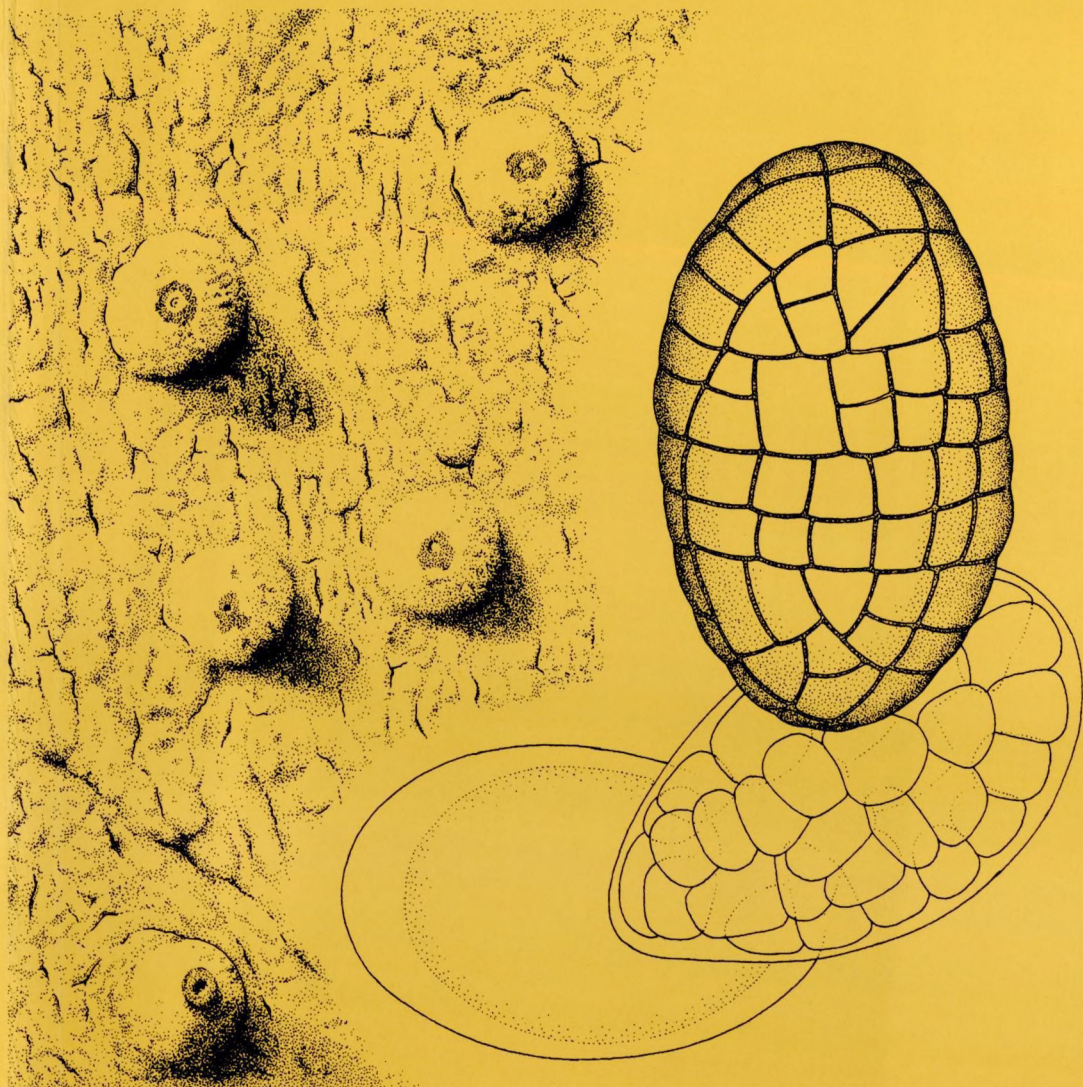


British Lichen Society Bulletin

Number 92 Summer 2003



Edited by P W Lambley

FORTHCOMING BLS MEETINGS

NETTLECOMBE, SOMERSET (*Physiaceae* workshop)

Leaders Bryan Edwards & Peter James

MARLBOROUGH, WILTSHIRE

Leader Simon Davey

28 July - 1 Aug 2003

24 October - 26 October 2003

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Cover artwork *Polyblastia cruenta* by Alan Orange.

WORKSHOP ON NITROGEN IN THE ENVIRONMENT

In recent years the pollution environment of the British Isles and many other parts of north-west Europe has changed dramatically with big drops in the levels of sulphur dioxide, but at the same time there has been evidence of the effects on the lichen flora of increasing levels of nitrogen compounds from agriculture and transport. Interest has focused on two main aspects, the use of lichens as bioindicators and potential threats to lichen species and their communities. It was for these reasons that English Nature provided funding for the British Lichen Society to run a workshop to address these issues and to make recommendations for further work. The workshop was held between February 24th and February 27th at Nettlecombe Court, a Field Studies Council Centre in Somerset with 32 people attending from Britain, France, the Netherlands, Germany and Italy. It was very ably organised by Pat Wolseley with assistance from Gill Stevens and Jenny Duckworth. Nettlecombe Court proved to be an ideal place to hold such a workshop being surrounded by parkland rich in lichens but in an agricultural setting. The helpfulness and general support of the Nettlecombe staff was also instrumental in making it such a success.

The workshop began on the Monday evening with a reception then after dinner there was a characteristically thought-provoking address on nitrogen in the environment by Professor Mark Seaward. He emphasised the need to use the term hypertrophication rather than eutrophication which as he explained is a perfectly natural state of affairs. The levels we were concerned about in this workshop came from a variety of activities including agriculture and transport.

Tuesday began with a first session chaired by Peter James entitled 'A changing lichen flora'. The key note talk was given by Kok van Herk on 'What do we know about short and long distance nitrogen deposition in Europe'. He explained that the effects of the different nitrogen compounds on epiphytic lichens was not comparable. Ammonia increases bark pH and that severe ammonia pollution results in communities with abundant nitrophytic and few acidophytic species. Nitrophytic species can be characterised as species needing a basic or subneutral substratum but also some additional nitrogen as well. Acidophytes require acid bark as their name suggests, but many are sensitive to background levels of nitrogen as well. *Bryoria fuscescens* for instance disappears when background levels are as low as c. 1 mg N.l.⁻¹. NH_4 does not increase bark pH but it does affect acidophytes at medium to long distances by adding nitrogen particularly through precipitation. Neither NO or NO_2 are basic and therefore cannot be responsible for observed increases of nitrophytes on acid bark in urban areas. He considered that basic dust deposition was the most likely cause instead. This was followed by 'Changes in the epiphytic lichen flora of urban environments in Germany' by Ranolphe Kricke. He explained that the lichen flora of the Ruhr had started to recover in the last 15 years but that the species which had been lost by the previously rising pollution levels were mostly acidiphilous species where as those now coming in were generally nitrophiles. After coffee Linda Davies and

William Purvis presented data on 'Changes in the lichen flora of London'. Stefano Loppi then introduced us to the complexities of the landscape in nitrogen and lichen terms in the area near his home in Central Italy. The problems of separating out the effects of the many interconnected variables such as climate, substrate etc from air pollution. He emphasised that this meant that whilst it can be possible to detect the effects of individual pollutants great care was needed in interpreting the data. Norbert Stapper explained the mapping of aerial eutrophication with epiphytic lichens as biomonitors in North Rhine-Westphalia. As in other parts of the industrialised parts of north-west Europe SO₂ levels had dropped considerably but NO_x and ammonia levels had largely remained unchanged. The sources being motor vehicles and livestock respectively. He explained the techniques of biomonitoring on 2000 trees using different surveying techniques. Acidophytic lichens were dominant in the highlands of the area and nitrophytic species in the lowlands. Finally David Hill spoke on mapping changes in the important and unusual lichen flora of Stonehenge. After lunch participants visited a part of Nettlecombe Park to look at characteristic communities of ancient wood pasture and for agricultural influences particularly from excessive nitrogen from adjacent farmland.

The afternoon session entitled 'The pollution environment' was chaired by David Hill. The keynote address of the session was by Alison Vipond on Air quality- the policy perspective. She explained that the adverse effects of air pollution on ecosystems continues to be a major driver of international agreements on emission controls. Whilst sulphur dioxide and acid rain levels were generally decreasing she raised concerns about nitrogen deposition and ground level ozone concentrations and said that combating these problems will require further concerted international efforts. Clare Whitfield then spoke on 'Air pollution assessment by the statutory nature conservation bodies'. Air pollution had been identified as a potential threat to many designated nature conservation sites but at present there is currently no systematic monitoring or assessment of air pollution impacts on species or habitats at individual sites. This shortcoming has been identified by the National Expert Group on Transboundary Air Pollution (NEGTA 2000). One of its key recommendations was that site specific assessments are urgently needed to take into account the impacts of local and regional air pollution on sites of high biodiversity. There was also a need to develop improved methods of ecological risk assessment for air pollution at international and local scales. This was followed by Mark Sutton who discussed the spatial distribution of nitrogen impacts in the UK and its consequences for the development of mitigation strategies and monitoring tools. He demonstrated that atmospheric nitrogen deposition arises from emissions of ammonia and nitrogen oxides with impacts being a result of both dry deposition of the primary gases and wet deposition of ammonium and nitrate in precipitation. In terms of N deposition NH₃ is locally more significant since its rate of dry deposition is faster than NO_x this gives rise to substantial variability of N deposition at the landscape level. This has major consequences for the development of mitigation strategies and the monitoring of ecosystem responses. A key challenge was to improve the calibration between atmospheric concentrations / deposition,

bioindicator and ecosystem response to permit diagnosis of significant environmental effect.

After tea David Chadwick opened our eyes to the fascinating world of slurry in a changing agricultural scene and research on techniques for mitigating the effects of ammonia. The final paper by Alastair Headley used data from the lichen mapping scheme to discuss changes in the distribution of lichens in relation to atmospheric deposition of nitrogen. In the evening several posters were presented including Damien Cuny and his team from Lille showing changes in Dunkerque and Lille cities in France between 1995 and 2002, and as in many other places in Europe this was associated with an increase in *Flavoparmelia soredians*.

Wednesday began with the session 'Selecting and monitoring species and communities' chaired by William Purvis. The keynote paper was Christoph Scheidegger on Lichen diversity, species composition and conservation values in landuse gradients across Europe. He explained the strengths and weaknesses in the sampling strategy. This was followed by a paper on 'Lichen indicator species of environmental variability in Liguria, Northern Italy' by Paul Giordani. Andree Aptroot then provided a global view of nitrophytic lichens and their distribution and ecology. Pointing out that the *Physciaeae* were important in such environments both in the tropics and temperate areas though different genera were involved. After coffee the physiological aspects of nitrogen were considered by a number of speakers. Isabelle Franzen-Reuter spoke on Metabolization and physiological effects of nitrogen additions on epiphytic lichens. Christopher Ellis then spoke on the work he and Peter Crittenden had undertaken on using heathland lichens to map nitrogen and acid deposition. Lucy Sheppard then discussed her work on the effects of different ammonia concentrations on *Cladonia portentosa* growing on an ombrotrophic bog. The whole set up for the work was extremely impressive and the opportunities it gave for further studies were emphasised. Finally in the morning session Pat Wolseley and Peter James presented the results of a survey of epiphytic lichen communities of twigs and trunks of oak in areas affected by increased ammonia deposition.

The afternoon session was chaired by Gill Stevens on the theme of conserving lichen communities and species diversity. The session began with a paper by Bryan Edwards on 'the lichen flora of wayside trees, species communities, suspected origins and potential threats'. Peter Lambley then discussed the evidence for possible impact of nitrogen compounds on a number of SSSIs in England and Wales. The final summing up session of the afternoon was by Ray Woods giving the Overview from the site conservation point of view.

After tea the participants divided into four groups to look at various aspects of the issues covered in the two days. This promoted lively discussion and after dinner the groups met up together to put forward their recommendations. It is intended that this will be published in an English Nature Research Report.

On the final day (Thursday) participants visited IGER (The Institute for Grassland and Environmental Research) at North Wyke near Okehampton. They were welcomed by Professor Steve Jarvis who explained the background to the Research Station and the type of research which took place. The party was then shown around by Jerry Tallowin. A familiar surname to the longer serving members, as his father was the former BLS Treasurer Noel Tallowin. Pat Wolseley and Peter James had visited the site last year as part of a DEFRA funded project to test methodology for using lichens as bioindicators of ammonia (*Bulletin* 91:1-5). This site included many surprises including a roadside oak near the farm with *Lobaria pulmonaria* and a small amount of shrubbery and woodland from the farm but exposed to the west. The walk continued around to the back of the farm buildings where a group of oaks situated close to a large slurry tank were also found to be surprisingly rich with a mix of nitrophiles and acidophiles including species like *Normandina* apparently growing well. The visit finished with a prepared lunch back in the station. Despite the rain it was a fine ending to a very interesting and stimulating workshop which had been characterised by a very friendly informal but constructive atmosphere both in the workshop which continued in the bar late into the evening.

Peter Lambley

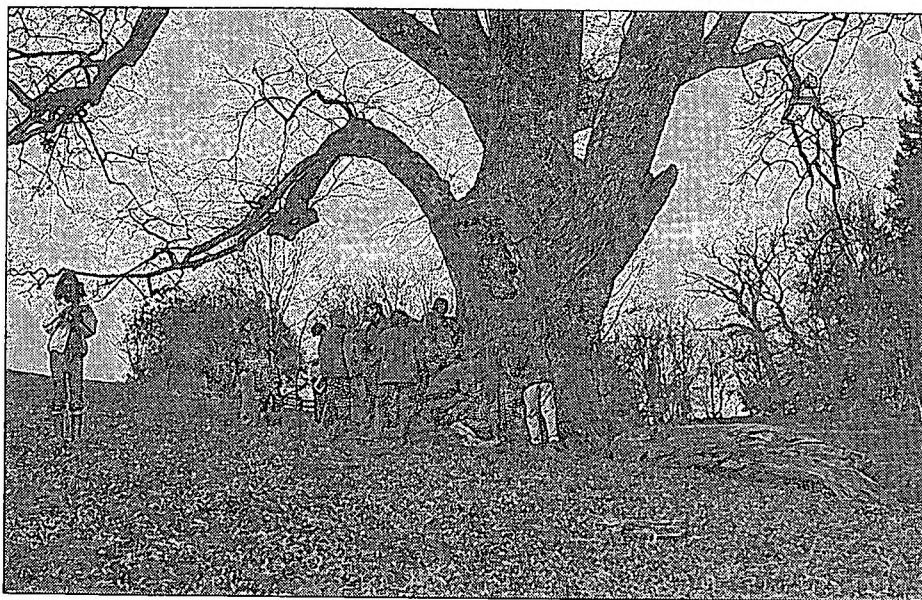


Figure 1 Participants in the workshop examining a tree in Nettlecombe Park

Photo by Randolph Kricke



Figure 2 The group inspecting an oak tree at North Wyke which supports *Lobaria pulmonaria* and *Teloschistes flavicans*.
Photo Randolph Kricke

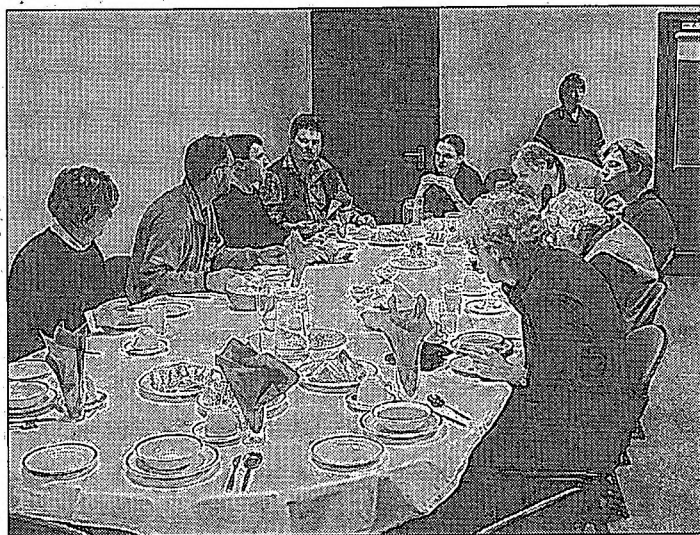


Figure 3 Members of the workshop discussing the morning's excursion over lunch at North Wyke.
Photo Randolph Kricke

REPORT ON THE NEW YEAR MEETING AND AGM ON 10-12TH JANUARY 2003

This year the AGM was held in the Flett theatre of the Natural History Museum which allowed us to use the Foyer as an exhibition space. There was an enthusiastic response to the call for exhibits and 13 people brought exhibits. Pat and Ann Allen organised space and boards and by 5 o'clock we had a glass of wine in our hands and were able to look at all the projects which have been going on in the last year and chat to the exhibitors. This exhibition space provided a focus for the whole weekend and the contributors are congratulated.

