-40 x 3-5 μ m	P.borreri
20(19)	Thallus isidiate, spores 50-65 x 12-15 μ m	P.isidiata
	Thallus not isidiate, spores usually longer and narrower	P.atlantica

This is a phytogeographically most interesting addition to the British lichen flora, most possibly adding to its Macaronesian element, comprising *Degelia ligulata* P. M. Jørg. & P. James, *Herteliana taylorii* (Salwey) P. James, *Pseudocyphellaria lacerata* Degel. and *Thelotrema isidioides* (Borrer) R. Sant. Since the isidiate *Porina* species have not been revised world-wide, there is, however, a possibility that *Porina isidiata* may prove to be one of those subtropical lichens which reach Macaronesia, and western Europe, mainly in SW Ireland and W Scotland, like *Leptogium juréssianum* C. Tav., *Parmentaria chilensis* Fée and *Pyrenula dermatodes* (Borrer) Scharer.

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SET OF THE LICHENOLOGIST FOR SALE

An unbound set of the *Lichenologist* has come up for sale. It includes the rare, small format Volumes 1 and 2 but unfortunately Volume 20(3) is missing. Half the contents of 20(3) consists of a paper on 'The lichen flora of Ben Lawers' which is provided as a reprint. Sealed offers above £300 sterling should be made to O L Gilbert, 42 Tom Lane, Sheffield, S10 3PB, UK (E-mail: O.L.Gilbert@sheffield.ac.uk) by the end of July 2000. Monies raised from this B W Fox bequest to the BLS will go to Society funds. The purchaser will be expected to collect the set from Sheffield or pay for its postage.

NEW, RARE AND INTERESTING BRITISH LICHEN AND LICHENICOLOUS FUNGUS RECORDS

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 and 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.

Absoconditella trivialis: for details, see under *Omphalina cupulatoidea*.

S P Chambers

Acarospora benedarensis: on soil of vertical bank along cliff-top, Hill of White Hamars, South Walls, VC111, Orkney, GR 39/32-88-, August 1999. New to Scotland. We agree with Tony Fletcher (pers. comm.) that this taxon is not a synonym of *A. smaragdula*. However, its affinities with some other unidentified collections on (usually coastal) sandstones elsewhere in Britain, needs investigation. No substances were detected by TLC in this collection.

B J & A M Coppins

Adelococcus alpestris: on *Acarospora glaucocarpa* on shaded north side of big limestone boulder, Ribbleshead, VC64, Mid West Yorkshire, GR 34/7--7--, May 1999. Confirmed by B J Coppins.

S P Chambers

Anaptychia ciliaris: on west face of ironstone headstone in churchyard, Thorpe Mandeville, VC 32 Northamptonshire, GR 42/53-44-, August 1999. An unusually fertile example of this relatively rare churchyard species.

T W Chester

Anaptychia ciliaris subsp. *mamillata*: locally abundant on low rocks and associated turf, The Leithies [island accessible at low tide], 2 km east of North Berwick, VC 82, East Lothian, GR 36/57-85-, October 1999.

A M Coppins

Arctomia delicatula: three recent records from VC105, West Ross: (i) over mosses on limestone, Rassal Ashwood NNR, GR 18/84-43-, alt 28m, May 1999; (ii) on *Polychidium muscicola* on horizontal trunk of *Sorbus*, northeast facing slope above Allt Gleann an t-Strathain, GR 29/08-16-, alt 20m; (iii) on *Polychidium muscicola*, on rocks in bottom of ravine, Allt a' Chàirn, Dundonnell, VC 105, West Ross, GR 28/12-85-, alt 160m, June 1999. It would appear that this inconspicuous species is less rare than previously assumed, although all the populations seen were very small.

B J & A M Coppins

Arthonia arthonioides: on dry base of old *Quercus* in upland sessile oakwood, Coed Glasffrwd, VC 46, Cardiganshire, GR 22/75-64-, alt 270m, November 1998. New to Cardiganshire. Determined by B J Coppins.

S P Chambers

Arthonia excipienda: locally abundant on young stems of *Corylus*, southwest side of Loch Buine Móire, Inverpolly NNR, VC 105, West Ross, GR 29/09-15-, alt c.100m, June 1999. New to West Ross, fourth Scottish record.

B J & A M Coppins

Arthonia punctella: growing on thallus of *Diplotomma albostratum* on basic rock of dry-stone dyke, Costa Head, Mainland, VC 111, Orkney, August 1979.

C J B Hitch

Aspicilia intermutans: on flat surfaces of exposed, hard, gritty rocks at edge of upland lake, Llyn Eiddwen, VC 46, Cardiganshire, GR 22/60-66-, alt 330m, August 1990. New to the vice county. The material had been filed under *A. cinerea* originally. Confirmed by B J Coppins.

S P Chambers

Bachmanniomyces uncialicola: (i) distorting *Cladonia uncialis* ssp. *biuncialis* podetia on river shingle lichen-heath, Afon Ystwyth, Grogwynion, VC 46, Cardiganshire, GR 22/71-72-, alt 90m, June 1999. Confirmed by B J Coppins. New to Wales.

S P Chambers

(ii) On *C. uncialis* ssp. *biuncialis* in acid grassland between shingle in dry bed of former river channel, Afon Marchnant, near Pontrhydfendigaid, VC 46, Cardiganshire, GR 22/72-69-, alt 215m, August 1999.

S P Chambers, D Guest & S Smith

Bacidia chlorotricula: for details, see under *Strangospora pinicola*.

S P Chambers

Bacidia neosquamulosa: fertile on old *Sambucus* branches and on lignum on the ground in deep shade of coppice, Chase Nature Reserve (London Wildlife Trust), Dagenham, VC 18, South Essex, GR 51/51-85-, April 1999.

P W Earland-Bennett, J F Skinner & C J B Hitch

Caloplaca cerina: (i) frequent on dry-stone dyke running down to the shore, with *Lecanora albescens*, *Phaeophyscia orbicularis*, *Diplotomma alboatrum* etc, Costa Head, Mainland, VC 111, Orkney, GR 310/31-30-, August 1979; (ii) on rock, Rerwick Head, Mainland, VC 111, Orkney, GR 310/54-11-. August 1979.

C J B Hitch

(iii) on rocks (shale) with *Lecanora campestris* below low north-facing sea-cliff, near the Old Custom House, South Walls, VC 111, Orkney, GR 39/30-90-, August 1999.

(i)-(iii) are rare saxicolous occurrences of this normally corticolous or lignicolous species.

B J & A M Coppins

(iv) abundant on dust contaminated oak twigs downwind of a cement works near Buckley, VC 51, Flintshire, GR 33/2-6-, March 2000.

O L Gilbert & V Giavarini

Caloplaca crenulatella: in VC 55, Leicestershire, (i) locally abundant on eroding concrete surfaces, Bruntingthorpe Proving Ground, GR 42/59-88-, November 1999; (ii) on concrete base of demolished hut by gravel pit, Acresford, GR 43/30-13-, December 1999; (iii) on concrete edge of The Grand Union Canal, GR 43/60-12-, March 2000; (iv) abundant on concrete runways, Leicester Airport, GR 43/64- 01-, March 2000. Previously overlooked, this species prefers horizontal eroding concrete. New to the county.

O L Gilbert & I G Pedley

Caloplaca flavescens: on rock on top of cliff, Rerwick Head, Mainland, VC 111, Orkney, GR 310/54-11-, August 1979. Determined by J R Laundon. A rare occurrence in the northern part of the British Isles.

C J B Hitch

Caloplaca polycarpa: on an endolithic *Verrucaria* sp. on oolitic limestone chest tomb, Harkstead Ch, VC 25, East Suffolk, GR 62/19-35-, October 1999. Determined by P L Nimmis. New to Suffolk and eastern Britain.

P M Earland-Bennett & C J B Hitch

Candelaria concolor: a number of small thalli on the west side of an ironstone headstone in churchyard, Evenley, VC 32, Northamptonshire, GR 42/58-35-, July 1999. Second vice county record and relatively rare on stone in churchyards. A recent

arrival which is interesting in the light of *The Lichen Flora of Great Britain and Ireland's* suggestion that this species is decreasing due to agricultural pollution.

T W Chester

Catapyrenium cinereum: on cliff-top turf, Hill of White Hamars, South Walls, VC 111, Orkney, GR 39/31-88-, August 1999. New to Orkney.

B J & A M Coppins

Catillatia aphana: on dry shale under mortar, on north side of church, South Pool, VC 3, South Devon, GR 20/77-40-, March 1997. Confirmed by O L Gilbert. New to the county.

B Benfield

Chaenotheca brachypoda: abundant on the underside of an old *Sambucus* in the bottom of Lathkill Dale, VC 57, Derbyshire, GR 43/19-66-, November 1999. New to the county.