Ann Allen and Jeremy Gray contributed an exhibit about Cornish Churchyards and the Flattening Crisis. Barbara Hilton and Ann Allen provided an excellent exhibition on school projects which stimulated discussion about ways to involve children in lichen projects. Mary Hickmott brought the members a challenging display of presidents of the British Lichen Society which members were invited to identify. Frank Dobson demonstrated his updated version of the Lichen Identifier and was always surrounded by a knot of interested persons. Janet Simkin demonstrated Biobase which now holds over 9,000 site records for the BLS.

Andrew Branson contributed an exhibit about British Wildlife to which Oliver Gilbert now contributes a regular feature on lichens and Oliver brought a poster about lichens of soft unprotected sea cliffs. Bryan Edwards brought an exhibit on the discovery of *Pseudocyphellaria aurata* in the Scilly Isles and Neil Sanderson on the distribution of *Enterographa sorediata* in the New Forest. Ray Woods brought information on recent survey work in Wales and Howard Fox reminded us of some good things in Ireland. Pat Wolseley put up an exhibit about the Lichens on Twigs key on the NHM website and got rid of the remaining free trial keys from AIDGAP. William Purvis had a poster about changes going on in the the Parmelion at Burnham beeches and Linda Davies a poster on her London lichens project which provided an excellent background for the field day in Regents Park on Sunday.

After the exhibition we all repaired to the Hoop and Toy for a buffet supper in their functions room where we could also have our own bar. This was followed by a memorable quiz provided by Oliver Gilbert which included everything from species, to unusual sites to anagrams of lichenologists that had everyone thinking hard (see p26).

The AGM was held as usual on Saturday morning and included the presentation of the Ursula Duncan award to Jeremy Gray for his services to the British Lichen Society and to Mark Seaward for his services to lichenology internationally (see pp). There

were also considerable changes to Council members and Committee chairs. Tony Fletcher resigned as Conservation officer after 25 years but was elected as Librarian of the BLS library which is now housed in Leicester County Museum and Bryan Edwards was elected as Conservation Officer. Jeremy Gray was also retiring as long standing assistant treasurer and webmaster and was thanked for all his hard work in this arena. He is succeeded by Clifford Smith who has run the Hawaii IAL lichen website for many years and who will liaise closely with Jeremy during the transition period. Newly elected members to Council include Ishpi Blatchley, Steve Chambers, Paul Smith and ex-President Ray Woods.

Finally Sandy Coppins received an enthusiastic response to her suggestion that the next AGM should be at the Royal Botanic Garden Edinburgh where she proposed several additional features.

After a good lunch at the staff canteen at the NHM there were contributions from 3 speakers on Where is the British Lichen Society going with data, maps, names and biodiversity? Professor Mark Seaward began with an account of the history of the British Lichen Society Mapping Scheme. Dr Brian Coppins followed with What's in a name? - taxonomy, nomenclature and all that jazz. Finally Bryan Edwards, and Vince Giavarini gave an account of lichenology at the sharp end: lichens and Biodiversity Action Plans. These talks are written up on p 8-10.

On Sunday we all met with Linda Davies and William Purvis in Regents Park to look at one of the sites that Linda has included in her survey of parks in and around London. It was a beautiful crisp day with ice on the ponds and a brilliantly blue sky and it provided many interesting finds to those who attended, in particular the greater abundance of lichens on younger trees, particularly oaks. This meeting is described by Chris Hitch on p 10-13. We look forward to seeing members at the next AGM at the Royal Botanic Garden Edinburgh.

Pat Wolseley

The afternoon session

Mark Seaward

Starting from Scratch: the History of the British Lichen Society Mapping Scheme

The history of the BLS Mapping Scheme was traced from its inception in September 1963 to show the development of data retrieval, access and output. Particular attention was paid to the evolution of mapping cards, the improvement in computer facilities and the elaboration of chorological material, site and red data lists. The unifying role of the Mapping Scheme in the Society's history was emphasised in terms of latter's programme and membership. The flow of mapping information to, and its value in, other lichenological activities were reviewed. Reference was made to the importance of using historical data and herbaria to provide a dynamic dimension to maps. Tribute was paid to the many who have made the Mapping Scheme such an on-going success.

Brian Coppins
"What's in a name?"

Brian began at the beginning, extolling the benefits of binomial names by saying that we would not be able to get many of the old polynomials, such as *Lichenoides viride, segmentis angustis distortis, scutellis pullis* [= *Physconia distorta*] on a mapping card! Linnaeus, the 'father' of binomial names, was not a great enthusiast of lichens and put them all in the one genus, *Lichen*. Such a classification was clearly unsatisfactory, and taxonomic, and hence nomenclatural change was inevitable; for example, by 1803 *Lichen saxatilis* L. became *Parmelia saxatilis* (L.) Ach. In the first half of the 19th century many lichenologists (e.g. Acharius, Flotow, Körber, Massalongo and Trevisan) presented new arrangements and introduced many new generic names. Many of these innovations were quashed by overriding influences, firstly by William Nylander, and later by Alexander Zahlbruckner. It was not until the recent lichenological 'revolution', which got underway in the 1960s, and led by such fresh-thinking scientists as Josef Poelt, Antonin Vezda, Hannes Hertel and Mason Hale, did major changes become widely accepted. Under their reforming influences we saw the resurrection of many of the 'old', long-forgotten genera, such as *Heterodermia*, *Hyperphyscia*, *Micarea* and *Porpidia*, and the introduction of many new ones. This process of taxonomic refinement and readjustment continues, and will continue for many years yet, especially with the rapidly advancing 'molecular' techniques, which enable us to arrange our species into genera with an undoubted common origin.

Brian stressed that some generic 'splits' are a matter of degree and opinion, and the 'jury is still out' on their worthiness. For example, few taxonomists would now dispute that *Parmelia reticulata* belongs in a different genus from *Parmelia* s. str. (*P. saxatilis* group), but do it and its close (non-British) relatives really deserve to belong in a genus (*Rimelia*) separate from *Parmotrema*?

There then followed an insight into the International Code of the Botanical Nomenclature ('ICBN' or 'Code') and the workings of the various Special Committees associated with it. Also explained were the Principle of Priority, the importance of 'types', and the advantages of the recently improved mechanisms by which names can be 'conserved' or 'rejected' in order to prevent unnecessary name changes for purely 'legal' rather than taxonomic reasons.

To illustrate the influences of taxonomy (T), orthographic variations (O) and nomenclatural rules (N) on names, several case examples were outlined, such as *Lichen pulverulentus* - *Physcia pulverulenta* (T) - *Physconia pulverulenta* (T) - *Physconia pulverulacea* (N) - *Physconia distorta* (N), and *Lecidea tenebricosa* - *Lecidea carrollii* (T) - *Japewia carrollii* (T) - *Japewiella carrollii* (T) - *Japewiella tavaresiana* (N). Also the resolving of the complicated mess that involved the names *Arthonia didyma*, *A. lurida* and *A. spadicea*, and their varied interpretations by lichenologists in different countries. An example that has puzzled many of us is the case of *Placidopsis custnani*, whose name has changed over the years with the added

problems of orthographical and etymological misinterpretation (O) and misapplication of the nomenclatural rule that a name has priority at its own rank (R): *Placidium custnani* - *Placidiopsis custnani* (T) - *Placidiopsis custanii* (O) - *Placidiopsis custnanii* (O) - *Placidiopsis cartilaginea* (R) - *Placidiopsis custnani* (realization of previous problems!).

Life at the sharp end: Survey and recording

Bryan Edwards: *Caloplaca aractina*

Caloplaca aractina is a Priority Species under the UK Biodiversity Action Plan, and forms part Plantlife's 'Back from the Brink' project. It is listed on Critically Endangered in the Lichen Red Data Book. As a Project Officer for this species my work involves reviewing herbarium specimens and historical records, surveying historical, existing and potential sites, assessing populations and threats and providing management advice and raising awareness.

C. aractina has always a rare species in the UK, and up until 2000 was only known from one extant site on coastal serpentine rocks on The Lizard Peninsula. There were also historical from the Lake District and western Scotland, which were backed by specimens in the herbarium at the Natural History Museum. However, on closer examination these specimens proved to be of other species, mostly immature *Caloplaca ceracea*. The only genuine specimen of *C. aractina* was collected by W. Watson from The Lizard in 1924.

A survey of the extant site on The Lizard was undertaken in 2000. The species was duly found where Watson had collected it almost 80 years previously. Searches along other parts of the west coast of The Lizard only yielded one further small population. The reasons for its apparent rarity were unclear at stage. Later in the year while surveying on the east coast of the peninsula a further eleven sites were discovered, including one on Gabbro. The eastern coast is much more sheltered than the west coast, and this proved to be the major factor in distribution of the species on the peninsula. For each of the populations surveyed data was gathered on population, phytosociology, threats, site status and site ownership. A sketch map of each site was made to aid future monitoring.

As a result of the survey *C. aractina* was found to be an important member of the mesic-supralittoral zone along the more sheltered parts of The Lizard coastline. Fourteen populations were found on serpentine, one on Gabbro, but none on Hornblende Schist, the other major rock along the coast. None of the sites are under immediate threat, and its future as a British species seems secure.

Vince Giavarini: The Churchyard lichen *Lecanactis*

After the tea break Vince Giavarini talked about "Investigating the BAP species, *Lecanactis hemisphaerica*", through work funded by Plantlife. First he showed the disjunct distribution of the lichen, in 1982, recorded from East Anglia, Kent and

Dorset. By 2000, there were still relatively few sites (15) for this, believed British endemic. *Lecanactis hemisphaerica* is a member of the *Dirinetum* lichen community of old, dry shaded walls, known sites being mostly medieval churches and castles near the coast. Vince described the methodology used in site surveys. It involved using 50 x 50cm quadrats marked out with push-pins. All lichens and associated fungi were recorded and given a Domin scale value. By the end of the first phase of survey in Dorset, Somerset and Sussex, important discoveries had been made. Firstly, good material of this species from Italy was provided by Mark Seaward, so it was not an endemic after all. Then during survey, extreme forms of the plant with compressed (non-hemispherical) apothecia were found. Initially, this was believed to be due to differences in accumulated calcium oxalate, which is known to alter the outward appearance of lichens belonging to related genera (e.g. *Opegrapha calcarea*, *Dirina massiliensis* f. *sorediata*). However, subsequent microscope work revealed flaws and inaccuracies in *The Flora* key to *Lecanactis* and also in the original diagnosis of the species. *L. hemisphaerica* was found to be identical to *L. grumulosa*, except for the presence of hemispherical fruits.

As suspected, *Lecanactis hemisphaerica* is not a good species and should be regarded as a form of *Lecanactis grumulosa*, which in the absence of natural limestone will also colonise stable artificial habitats. *L. hemisphaerica* had long regarded with some suspicion, as it appeared to have no known natural habitat. More recently, new problems have arisen concerning its systematic status. Now included in *Lecanographa*, *L. grumulosa* may be more accurately described as a lichenicolous fungus of *Dirina massiliense* f. *sorediata*. The Spanish lichenologists Egea and Torrente were among the first to noticed this. The effect of *L. grumulosa* on some *Dirina* colonies is to inhibit soralia production and accelerate wrinkling, so the thallus may appear as if it is slowly imploding. Despite these revelations *Lecanographa grumulosa* remains an excellent indicator species of ancient lime-rendered walls. The *Dirinetum* inclusive of *Lecanographa grumulosa* represents an advanced stage of development. The community is at its peak with the appearance of *Arthonia pruinata*, *Opegrapha areniseda* and the fungus *Spiloma auratum* either singly, with two or three species present, or with all four together.

Winter Field Meeting 2003 - Regent's Park, London

On the Sunday following the AGM, 20 members of the Society met, led by William Purvis. Although the day was in the grip of a hard frost the weather was kind and the Park was bathed in sunshine all day so at least the sides of the trees facing south and west were thawed enough for good observations of the flora to be made.

James *et al* (2002) had already produced a good report on the lichens of this area and this opportunity was taken to refine some of these species, and also to try and increase the list if possible. In the pilot survey 33 lichens were recorded on young planted oaks, with an additional 6 species being noted in other regions of the park.



Figure 1

The park straddles 4 1km squares and is of the order of 1.5sq kilometres in area with London Zoo on the northern boundary. There mature London planes (*Platanus*) are near the lake in the southwest corner and many other mature trees present including willow (*Salix*) and ash (*Fraxinus*). The main central area is open for sport and other recreations, criss-crossed by numerous avenues and walkways. Initially the party looked at trees by the lakeside including the planes and ornamental apples (*Malus*), though not much was found there. A *Xanthorion* flora was present, though *Melanelia subaurifera* was noted and a fallen dead branch had *Hypogymnia physodes* and *Lecanora conizaeoides*. On the base of one plane, on the west side, a single thallus of *Caloplaca flavocitrina* was found. The squamule was too big for it to be *Candelariella reflexa* but it did have the typical marginal bright yellow soralia. It was not collected for further examination and neither was it tested with K in the field, as it was too small. The author has found this species growing on eutrophicated bases of apple (*Malus*) in a carpark area in Suffolk.

By the late morning, some of the party had reached the plantation of oaks (*Quercus*), maples (*Acer*) and odd hawthorns (*Crataegus*) and the oak with the single thallus of *Pleurosticta acetabulum* had been refound. A tiny portion of a *Physconia* was collected, in case it was *P. perisidiosa*, but the rhizines were simple, so that meant it was only *P. grisea*. During this brief search 18 taxa were recorded. Perhaps with the presence of *Parmelina tiliacea* and *Lecanora confusa*, it is possible that propagules were brought in when the trees were planted rather than being airborne. It is noted that several young planted trees in Suffolk support *L. confusa* and one even had *Fuscidea*

lightfootii on it (conf. B J Coppins) to substantiate this observation. [Note: the oak trees actually came from Italy.]

By the time this list was complete, the party had split into two factions and the small group remaining retired to the café nearby for a pizza and coffee, before meeting up with the other group, who by this time had fed and moved to the long avenue of limes (*Tilia*) towards the eastern boundary. With the sun beginning to set it was generally felt that the meeting had come to a close. Several members departed but Amanda and Linda set off to try and find the *Physcia aipolia* noted previously. However, cold and the lessening daylight inhibited the search and this taxa was not refound.

Walking back to the tube station CJBH and Martin Butler stopped to look at a gigantic free-standing ash, well frozen, in the hope of finding *Caloplaca obscurella* and/or *Hyperphyscia adglutinata* on the buttress roots. A diminutive attached look-alike was collected, but this turned out to be *Phaeophyscia orbicularis* with its black underside. However a thallus of *Xanthoria ucranica* was correct. The only other species of note recorded before sundown were *Bacidia neosquamulosa* on a mossy sloping willow and *Athelia arachnoidea* on an algal encrusted tree.

With the good company and sun warming the air, a most enjoyable day was had and during it 31 lichen taxa and one fungus taxon were seen. Whilst some species were not refound, 6 lichens were recorded as new to the park, together with the fungus, and it would seem that a good list is now being got together for this area in the centre of London.

List of Lichens and Fungi noted 12 January 2003 at 51(TQ)/28.83

<i>Amandinea punctata</i>	<i>Melanelia subaurifera</i>
* <i>Athelia arachnoidea</i> (f)	<i>Parmelia sulcata</i>
* <i>Bacidia neosquamulosa</i>	<i>Parmelina tiliacea</i>
* <i>Caloplaca flavocitrina</i>	* <i>Pertusaria hymenea</i>
* <i>Cliostomum griffithii</i>	<i>Phaeophyscia orbicularis</i>
<i>Evernia prunastri</i>	<i>Physcia adscendens</i>
<i>Flavoparmelia caperata</i>	<i>Physcia tenella</i>
<i>Flavoparmelia soredians</i>	<i>Physconia grisea</i>
<i>Hypogymnia physodes</i>	<i>Pleurosticta acetabulum</i>
* <i>Lecanora confusa</i>	<i>Punctelia subrudecta</i>
<i>Lecanora conizaeoides</i>	<i>Ramalina farinacea</i>
<i>Lecanora dispersa</i> agg.	<i>Rinodina gennarii</i>
<i>Lecanora expallens</i>	<i>Xanthoria candelaria</i>
<i>Lecanora symmicta</i>	<i>Xanthoria parietina</i>
<i>Lecidella elaeochroma</i>	<i>Xanthoria polycarpa</i>
<i>Lepraria incana</i>	* <i>Xanthoria ucranica</i>

Reference

James, P.W., Purvis, O.W. and Davies, L. (2002) Epiphytic Lichens in London. *Bull. Brit. Lichen Soc. Bulletin* 90: 1-3.

Field meeting report by Chris Hitch

THE URSULA DUNCAN AWARD

The Ursula Duncan Award is a mark of recognition to persons who have rendered a valuable service to the Society's aims of promoting the study of lichens. It also honours such persons for the merit inherent in their work, and our gratitude to them for performing it.

As you can imagine, there are many members, who, over the years have given stalwart service to the Society, and in selecting recipients for this award Council have been mindful that for those singled out, there are equally many others who are also deserving. Hence, our decisions have often been difficult.

We feel, however, that it is important to recognise the 'unsung heroes', those who are not necessarily at the forefront of international fame and recognition, but who have worked long, hard and diligently on behalf of the Society, and without whom we would be less active and positive. At the same time, we cannot overlook those members of the Society who have contributed so much to furthering the understanding of lichenology world-wide.

It was with this in mind, that Council decided to honour **Dr Francis Rose** with the Ursula Duncan Award at his 80th Birthday Celebration held at Cardiff Museum in June, in recognition of his services to the British Lichen Society, and someone who has done so much for lichens not only in the British Isles, but world-wide. Francis was delighted to receive this, saying it gave him as much pleasure to receive the Ursula Duncan Award as it did to be awarded the MBE. He is also immensely pleased to learn that a Nature Reserve at Wakehurst in Sussex, has been named after him.

Council is also pleased to honour **Jeremy Gray**, our retiring Assistant Treasurer and Membership Secretary, for his contribution to British lichenology, and **Mark Seaward**, for his contributions to international lichenology.

Sandy Coppins

RECIPIENTS OF THE URSULA DUNCAN AWARD AT THE 2003 AGM

Jeremy Gray

Jeremy has been an enthusiastic and active member of the Society since 1989. His interest initially was in photographing lichens, and many of you who regularly attend field meetings will be familiar with the sight of Jeremy, laden down with a vast amount of photographic equipment, gamefully romping uphill in pursuit of an elusive species. However, early on, Frank Dobson spotted Jeremy's qualities as a meticulous and competent organizer, and called him into service as Assistant Treasurer and Membership Secretary in 1990. One might say 'a rapid rise', but Jeremy has thrown himself whole-heartedly into his duties in these offices, and has carried them out flawlessly and efficiently over the past 12 years.

His commitment to the Society was further increased when he investigated the options for new and enhanced methods for storing and accessing the huge bank of lichen data. In collaboration with Frank Dobson and Janet Simkin, Jeremy set in motion the decision to adopt BioBase as the vehicle for BLS data handling, and was instrumental in getting it up and running. A huge achievement and a significant step forward into the 21st century.

Following on from this, after calls for the BLS to have a web-site, Jeremy again set-to, and has produced a user-friendly and highly informative web-site. Jeremy constantly up-dates and expands the web-site, and it has now become a fundamental tool for the smooth running of the Society, covering a vast range of information.

Then, on the matter of the Ursula Duncan Award itself, it was Jeremy who took it upon himself to make this a reality, by coming up with the beautiful, polished serpentine stone paper weight. I remember the Council Meeting, when discussion of the Ursula Duncan Award was almost the last item on the Agenda, and Jeremy was anxious about catching his train back to Cornwall, he brought out of his brief-case an assortment of possible award 'trophies', including the one that was selected. I thought at the time that he had gone to an enormous amount of trouble in an effort to produce something the BLS could rightly be proud of.

And let us not forget Jeremy's insistence about the BLS logo - or his equally adamant insistence about the name of the BLS web-site "theBLS", (now colloquially referred to as "thebbles").

Jeremy has put his stamp on the BLS in no small way. His commitment to the Society has been enormous, both in terms of his dedication and time, as well as pushing forward innovative ideas to ensure that the BLS (and lichens) are at the forefront of British scientific societies.

It therefore gives me great pleasure, on behalf of the Society, to present Jeremy Gray with the Ursula Duncan Award for his Outstanding Contribution to British Lichenology.

Sandy Coppins

Mark Seaward

Mark is known to most of you as Mapping Recorder and as Editor of the Lichen Atlas fascicles. It was largely for his untiring work as Mapping Recorder, since the early, pioneering days of the Society, that several years ago Mark was awarded Honorary Membership of this Society.

However, there are many other facets to "Mark Seaward, Lichenologist". My problem here is where to start, and that time allows me only to highlight but a few of these facets.

Let us begin with Ireland, where Mark has kept alight the lamp of lichenology for many years, recording in many previously little-known areas, and publishing two Census Catalogues of Irish Lichens.

Closer to his home in Yorkshire, Mark has been Lichen Recorder of that county, as well as lichen and bryophyte recorder for Lincolnshire - his boyhood home. Indeed, his publication of the Lichen Flora of the West Yorkshire Conurbation in 1975 has provided a valuable baseline for studying the response of lichens to the rapidly ameliorating levels of SO_2 in the atmosphere.

In connection with his activities as Mapping Recorder, Mark has ferreted out many old lichen herbaria in provincial museums. Not only has he extracted records for the BLS Database, but he has re-curated the collections, published findings from them, and saved several from destruction. Recently, he has completed work on the Manchester Museum Lichen collection, begun by the late Brian Fox, and on a small but valuable early 19th C collection of John Ralfs, in Swansea Museum.

1977 saw the publication of one of the most often cited, and still much sought after books, *Lichen Ecology*, instigated and edited by Mark Seaward.

By profession, Mark is an Environmental Scientist. His teaching and research are by no means confined to lichens, but lichens often figure largely. His researches have involved many aspects, including SO_2 air pollution, heavy metal and radionuclide contamination, nitrogen pollution and biodeterioration of stonework, monuments and frescos. These researches, and the associated teaching, have introduced many young scientists to lichens, both at home and abroad.

"Abroad" includes North Africa, the Middle East, India and Hong Kong, and especially several countries in Eastern Europe. Mark's involvement in collaborative research in these former 'Warsaw Block' countries goes back way before the fall of the 'Iron Curtain'. Many lichenologists in these countries have benefited from Mark's help and encouragement in difficult times.

It gives me great pleasure, on behalf of the Society, to present Mark Seaward the Ursula Duncan Award for his Outstanding Contributions to International Lichenology.

Brian Coppins

TONY FLETCHER - RETIRING CONSERVATION OFFICER

Tony has been Conservation Officer for 25 years (with a short break of a few years whilst he was in the United States).

In the early 1980s, Tony chaired the Woodland Working Party, a body of BLS members responsible for drawing together information on the epiphytic lichen habitats of woodlands and parklands throughout the British Isles, culminating in the report of "Site Assessment and Grading of Epiphytic Lichen Habitats" in 1982. This was followed two years later by a report listing and assessing lowland heathland habitats. These two reports were ground-breaking in their time, and remain unique in their overall scope amongst other cryptogamic groups. They were tremendously influential in raising awareness of lichens within government Conservation bodies. Although produced 20 years ago (and long overdue to be updated), they remain the background by which comparison between epiphytic sites and heathland sites can be made.

More recently, Tony was responsible for instigating a workshop on Habitat Management for Lichens, which has culminated in publication of the book.

Tony has regularly represented the BLS on a number of associated societies (such as the Institute of Biology) in order to keep the interest of lichens in the forefront of future conservation planning and legislation.

Although retiring as Conservation Officer, handing over the reins to Bryan Edwards, Tony has taken on the task of revitalising the BLS library in his new capacity as Librarian.

Sandy Coppins and Vince Giavarini

SECRETARY'S REPORT FOR 2002

The year began with an unusually well attended AGM which filled the Paleo Demonstration Room at the Natural History Museum. Perhaps the Island hopping theme for the lectures attracted a few extra people in the middle of a British winter! In these lectures we visited Islands off the Welsh coast with Tony Fletcher, Channel islands with Peter James, Atlantic islands with Clifford Smith and tropical Pacific Islands with Simone Louwhoff.

Tom Chester has been very much missed at Council and field meetings since his operation last August, but he is now convalescing at home and we send him best wishes for his continuing recovery. Dr Ian Pennie died last year (see obituary in the last *Bulletin*) leaving his lichen collection to the BLS and this is now in the collection at the Dundee Museum. John Arnott former chairman of the Scottish Wildlife Trust has also left his collection to the BLS herbarium at Dundee.

Council meetings have been held three times this year, 2 in London at the Natural History Museum and the autumn one in Bodmin, Cornwall coinciding with a field meeting. My thanks to Simone Louwhoff for acting as secretary for this meeting while I was in China on an IAL meeting, and for getting the minutes out to all Council members before I came back. I also have to thank Ivan Pedley for taking the minutes of the Flora committee meeting, of which I am also secretary. Oliver Gilbert, Peter James and Clifford Smith have been setting the pace for this project, and c. 27 members are involved with producing this flora which includes c. 140 additions to the British Flora. Several accounts are almost finished and this has provided a regular stream of visitors at the NHM.

Thanks to Jeremy Gray's excellent record keeping as membership secretary we know that membership has grown rapidly to 621 of which 304, less than half, are in the UK. This is the highest that we have been by a considerable margin. There is no doubt that the website is largely responsible for a surge of interest in lichenology. Hits on the website averaged 458 weekly over 8 weeks around Christmas. If you haven't looked recently there is much new information on the website including links to other lichen sites across the world.

Times are changing rapidly and enquiries mostly come by e-mail now and I must admit that this has sometimes been very time-consuming (c. 20 a week = c. 1040 a year). Despite the lack of employed lichenologists there are still plenty of people wanting to do lichen projects at all levels of education and easy access to the website makes us accessible to members of the public who are interested. Many enquiries require considerable information and help and we have now discussed ways of dealing with this on the education committee by creating a form for people to fill in concerning their educational level, project title and proposed methods. Since writing this report the education committee have now included the form and a projects page on the BLS website for interested teachers and students to make use of. The Lichens on twigs key is now past the trialling stage and is now published by the Field Studies Council. Thanks to all of you who contributed comments and suggestions during the trialling process it is now much improved. The Natural History Museum web page is updated to accommodate changes and provide a simplified recording sheet. As several teachers have found access to the website difficult I am in discussion with the NHM to make the final version available on a CDROM. This would mean that it could be widely used in schools across Britain and on the continent where several people have expressed an interest. This is also available on the BLS Website together with a tree trunk recording project.

Last year I recommended BLS members to join the IAL and to pay through the BLS. However several of you who did this did not receive the IAL newsletter because of a delay caused by the bank over transfer of accounts from Frank to Bob Hodgson as treasurer. I wrote to both Christoph Scheidegger and Martin Grube (editor of the

newsletter) and I hope that this matter is now cleared up and that you have all received the present copy and the one before. Please get in touch if this is not so.

Simone Louwhoff now has a baby girl, Olive Helena and is on 6 months maternity leave so we wish her a very good time with her family. I should also add that she hopes to complete her parts of the flora contribution during this time! We are very lucky to have Hannah McPherson on secondment from Sydney Botanic garden for 6 months so those of you wanting to visit the NHM herbarium for your flora accounts or anything else should ring Hannah on Simone's number to make arrangements to visit.

I have many people to thank for help and support this last year, including other members of Council especially Sandy, Frank and Jeremy for their rapid responses and help in sorting out the diverse things that crop up.

Pat Wolseley

SECRETARY'S REPORT FOR 2001

Jeremy Gray was warmly thanked for his work as membership secretary. Membership is slowly but steadily growing. At the end of 2001 there were 604 members. Numbers in October from 1991 were as follows: 1991: 535, 1995: 568, 1999: 594. New members were greeted and a special welcome was extended to foreign members who attended the AGM.

Council meetings were held in January, March and September 2001. Enquiries are now most frequently made by e-mail, ranging from 5 - 25 a week, usually about student projects. Many enquiries can be referred to available websites, so it is not as time consuming as answering mail enquiries. It would be interesting to know if any of these become members. The BLS had a stall at the Cambridge Conversazione in the Zoology Department at Cambridge University. Lichens on gravestones and twigs formed the basis of this exhibit and we were encouraged to return next year. A wide range of interested people including schools attended this 2 day meeting. The Field key to lichens on twigs was trialled by the Field Studies Council (FSC) and the final copy is being prepared for publication in this year. The key is also on the Natural History Museum's website together with recording forms and instructions. Lichens on gravestones will also be available from the FSC.