O L Gilbert

Chromatochlamys larbalestieri: on mudstone in deep sheltered recess above narrow wooded stream gorge, Nant Gau, Hafod, VC 46, Cardiganshire, GR 22/77-73-, alt 240m, February 2000. The pale perithecia and light grey thallus in this collection (growing in deep shade) are contrary to the description given in *The Lichen Flora of Great Britain and Ireland* and the paper on *Microglæna* (Morgan-Jones & Swinscow, *Lichenologist* 3, 1965). Weakly pigmented forms could perhaps be overlooked as a poorly developed *Porina* sp. Confirmed by A Orange.

S P Chambers

Cladonia asahinae: on base of *Salix* in birch-hazelwood, northwest end of Loch Call Uidhean, Inverpolly NNR, VC 105, West Ross, GR.29/09-14-, alt 90m, June 1999. Fumarprotocetraric and rangiformic acids by TLC. New to Scotland.

B J & A M Coppins

Cladonia phyllophora: rare in maritime heath, north of Castle Bloody, East Hill, Shapinsay, VC 111, Orkney, GR 310/53-16-, alt 25m, August 1999. Fumarprotocetraric and protocetraric (trace) acids by TLC. New to Orkney.

B J & A M Coppins

Coppinsia minutissima: for details, see under *Omphalina cupulatooides*.

S P Chambers

Cyphelium trachyloides (Nyl. ex Branth & Rostr.) Erichsen (1938): on peeled (not sawn) surface of a roadside fence post, N of Glencally, Glen Prosen, VC 90, Angus, GR 37/355634, alt 240m, November 1999. New to the British Isles. This species most closely resembles *C. tigillare*, but is pale grey to greyish-fawn, not yellow-green.

in colour. Its apothecia differ from those of *C. inquinans* in being smaller (0.3-0.4mm diam.) and immersed in discrete thalline verrucae, and in producing \pm smooth-walled ascospores. The species is given a full description, accompanied by a colour photograph, in Volume 1 of the *Nordic Lichen Flora* - Notes by B J Coppins.

R C Munro

Dictyonema interruptum: on trunk of *Ilex* in a *Fraxinus* wood, with *Agonimia* cf. *octospora*, north side of Loch Creran, Glasdrum, VC 98, Argyll Main, GR 27/00-45-, 0.75m, September 1985. Sterile. First Scottish record of this rare and endangered species in the 20th century. Specimen in LG.

P Diederich & E Sérusiaux

Dimerella pineti: over the last ten years this species has become exceedingly common in VC 57, Derbyshire, where it appears to be on most mature deciduous trees in sheltered situations.

O L Gilbert

Echinodiscus lesdainii Etayo & Diederich (2000): on thallus of *Lecania cyrtella* on *Sambucus* twigs, Gurtgonell, Castle Coole, Enniskillen, VC H33, Fermanagh, GR 23/2--4--, July 1993; (ii) on *Lecania cyrtellina* on *Ulmus*, Newton St Boswells Wood, VC 80, Roxburghshire, GR 36/5--3--, August 1993. New to the British Isles. For further details see reference cited on 'Literature Pertaining' in this *Bulletin*.

B J Coppins

Endococcus brachysporus (Zopf) Brand & Diederich (1999): (i) on *Porpidia* sp., An Stac, west of Torrin, Skye, VC 104, North Ebudes, GR 18/5--2--, May 1987.

P Diederich

(ii) on thallus of *Porpidia tuberculosa* northeast of Kilblaán, Glen Shira, Inverary, VC 98, Argyll Main, GR 27/13-13-, March 1996.

B J Coppins

New to the British Isles. Distinguished from other *Endococcus* species on *Porpidia* by the very small ascospores, 7-10 x 4.5-6.5 μ m. For further information see Sérusiaux *et al* (1999) cited in 'Literature Pertaining' in this *Bulletin* - B J Coppins.

Endococcus macrosporus (Arnold) Nyl. (1878): on thallus of *Rhizocarpon geographicum*, Great Burland Rocks, Woody Bay, VC 4, North Devon, GR 21/66-49-, April 1993. New to the British Isles. Distinguished from other *Endococcus* species on *Rhizocarpon* by its immersed perithecia with large ascospores, 16-21.5 x 5.5-7 μ m. See also Sérusiaux *et al* (1999) cited in 'Literature Pertaining' in this *Bulletin*.

B J Coppins

Endococcus propinquus: on thallus of *Candelariella vitellina* on top of red brick wall, The Stone Farm, Blaxhall, VC 25, East Suffolk, GR 62/35-56-, December 1999.

P M Earland-Bennett & C J B Hitch

Endococcus verrucisporus Alstrup (1994): on thallus of *Hymenelia lacustris* (i) Firth, Nesting, Mainland, VC 112, Shetland, GR 411/4-- 5--., August 1973 H M Bowen

(ii) Traprain Law, East Linton, VC 82 East Lothian, GR 36/58-74-, Alt 100m, February 1998. B J Coppins

New to the British Isles. Distinguished from *E. propinquus*, by its warted ascospores, 9-12 x 6-7.5 µm - B J Coppins.

Epyremula septemseptata: on *Corylus*, on northeast-facing slope above Allt Gleann-an-t-Strathain, Inverpolly NNR, VC 105, West Ross, GR 29/08-16-, alt 20-70m, June 1999. New to West Ross and most northerly British record.

B J & A M Coppins

Epigloea bactrospora: on damp wad of decaying vegetation in tightly grazed acid grassland, Craigyciliau NNR, VC 42, Brecknockshire, GR 32/18-16-, October 1998. Second British record and new to Wales. Determined by B J Coppins.

S P Chambers

Fellhaneropsis myrtillicola: on living leaves of *Skimmia japonica* in woodland, Parc Cefn Onn, Lisvane, Cardiff, VC 41, Glamorganshire, GR 31/17-84-, February 2000. New to Wales. This was until recently under *Bacidia*, see *British Lichen Society Bulletin* 71, p 42.

A Orange

Graphina pauciloculata: (i) one small patch on upper side of a large *Quercus* growing horizontally from a rock-face above plunge pool in river gorge, with *Micarea adnata* on the underside, north bank of Afon Dulas, by Coed Maes Mawr, VC 48, Merionethshire, GR 23/77- 10-, alt 110m June 1999. Confirmed by B J Coppins; (ii) very locally frequent on *Corylus* stems at the top of a narrow, bouldery stream ravine, closely associated with *G. ruiziana*, *Arthonia elegans* and *Thelotrema lepadinum*, Allt Dihanog, Hafod, VC 46, Cardiganshire, GR 22/76-72-, alt 220m, February 2000. First Welsh records. This RDB lichen could well be elsewhere in old oceanic woodlands in Wales.

S P Chambers

Graphina ruizana: for details, see under *Graphina pauciloculata*.

S P Chambers

Graphis alboscripta: on *Corylus* in hazel pasture woodland, north side of Allt Gleann an t-Strathain, Inverpolly NNR, VC 105, West Ross, GR 29/09-16-, alt 30-50m, June 1999. New to West Ross and most northerly record of this apparently British endemic.

B J & A M Coppins

Gyalecta biformis: (i) on top of north-facing ironstone string course and west-facing but shaded ironstone window sill, church, Marston St Lawrence, VC 32, Northamptonshire, GR 42/53-42-, August 1999. New vice-county record and the first British churchyard record. Determined by T W Chester and confirmed by F Kauff who is studying the genus as Kaiserslautern University.

B Weber

(ii) on west-facing granite of north transept immediately below mortar course of church, Widecombe in the Moor, VC 3, South Devon, GR 20/71-76-, September 1999. New vice-county record and second British churchyard record. Confirmed by P W James.

B Benfield, B Weber & T W Chester

Gyalecta jenensis: on sloping ironstone buttress plinth on north porch of church, Thenford, VC 32, Northamptonshire, GR 42/51-41-, August 1999. New vice-county record. Confirmed by F Kauff.

T W Chester

Lecanora compallens: on *Hibiscus* and *Pyrus*, Penspool Cottage, Plymptree, VC 3, South Devon, GR 31/05-03-, February 2000. Confirmed by K van Herk. Second British published record, though known of for the last 5-10 years.

B Benfield

Lecanora pannonica: abundant on southwest-facing basalt outcrops, by Hailes Burn, Hailes, VC 82, East Lothian, GR 36/57-75-, January 1999. New to Scotland, and possibly the first British record from a natural rock outcrop. Atranorin, gangaleoidin and roccellic acid by TLC.

B J Coppins

Lecanora swartzii: on vertical underhang rocks of east-facing crags in pine plantation below Elf Hillock, Glen Clova, VC 90, Angus, GR 37/34-70-, October 1999. Confirmed by C J B Hitch. This species seems to be not uncommon on similar east-facing crags in the region.