The Lichen Monitoring Handbook - a useful handbook to all types of environmental and lichen monitoring was produced after the LIMON meeting at Orierton in August 2000. This was funded by NATO with very strict deadlines for it to be published by Kluwer. This was a rapid production for which I personally thank Pier Luigi Nimis for taking on the preparation of camera-ready copy.

The Secretary contributed BLS news to the International Association of Lichenologists' newsletter and would encourage members to subscribe to this twice yearly publication. Dues can be paid via the BLS.

The Society's computer has been usefully employed for a variety of things including editing the Lichen Society Monitoring book and the BioBase workshop. It now has BioBase on it and instructions for use and will be available for members at the Natural History Museum on arrangement with the Secretary.

Pat Wolseley

This report was written for the 2002 Bulletin but due to e-mailing errors combined with Pat working in Scotland for 6 weeks it missed the deadline for publication.

Editor

IAL NEWS

As BLS representative to the IAL I am continuing to contribute to the IAL newsletter concerning BLS activities and field meetings. This reinforces contacts abroad and has been responsible for quite a few new members last year. We are part of a small community of lichenologists across the world and cannot overestimate the importance of maintaining contact with each other. The IAL meeting in Kunming Yunnan China was a good example. Not only did this meeting highlight problems of deforestation in China - we had to climb through scrub forests to over 3000m to find good lichen habitats in Tsuga forests, but we had ample opportunities to enjoy each other's company and discuss joint projects and field meetings. During this meeting we finalised the proposal for a joint inexpensive field meeting in Holland first proposed by Peter James. The next IAL meeting is 15-21st August 2004 in Tartu, Estonia and I know that the education committee are planning to contribute, and I hope that BLS members will join this meeting. At all these meetings every effort is made to provide inexpensive accommodation.

Pat Wolseley

CONSERVATION OFFICER'S REPORT FOR 2002

Three meetings of the 32 member committee were convened in London. The year has not been particularly demanding, though the usual plethora of government reports were read and commented upon where we had something of relevance to say.

The issue of the Future of Systematics, spearheaded by the BLS during Peter Crittenden's Presidency, was enthusiastically taken up by bigger players - the Linnean Society and Institute of Biology. This led to a House of Lords Select Committee report which has now been passed to the House of Commons for action. Lord Soulsby, chair of the committee outlined the work process at the IoB in November and promises to chase up any further actions. As BLS representative on the IoB I will keep the members informed and apply further pressure as needed.

Plantlife continues to be an enthusiastic ally. During the year it commissioned further 'Back from the Brink' reports from Bryan Edwards and Vince Giavarini. These detailed the conservation status of the endangered species *Lecanactis hemisphaerica* (Britain), *Bacidia incompta* (England, Wales), *Biatoridium monasteriense* (England, Wales), *Caloplaca luteoalba* (England), *Heterodermia leucomelos* (Scilly) and *Cladonia peziziiiformis* (England). Copies are lodged in the BLS library. Plantlife is now preparing an 'Important plant areas' report for lichens paralleling that issued for Fungi. It has also revised the Biodiversity Action Targets and has also published them at county level.

The National Trust has also got into the lichen act by publishing 'Wildlife and Buildings' assisted by Vince Giavarini and myself. This is a guide to best practice, destined for managers of historic sites maintained by the Trust. English Nature has produced progress reports on Parkland and Wood Pasture which involve lichens. The Wildlife Trusts has produced a report on 'Non-statutory wildlife sites' which we should take note of as there is great scope for lichen conservation outside the statutory SSSI system.

The Biodiversity Action Group of the Conservation Committee monitors progress made on Lichen biodiversity action plans and convened a lengthy meeting in January where participants reported progress.

It was reported through the committee that *Pseudocyphellaria aurata* has been rediscovered in the Isles of Scilly and Peter James confirmed it. The long awaited 'Lichen Monitoring Workshop' book appeared, edited by P.L. Nimis, C. Scheiddegger and Pat Wolseley.

On the negative side, the most disturbing event was damage done to Lakenheath Warren following an ill-informed management plan. Introduction of cattle grazing has apparently destroyed the site and *Buellia asterella* now appears to be extinct from Britain. I have corresponded with English Nature, and this highlights a need continually to monitor and advise on management plans, and to get involved at an early stage. The matter of the BLS offering site management guidance is becoming urgent and we need to work out a strategy for offering rapid and effective advice. A step in this direction is the proposed BLS Conservation Strategy which is in draft at the moment.

A further threat was posed by the Health & Safety Executive directive on the 'Safety of tombstones' issued to local councils. The threat of removing tombstones deemed to be unsafe was considered so great that the President has sent a letter to the various authorities.

Misguided management is only one of the threats to lichens. Members are continually observing deterioration of lichen communities in esteemed places such as Low Stile Wood, Gregynog and heathland sites in general. This seems to be attributable to background pollution, probably nitrogenous compounds arising from agriculture. We are organising a workshop, with funding from English Nature, in late February to discuss possible actions to alleviate this problem. The nitrogen issue is however, recognised by DEFRA and was highlighted in a recent report.

Also received are progress and updates from international organisations such as the IUCN and Planta Europa Conservation Strategy targets. A lichenologist is now employed by IUCN. DEFRA's Draft Environmental Regulations were received, along with many other reports. I commented on the National Assembly of Wales proposals to reduce a number of species including lichens from Welsh BAP lists. We did not contribute to the 5-year review of the Wildlife and Countryside Act annexes in view of lack of time and resources, and a feeling of leave well alone!

In conclusion, I am stepping down as Conservation Officer this year, having first taken on the job in 1980. I feel that the conservation scene has changed so much since then that younger persons with fuller resources should be given their opportunity. I wish my successors every success.

Finally, I would like to thank all members of the committee who have given such sterling support over the years and especially to Brian Starkey for creating coherent minutes of the committee's involved and passionate debates.

Dr Anthony Fletcher

ACTING LIBRARIAN'S REPORT FOR 2002

The BLS library was transferred from the University of Bristol to the Mycology Department at Royal Botanic Gardens, Kew from 10-11 September 1999. While at Kew the BLS librarian resigned and we were later urged to move it because of lack of space. I agreed to store the BLS library at the secure collections store of the Leicestershire County Council Heritage Services (then Leicestershire Museums Service). The library was removed from Kew and transported to Leicester by my own staff on 27th August at no cost to the BLS.

I have now completed the sorting and ordering of the holdings. They consist of -

Books	- 6 m shelving	- approximately 300 volumes
Reprint boxes	- 16m shelving	- " 6000 reprints
Journals	- 8m shelving	- 10 serial titles
Miscellaneous	- 6m shelving	- unsorted material, card indexes, tapes

The collection is in usable order but urgently needs an updated catalogue. A microfiche was issued to all BLS members in April 1987 but about 1000 titles need inserting. The reprints are in boxed order but are as yet unsorted alphabetically (5 boxes of As, 7 of Bs, etc.).

The original tapes of the microfiche catalogue could be converted into disk format for about £ 120. Then new titles could be inserted and the entire catalogue put on the website. A volunteer or two would be most appreciated for cataloguing the collection. Books and reprints may be borrowed for the price of return postage.

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Dr Anthony Fletcher

FROM THE ACTING ASSISTANT TREASURER

... 'Acting' because Cliff Smith was elected at the January 2003 AGM to take over my roles in the Society as Assistant Treasurer, Membership Secretary and Webmaster. He will assume office on 1st July.

Credit Card/cash payments

I continue to receive requests from members to pay subscriptions direct to the Society by credit card but the cost of operating such an account, carrying as low a volume of transactions as the Society would generate, is not an economic proposition. An increasing number of members are sending the equivalent in sterling notes in their local currency. As no commission charges are payable in this country for conversion of foreign currency notes to sterling this method of payment is acceptable to the BLS providing contact is made with the Assistant Treasurer beforehand (preferably by email) to agree an exchange rate. Acknowledgement of receipt of cash will always be made.

Payments in Euros

Members living in Europe will be relieved to know that, from next year, payments may be made in Euros to a 'Europe Treasurer' in Germany in much the same way as dollar subscriptions are made to the BLS Americas Treasurer by those members living in the U.S.A. and Canada. Full details and rates will be published in the Winter Bulletin and on the BLS website in time for the 2004 subscriptions to be paid.

Membership List

A new list will be published with the Winter 2003 Bulletin. If you believe that your title, name or address are incorrect in the Society's records or if you do not wish your address to be published please contact the Assistant Treasurer by 1st September.

Membership Statistics

Membership of the BLS continues to grow and stood at an all-time high of 621 at the last AGM of which 317 were overseas members. It is interesting to note that, almost without exception, membership applications are received on the printable form from the BLS web site rather than on a Prospectus application form.

BLS AGM 9TH & 10TH JANUARY 2004 PRELIMINARY NOTICE

VENUE : THE ROYAL BOTANIC GARDEN, EDINBURGH.

For the first time in the history of the BLS, the AGM will be held outside England. The Royal Botanic Garden Edinburgh (RBGE) provides ample facilities for the meeting, with a comfortable Lecture Theatre, exhibition space and room to enjoy the buffet supper and mingle with other members. The Gardens themselves are extensive, and there are heated glass-houses covering a wide range of climates and habitats. The staff at RBGE have offered to provide guided tours of the Garden for those who are interested. The **Library** at RBGE is one of the most comprehensive and important in Scotland, covering a wide range of botanical, horticultural, agricultural and forestry subjects, as well as rare volumes of early botanical works and Floras. An enormous range of Journals are also taken. There will be a special display of early lichenological works set out by the Library staff for members to see. The **Lichen Herbarium** must now rank as one of the most important in Britain, with the British collection probably as comprehensive, certainly in recent collections, to that of the BM. Displays will be set out of examples of early collections, as well as opportunity to browse through some of Britain's newest, scarcest and more enigmatic and puzzling species - the 'Coppins' specials "retained in E".

Exhibition

Following on from the success of the exhibition displays at the last AGM, it is proposed to encourage members to submit posters, exhibits or demonstrations on any aspect of lichenology with which they have been engaged. This will enable appreciation by the wider membership of what activities have been going on within the Society over the last year. Items for display can be simple or sophisticated, for example, of local or national projects, discovery of new species, Biodiversity Action Plans, photographic monitoring, uses of lichens, unusual species, locations or habitats, etc.

Please let the Evelyn Turnbull at RBGE know by December 10th 2003 if you are intending to display an exhibit or poster, giving the title of the exhibit, and approximately how much space you will need (table or display board). Exhibits to be set up on Friday 9th Jan., 2004. E-mail: e.turnbull@rbge.org.uk or phone 0131 248 2863.

We intend that there will be time set aside for viewing the exhibits on both Friday evening and on Saturday. Those submitting display items will be given opportunity to speak for a few minutes on their display, and answer questions.

The Friday evening events will also include a buffet supper (details later in the Winter Bulletin), plus the **Dougal Swinscow Lecture: Lichen Vegetation of the Scottish Highlands**. Scotland has not only some of the finest scenery in Britain, but is of international importance for the wealth and diversity of its lichen flora. The mountains hold a special appeal, not just in the eye of the beholder, but for the many and varied lichen taxa lurking in crannies, spread over fell-fields and mantling boulders, or the curiosity of late snow patch habitats. **Dr Alan Fryday** (now of Michigan State University, USA) spent many years exploring and studying the montane lichen floras of Scotland. Far from being bleak, bare crags, he found that there was a wealth of diversity, with well over 700 lichen taxa recorded from Scottish mountains (compared to 121 vascular plants). Fryday considers that the mountains of the Western Highlands of Scotland support a lichen vegetation that is apparently unique in Europe, and probably in the world. Ben Lawers NNR, for example, he considers to be "arguably, the most important lichen site in the British Isles; it is without question, the most important montane site" (Fryday, 1999). The reason for the extraordinary richness at Ben Lawers lies in a combination of factors, including geology (calcareous mica-schist), geographical position, climate and altitudinal range. Over 20 lichen species are known in the British Isles only from the Ben Lawers NNR, and several also appear to be British endemics. Other mountain ranges also will be considered, such as the Cairngorms, Aonach Mór (Ben Nevis range) and the Breadalbanes.

Reference

Fryday, A.M. (1999) *Location of rare lichens on the Ben Lawers NNR, Perthshire*.
Unpublished report for Scottish Natural Heritage.

The AGM will take place on the morning of Saturday, 10th January, in the Lecture Theatre of the Royal Botanic Garden.

The Lecture session is on Saturday afternoon 10th January 2004. The theme will be **Lichenology in Scotland: past, present - and future?** Amongst the topics will be a talk on the lichens of Atlantic Hazelwoods, and early lichenologists in Scotland (including the enigmatic Rev. Crombie), plus contributions from some young Scottish lichenologists.

There will be a **Field Excursion** on Sunday, 11th Jan., which will include sheltered maritime rocks along the shores of East Lothian, some of the most beautiful and fascinating geological coastal scenery in south-eastern Scotland.

Travel : there are many good offers now on flights from centres throughout Britain to Edinburgh. A regular bus shuttle operates between Edinburgh Airport and the City Centre. Travel within the City can be by bus or taxi. Edinburgh is easily accessible on train routes, and regular, inexpensive coach travel is also an option. If you are coming by car, there is ample parking near the Botanic Garden.

Accommodation : a list of local B & Bs is available on request from Norma Gregory: e-mail: norma.gregory@talk21.com - or phone 0131 447 5976.

Any other queries, please contact Carol Gibb (e-mail: c.gibb@rbge.org.uk or phone 0131 248 2957), or Brian and Sandy Coppins (e-mail: lichensEL@btoopenworld.com or phone 01620 860 906) or (e-mail: b.coppins@rbge.org.uk or phone 0131 248 2864).

Following on from the Meeting, there will be a two day Workshop led by Dr. David Hill "**Lichen Site Surveying and Report Writing**" (Monday 12th and Tuesday 13th January, 2004) at the Royal Botanic Garden, Edinburgh. This is aimed at current practitioners and would-be practitioners, and will discuss methodology, best practice, problems and pitfalls, and aim to establish a common professional standard amongst contract Lichen Surveyors. Please contact David Hill if you wish to attend. (e-mail: d.j.hill@bristol.ac.uk - telephone 0117 928 8155).

Sandy Coppins

AGM QUIZ 2003

By Oliver Gilbert with help from Albert Henderson

1. Who is generally regarded as the father of lichenology? (Erik Acharius).
2. Spell *Roccella phycopsis*
3. Explain the glossary term botryose (Grouped like grapes)
4. To which genus goes *Parmelia caperata* now belong? (*Flavoparmelia*)
5. Where is the classic area to look for cryptoendolithic lichens? (Dry valleys in the Antarctic)
6. Who in 1996 gave the first Dougal Swinscow Memorial Lecture? (Per Magnus Jørgensen)
7. What traditionally determines the date of the Autumn Field Meeting? (The weekend the clocks go back)
8. List a lichen genus from the recent UK checklist comprising exactly 15 letters. *Tuckermannopsis*, *Allantoparmelia*, *Protothelenella*, *Mycomicrothelia*, *Vestergrenopsis*.
9. What is the subject of the next BLS Workshop? (Graphodion or 'Smoothies')
10. Before it became extinct where was the classic locality to go and see *Tornabea scutellifera*? (Hastings Cliffs)
11. Which lichenologist is hidden in the anagram Lord.Bang.Omer? (Roland Moberg)
12. Name a lichen which takes its specific name from an English or Scottish locality. (*Pyrenocollema strontianense*; *Porocyphus kenmorensis*; *Rimularia mullensis*, *Placynthium lismorensis*)
13. Where in the UK would you go to see *Fulgensia bracteata*? (Ben Alder Range in the Scottish Highlands).
14. What is a quick way to telling *Trapeliopsis granulosa* from *T. gelatinosa*? (Former is C+red, latter is C-).
15. Which lichenologist was so excited on opening a parcel of lichens from Spain that he died of a heart attack? (Acharius).
16. Which British lichenologist bore or bears the Christian names William Allport? (Leighton)
- 17-20 Fill in the missing words with the names of lichenologists.
Although he dined well that... FRYDAY... evening on... LAMB... and... DAHL..., he... ROSE... the following morning feeling quite... HALE... and... AHTI... without a trace of ...GRAY... in his complexion and set off for the field without a... HITCH...

**BRITISH LICHEN SOCIETY and the
INTERNATIONAL ASSOCIATION OF LICHENOLOGY (IAL)
Announcement of the Sylvia Sharnoff Award**

The Sylvia Sharnoff Award for the:

- **best Web-site on lichens**, submitted by **students from any school or college, pre-university** will be presented by the **International Association for Lichenology (IAL)** at the **5th International Congress of Lichenology**, which will be held in **Tartu (Estonia)** during **August 2004**.

The **criteria for success** are: aesthetic appeal, clarity, educational impact, accuracy, useful links and appropriateness for the targeted age group. The Web-site can be in any language.

Apply by December 31, 2003, using the simple form available at:

http://dbiodbs.univ.trieste.it/lichens/Sharnoff_Award

Sylvia Duran Sharnoff was a remarkable photographer who, with her husband **Stephen Sharnoff**, produced a wonderful book of lichens in North America, illustrated with almost 1000 superb photographs of lichens.

The prize will be awarded by an **International Committee**. It is hoped that representative submissions from students and schools will form part of the exhibition on ***Lichens and Education*** at the International Congress. The exhibition will be open to the general public and will also include a large amount of material for a much broader audience via the Internet.

Lichens are part of our natural heritage and ideal for educational projects. They are

- one of the most interesting examples of symbiosis
- used worldwide to evaluate air quality
- important in the aesthetic appearance of stone monuments, buildings and woodland
- pioneers, often the first living forms to colonise bare surfaces.
- and they have had many interesting practical uses, some of which, for example, dying and the production of perfumes, are related to their unique chemistry.

Thousands of schools have been involved in working on projects about lichens. Projects, for example, on biomonitoring, have been organized on a broad national scale. An initial search in the Internet using two key words, such as *Lichens school*, *Lichens école*, *Flechten Schule*, *Licheni Scuola*, *Lavar Skolan*, etc, reveals the

presence of hundreds of web-pages, many of which were constructed by school classes to illustrate the results of their work on lichens.

To find out more about lichens join the Nettlecombe Court workshop in Somerset (1-3 August 2003) which provides opportunity to work on lichens alongside field lichenologists (*contact Ivan Pedley, BLS Field Meetings Secretary, 48 Woodlands Drive, Groby, Leicester, LE6 0BQ*). Also try the **British Lichen Society Web-site:** <http://www.theBLS.org.uk> which includes a selection of projects suitable for individual students and classes in Key Stages 2, 3 and 4 and post-16 students.

BIOBASE, THE EXPERIENCES OF A COMMITTED USER

Now that BioBase has been up and running, and available to the Society for a considerable time, I find it astonishing that more members are not fully committed users. Being a rather disorganized person, I find keeping record cards in any sort of order, especially when I am making field visits all over the British Isles, difficult. BioBase, provided that I exercise good housekeeping, allows me to consult, and update cards literally at the press of a button. Essential good house keeping involves constant back up onto CD, or else there is a real risk of loosing everything. This safeguard for data being guaranteed, I find it hard to understand why BioBase is so little used. The statement, "Oh yes, I have BioBase. I feel badly about it, but I still haven't installed it yet. I will.....sometime." is so commonly heard amongst members. I am therefore writing this account of my BioBase experiences in the hopes that I can encourage more computer owners to install it, and then really make use of it. Some members may have been put off computerized biological recording by unhappy experiences with Recorder. I have to admit, I have struggled with Recorder, and lost the battle. Compared with Recorder, BioBase is a joy, and extremely user friendly.

I have to admit that I am very lucky. I am married to a wizard when it comes to computers. Because of this, installing the BioBase software, and any subsequent updates has been no problem to me. If I had had to install it all myself, I might well have had to admit to being amongst those with BioBase still sitting forlornly on the shelf. My wife and I did have a very few teething problems when first using BioBase, but Janet Simkin was always at the end of an e-mail address, and occasionally a telephone line. She answered my questions instantly, and clearly. Janet is enthusiastically committed to BioBase, and I know, will spoon-feed anyone over any initial difficulties of installation.

Having installed BioBase, what are the great advantages to an active lichenologist in using it to input, store and retrieve data?

BioBase allows great versatility in recording data. If for instance, a record of *Hypogymnia physodes* is being entered, it may be added without any additional data onto a card. Such an input takes little more than a second. As long as it takes to type *Hypog*; and then click on *Hypogymnia physodes* which comes up on the menu beneath in fact. It is even simpler with *Evernia prunastri*. *Ev* will bring it up, and it can then be entered. *Phaeog* brings up *Phaeographis dendritica*, and *Ent*, *Enterographa crassa*. Such wrinkles are soon learned. *Rinodina roboris* is more difficult as *Rinodina rob* has to be entered, and then the variety clicked on from the menu. The fact that a common species is either corticolous or saxicolous only takes a split second, and then to add substrate details for a corticolous species also becomes very swift, with a little practice.

If, on the other hand, one is adding a record of something rare like *Gyalecta ulmi*, for instance, a little more care is allowable in BioBase. Such details as considerable notes on the substrate, aspect, frequency and details of the determiner can be entered. Any reactions of spot tests in the field, spore details as well as a short essay, if required in the notes section can all be added with ease. You could even note that your handlens steamed up with the excitement, if you really wanted to. You even could add that you were enjoying a beef sandwich at the time! However, this level of detail is not necessary, or even desirable for commoner species, and this need to complicate seems to have been a stumbling block for some.

Creating extra cards on BioBase does not involve any additional use of materials. For a given site, an additional card can be created for each visit, for each part of the main site (six figure grid references), and for each visitor. In fact, a separate card could be made for each substrate or tree species if this were desirable. All this data can then be amalgamated by consulting the Master Site section in Reports, and a complete list for all the records for the site is made instantly. If so wished, this can then be printed, and sent off to anyone who wishes the data. In fact, when specifically requested by Mark Seaward, I send him data in this way.

Similarly, it is possible to gain all records for a ten-kilometer square, and print that. Such a report can then be sent to Mark Seaward for the mapping scheme. With the relevant software, which is not outrageously expensive, it is also possible to print out distribution maps for a whole vice county.

By consulting "Reports" in BioBase, it is possible to find all the records in the system of a particular species instantly. Details of the record, and all associated species at the site can then be found rapidly by browsing the relevant record card.

It is astonishing how rapidly records from paper record cards can be added. A site card is first created with details of recorder, site etc., and then the records can be added by entering the number to the left of the species on the card and clicking on enter. It therefore takes fractionally more than a second to enter a species. Once this has been

done, the data, which can be accessed with such ease, is available at the press of a button. If a mistake is made, or a record found to be unsafe, it is very easy to delete it.

Many of us are county recorders for lichens, or have specific interest in sites or other aspects of lichenology. Once the data is with Janet Simkin, she can collate the records to produce a database for a particular area or species, which (unless the records are confidential) can be sent to a BioBase user by email. Once BioBase has been in use for a very short time, it will be found to be incredibly simple, but the huge ability the BioBase software gives the user for data consultation is mind-blowingly impressive.

There will always be a need for records kept on record cards. I do not own a lap top computer, and if I'm on a prolonged field excursion, it can be very useful to add records onto cards each evening. These records can then be entered onto BioBase on my return.

This article has been written in order to share with members of the Society my experiences, and enthusiasm for using BioBase, and the immense advantages to me as a field lichenologist of using it. I now have in excess of 1200 cards on my hard disc. With an average of 50 species per card, this means I have 60,000 records, and I have only been using BioBase for just over a year. I hope that by sharing these experiences, I will encourage more members to use this invaluable package.

Simon Davey

LICHENS IN LITERATURE: 10

'For the rain had ceased at last, and a sickly autumn sun shone upon a land which was soaked and and sodden with water. Wet rotten leaves reaked and festered underv the foul haze which rose from the woods. The fields were spotted with monstrous fungi of a size and colour never mathed before - scarlet and mauve and liver and black. It was though the sick earth had burst into foul pastures; mildew and lichen mottled the walls, and with that filthy crop of deathsprang also from the water-soaked earth.....'

From Sir Nigel by Sir Arthur Conan Doyle p2 (1906).

Contributed by Peter Earland-Bennett

LICHENS WENT TO WAR

During World War II, The Spécial Operation Executive (SOE) produced a catalogue of devices that could then be chosen by their operatives before they set out for occupied Europe. The available items listed in this book include exploding rats that could be left on coal heaps in the hope that, when found, they would be thrown into the furnace and cause a damaging explosion in the boiler.

Hollow plaster logs were manufactured to conceal arms and ammunition and a catalogue entry says that they were 'painted and garnished with moss, lichen and other tree fungi'. It also mentions that great care was taken to ensure that the trees used as models were species that commonly grew in the district to which the shipments were being made. However, it is doubtful if such care was taken with the species of lichens that were attached. Therefore, despite all this effort to ensure authenticity, it is probable that, if a lichenologist had examined the false logs, the deception would have soon been exposed. There is no evidence that this ever happened or that any were accidentally thrown on a fire giving the same result as the exploding rats.

Frank Dobson

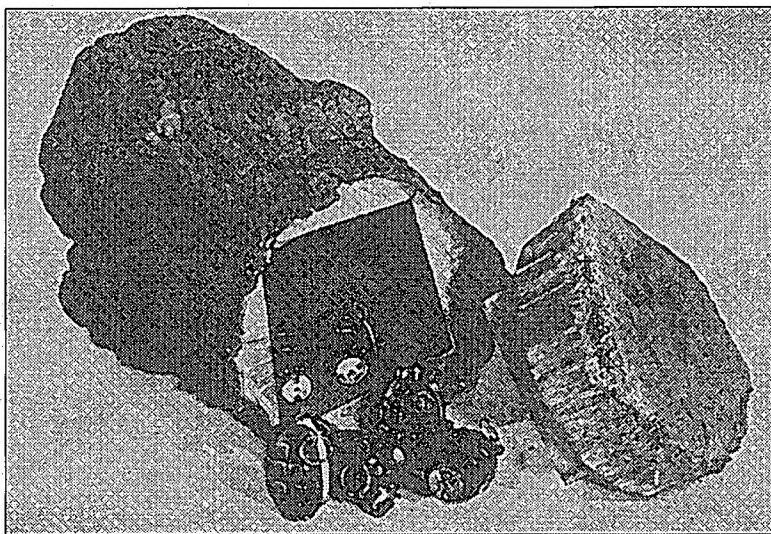


Figure 1 One of the artificial logs

CRYPTOTHELE IN THE BRITISH ISLES

Cryptothele rhodosticta was first described from Ireland in 1847, but was later confused with other species, in Britain particularly with *Pyrenopsis subareolata*. The nomenclature was corrected in the recent checklist of British and Irish lichens (Coppins 2002), but there are no readily available descriptions to enable British and Irish lichenologists to distinguish the two. During the preparation of the following notes, a second species previously unrecorded in the region was detected.

The species below are united by their crustose thallus, simple ascospores, and the possession of a species of the cyanobacterium *Gloeocapsa* as a photobiont, whose cells have striking red sheaths which turn dull purple in K.

Cryptothele rhodosticta

Thallus crustose, dark red-purple, continuous or cracked; surface uneven, but slightly glossy. Ascomata forming convex projections 220-400 μm diam., apex with a pore, appearing as a small closed pit or a cavity. Exciple c. 16 μm thick, colourless, gelatinized, grading into branched and anastomosing periphysoids between the insertion of the asci and the ostiole, interascal filaments absent. Hymenial gel I + red, I + blue after pretreatment with K. Asci tapering above, thin-walled throughout, 8-spored, I - except for an I + blue fuzzy coat on the outside. Ascospores simple, thin-walled, broadly ellipsoid to subglobose, 6.5-10 \times 5.5-7.5 μm , uniseriate or partly biseriate in ascus. Pycnidia appearing as minute projections with apical pore; c. 100 μm diam. in section; with single cavity; wall colourless throughout; conidia oblong, straight, 2.9-3.3 \times 1.2 μm .

The description is based on two specimens (*Orange* 12040 and 12044, in NMW), collected on acidic unshaded rocks by a river, the Afon Cwm-llan, Nantgwynant (V.C. 49), which also receive some flushing from adjacent turf. The reddish and slightly glossy thallus was in the field unlike *Pyrenopsis subareolata*, which is usually dark brownish and slightly more scurfy. *C. rhodosticta* had the look of a *Verrucaria* which had been painted red. *C. rhodosticta* is said to differ from other members of the genus in the short conidia.

Cryptothele sp.