R C Munro & C J B Hitch

Lecanora xanthostoma: on limestone outcrop above shore, Barafundle Bay, Stackpole, VC 45, Pembrokeshire, GR 11/99-95-, July 1997. New to Wales. See *Bulletin 82* for details on this member of the *L. dispersa* group.

S P Chambers

Lecidella subviridis Tønsberg (1992): on twig of *Juniperus communis* in native pinewood, Eilean Dubh na Sròine, Loch Maree, VC 105, West Ross, GR 18/91-72-, alt 15m, May 1999. New to the British Isles. Previously known from the coastal regions of southern and western Norway, and Sweden. It is characterized by its yellowish green, punctiform to confluent soralia which are C+ yellow, KC+ orange (atranorin and thiophanic acid), and pale grey-brown to reddish brown apothecia. Sterile material needs TLC to distinguish it from similar species (e.g. *Lecanora expallens*). For a full description see Tønsberg in *Sommerfeltia* 14: 192-193 (1992).

B J Coppins & V J Giavarini

Lemmopsis arnoldiana: on large to 1³m chalk boulders in woodland, in the Axe-Lyme undercliff NR, VC 3, South Devon, GR 30/32-91-, March 2000. Determined by O L Gilbert. New to Devon.

B Benfield

Leptogium subtorulosum: on sandstone rock by river, close to the water-level, with *Dermatocarpon meiophyllizum* and *Fontinalis antipyretica*, Afon Pyrddin, Pontneddfechan, VC 42, Breconshire, GR 22/89-09-, alt 100m, November 1994. New to Wales.

A Orange

Leptogium tenuissimum: in a rut on compacted soil dumped to the north of the A3052, Aylesbeare Common, VC 3, South Devon, GR 30/05-09-, August 1999. Confirmed by P W James. The only 20th century record for Devon.

B Benfield

Leptorhaphis maggiana: on young vigorous branch of fallen *Castanea sativa* lying on the ground, by open path, Easton Wood, South Cove, VC 25, East Suffolk, GR 62/51-79-, October 1999.

P M Earland-Bennett & C J B Hitch

Lettauia cladoniicola: on *Cladonia arbuscula*, Eastbister, South Walls, VC 111 Orkney, GR 39/31-89-, alt 35m, August 1999. Second British record and new to Orkney. For description and illustrations see Hawksworth & Santesson in *Bibliotheca Lichenologica* 38: 121-143 (1990).

B J & A M Coppins

Melaspilea interjecta: locally frequent on sandstone stones in heathland, often associated with *Micarea ternaria*, East Hill, Shapinsay, VC 111 Orkney, GR 310/53-16-, alt c.30m, August 1999. An unusual habit, as this species has previously been recorded from rock faces. In the field we mistook it for *Polysporina simplex*!

B J & A M Coppins

Micarea adnata: for details, see under *Graphina pauciloculata*.

S P Chambers

Micarea inquinans: on thallus of *Dibaeis baeomyces* at side of forest track, Black Wood of Rannoch, VC 88, Mid-Perthshire, GR 27/56- 55-, alt 270m, August 1999.

B J & A M Coppins

Micarea lignaria var. *endoleuca*: on moss in crevices of south-facing cliff, below Winter Tor, Belstone, VC 4, North Devon, GR 20/60- 91-, August 1999. New to Devon.

B Benfield

Mycoblastus affinis: on low, vertical, southeast-facing rock face, Mynydd Moel, Cadair Idris, VC 48, Merionethshire, GR 23/73-13-, alt 600m, August 1999. A rare and disjunct species in Wales with few modern records. Southern-most British locality.

S P Chambers & J B Grasse

Nanostictis christiansenii Etayo (1996): (i) on moribund thalli of *Lobaria pulmonaria*, on *Quercus*, Talladale, Loch Maree, VC 105, West Ross, GR 18/91-70-, May 1984; (ii) on *Corylus* by rocky sea-shore, Strome Wood, north side of Loch Carron, VC 105, West Ross, GR 18/88-37-, December 1999. New to the British Isles. For description and illustrations see Etayo & Diederich in *Bull. Soc. Nat. Luxemb.* 97: 102-107 (1996). The ascospores of this species are mostly 3-7 septate and c30-45 x 3 µm, but a few 9-septate spores up to 49 µm long were seen in the Strome Wood material.

B J & A M Coppins

Nectria rubefasciens: (i) on moribund thallus of *Parmelia subrudecta* on *Crataegus* bole in parkland, High House, Castle Acre, VC 28, West Norfolk, GR 62/79-17-, January 2000. New to Norfolk.

P M Earland-Bennett, C J B Hitch & P W Lambley

(ii) abundant on west-facing moribund thallus of *Parmelia subrudecta* by River Deben, Glevering, VC 25, East Suffolk, GR 62/30-56-, February 2000. With *Ramalina lacera*, first corticolous Suffolk record.

P M Earland-Bennett & C J B Hitch

Omphalina cupulatoides: on decaying *Peltigera lactucifolia* on cryptogam-dominated metal-polluted river shingle, with *Absconditella trivialis* and *Coppinsia minutissima*, Afon Ystwyth, Llanilar, VC 46, Cardiganshire, GR 22/62-75-, Alt 30m, October 1999. First vice-county record.

S P Chambers

Opegrapha fumosa: (i) on tree bole *Betula* woodland on northwest side of Creag Dubh, Inverpolly NNR, VC 105, West Ross, GR 29/09-16-, June 1999. New to West Ross and a northern extension of the known European range.

B J & A M Coppins

(ii) on sheltered bases of three ancient *Quercus* in relict old-woodlands (abundant on one tree); Allt Dihanog and by Pont Dologau, Hafod, VC 46, Cardiganshire, GR 22/76-72-, alt 270m, February 2000. New to Cardiganshire.

S P Chambers

Pachyphiale carneola: on *Quercus* trunk in shelter of cliff, southeast-facing slopes of Gleann Lochan Sàl, Inverpolly NNR, VC 105, West Ross, GR 29/07-15-, alt c. 50m, June 1999. A northerly extension of the known British range.

B J & A M Coppins

Paranectria oropensis: (i) on *Lepraria incana* and killing the thallus, Hill Snook Park, Rhiwbina, Cardiff, VC 41, Glamorgan, GR 31/16-80-, December 1999; (ii) on dead *Lecanora* sp. covered by algae on elder twig, Craig Llanishen, Cardiff, VC 41, Glamorganshire, GR 31/17-84-, February 2000. New to Wales.

A Orange

Parmelia elegantula: a long streak, west-facing, on ancient sloping *Salix* in carr, Denham Lock Wood, VC 21, Middlesex, GR 52/05-86-, January 2000.

C J B Hitch & A Waterfield

Parmelia reticulata: six patches seen on north-northwest-facing side of low andesitic rock outcrop, by cliff-top path above Wuddy Rocks, St Abb's Head, VC 81, Berwickshire, GR 39/91-68-, alt c40m, April 1999. New to eastern Scotland.

B J Coppins & A Fletcher

Parmelia sinuosa: one plant, c3 x 1.5cm on small branch (22mm diam) of *Fraxinus excelsior*, 35ft up in the canopy, Hafod walled garden, near Pontrhygroes, VC 46 Cardiganshire, GR 22/75-76, alt 145m, January 2000.

S P Chambers

Parmelia soredians: single thallus on upper, west face of sloping sandstone headstone of churchyard, Evenley, VC 32, Northamptonshire. GR 42/58-35-, July 1999. New vice-county record. An interesting discovery in that the thallus has appeared relatively recently and is about as far from the coast as one can possibly go in England. Previously determined as *P. caperata*. V Giavarini confirmed its true identity (medulla K+y-r).

T W Chester

Parmeliopsis hyperopta: on a decorticate tree near car park, Kitley's Cave, Yealmpton, VC 3, South Devon, GR 20/57-51-, February 1999. Confirmed by P W James. New to Devon and extending its range greatly southwestwards.

B Benfield

Pertusaria lactescens: (i) abundant and richly fertile on sandstone slabs in heathland, near Castle Bloody, East Hill, Shapinsay, VC 111, Orkney, GR 310/53-16-, alt 35m, August 1999; (ii) on sandstone stones near summit of Hill of White Hamars, South Walls, VC 111, Orkney, GR 39/31-88-, alt 50m, August 1999. New to Orkney. Abundant at both localities and whitening the rocks much as does *P. corallina* [not present at all] in many other parts of the Highlands. 'Hamars' means stones, and it is tempting to suggest that the Hill derives its name from the occurrence of this lichen.

B J & A M Coppins

Pertusaria xanthostoma: on sandstone boulder in maritime heath, East Hill, Shapinsay, VC 111, Orkney, GR 310/53-17-, alt 25m, August 1999. New to Orkney.