Thallus crustose, cracked, very dark brown, 100-130 μm thick; surface slightly uneven and roughened. Ascomata inconspicuous, forming low to moderate convex projections to 160 μm diam., opening by a pore at the apex. Centrum 110-180 μm wide. Exciple colourless, 8-15 μm thick at sides and base. Hymenial gel I + red, I + dull red after treatment with K. Hamathecium of branched and anastomosing periphysoids adjacent to upper part of exciple. Also, inconspicuous filaments much shorter than the asci, c. 35 μm long, occur mixed with the asci. Asci thin-walled, tapering above, I -, with at

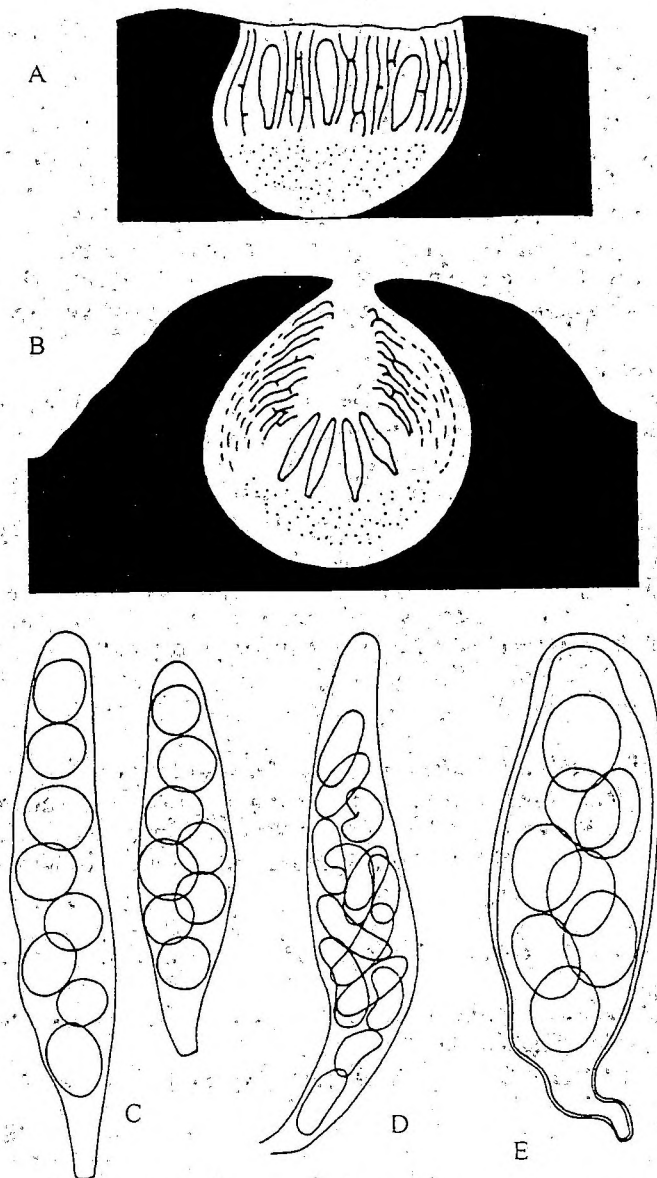


FIG. 1. A, *Pyrenopsis subareolata*, section of ascoma, with interascal filaments and asci (diagrammatic); B, *Cryptothele rhodosticta*, section of ascoma, with periphysoids and asci (diagrammatic); C, *Cryptothele rhodosticta* asci; D, *Cryptothele* sp. ascus; E, *Pyrenopsis subareolata* ascus.

least 11-14 ascospores. Ascospores simple, colourless, reniform to allantoid, $7.8-12.5 \times 3.5-4.5 \mu\text{m}$. Conidiomata not detected.

The description is based on one collection (*Orange* 12171, in NMW) from acidic unshaded rocks by a stream (Nant Gwynllyn) near Rhayader (V.C. 43). The ascospores agree in shape and size with *C. permiscens* (Nyl.) Th. Fr., but that species is said to have 8-spored asci (Henssen 1979). *C. neglecta* Henssen has 16(-24)-spored asci, but the ascospores are $7-8 \mu\text{m}$ long and the exciple is conspicuously thickened to $40-50 \mu\text{m}$. Interascal filaments are said to be absent in these species, but short ones occur in *C. cylindrophora* (Vain.) Henssen, described from Brazil (Henssen 1979).

Pyrenopsis subareolata

Thallus reddish black or dark reddish brown, cracked, surface slightly uneven, more or less matt. Ascomata immersed, margin either level with thallus or swollen, forming a low projection to $360 \mu\text{m}$ diam. Disc deeply concave, like a broad pit (when dry), $50-200 \mu\text{m}$ wide. Hymenium I + strongly blue (with or without pretreatment with K). Hamathecium of branched and anastomosing paraphysoids, abundant amongst the asci, $1.2-2 \mu\text{m}$ wide in middle of hymenium, up to $1.6-3.3 \mu\text{m}$ wide near free apices, parallel-sided or slightly constricted at septa in upper parts, but at most weakly moniliform. Asci 8-spored, clavate, wall thickened above, I + blue in part (details not determined, but the inner wall in *Pyrenopsis* is said to be amyloid by Schultz & Büdel 2002). Ascospores broadly ellipsoid, $11-14 \times 8-9 \mu\text{m}$ (few measured), wall unthickened, or thickened to $0.5-0.8 \mu\text{m}$ in some.

Differs from *Cryptothele rhodosticta* in the abundance of filaments amongst the asci, without a lateral zone of paraphysoids, and in the apically thickened wall of the ascus. The ascomatal disc is narrow, but the dry ascomata are less perithecioid in appearance than in *Cryptothele*. Description based on three specimens from North Wales.

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Alan Orange

SMALL ECOLOGICAL PROJECTS GRANT

Members are reminded that short (half page applications for grants (in the range £100 to £400) in the form of a letter, should be sent to Oliver Gilbert, 42, Tom Lane, Sheffield S10 3PB; they will be dealt with promptly. The work published below was funded by one of these grants.

A PRELIMINARY INVESTIGATION INTO ASCOSPORE CHARACTERS IN THE *GRAPHIDACEAE* AND *OPEGRAPHACEAE*

Introduction.

There has been little work on the variation of ascospores in microlichens. Much of the information is either anecdotal, or provided without reference to any raw data or source (e.g. Purvis *et al.* 1992). Ascospore characteristics are important in the taxonomy of most microlichens and non-lichenised ascomycetes. Two major families of microlichens are the *Graphidaceae* and *Opegraphaceae* both of which possess lirellate apothecia, and the identification of which relies strongly upon ascospore characters. In this article, one representative of each of these families is investigated to determine the variation in three key characters, namely spore length, width and number of cells. The chosen species were *Graphis scripta*, (L.) Ach. (*Graphidaceae*) and *Opegrapha calcarea* Turner ex Sm. (*Opegraphaceae*).

Methods.

a) Sampling and examination

For both species, three sites were chosen in the U.K. which were >100km distant from each other (Table 1). At each site, a total of three thalli was collected, either on the same tree (in the case of *G. scripta*) or on the same wall, within 1 m from each other (*O. calcarea*). Every effort was made to collect only single, well-developed and apparently healthy plants as they appeared in the field.

Table 1 collection details

Species	Code	Location	Nat.grid ref.	Date collected	Altitude m	Sub- stratum
<i>G.scripta</i>	G1	Fairy Glen, Gwynedd	23/804540	Nov.2002	100	<i>Corylus</i>
<i>G.scripta</i>	G2	Hurdlestone Somerset	31/617482	May 02	150	<i>Corylus</i>
<i>G.scripta</i>	G3	Saxonbury Hill, Sussex	51/573333	May '02	130	<i>Corylus</i>
<i>O. calc</i>	01	Caernarvon, Gwynedd	23/475627	Apr 2002	5	Sea wall N- facing

<i>O. calc</i>	02	Berry Head, Devon	20/928570	May '02	10	Schist cliff N-facing
<i>O. calc</i>	03	Withyham, Sussex	51/494396	May '02	80	Wall of church N- facing

On returning to the laboratory, each collection was examined microscopically using an apochromat x60 objective under a total magnification of x750. Measurement precision was estimated as $\pm 0.2 \mu\text{m}$. From each plant, three apparently mature apothecia were detached separately and placed into three separate drops of water to soak for 5 min. They were then gently squashed under the coverslip to release the ascospores from the asci. From each squash, eight ascospores with developed septa were examined at random. The length and maximum width was recorded, taken from the outside of the cell wall (not the epispore where this was present) using a micrometer graticule. The number of cells in each spore was also recorded. At each site, three apothecia from three plants were examined. As there were three sites, a total of $3 \times 3 \times 3$ squashes were prepared and a total of 216 ascospores examined for each species.

To provide information on ascospore variation within individual asci, thalli of *O. calcarea* were moistened and suspended 5mm above a layer of 1% agar. The agar was examined after 24 h. Where series of 8 ascospores were found in close association, it was assumed they were the product of a single ascus. They were examined as above. Some spores were also measured before and after treatment with KOH solution. The two species were analysed separately using a combination of analysis of variance (anova) and correlation.

Results.

Basic Statistics

The results are summarised in Table 2 where descriptive statistics are provided for the complete data sets. The data were analysed using Minitab 12 statistics package.

Table 2 Descriptive statistics for ascospores

Taxon	statistic	Spore length μm	Spore width μm	Cell number/ spore
<i>Graphis</i>	mean	49.1	8.58	11.01
	s.d.	8.95	0.83	-
	range	22.7-70.9	6.7-10.7	6-14
<i>Opegrapha</i>	mean	17.9	5.76	4
	s.d.	1.77	0.62	-

	range	13.8-24.3	4.5-7.2	
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ANOVA

Both sets of data were subject to fully nested anova placed in sub-sets of 'site', 'thallus' and 'apothecium'. An ascus subset was not attempted due to the excessive amount of work required to obtain it, and the ascus results were analysed separately. A preliminary test of homoscedasticity was applied. In the case of *Graphis*, the data were found to be weakly heteroscedastic, with thallus 3 of G1 having ascospore variance significantly lower than the remaining 8 plants. When this set was removed the variances were homoscedastic. However, all 9 thalli were included since anova is a robust procedure and with $df \gg 1$ the homogeneity condition is not considered a serious problem (Sokal & Rohlf, 1995). In the case of *Opegrapha*, the test demonstrated homoscedasticity at the apothecium level so no transformation was necessary. Previous work had indicated that ascospore length in *O. calcarea* approximated a normal distribution (Pentecost, 1981) and it was shown by spores of *G. scripta* in this study at the site level using an Anderson-Darling plot. Consequently, anova was permissible and the results of these anovas are tabulated below (Table 3)

Table 3. Nested anovas for the two lichen species.

	Level	F	P
<i>Graphis</i>	site	2.80	0.14 n.s.
	thallus	9.03	0.001 ***
	apothecium	2.13	0.007 **
<i>Opegrapha</i>	site	17.3	0.003 **
	thallus	5.01	0.004 **
	apothecium	0.66	0.85 n.s.

The analysis showed different results for the two species. In *Graphis*, significant differences were found between both the three thalli and the apothecia belonging to individual thalli, whereas there were no overall differences between sites. Individual apothecia therefore provided different spore lengths even on the same thallus. It is unlikely that the apothecia came from different plants since the thalli were all well delimited. It is possible that the apothecia occurred at different stages of maturity, although only 'well developed' apothecia were sampled. This needs further investigation. Differences between *Graphis* thalli collected from the same tree may be due to a similar phenomenon. The thalli were unlikely to be of the same age and development, and the apothecia sampled (only 3 out of the 10 or more present) may also have been of different maturity. This again suggests that some ascospores have not necessarily reached a level of maturity. Interestingly, at the site level, no overall differences were found, suggesting that all three sites contained the same species of lichen.

In the case of *Opegrapha*, there was a significant difference between the sites in terms of spore length, but none between apothecia within the thalli, yet individual thalli differed. This might reflect a difference in maturity of the thalli, with the sampling of mature apothecia in all cases. Possibly it is easier to pick out a mature apothecium in this species. Thus the species appears inhomogeneous as far as sites are concerned, yet maturity might differ between individuals. Alternatively, 'subspecies' but with different spore sizes might coexist at these sites. Again, more study is desirable.

Spore width was also measured, but as the relative precision was lower, detailed analyses were not attempted. However, in both lichens, there was a significant positive product-moment correlation between spore length and width ($r=0.39$, $P<0.001$ for *Graphis*; $r=0.58$, $P<0.001$ for *Opegrapha*).

Further samples of spores were studied for other purposes. Three octets discharged from three asci of *O. calcarea* onto agar were compared using single classification anova, with non-significant means for their lengths ($F=0.61$, $P=0.55$). When these spores were compared with spores measured from a 'squash' from the same plant, they were not significantly different. In another study, the lengths of ascospores in a squash were obtained in water, then in 10% KOH. Here the anova was significant ($F=4.82$, $p=0.032$) with the mean length in KOH, 4% shorter than in water (30 observations). Since the measurements could not be undertaken on identical spores, the result remains tentative, but is also suggestive.

Cell number in spores.

In the case of *Graphis*, further information was provided by the number of cells in the spores. A significant positive rank correlation was obtained between the spore length and the number of cells in the spore, ($r=+.79$, $P<0.001$) thus larger spores had more cells. It was not possible to obtain a successful transformation of cell number to achieve homoscedasticity, so a nested anova was not attempted (the maximum likelihood method of Box & Cox, in Sokal & Rohlf, 1995 might work but the software was not available at the time of writing). However, since length was strongly correlated with spore number, it is likely that cell number will differ significantly between apothecia and thalli. No analysis of this kind was attempted with *O. calcarea* as the spores were uniformly 4-celled.

Incidental observations.

In both species, the ascospores were frequently surrounded by a colourless episporium a few micrometres in thickness (stain in Alcian blue). The occurrence of episporium was not erratic, occurring in particular apothecia, and in one case small particles were seen attached to the episporium (*Opegrapha*). In *Graphis*, two brown spores were observed in the samples but they did not appear moribund. Purvis *et al.* (1992) term these spores 'over mature'. Also, several *Graphis* apothecia contained spores with a distinct

mammillate appendage at one end. This was encountered in about 5% of the sample and not confined to thalli.

Conclusions.

This pilot study has revealed interesting and unexpected variations in ascospore length and needs to be pursued further. In particular, detailed work on individual apothecia of different size needs to be investigated on a single plant to establish the variation caused by ascospore maturity. It would also be worthwhile to sample different parts of a single apothecium in these species. On the basis of the evidence presented, it is recommended that for taxonomic work, squashes are always prepared from several 'mature-looking' apothecia on the one plant with at least 8 spores measured. Little reliance should be placed upon ascospore length in isolation in describing species, and this also applies, at least in *Graphis*, to the number of cells in the spore.

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Acknowledgement

The British Lichen Society for Provision of a Small Ecological Project Grant.

Allan Pentecost

THINK GLOBALLY, ACT LOCALLY - GETTING INVOLVED WITH YOUR LOCAL BIODIVERSITY ACTION PLANS

1970 was the Year of Conservation in Europe and in 1992 there was the Rio Agreement. The world was waking up to the loss of its biodiversity - or was it?

Living in London, my local environment is urban and one of the problems with urban conservation is that it will not necessarily be dealing with the nationally rare. I am not going to find *Lobarion* on Hampstead Heath but it was there once, and the Heath is actually the type locality for a BAP species. In this way we become aware of what has been lost and what we might lose. These large urban open spaces are under a number of pressures as more people have more leisure time. Other areas of interest for the

urban lichen conservationist are **brownfield sites** which are under pressure from development and **backlands** - a term for a block of gardens that can create a wildlife corridor - which are also under pressure from development and the emphasis on 'easy maintenance' gardens. Also burial grounds because of the acute shortage of space and the demand for reuse.

Why did I get involved? Through the planning process and Local Agenda 21 framework people are being encouraged to influence what happens in their local environment. Ken Livingstone, the new Mayor of London, included Biodiversity in his Strategies. [These Strategies and Plans are part of what is known as secondary legislation, not binding but influential.] I had read Laundon's 1970 paper on London lichens and thought that the most important place for lichens in London would be churchyards and cemeteries. Also burial grounds covered a variety of issues connected with nature conservation. There was the pressure of an increasing population and the demand for the re-use of graves. Many faiths, not only Christian, but also Jews, Muslims and others, who have different beliefs and burial practices, use them. The education system can use them to learn about nature and cultural issues. The UK is also thought unique in the cultural value of its cemeteries and memorial practices.