B J & A M Coppins

Phaeophyscia chlorantha: this Mediterranean sp. has been incorrectly reported from the British Isles. Material collected on southwest-facing recess of mature *Salix* in open grassland, Ruislip Common, VC 21, Middlesex, GR 52/08-89-, January 2000 was re-determined by B J Coppins - "the lower side is black in the centre part of the thallus. More importantly, the lower cortex is formed of \pm isodiametric cells - not psorenchyma (horizontal filaments) as in *P. chlorantha*". In the field P L Nimis suggested the population was *P. chlorantha* due to the palish grey colour of the upper cortex, spreading lobes, and pale underside, at least as seen from the outer edges - C J B Hitch.

British Lichen Society Field Meeting

Physcia clementei: on vertical face of ironstone headstone in churchyard, Sulgrave, VC 32, Northamptonshire, GR 42/55-45-, September 1999. The third record of this rare churchyard species - all on ancient ironstone headstones in the Brackley Rural Deanery.

T W Chester

Physcia tribacia: on *Sambucus* in wooded area, Chase Nature Reserve (London Wildlife Trust), Dagenham, VC 18, South Essex, GR 51/51-85-, April 1999.

J F Skinner & P M Earland-Bennett

Polyblastia cupularis: on calcareous andesitic rocks of cliff, Halterem's Loup, St Abb's Head, VC 81, Berwickshire, GR 36/91-67-, April 1999. New to southeast Scotland.

B J Coppins & A Fletcher

Porina linearis: common on Cotswold limestone buttress slopes on north side of church, Taynton, VC 23, Oxfordshire, GR 42/23-13-, July 1999. Possibly first vice-county record of this overlooked churchyard species. Confirmed by A Orange.

T W Chester

Pronectria pertusariicola Lowen (1999): on thallus and apothecial warts of *Pertusaria pertusa*, Reelig Glen, 5 km southeast of Beauy, VC 96, East Inverness-shire, GR 28/55-42-, alt 50m, February 1997. New to the British Isles. For description see Rossman *et al* (1999) as cited in 'Literature Pertaining...' in this *Bulletin*.

B J & A M Coppins

Protothelenella corrosa: on exposed boulder on mountain summit, Glas Maol, VC 90, Angus, GR 37/16-76-, October 1999. Determined by C J B Hitch.

R C Munro

Psilolechia clavulifera: (i) on clay on upturned roots of fallen tree in woodland, Ramsey Wood, Hintlesham, VC 25, East Suffolk, GR 62/06-43-, March 1999; (ii) on sandy soil on upturned roots of fallen tree in woodland, Easton Wood, South Cove, VC 25, East Suffolk, GR 62/51-79-, October 1999. Determined by B J Coppins. May well be overlooked in the sterile state - BJC.

P M Earland Bennett & C J B Hitch

Ramalina polymorpha: abundant on top of standing stone at edge of arable field, southwest of Traprain Law, VC 82, East Lothian, GR 36/57-74-, alt c100m, April 1999. The second discovery on a standing stone in the vicinity.

B J Coppins

Ramonia dictyospora: on flake of bark of semi-shaded, mossy bole of *Fraxinus*, by river, Glen Prosen, VC 90, Angus, GR 37/36-62-, October 1999. Determined by C J B Hitch. This species seems to be locally frequent - RCM.

R C Munro

Rinodina flavosoralifera: (i) on *Quercus* in parkland to west of Arlington Court house, VC 4, North Devon, GR 21/60-40-, June 1999. New to Devon.

B J & A M Coppins

(ii) on smooth *Fraxinus* bough in sheltered but well-lit abandoned walled garden, Hafod, near Pontrydygroes, VC 46, Cardiganshire, GR 22/75-76-, alt 145m, January 2000. Confirmed by B J Coppins. New to Wales.

S P Chambers

Rinodina mniaraea var. *mniaraeiza* (Nyl.) H. Magn. (1936): on moss in acidic habitat, Glen Mark, VC 90, Angus, GR 37/41-82-, March 1997, communicated by C J B Hitch. New to the British Isles. The spores in the Scottish collection are (19-)25-30 x

(10-)12(-13) μm , and differs from var. *cinnamomea* in the absence of orange pigment in the medulla and from both var. *cinnamomea* and var. *mniaeraea* in having a whitish, K+ yellow surface to the thallus. This taxon may well merit recognition as a species, in which case it should be called *R. mniaeraeiza* (Nyl.) Arnold (1870) - BJC.

R C Munro

Rinodina occulta: on vertical rocks at base of cliff, southeast-facing slopes of Gleann Lochan Sàl, Inverpolly NNR, VC 105, West Ross, GR 29/07-15-, alt 50-70m, June 1999. New to West Ross and fifth Scottish record.

B J & A M Coppins

Rinodina pityrea: with an abundance of *Lecania cyrtella* on south-facing side of trunk of mature *Sambucus* at edge of *Salix* carr, Denham Lock Wood, VC 21, Middlesex, GR 52/05-86-, January 2000.

C J B Hitch & A Waterfield

Sarcogyne clavus: on top of a basal granite ledge beside the west door of church, Drewsteignton, VC 3, South Devon, GR 20/73-90-, September 1999. New vice-county record and fourth churchyard record (the others are all on granite churches in VC 1, West Cornwall). Determined by T W Chester and confirmed by P W James.

B Benfield, B Weber & T W Chester

Schismatomma decolorans: fertile on ancient *Cedrus* by drive, Killerton Park, VC 3, South Devon, GR 21/97-00-, January 2000. Confirmed by A Orange and P W James. This is the second British gathering with fruits, and in this instance mature spores were found.

B Benfield

Schismatomma graphidioides: forming micro-mosaics with *S. decolorans* and *Opegrapha vulgata* on leaning, south-facing *Carpinus betulus* trunk at woodland-parkland interface, north edge of Coed Llynloedd at boundary with Parc Machynlleth, Machynlleth, VC 47, Montgomeryshire, GR 23/74-00-, alt 50m, August 1999. Confirmed by Francis Rose. First Welsh record since Leighton recorded it on *Ulmus glabra* (thought lost) at Chirk Castle Park, VC 50, Denbighshire, in 1876.

S P Chambers

Scoliosporum curvatum: on living leaves of *Camellia* sp. in woodland, Park Cefn Onn, Lisvane, Cardiff, VC 41, Glamorganshire, GR 31/17-84-, March 2000. New to Wales.

A Orange

Spirographa fusisporella: on grazed *Pertusaria corallina* on top of shale boulder, at margin of Caban-coch reservoir below Craig Cnwch, Elan Valley, VC 42, Breconshire, GR 22/92-63-, alt 280m, February 1999. Determined by B J Coppins.

S P Chambers

Stenocybe bryophila: on hepatic on *Betula* in valley on southwest side of Creag Dubh, Inverpolly NNR, VC 105, West Ross, GR 29/09- 15-, alt 50m, June 1999. New to West Ross and most northerly British record.

B J & A M Coppins

Sticta fuliginosa: sparsely fertile on damp west side of giant *Salix caprea*, Hafod garden, near Pontrhydygroes, VC 46, Cardiganshire, GR 22/75-73-, alt 145m, November 1999. Sir J E Smith reported this *Sticta* fertile at Hafod over 200 years ago in the 1790s.

S P Chambers

Strangospora microhaema: over *Hypnum andoi* on very wet trunk of large *Salix caprea*, Hafod walled garden, near Pontrhydygroes, VC 46, Cardiganshire, GR 22/75-73-, alt 145m, November 1999. Second Welsh record.

S P Chambers

Strangospora pinicola: on new softwood fence rails, southwest-facing, by driveway entrance; Glanrheidol, Capel Bangor, VC 46, Cardiganshire, GR 22/65-79-, alt 30m, February 2000. Accompanied in places by *Bacidia chlorotricula*, both new to the vice-county. Confirmed by A Orange.

S P Chambers & D J Armstrong

Strigula stigmatella var. *stigmatella*: a few tiny patches on damp, base-rich bark of an ancient *Quercus* in old woodland fragment surrounded by conifer plantations, Allt Dihanog, Hafod, near Pontrhydygroes, VC 46, Cardiganshire, GR 22/76-72-, alt 270m, February 2000. Confirmed by B J Coppins. New to Wales.

S P Chambers

Thelocarpon impressellum: on soil of root-plate of fallen conifer, Ninewar Wood, 3km east of East Linton, VC 82, East Lothian, GR 36/61-77-, alt 40m, November 1999. New to Scotland.

B J Coppins

Umbilicaria cylindrica: locally frequent on more than 50 exposed boulder tops; south of Plynlimon summit, VC 46, Cardiganshire, GR 22/79-86-, alt 700-720m, October 1999. First vice-county record.

S P Chambers, J B & C Grasse

Usnea glabrata: on *Prunus spinosa*, at outer edge of wood on side of Alt Mór ravine, Rassal, Kishorn, VC 105, West Ross, GR 18/84-42-, June 1999. Usnic and fumarprotocetraric acids by TLC.

B J & A M Coppins

Usnea wasmuthii: on *Betula*, Allt a' Chàirn ravine, Dundonnell, VC 105, West Ross, GR 28/12-85-, alt 160m, June 1999. Usnic and barbatic acid by TLC. Two thalli were collected with apothecia, which do not appear to have been previously reported for this species (see *The Lichen Flora of Great Britain and Ireland* p.629).

B J & A M Coppins

Usnea wirthii: on *Prunus spinosa*, at outer edge of wood on side of Alt Mór ravine, Rassal, Kishorn, VC 105, West Ross, GR 18/84-42-, June 1999. New to Scotland. Usnic, psoramic and 2'-*O*-demthylpsoromic acids by TLC.

B J & A M Coppins

Verrucaria latericola: on thallus of *Caloplaca* sp. cf. *C. marina* on sunny coastal rocks, Lunan Bay, VC 90, Angus, GR 37/70-52-, July 1998. New to Scotland and perhaps a new host. Confirmed by B J Coppins.

R C Munro

Vezdaea cobria: over hepatics, with *Mniacea jungermanniae*, on north-facing, steep clay bank above woodland track, Capel Bangor, VC 46, Cardiganshire, GR 22/65-79-, alt 40m, February 2000. Both species with apothecia just developing. *V. cobria* could be widely overlooked in this habitat.

S P Chambers

Zamenhofia coralloidea: on *Quercus* trunk in shelter of cliff on southeast-facing slopes of Gleann Lochan Sàl, Inverpolly NNR, VC 105, West Ross, GR 29/07-15-, alt c50m, June 1999. New to West Ross and a marked northerly extension of the known range.

B J & A M Coppins

Zamenhofia rosei: on fallen, rotting, mossy, corticate *Quercus* in glade, in ancient forest, Staverton Thicks, Butley, VC 25, East Suffolk, GR 62/36-50-, May 1999. New to East Anglia, and further evidence of the woodland's ancient continuity. Determined by B J Coppins.

P M Earland-Bennett & C J B Hitch

LICHEN CHECKLIST

Shortly after the publication of the *Flora* in 1992 it was decided to produce a new checklist containing nomenclature that had been revised since its publication. It also listed synonyms that did not appear in the 1980 checklist.

This 1994 checklist has been out of print for some time and it had been the intention to print a slightly revised list also including the BLS numbers. However, at the last AGM a decision was taken that a fully revised checklist should be produced and that this should include as many synonyms as possible. This more ambitious plan will take much discussion and several years to come to fruition. We have therefore reprinted the 1994 edition and this is now available again from Brian Green.

There are just 42 copies of the earlier, comprehensive 1980 checklist left in stock. This checklist is invaluable to any lichenologist who has puzzled over the current name of a lichen of which an earlier name had been noted from books and records. It contains lists of early synonyms that are difficult to locate elsewhere. Together, the two checklists make a powerful tool to assist in the modern identification of lichens and records.

Checklist of British Lichen-forming Lichenicolous and Allied Fungi (1980)
£2.00 to members, £4.00 to non-members.

Checklist of Lichens of Great Britain and Ireland (1994)
£3.50 to members, £6.00 to non-members.

Frank Dobson

PLANTLIFE'S LEAD PARTNER ROLE FOR BAP LICHENS

Plantlife have recently taken on the role of Lead Partner for the 11 species of lichen listed below. This involves the coordination, administration and in many cases, carrying out of actions detailed in the Biodiversity Action Plan for each species, to take them towards 'favourable' conservation status.

*Bacidia incompta**
Belonia calcicola
Biatoridium monasteriense
Calicium corynellum
*Caloplaca aractina**
*Cladonia mediterranea**

Cladonia peziziformis
*Heterodermia leucomelos**
*Lecanactis hemisphaerica**
Teloschistes chrysophthalmus
Thelenella modesta

Work will commence in England this coming year on the species highlighted with an asterisk. This work will initially focus on data collation and survey of existing, historic and potential 'new' sites in order to ascertain status. This will then provide a baseline for future more specific conservation work, which may involve a range of activities such as site management, population monitoring, and pressing for better site protection. In Scotland a species dossier, detailing the current status of the species, has been prepared for *T. modesta* and dossiers will be prepared for *C. peziziformis* and *B. incompta* this year.

Plantlife see their role as one of coordination and ensuring that actions are carried out effectively rather than to dictate what those actions are and we very much hope to be able to draw on the expertise of the membership of the BLS to help us realise these objectives. An update on progress will be provided next year, but in the meantime if any member has comments or would like any further information please contact Dr Jenny Duckworth, Plantlife's Fungi & Lower Plants Officer at 21 Elizabeth Street, London SW1W 9RP, Tel: 0207 808 0113, Email: jenny.duckworth@plantlife.org.uk.

NOTES ON ELM LICHENS

Bacidia incompta

In Mid & South Wales, a recent survey has failed to relocate it in all its historic sites and it is now known from a single mature elm that has somehow escaped Dutch elm disease. Here it occurs around the edges of a sap weep created some three years ago when a low branch was pruned off the tree. Did it occur on the tree before the branch was pruned? If not where did it come from? It covers an extensive area and seems to have grown at a remarkable rate if the sap weep really was created by this branch cutting. Has anyone any experience of site colonization by this species? Can new sap weeps be reliably created? When is the best time to cut branches off? Have we overlooked this lichen in other niches? It is reported from beech sap weeps and inside hollow trees such as of holly and field maple. Brian and Sandy Coppins recently noted it on beech tree wood where horses had bitten off the bark around the root plate of a parkland tree.

Caloplaca luteoalba

Only a tiny fragment on a single tree can now be found in Wales. It has much declined in Scotland. In East Anglia known on two trees, is there any elsewhere in England? The Scottish survey has identified that bare wood at the base of old damaged sycamore trunks is a previously overlooked habitat. Its presence on calcareous sandstone is noted in 'the Flora'. Does it occur in other habitats?

Biatoridium monasteriense

Another elm-loving species with possibly no modern (post 1990) records from elm. Do you know otherwise? Look out for it on elder trunks and branches in woodland glades on bark that is not too nutrient-rich. It has also been noted in Central Europe at the edges of sap weeps on beech.

Please note a BLS grant may be available to encourage surveys for these species.

Ray Woods



Roadside horse chestnut with *Caloplaca luteoalba*, Woodton, Norfolk.
Photo: Peter Lambley.

MATURE ELMS AND 'PRIORITY' LICHEN SPECIES

In the past, elms were a common feature in the British countryside, with scattered wayside trees dotted around the landscape and along boundary features. The four native species of British elm play host to two threatened species of lichen that are listed as 'priority' species in the UK Biodiversity Action Plan - *Caloplaca luteoalba* and *Bacidia incompta*. Although these are not the only rare lichen species associated with elms, they are perhaps a cause for particular concern for the very reason that they used to be common.

Both these species declined considerably during the first half of the century, due to a combination of atmospheric pollution and changes in the rural landscape that favoured the felling of wayside trees. Distribution maps show they still were relatively frequent in the 1960s, but populations have largely been decimated since then thanks to the Dutch elm disease epidemic that swept the country during the late 1960s and 1970s.

Mature wayside elms are by far the most important phorophyte for these two species, and although there are signs that elms are beginning to reappear in hedgerows, largely through the regrowth of suckers, the vast majority of mature elm hosts are likely to have been lost. However, the two species have occasionally been reported on alternative hosts: beech, holly, hornbeam and field maple for *Bacidia incompta* and horse chestnut and black poplar for *Caloplaca luteoalba*.

The first stage of work necessary on these 'priority' species of lichen, will be to establish their current status in the UK. Knowledge of their current status will then provide a baseline from which more specific conservation activities can be targeted where appropriate. These may range from arranging protection for individual host trees to the creation of artificial wounds to facilitate lichen colonisation. Work to establish the current status of a species usually involves the collation of historic and recent records followed by a survey of sites. However, in the case of *Bacidia incompta* and *Caloplaca luteoalba* it would not be a prudent use of time to resurvey past sites, since it is likely that most mature elms will no longer be present.

We are therefore calling on BLS members to help us in this respect by passing on any recent (ie post 1990) records of these species on any host trees to us, so that we can plan a targeted survey for the coming year. In addition, we would also appreciate any records of surviving mature wayside elms, regardless of whether there are any records for the two lichens, since these may well warrant further investigation.

If you have any comments or records, please contact:

Jenny Duckworth for *Bacidia incompta* (Plantlife, 21 Elizabeth Street, London SW1W 9RP. Email: jenny.duckworth@plantlife.org.uk).