So how do you go about getting involved? First make contacts. Is your local natural history society the main recorder of biodiversity or your Wildlife Trust? Who is your local authority Conservation Officer? Find out what is going on in your local area and get involved. I got onto the Habitat Action Plan working group for Churchyards and Cemeteries. However being on a working group does not necessarily mean you have much influence. Endless committee meetings later the plan was ready - then it was launched in a changed form and I found that *Caloplaca decipiens* was a key species and where this had come from I do not know! However I did manage to change it to *Xanthoria parietina* in my Local Biodiversity Action Plan. (LBAP). This is a species that is readily identifiable, although not rare, and links up with other issues like the increase in atmospheric nitrogen. My LBAP, for Camden, is a very glossy document that goes to architects and people of influence.

I am finding that I have to follow a steep learning curve about a huge variety of subjects but would encourage anyone to get involved in their Local Plans - we live in a democracy!

Some background on policy and legislation:

Policy exists at international, national, regional and local level. Here are some of the most influential legislation and policy and the designations for different types of conservation.

European legislation

1979 'Birds Directive' - EC Council Directive on the Conservation of Wild Birds - gives protect, introduces concept of **Special Protection Areas** (SPAs)

1992 'Habitats Directive' - EC Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna - introduces **Special Areas of Conservation** (SACs) and modifies Birds Directive.

British legislation

1949 National Parks and Access to the Countryside Act - gives Local Councils power to declare their own **Local Nature Reserves** (LNR). Introduces **Sites of Special Scientific Interest** (SSSI) and **National Nature Reserve** (NNR) concepts.

1981 Wildlife and Countryside Act - main legislation for species protection. **Schedule 8** lists protected species - 26 lichen species.

1997 The Hedgerow Regulations - important hedges to be protected, and notification before hedges removed.

2000 Countryside and Right of Way (CroW) - updates the WCA 1981. Section 74: List of Habitats and Species of principal importance for the conservation of biological diversity in England. 33 lichen species.

Other policy

Planning Policy Guidance notes (PPGs) - these influence local planning.

Biodiversity: The UK Action Plan - the Government's response to Rio.

Church, J.M., Coppins, B.J., Gilbert, O.L., James, P.W., and Steward N.F. 1996. *Red Data Books of Britain and Ireland: Lichens. Volume 1: Britain*. **JNCC website:**

www.jncc.gov.uk

National Biodiversity Network (NBN) - biological recording network.

Convention on Biological Diversity (CBD) - the Government's commitment.

What is V.A.T. in the Herbarium?

I am lucky that my 'local' museum happens to be the Natural History Museum. I came here in 1997 as a volunteer and have graduated to being a Scientific Associate, having done a variety of tasks. There are three concepts that I think are fundamental to herbaria.

The first is **vouchers**, an important concept for floristic and taxonomic studies. Voucher specimens are little snippets of time and place. Types are a special kind of voucher as they represent the criteria by which a name is known.

The second is **authority**. Some people think a scientific name has two parts, generic and specific, but in fact there is a third - the authority or author of the name. The concept of authority is important in the herbarium if one is going to find things. Originally the NHM Lichen Herbarium was ordered according to the nine great volumes of Zahlbruckner - still there to be consulted - but obviously things have changed since, which makes reordering the Foreign Herbarium difficult. The Parmeliaceae are ordered according to the Smithsonian criteria, and groups of genera have been variously ordered but there is no World Checklist. The British Herbarium follows the latest checklist - Coppins!

Tracking is another important concept in herbaria. Over time concepts of species change and it is important to know this. If one keeps track of change each step is manageable - but you do need a reliable expert to turn to with problems. We are very lucky to have Brian Coppins who has produced a mammoth synlist that is growing all the time. I find the historical aspect of a great herbarium fascinating - it makes one aware of how much progress has been made in our understanding of the natural world. The herbarium is an important adjunct to fieldwork.

The Natural History Museum is the largest and most influential in Britain but I think it is important to find out what is out there in local museums - perhaps an odd shoebox or a few packets that can tell us a little about another time and place. Janet Simkin has produced an Excel spreadsheet that can be used to list these and incorporate them in the BLS BioBase database.

So think global and act local - and enjoy!

Amanda Waterfield

SUMMER WORKSHOP 2002 — *CLADONIA* THE LAKE DISTRICT (BLENCATHRA)

There is a Manchu saying that movingly summarises the Chinese love of landscape:

Some landscapes you wish to contemplate

Some you wish to enter

Some you never wish to leave.

The view from the terrace of Blencathra Field Study Centre over the magnificent Lakeland scenery must extend even the final accolade. On this first Sunday in August the sun was shining, the sky clear, and the mountains spread out before in a sublime landscape of rock and mountain, moorland and tarn. Add to this the fine architecture and situation of the Field Centre behind us, with its flower borders a riot of colour, bees bumbling among the blossoms, and red squirrels, *Sciurus vulgaris* active in the trees above, and it was easy to feel that this, perhaps, was paradise re-found. And yet

this was the now traditional BLS Summer Workshop, and we were here in this grand setting to work and to extend knowledge, —it seemed almost too good to be possible.

The geology, topography and climate of this area of the Lake District have been summarised elsewhere (Gilbert and Giavarini 1993, Ratcliff 2002) and the lichen flora of this northern region is well known. Nevertheless most of the group had never visited the area before and fresh discoveries are always possible, so there was an air of keen anticipation and eagerness in the party as we looked forward to the week ahead. The workshop was organised on the now traditional lines, with lectures by Peter James soon after breakfast, followed by the days itinerary in the field. We visited a wide range of habitats during the week and, on the whole, the weather was very kind, particularly for a region noted for its high rainfall figures. As a base for a workshop devoted to the genus *Cladonia*, this area was not particularly rich in specific taxa although enough were recorded to sustain interest throughout the week and, as if ordered specially for the occasion, *Cladonia monomopha* was discovered, a species new to the British Flora.

Monday 5th August. Blencathra

The Glenderaterra Beck below Blease Fell. NY 29-25-

The valley down to the river Greta NY 299248

Threlkeld Church NY 322254

A lovely day, mild with glorious sunshine and clear mountain tops. From behind the centre we contoured into the valley to the north-west on a track to the disused Glenderaterra lead mine. The geology of the area is acidic blue-grey mudstones, in parts thermally metamorphosed to slates of the Ordovician Skiddaw group (510-460 Ma). The dry stone wall bordering the track and of local material was interesting, with *Arctoparmelia incurva*, *Diploschistes scruposus*, *Enterographa zonata*, and *Pertusaria aspergilla* all good records. On the rocks outcropping besides the path there were even more notable finds including *Fuscidea praeurptorum* and *F. recensa*, *Immersaria athrocarpa* —indicating the metal rich nature of this metamorphic oriole, *Lecidea plana*, *L. swartzioidea*, *Micarea subnigrata*, *Rimularia furvella*, and *Tephromela pertusarioides*. The Fell had a limited *Cladonia* flora but *C. furcata*, *C. portentosa*, and *C. uncialis biuncialis* were all common and typical of this habitat. This area is a site for *C. rangiferina* but it proved to be elusive—and remained so for the whole of the workshop! With stories of previous lichen parties having spent hours covering a mere few hundred metres of this trackway we were encouraged onwards, or rather, steeply downward, and very hesitantly, to the Beck in the valley bottom. The corticolous flora on mature oak, *Quercus sp.* and ash, *Fraxinus excelsior* became more interesting, with *Chaenotheca ferruginea*, *Megalania pulvera* and *Mycoblastus fucatus* drawing attention.

The heat and humidity of the afternoon took its toll, and the group separated to pursue individual interests. The church at **Threlkeld** was surveyed but was found to be

disappointing—its flora limited by mortar render to most walls, *Acarospora umbilicata*, *Caloplaca dalmatica*, *C. saxicola*, and *Leptogium gelatinosum* were notable records.

Our haul for the day was a very creditable 181 species and that evening a contented and relaxed party enjoyed a good meal and then whiled away contented hours in the laboratory working on the specimens collected during the walk.

Tuesday 6th August

St. Bees. Concrete promenade above the beach NX 962117,

New Red Sandstone (Permo-Triassic) NX 955118.

St Bees Priory Church NX 968122.

A lovely morning, the valley below filled with a fine mist of gauze- like quality, its surface a constant source of movement as it formed and then wasted. A hazy sunrise cast a creeping light down the eastern face of High Rigg to the south and to the west the hills appeared to be every shade of blue and grey.

Our first site of the day was reached after a long journey along the shore of Bassenthwaite and then west to the coastal village of **St Bees** and its promenade and headland. We lingered above the sea wall noting a flora typical of concrete and mortar substrata. The under recorded *Caloplaca flavocitrina* was pointed out and *Collema tenax* var. *tenax* was found to be common on the eroded lawns of the esplanade. One child, intent on the pleasures of the beach and the sea, was fascinated by our genuflections before a number of concrete seats. He was heard to ask his mother if all this strange activity was yoga. Her reply was not recorded! At last, weary of avoiding that detritus that so depressingly characterises this nation at play—litter, chewing gum, and a good “topping” of dog fouling, we moved on to the New Red Sandstone of the headland. A light sea mist was developing and the day turned into one of those rare coastal events where there was hardly a swell or a wave and with the water appearing almost oily and leaden. All the sounds of the excited children enjoying the sea and sand across the bay were distorted and hushed and a black guillimot *Uria grylle grylle*, bobbing close in on the water and normally so retiring, was almost too lethargic to take off.

The geology of this promontory was as equally unusual as were the climatic conditions, being a complex of basic sandstone bands laminating a main exposure of more acidic character. The lichen flora reflected these characteristics, with calcicoles such as *Caloplaca dalmatica*, *Diplotomma alboatrum*, *Lecanora conferta* and *Toninia aromatica* growing within a few centimetres of species typical of an acidic substratum. There were also a number of more interesting finds including *Acrocordia macrospora*, *Halecania ralsii*, *Rinodina confragosa*, *Solenopsora vulturiensis*, and *Verrucaria prominula*.

With the tide creeping in and threatening to leave us stranded we reluctantly moved back to the promenade. **The Priory Church of St Bees** was visited as the final site of the day, its fine Norman west door with three orders of columns indicating a building of great antiquity. The geology of the church and its memorials was mainly acidic, but a number of mature sycamore, *Acer pseudoplatanus* and ash trees added corticolous interest. *Arthonia pruinata*, *Halecania viridescens*, *Lecania cyrtella*, *Lecanora jamesii*, *Opegrapha varia*, *Punctelia ulophylla* and *Pyrrhospora quernea* were good finds, the latter species promoting some discussion—much of it unconvincing, about the characteristics distinguishing it from *Lecanora expallens*. Disturbed ground provided the only record of *Cladonia humilis* for the week and, close by on a sandstone memorial, *Pertusaria lactescens* was noted. Mortar by a copper lightening conductor was the site of *Psilolechia leprosa*.

The journey back to the centre proved to be less tedious for a number of the senior members of the society than it had seemed during the morning—they fell asleep! A reaction that said more for the rigours of the day, or perhaps an enviable ability to conserve energy that comes with maturity, rather than the smoothness of the ride or the quality of the drivers.

Wednesday 7th August.

Great Wood and Calfclose Bay NY 272215.

Threlkeld Mine spoil heaps and lead workings NY 324263.

The morning started with dark brooding skies and a poor weather forecast, but as the first site of the day was close by and it was one of the famous corticolous sites of the Lake District, we were tempted out. The consensus was that a wood to shelter in during wet weather did not seem too bleak a prospect (little did we know!). And this wood was justifiably famous, judged in 1970 to contain “the best *Lobaria* communities...seen anywhere in the British Isles or Brittany” (Rose et al 1970). It had received numerous visits and formal surveys from lichenologists since that time (Day 1996, Hawksworth 1995) as well as translocation attempts involving species of *Lobaria* (Day 1996). However the promise of a day of lichen largess was not to be, as the threatening nature of the morning was finally resolved into torrential rain. Even under a sheltering tree and umbrellas rain misted through and the expensive technology of waterproof but breathable fabrics was tested—and found wanting. The view down Derwentwater towards a dark and brooding Borrowdale valley was awe inspiring—one of wild beauty and of almost monsoonal appearance. In spite of the foul conditions a number of important taxa were recognised that included *Anisomeridium ranunculosporum*, *Arthonia vinosa*, *Bacidia delicata*, the three *Lobaria* species, *L. amplissima*, *L. pulmonaria* and *L. virens*, *Loxospora elatina*, *Mycoporum anticellens*, *Parmotrema crinitum*, *Peltigera horizontalis*, *Phyllopsora rosei*, and finally *Stenocybe septata*. Identification of the saxicolous flora of the walls and lakeside boulders was an impossibility, although several tried and tested methods of dehydration were demonstrated, including the dabbing of inundated rocks with

handkerchiefs, woollen hats, tissues, and of course, toilet paper (never let it be said that members of this society are anything but prepared for the worst!)

After a luncheon eaten in the rain forest humidity of the cars, we decided to abandon the site and return to the laboratory. As is so often the case, when decisions are made based on the level of discomfort of the party, this was regretted immediately on our arrival back at the centre—the rain stopped and the weather improved!

A group were tempted out again to look at the metaliferous flora of **Threlkeld Mine**, on the southern slopes of Blencathra. Little remains to be seen of this once thriving lead and zinc mine other than for a few collapsed levels and spoil tips, but the visit was more than worth while with 18 *Cladonia* taxa being recorded, including *C. arbuscula* subsp. *squarrosa*, (its only site for the week) and also, as if conjured up solely for this workshop by its finder Steve Chambers, *C. monomorpha*, new to the British Isles!

Thursday 8th August.

Brown Cove, Helvellyn. NY 343160

Greenside Lead Mine NY 364175 abandoned lead workings.

Dacre Church NY 460266

Castlerigg Stone Circle NY 292236

All memories of the rain and tempest of yesterday was banished by this lovely morning. The valley was again filled with mist and the tops were outlined against a clear blue sky. This was to be a mountain day, visiting one of lichenological jewels of the Lakes, **Brown Tarn**, the only site for *Lecanora achariana* in the British Isles and with several other rarities to interest us, so our expectations were high. The drive there was through glorious Lakeland scenes and countryside and with the view along the length of Ulswater from the road at Parks Brow (NY 397205) a final and moving prospect.

The Tarn was approached from Glenridding up a disused mine road that provided a gentle ascent into marvellous mountain scenery. A ruinous concrete dam, dynamited between the wars to prevent it impounding water following the catastrophic (for the village below) failure of a lower dam, produced a few taxa typical of this substratum, including the highest record so far of *Lecanora crenulatella* at 550 metres. **Brown Tarn** itself was remarkable. A tiny environment, no more than a quarter of an hectare of water, not even shown on some maps, and yet so very important and also so very susceptible to damage. Attempts at surveying the rocks at the waters edge are only possible by either clambering on their surface with inevitable destruction of the lichens or, for the stoical, by paddling. Many of the rarities recorded by previous visitors (Gilbert and Giavarini 1993) were found and appeared to be in good health, although some were present in tiny quantities. *Collema dichotomum*, (completely submerged), *C. flaccidum*, and *C. glebulentum* were admired together with *Dermatocarpon*

deminuens and *D. leptophylloides*. Pride of place was of course taken by *Lecanora achariana*, very noticeable on the tops of marginal boulders and reassuringly easy to recognise from its description! To the south of the Tarn an unusual grassy swath sloped up to the headwall below Helvellyn and we spent a pleasant hour surveying the siliceous rocks embedded in the turf. In spite of a few spots of rain luncheon in this lovely spot, cradled between Lower Man and Swirral Edge, was a delight and all of us found welcome comfort in the silence.