William Purvis for *Caloplaca luteoalba* (Botany Department - Natural History Museum, Cromwell Road, London SW7 5BD. Email: owp@nhm.ac.uk).

BIOBASE

Why Another Recording System?

In the early 1960s Mark Seaward developed the BLS Mapping Scheme, a pioneer data recording system, and for some 37 years he has entered lichen distribution data, received from BLS members, on an almost daily basis enabling the production of accurate and up-to-date distribution maps and species lists for 10 km squares. These are invaluable to lichenologists and conservationists. The development of computer programming now allows the recording and reporting of a wider range of data, and in the mid 1990s the BLS undertook a comparison of the systems, then available, to identify which would best suit the Society's needs.

Why BioBase?

BioBase was chosen as a general data recording system for the Society in early 1998 after detailed consideration by the Data Committee, under Brian Fox, of the alternatives available, and consultations with the most active recorders in the Society. It is a simple stand alone system that is quick and easy to use as it is pre-loaded with species and other lists which are available from drop-down menus allowing the entry of data with the minimum need for typing.

BioBase Reports

Data entered can be used to produce a range of reports such as site species lists, lists for squares of various sizes and lists for date ranges so that a date-based analysis of the decline or spread of a species can be assessed over a period of time.

For the advanced researcher, the more data that is entered the more reports can be refined. BioBase is provided with a facility, BioExt, which allows Access queries and reports to be set up and run against an up-to-date copy of the database. In this way data can be extracted and analysed in a way that is flexible and easy to use, without any risk of corrupting the records held in the database.

There is a direct link from BioBase to Alan Morton's DMAP program.

Developments

Development and adaptation of the program for the Society's needs continued for nearly two years with further consultations and trialling of the program. Finally, approval was granted at the Council meeting on 6 January 2000 for the purchase of a dedicated computer of suitable specification to meet the Society's needs for data recording for the foreseeable future.

This computer is under the control of Janet Simkin, a lichenologist with 20 years experience of developing and implementing computer systems who is now responsible for all aspects of BioBase.

The BLS Mapping Scheme

Mark Seaward, the BLS MAPPING RECORDER, will continue to enter 10km square distribution data into the BLS database enabling the production of the Society's distribution maps, lists for 10 km squares and species lists.

If you require BLS lichen distribution data please continue to request this from Mark Seaward.

Existing Data

BioBase allows the direct export and import of data to and from Recorder and export to BRC. Programs can be written to convert data from other systems and software packages.

The conversion and copying to BioBase of the whole of the BLS data held by Mark Seaward (species name, 10 km square, recording date pre or post 1960) has been completed, as has Janet Simkin's data, and the conversion of data held by Don Smith and Tony Fletcher on other systems is in hand. The entry into BioBase of Francis Rose's records has been started and it is hoped that the entry of Tom Chester's churchyard records will begin later this year. Records from BLS meetings will be entered as a matter of course.

Procedures

All paper-based distribution data, whether mapping cards or site lists, should be sent, as at present, to Mark Seaward, who will enter species and 10 km square data into the BLS mapping database before forwarding the records to Janet Simkin.

The simple tick-list method of recording is still acceptable and only the following data is necessary to enable records to be entered on BioBase.

A site name.

Alpha-numeric grid reference of site.

The name of the compiler of the mapping card.

The date of the visit to the site.

The species found at the site.

BioBase users may send data, either on disk or by e-mail, direct to Janet Simkin who will send a print out to Mark Seaward to enable the present mapping scheme to progress.

More comprehensive information about the site or species would be very welcome for BioBase. Details of what can be entered are available from Janet Simkin and if there is sufficient demand new mapping cards can be designed for those who wish to record fuller information.

Janet's address, e-mail and 'phone numbers are:

Ms. J. Simkin,
41 North Road,
Ponteland,
NEWCASTLE UPON TYNE,
Northumberland, NE20 9UN
j.m.simkin@ncl.ac.uk
01661 823233 or 0191 222 7725

FURTHER INFORMATION about BioBase is available on the BLS web site at <http://www.argonet.co.uk/users/jmgray/> or from Janet.

Jeremy Gray

A NEW ANNOTATED CHECKLIST

Paul Diederich and Emmanuel Serusiaux have recently produced an Annotated Checklist of the Lichens and Lichenicolous fungi of Belgium and Luxembourg. It will be of particular interest to British lichenologists as the flora and habitats have much in common with the British Isles especially south-east England and East Anglia. Many will be surprised that despite high levels of air pollution particularly in the north and the death of elms much remains of interest. *Lobaria pulmonaria* is still present at a number of sites in the Ardennes for instance and wayside trees in the Ardennes seem far less affected by agricultural pollution with species like *Parmelia tiliacea*, *P. acetabulum* and *Anaptychia ciliaris* still locally abundant.

The checklist includes short sections on the history of lichenological exploration and the different regions within the area. The text is in English. See also Literature pertaining to British Lichens - 27 in this *Bulletin*. A full review will appear in the forthcoming *Lichenologist*.

The checklist can be obtained from the Musée national d'histoire naturelle, 25 rue Munster, L-2160 Luxembourg, Luxembourg.

Peter Lambley

LITERATURE PERTAINING TO BRITISH LICHENS - 27

Lichenologist 31(4) was published on 10 July 1999, 31(5) on 23 October 1999, 31(6) On 18 November 1999 and 32(1) on 6 January 2000.

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

N.B. 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.

BARON, G 1999. *Understanding Lichens*. Slough: Richmond Publishing. Pp. 92, 4 pages of colour photographs & 49 black and white illustrations. A useful beginners guide to what lichens are about.

BOQUERAS, M, BARBERO, M & LLIMONA, X 1999. El género *Ochrolechia* A. Massal. (Pertusariaceae, líquenes) en España y Portugal. *Cryptogamie Mycol.* 20: 303-328. Includes keys and descriptions to Iberian species, and will be an important reference for critical work on British material of the genus.

DAVEY, S 1999. An account of the lichen flora of Jersey. *Ann. Bull. Soc. Jersiaise.* 27: 426-447. A compilation of the lichens of Jersey, including records and observations made on the island by the author in 1998 and 1999. A marked decline in the flora of some habitats since the 1960s is noted, especially with regard to species of the *Lobarion*, none of which are to be found today. Fortunately, a Jersey rarity, *Umbilicaria grisea*, is still thriving. Includes two pages of (ten) colour photographs.

ETAYO, J & DIEDERICH, P 2000. *Echinodiscus lesdainii* gen. et comb. nov., a new name for *Phacopsis lesdainii* Vouaux (lichenicolous Ascomycetes, Leotiales). *Bull. Soc. Nat. Luxemb.* 100: 63-66. This is a *Skyttea*-like parasite on *Lecania cyrtella* and *L. cyrtellina*. The name is neotypified by a specimen from Northern Ireland; see 'New, Rare and Interesting...' in this *Bulletin*. [Not to be confused with *Unguiculariopsis lesdainii* (Vouaux) Etayo & Diederich *ined.*, which is a parasite of *Lecanora saligna*.]

FOX, B W 1999. The influence of atmospheric pollution on the lichen flora of Cheshire. In E F GREENWOOD (ed.) *Ecology and Landscape Development: A History of the Mersey Basin*, pp. 185-193. Liverpool: Liverpool University Press and National Museums & Galleries on Merseyside.

GILBERT, O L 2000. *Lichens* [New Naturalist Library No. 86]. London: Harper Collins. Pp. 288, 150 illustrations and 16 pages of colour photographs. Available in hardback (£34.99) and softback (£19.99). Just published. Indispensable guide to the

habitat ecology of British lichens - it fills in many of the gaps the *Flora* didn't have space for, and much much more!

HENDERSON, A (comp.) 1999. Yorkshire Naturalists' Union excursions in 1998. *The Naturalist* **124**: 117-131. Includes short reports by Albert Henderson on visits to Seckar Wood (pp. 119-120), Farnham Gravel Pits (p. 122), Cotterdale (p. 125) and Kirkdale (p. 130), and by Mark Seaward and Albert Henderson for Welwick Saltmarsh (p. 127).

IHREN, P G & COPPINS, B J. 1999. Two species of *Arthothelium* (*Arthoniaceae*, *Arthoniales*) new to Scandinavia. *Nova Hedwigia* **69**: 3-4. Includes records, ecological notes and European dot maps for *A. lirellans* and *A. orbiliferum*.

PRINTZEN, C 1999. *Japewiella* gen. nov., a new lichen genus and a new species from Mexico. *Bryologist* **102**: 714-719. The genus *Japewiella* Printzen is introduced for three species, including *Japewiella carrollii* (Coppins & P. James) Printzen [syn. *Lecidea carrollii* Coppins & P. James; *Japewia carrollii* (Coppins & P. James) Tønsberg]. *Japewiella* seems to be a genus of humid temperate and subtropical regions, whereas *Japewia* (e.g. *J. tornuensis* and *J. suburifera*) has a boreal to arctic-alpine distribution.

PRINTZEN, C & TØNSBERG, T 1999. The lichen genus *Biatora* in Northwestern North America. *Bryologist* **102**: 692-713. Several British and European species are included in this revision.

ROSSMAN, A Y, SAMUELS, G J, ROGERSON, C T & LOWEN, R 1999. Genera of Bionectriaceae, Hypocreaceae and Nectriaceae (Hypocreales, Ascomycetes). *Studies in Mycology* **42**: 1-248. A major reassessment of families and genera within the Hypocreales. Several genera of lichenicolous fungi are treated and illustrated, with keys to species for some of them: *Paranectria*, *Pronectria*, *Trichonectria* and [as yet not British] *Xenonectriella*. **Pronectria echimulata* Lowen sp. nov., on *Physcia aipolia*, is based on a collection from Ireland.

SEAWARD, M R D 1999. Mosses, liverworts and lichens. *Trans. Lincs. Nat. Un.* **24**: 248-250. New records for Lincolnshire, with *Caloplaca creulatella*, *Cladonia cariosa* and *Ramalina capitata* being reported for the first time.

SEAWARD, M R D & HENDERSON, A 1999. Lichen flora of the West Yorkshire Conurbation-Supplement VI. *The Naturalist* **124**: 113-116.

SÉRUSIAUX, E, DIEDERICH, P, BRAND, M & VAN DEN BOOM, P 1999. New or interesting lichens and lichenicolous fungi from Belgium and Luxembourg. VIII. *Lejeunia*, n.s. **162**: 1-95. *Polyblastia gelatinosa* is transferred to *Agonimia* as *A. gelatinosa* (Ach.) Brand & Diederich, and a new species is described: *A. globulifera*

Brand & Diederich. *Caloplaca phlogina* (Ach.) Flagey and *C. flavocitrina* (Nyl.) H. Olivier are treated as distinct species from *C. citrina*, and a comparative table is provided. A narrower species concept is employed for the lichenicolous genus *Endococcus* and several species are redefined, especially for those parasitizing the genera *Porpidia*, *Rhizocarpon*, *Protoblastenia* and *Verrucaria*. These include *E. brachysporus* (Zopf) Brand & Diederich, which is reported from Scotland on *Porpidia* sp. [see 'New, rare or interesting...' in this *Bulletin*]. *Catillaria globulosa* is transferred to *Lecania* as *L. globulosa* (Flörke) v. d. Boom & Sérus. *Nectria indigens* and *N. lecanodes* are transferred, as *Nectriopsis indigens* (Arnold) Diederich & Schroers and *Nectriopsis lecanodes* (Ces.) Diederich & Schroers, respectively. *Opegrapha herbarum* Mont. (1833) is replaced by *O. culmiger* Lib. (1830). [Surely an attempt to formally conserve such a well-established name as *O. herbarum* would be appropriate here. Furthermore, the observation that the exciple wall of the type of *O. culmiger* is K+ olivaceous is worrying - in 100s of specimens of *O. herbarum* I have never detected this pigment. A careful comparison of the type with other 'K+ green' species, e.g. *O. areniseda*, *O. calcarea* and *O. xerica*, is required.]

YAO, Y-J & SPOONER, BM 1999. *Roesleriaceae*, a new family of Ascomycota, and a new species of *Roeslerina*. *Kew Bull.* 54: 683- 693. The new combination *Sclerophora pallida* (Pers.) Y.J. Yao & Spooner is the correct name for *Sclerophora nivea*.

Brian Coppins

FIELD MEETING AT KIRKBY STEPHEN, CUMBRIA 22 - 25 October 1999

About 24 members attended the Society's last field meeting of the century which was centred on Kirkby Stephen, a delightful unspoilt market town in the Eden valley overlooked by the high limestone hills of the Pennines. The market town atmosphere was enhanced by the fact that Friday was market day and several members were stuck in long traffic jams brought about the sheep sales on the Friday. Our headquarters was the Jolly Farmers Guest House in the High Street which provided a comfortable venue and excellent food for the participants.

After a brief talk on the Friday night, members set off on Saturday, a windy but mostly dry day, for Crosby Gill (map reference 35/617119) a steep limestone valley about 15 kilometres to the west of Kirkby Stephen. This is an SSSI and known to be of considerable interest for flowering plants. The steep valley or gorge has been cut into carboniferous limestone by the headwaters of a north flowing stream with the valley floor at about 250-260 m and the surrounding land between 270 and 320 m in altitude. The site is quite extensive and members spent most of the day at the site exploring the variety of habitats ranging from shady limestone exposures, the occasional igneous

erratic boulder through to mixed deciduous woodland with birch, ash, hazel, hawthorn and elm.

About 147 species were recorded of which about 40 were on rock. Only a few species characteristic of the *Lobarion* were found including *Biatora sphaeroides* on elm. *Gyalecta flotowii* and *Opegrapha vermicellifera* were present on other elms. Hazel was quite abundant and supported *Tomasellia gelatinosa* and *Graphis scripta*. The birch trees on the valley sides and bottom were also surprisingly interesting with the local *Ochrolechia inversa* present on one tree on the valley floor. Other species recorded on birch included *Mycoblastus sanguinarius*, *Parmeliopsis ambigua* and *P. hyperoptera*. The absence of *Parmelia caperata* might be a reflection of the relatively cold climate despite its western geographical location. *Chaenothecopsis pusillum* was found on lignum. Damp shady carboniferous limestone outcrops had a characteristic suite of species including *Dermatocarpon luridum*, *D. miniatum*, *Psora lurida* and *Solorina saccata*. Limestone rocks in the stream supported *Placynthium tantaleum*, *Collema auriforme* and *Leptogium gelatinosum*. The occasional acid erratic boulders, mostly of Shap granite, had *Rhizocarpon geographicum*, *Porpidia crustulata*, *P. macrocarpa* and *P. tuberculosa*. A few additional species characteristic of nitrogen enriched areas were found around the farm.

Afterwards the party visited nearby Orton Church (map reference 35/622084) where 83 species were recorded. This church was built largely of sandstone and the monuments were generally of similar stone. Notable species found included *Pertusaria lactescens*, *Protoparmelia badia* (not previously encountered in a churchyard) and *Enterographa zonata*. There was a calcicole element in the flora which was supported by occasional limestone blocks and mortar and included *Acrocordia sahweyi*, *Collema auriforme* and *Gyalecta jenensis*. However, the bulk of the species were those which prefer more acid substrata such as *Lecanora rupicola*, *L. soralifera*, *L. sulphurea*, *Lecidella scabra*, *Ochrolechia parella*, *Pseudevernia furfuracea* and *Polysporia simplex*.

On Sunday the party visited Skenskrith Gorge (35/772074) which is on the south side of Kirkby Stephen where the River Eden cuts through brockram. This is a conglomerate with carboniferous stones set in a sandstone matrix. The gorge itself is sheltered with slabs of brockram alongside the river and vertical walls of rock forming the bank. Species of note included *Leptogium plicatum*, *Hymenelia lacustris*, *Verrucaria aquatalis*, *V. praetermissa* growing in or close to the water. Whilst *Dermatocarpon miniatum*, *D. luridum*, *Placynthium garovaglii* and *Squamarina cartilaginea* occurred on the gorge sides. The views of a red squirrel in one of the trees was an added bonus for this very attractive site. The threatening weather then set in with a vengeance and the party abandoned plans to look at high level limestone pavement.

Instead the afternoon was spent looking at Pendragon Castle and nearby abandoned mine workings in the Mallerstang valley. Pendragon Castle (map reference 35/782026) is associated with the Arthurian legend and is constructed largely of sandstone with mortar providing a limited calcareous substrata. Forty-four species were recorded from it and some neighbouring ash trees. Calicicles present included *Aspicilia calcarea*, *A. contorta*, *Caloplaca flavescens*, *Collema auriforme*, *C. crispum*, *Verrucaria baldense*, *V. hochstetteri* and *V. muralis*. Other species present included *Ochrolechia parella* and *Rhizocarpon geographicum*. The mineworkings (almost certainly for lead), at nearby Dale Foot (map reference 35/785403) proved disappointing as there was little evidence of heavy metal influence. About 40 species were recorded including a number characteristic of acid grassland such as *Coelocaulon aculeatum*, *Cladonia arbuscula*, *C. cervicornis*, *C. ciliata* var *temis* and *C. furcata*.

On the Monday a smaller group visited High Out Wood (map reference 35/790075) an SSSI which is situated about 2km south-east of Kirkby Stephen at an altitude of between 300 and 350m. It is a rather open exposed wood, mainly of ash, holly, hawthorn and birch, interspersed with areas of grassland and limestone outcrops. Thirty four species were recorded most reflecting the rather acid nature of the bark. They included *Arthopyrenia lapponina*, *Calicium viride*, *Fuscidea lightfootii*, *Graphis scripta*, *Lecanactis abietina*, *Parmelia saxatilis*, *Parmeliopsis ambigua*, *Platismatia glauca*, *Pseudevernia furfuracea*, *Stenocybe septata*, *Thelotrema lepadinum* and *Tomasellia gelatinosa*. The woodland is considered to be an ancient woodland from its vascular plants, but this is not reflected in the lichen flora which is more indicative of the harsh exposed position of the site.

The meeting finished at lunchtime when remaining members of the party dispersed. The meeting adding records to a diverse area which deserves to be better known to lichenologists.

Peter Lambley

RUSSIAN FIELD TRIPS

We invite our colleagues from over the world to participate in expeditions in the year 2000 in interesting areas of Russian Far East: Lesser Xingan Mts, Kamchatka and Kuril Islands, and Sikhote-Alin Mts.

We represent the group of Russian scientists, working in Russian Academy of Sciences and associated in Far East Association for Field Research and Exploration (FARREX). Members of FARREX have large field experience (from 10 to 20 and more years) in wild, unpopulated places of virgin nature. From 1992 to 1999 many of our colleagues had worked in our expeditions in Kamchatka, Kuriles, Primorye, Magadan, Sakhalin etc. Reports of expeditions 1999 were placed in our site <http://www.farrex.vtc.ru>

Our plans for summer 2000 are following (all dates below are preliminary):

Lesser Xingan Mtd: 1 June - 25 June

Aim: investigate flora and vegetation on the contact of Siberian, Mongolian and Far Eastern monsoon flora and vegetation.

Transportation: to Blagoveshchensk by train from Vladivostok or Khabarovsk.
In Lesser Xingan region: by truck and raft.

Kamchatka - Northern Kuril Islands: 1 July - 25 July

Aim: investigate flora and vegetation of active volcanoes, hot springs, and most high mountains in Far East.

Areas: volcano Avachinskiy (2751m, Eastern Kamchatka), volcano Kluchevskoy (4850m), Tolbachik, Mt Ploskaya (4106m, Central Kamchatka) or most powerful volcanoes of Northern Kurils: Ebeco, Alaid and Chikurachki.

Transportation: to Petropavlovsk-Kamchatskiy directly by air or via Vladivostok.

In Kamchatka: by truck, in Kurils by air (helicopter).

Sikhote-Alin Mts. 1 August - 25 August.

Aim: investigate flora and vegetation along the altitude gradient from the highest top of Sikhote-Alin Mts - Mt Tardoki-Yani (2077m), from alpine zone through subalpine and boreal spruce zones to cool temperate broad-leaved Korean pine zone.

Transportation: to Khabarovsk directly by air or via Vladivostok. From Khabarovsk to Mt Tardoki-Yani by helicopter and back by raft and truck.

Southern Primorie. 1 September - 25 September

Aim: investigate flora and vegetation in southernmost region of Russian Far East, richest in flora and vegetation, along altitudes gradients and maritime-continental gradients.

Transportation: in area by truck.

Who can participate: botanists, ecologists, geographers and other specialists, students are welcomed. Volunteers are welcomed too.

Team: Typical field crew includes 5-6 Russian persons and up to 3-5 foreign colleagues may participate.

Need more information? Please contact Dr Sergei Grishin: sgrishin@mail.primorye.ru.

Or go to WEB site http://www.farrex.vtc.ru/Layer2/E_2000.html.

Please inform your colleagues!

BRITISH ISLES LIST OF LICHENS

14 April 2000 update to list of 28 May 1999

In addition to this update a fully corrected and inclusive list has been published on the BLS web site, both as text and as a CSV file.

ADD

1244 <i>Calo polyc</i>	2000 <i>Dact opht</i> #
1244 <i>Caloplaca polycarpa</i>	2000 <i>Dactylospora ophthalmizae</i> #
1990 <i>Cyph trac</i>	2292 <i>Hain pert</i> #
1990 <i>Cyphelium trachylioides</i>	2292 <i>Hainesia pertusariae</i> #
1987 <i>Hymenelia obte</i>	2181 <i>Lichenopelt rama</i> #
1987 <i>Hymenelia obtecta</i>	2181 <i>Lichenopeltella ramalinae</i> #
1988 <i>Lecidea porp</i>	2170 <i>Nano chri</i> #
1988 <i>Lecidea porphyrospoda</i>	2170 <i>Nanostictis christiansenii</i> #
707 <i>Lecidella subvir</i>	2290 <i>Pronectria echi</i> #
707 <i>Lecidella subviridis</i>	2290 <i>Pronectria echimulata</i> #
1117 <i>Rhizoc sublav</i>	2291 <i>Sclerococ norm</i> #
1117 <i>Rhizocarpon sublavatum</i>	2291 <i>Sclerococcum normandiae</i> #

CORRECT

565 *Porp flavocaer* NOW *Porp meli*

565 *Porpidia flavocaerulescens* NOW
Porpidia melinodes

904 *Mniacea jungermanniae* ##

(should be *Mniaecia jungermanniae* ##)

905 *Mniacea nivea* ##

(should be *Mniaecia nivea* ##)

1926 *Bacidia caesiorevirens*

(Should be *Bacidia caesiorevirens*)

2015 *Athelia arachnoidia* #

(Should be *Athelia arachnoidea* #)

2106 *Bachmanniomyces uncilicola* #

(Should be *Bachmanniomyces*
uncialicola #)

2034 *Clypeococcum hypocenomysis* #

(Should be *Clypeococcum*
hypocenomycis #)

2043 *Dactylospora attendena* #

(Should be *Dactylospora attendena* #)

2054 *Endococcus apicicolous* #

(Should be *Endococcus apiciicola* #)

2178 *Psammia stipitata* #

(Should be *Psammia stipitata* #)

2210 *Skyttea tephromalarum* #

(Should be *Skyttea tephromelarum* #)

2267 *Weddellomyces epicallopismum* #

(Should be *Weddellomyces*
epicallopisma #)

J.M Gray

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For publications and other items please send orders to **Brian Green, 22 City Graig, Menai Bridge, Anglesey, LL59 5HP, UK**, E-mail bgreen@compuserve.com, sending Sterling cheques, payable to **The British Lichen Society**, drawn on a UK bank or on a bank with a UK branch or agent or US Dollar cheque (double the Sterling rate) or overseas members may pay by GIRO (Girobank, Lyndon House, 62 Hagley Road, Birmingham, B16 8PE, UK). The British Lichen Society Giro number is 24 161 4007.

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Bulletin back numbers

Nos 61-67, 69, 70, 72-82 each £1.00

The Lichen Flora of Great Britain and Ireland (1992) edited by Purvis, Coppins, Hawksworth, James and Moore.

for members £35.00

for non-members £55.00

Lichen Atlas of the British Isles edited by Seaward

Fascicle 1 (47 species of *Parmelia*) - out of stock

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<i>Bibliographic Guide to the Lichen Floras of the World</i> (second edition) by Hawksworth and Ahti (reprint from <i>The Lichenologist</i> Vol. 22:Part 1)	
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<i>Checklist of British Lichen-forming, Lichenicolous and Allied Fungi</i> by Hawksworth, James and Coppins (1980).	
	each £2.00
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Please would intending contributors to the Winter 2000 issue of the *Bulletin* submit their copy to the Editor by 23 September. It would be helpful, but by no means essential, for authors of longer articles prepared on a word processor to supply a copy on a 3.5" floppy disc, in addition to the hard copy. This can be MS.DOS, Word Perfect or any format from an Apple Mackintosh. Alternatively it can be sent by e-mail to plambley@aol.com, preferably in RTF.

NOTES

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REFEREES (Specialist)

O Breuss, *Catapyrenium*, *Placidopsis*; P Clerc, *Usnea* (W Europe, Macaronesia, eastern N America); B J Coppins, *Arthonia*, *Bacidia*, *Micarea* only; A Fletcher, coastal lichens; A M Fryday, montane lichens, lichens of metal-rich soils; O L Gilbert, all terricolous lichens (excl *Catapyrenium*, *Cladonia*), montane lichens on basic rocks, flint and chalk pebbles; P W James, critical complexes (all genera); R Moberg, Physciaceae; A Orange, pyrenocarpous lichens; O W Purvis, lichens on metal-rich rocks; F Rose, critical woodland lichens (epiphytes only); C Scheidegger, *Buellia*; L Tibell, Caliciales, *s. lat.*; E Timdal, *Toninia*, *Psora* and *Hypocenomyce*; T Tønsberg, corticolous sterile crusts.

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