The shiny metals that are so desired by our species are often perversely found in the most picturesque and dramatic countryside and as a poignant example, our return down the track from the corrie was dominated by the effects of man's mining activity at **Greenside**. Earth moving diggers and lorries were crawling about the spoil heaps looking at a distance like multi-coloured scarab beetles. They were busily engaged in expensive and perhaps misguided restoration work with earthen banks being reseeded and revetments under construction. All that had been achieved was a more artificial and noticeably "cosmetic" look to the valley and, like make up peeling from an actors face, the recently graded slopes were already being eroded and scarred. Nature, no doubt, in a few years will have formed scree of this work to rival all others in the valley. Higher up the hillside the more "honest" effects of the old miners toil with picks and spades had been softened by vegetation and lichen, and seemed infinitely preferable as it served to emphasise the enduring grandeur of these fine hills, in spite of all this wanton destruction.

Greenside mine, in its day, was one of the largest lead producers in Britain. Its working life was extended into the 20th century by the high silver content of the concentrates. More aesthetic riches however had attracted a small party to survey the mine spoil heaps rather than attempt the climb to Brown Tarn. They found a remarkable lichen flora. Not only were 14 species of *Cladonia* recorded, including *C. luteoalba*, but many other taxa for which this was the only site of the week. *Cetraria aculeata*, *Lecanora handelii*, *Lecidea hypopta*, *Micarèa melaena*, *Omphalina ericetorum*, *Porpidia melinoides* and *Verrucaria aethiobola* were notable. An interesting stream flora included abundant *Polyblastia cruenta* and also *Verrucaria aquatilis*, *V. aethiobola* and *V. funkii*.

Our return journey involved a diversion to visit to **St. Andrews Church at Dacre**. We found a lovely 13th century building occupying what was the site of a 6th century monastery. A good list was obtained in an hour or so of enjoyable diversion, with notable finds including *Leptogium plicatile* and a large thallus of *Tephromela grumosa*. Six species of *Cladonia* were also recorded—a high number for a churchyard, and amongst these were *C. ciliata* and *C. floerkeana*. The yard is justifiably famous for its stone effigies sited at the four corners. "The Dacre Bears" are possibly Pre-Saxon, certainly with a definitely pagan appearance. Sadly, for all their antiquity these siliceous (and perhaps salacious) statues had a disappointing flora.

The enigmatic grandeur of **Castlerigg Stone Circle** was also visited in the late afternoon. This Neolithic monument, with its 39 stones, is about 4000 years old and described by John Keats as,

.....a dismal cirque,
Of Druid stones, upon a forlorn moor.

Perhaps too bleak a description but the lichen flora did reflect its forsaken setting, with *Tephromela grumosa* again being its only notable species.

Friday 9th August

The Bowder Stone. NY 254164.

Seatoller Wood NY 240130

Honister Pass and Little Gatesgarthdale NY 225135

A bright morning with a hint of promising weather out to the west.. We took on the mantle of the tourist and visited **The Bowder Stone**, that "huge and vulgar nuisance" so beloved of the Victorian traveller to this place. But it is far more than that! –an enormous 2000 Tonne block of andesite, detached from the cliffs above and lowered on to a precarious corner by a collapsing valley glacier. This was to be only the quickest of surveys, but even so, the abrasion of rock climbers boots was all too obvious, as was the shading effect of the white patches of dolomitic chalk (used to increase grip). A wooden step ladder allowed those with a head for heights to gain the prospect from the top and also to note the presence of an interesting *Cladonia* flora on the western face, but dangerously too far away from the safety of the ladder for identification.

We moved on down the valley to the woodlands at **Seatoller**. The precipitation gradient from Keswick to these woodlands 12 kilometres to the south is quite astonishing (1437 mm of rain at Keswick and 3300 mm at Seathwaite situated at corner of the woods) These wet conditions have encouraged not only a fine bryophyte flora ("..the richest wood for Atlantic mosses and liverworts south of the Highlands," Ratcliffe 2002) but also a rich lichen flora.

Many of trees higher in the wood, particularly the ash, were reported to have been pollarded, either as part of old management systems or by wind damage. This had encouraged in places a more open canopy and the development of a rich *Lobarion* community (Day 1989). However we found that the wood was not the easiest of terrains to work over –block scree, covered in ferns. Add to this a 45 degree slope, and many of the party were content to sensibly remain close to the road. They were compensated by *Stereocaulon nanodes* and *S. pileatum* growing on the rocks, and indicative of the metallic rich nature of the substrata. A much more active group rose to the challenge and to the dangers of the terrain and ascended into the wood. They were richly rewarded by finding a number of old woodland indicator species including *Agonimia octospora*, *Collema sublaccidum*, *Mycoporum antecellans*, *Nephroma laevigatum*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Peltigera horizontalis*,

Phyllopsora rosei, *Rinodina isidioides*, *Stenocybe septata*, *Sticta fuliginosa*, and *Wadeana dendrographa*.

Eventually roadside and woodland parties were reunited after contact calls and whistles that would not have been out of place in the Pyrenees!

The afternoon ended in delightful sunshine at the head of the **Honister Pass**. The view down the valley to the north west was enchanting, but quarrying activity at the Col had produced a relatively recent saxicolous substratum and the lichen flora lacked maturity. Following the Hause Gill down into Little Gartsgarthdale proved to be much more productive, with a good range species typical of acid rock. *Acarospora smaragdula* and *Leparia caesia* were common, and *Placopsis lambii* generated the now familiar discussion about its separation in the field from *P. gelida*. *Ionaspis lacustris* was found on inundated rocks.

We disturbed a family of sun worshipers parked, and exposed, by the gill. The matriarch was braising a remarkable amount of cellulite to an alarming lobster red colouration. Her husband, a more dapper figure in collar and tie came over to talk. He was Romanian by birth and not only knew what we were looking at but also had our obvious love for the shape and colour of these organisms that so fascinate us. "Rock Flowers" was his translation of the Romanian for lichens – a pretty and evocative description. His Romanian name for *Flavoparmelia caperata* made us give thanks for Acharius and the simple sound of Latin!

And so, on this international note, ended the BLS Workshop for 2002, and for all of us a memorable few days.

A meeting such as this had been, with its camaraderie and close fellowship that so characterises the BLS on such occasions, is possible only by the efforts of a number of members who now richly deserve our thanks. I am grateful to Steve Chambers, Oliver Gilbert, Rod Corner and particularly Keith Parmer for sharing their knowledge of the area and suggesting sites to visit. Dave Muir (Project Officer, Cumbria Biodiversity Partnership) is thanked for generously providing information about the woodlands visited during the week, and for his cheerful presence with us on these days. Simon Davey operated a moth trap on two nights and provided a fascinating diversion on subsequent mornings with his infectious enthusiasm and expert identifications—for these, and for enchanting memories of Gold Spangles *Autographa bractea*, etc.; we are more than grateful. The British Natural History Museum and staff are thanked for generously loaning herbarium material of the highest quality. A special vote of thanks, of course, must go to Andy Simms the Centre Director of Blencathra and to his professional team, particularly to the young, hardworking "travellers" (students working here in this charming place for a few months before moving on) who were helpful and charming almost to a fault. The level of comfort and the fine scientific facilities at this lovely Field Study Centre offers will certainly tempt us back in the future. Finally, to Peter James; any expressions of gratitude for his contribution to this workshop seen quite inadequate. For him excellence comes as standard! His series of

lectures on the genus *Cladonia* were a remarkable experience for both their clarity and breadth. Those of us present at first light in the laboratory, watching him distilling on to the board his many years of experience of this genus and creating the most exquisite and realistic vignettes of each species, were quite in awe. Indeed, his summary tables of the genus were judged by all on the workshop to be so important that they are now to form the basis of an aid-memoir for future publication.

One final treasured memory of this wonderful week, out of so, so many, will be the late-afternoon tea and cakes, taken al fresco on the terrace before the Centre, with that magnificent prospect spread before us of the wild countryside that is the Lake District.

And what value can be put on such experiences?

Members present on The Workshop:

Ann Allen, Heather Colls, Ishpi Blatchley, Lars Borg, Steve Chambers, Simon Davey, Frank Dobson, Jeremy Gray, Andrew Harris, Barbara Hilton, Bob Hodgson, Peter James, Dave Muir, Don Palmer, Ivan Pedley, Sheila Reid, Joy Ricketts, Ken Sandell, Janet Simkin, Will and Delia Stevens, Stephen Ward

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Sites and Species Key

Monday 5th August.

Bl - Blencathra. Western side of Glenderaterra Beck on Lonscale Fell 35/295263 (Ordovician mudstones), and the woodlands below Blencathra field centre besides the beck.

TC - Threlkeld Church 35/322254.

Tuesday 6th August.

St B - St. Bees Headland. From the car park above the beach NX/962117 west to Permo-triassic New Red Sandstones below Patterning Holes - NX/955118. Taxa marked **co** on the site list were recorded on concrete seats and paving slabs.

SCh - St. Bees Priory Church. NX/968122

Wednesday 7th August.

GW - Great Wood and Calfclose Bay. From the car park at NY272215. Taxa Recorded **os** were found on saxicolous substratum.

TM - Threlkeld Mine. Lead workings and spoil heaps north of Gategill NY/324263

Thursday 8th August.

BC - Brown Cove. NY/343160. A shallow tarn below Helvellyn and an associated concrete mine dam below Keppel Cove NY/346164. Taxa associated with this structure are recorded as **co** on site list. **ofe** records taxa on iron substratum. **olg** = lignicolous. **of** = fertile.

GM - Greenside Mine. NY/364175 Abandoned lead workings and spoil heaps. **Ca** = on *Calluna*.

DC - Dacre Church. NY/460266.

Csc - Castlerigg Stone Circle. NY/292236.

Friday 8th August

BS - Bowder Stone. NY/254164 Volcanic (Andesite) boulder.

Taxa recorded as * were found at the site but not on the Stone.

LS - Seatoller Woodlands (LowStile Wood) NY/240130

HP - Honister Pass and Little Gatesgarthdale. NY/225135. A survey of the lichen flora associated with the slate at the top of the pass and the Hause Gill flowing east.

Summer 2002 Cladonia Workshop Sites and Species Lists

	SPECIES	BI	TC	StB	Sch	GW	TM	BC	GM	DC	Csd	BS	LS	HP
Lf	<i>Abrothallus bertianus</i>	o												
10	<i>Acarospora fuscata</i>	o	o		o			o	o	o	o			
24	<i>sinopica</i>						o							o
25	<i>smaragdula</i>			o	o					o				o
29	<i>umbilicata</i>		o											
33	<i>Acrocordia conoidea</i>				o									
34	<i>gemmata</i>												o	
35	<i>macrospora</i>			o										
37	<i>Agonimia octospora</i>												o	
38	<i>tristricula</i>		o											
1292	<i>Amandinea lecideina</i>			o										
212	<i>punctata</i>	o	o	o	o	o	o		o					o
44	<i>Amygdalaria pelobotryon</i>							o	o					
47	<i>Anaptychia runcinata</i>			o										
49	<i>Anisomeridium polyperi</i>				o	o								
1584	<i>ranunculosporum</i>					o								
1000	<i>Arctoparmelia incurva</i>	o												
72	<i>Arthonia cinnabarina</i>												o	
56	<i>didyma</i>					o								
58	<i>elegans</i>					o								
63	<i>pruinata</i>				o					o				
68	<i>punctiformis</i>	o												
69	<i>radiata</i>	o		o	o								o	
70	<i>spadicea</i>					o							o	
73	<i>vinosa</i>					o								
1540	<i>Arthopyrenia analepta</i>	o											o	
1916	<i>Arthrorhaphis aeruginosa</i>							o						
100	<i>citrinella</i>	o							o					
102	<i>Aspicilia caesiocinerea</i>	o			o	o		o						o
103	<i>calcareae</i>				o					o				
107	<i>contorta</i>	o		co										
112	<i>grisea</i>	o							o					
116	<i>leproscens</i>			o										
132	<i>Bacidia arnoldiana</i>			o										
136	<i>Bacidia biatorina</i>					of								
144	<i>delicata</i>			o	o	o	o		o	o				
154	<i>inundata</i>	o						o	o					
155	<i>laurocerasi</i>					o							o	
1583	<i>viridifarinosa</i>					o							o	
174	<i>Baeomyces placophyllus</i>								o					
176	<i>rufus</i>	o					o	o	o					o
179	<i>Belonia nidarosiensis</i>	o												
146	<i>Biatora epixanthoides</i>					o						o	o	
320	<i>sphaeroides</i>												o	
200	<i>Buellia aethalea</i>	o	o		o		o	o	o	o	o			o
219	<i>ocellata</i>				o		o							
225	<i>Calicium glaucellum</i>					o								
231	<i>viride</i>	o												
1644	<i>Caloplaca ceracea</i>			o	o									
263	<i>chlorina</i>				o									

2351	<i>citrina</i>	o	o	co	o		co	o	o		
253	<i>crenularia</i>		o	o	o				o		
249	<i>crenulatella</i>	o		co	o		co				
285	<i>dalmatica</i>		o	o	o						
259	<i>flavescens</i>	o			o				o		
2315	<i>flavocitrina</i>			co	o						
255	<i>flavovirescens</i>	o									
261	<i>holocarpa</i>	o	o	co	o		co		o	o	
267	<i>marina</i>			o							
280	<i>maritima</i>			o							
268	<i>microthallina</i>			o							
277	<i>saxicola</i>	o	o	co	o				o		
282	<i>thallincola</i>			o							
283	<i>ulcerosa</i>									o	
286	<i>verruculifera</i>			o							
693	<i>Calvitimela aglaea</i>	o									
291	<i>Candelariella aurella</i>	o	o	co	o				o		
292	<i>coralliza</i>	o				o					o
296	<i>medians f.m.</i>			o							
297	<i>reflexa</i>	o			o						
298	<i>vitellina f.v.</i>		o	o	o	o			o	o	o
1609	<i>Catillaria atomanoides</i>					o					
306	<i>chalybeia</i>			o	o				o		
311	<i>lenticularis</i>		o		o						
430	<i>Cetraria aculeata</i>								o		
344	<i>Chaenotheca ferruginea</i>					o					
466	<i>furfuracea</i>	o									
354	<i>Chrysothrix candelaris</i>					o					
1925	<i>flavovirens</i>	o				o					
273	<i>Cladonia arbuscula s.a.</i>					o					
362	<i>bellidiflora</i>						o				
369	<i>cervicornis s.c.</i>	o				o				o	o
370	<i>cervicornis s.v.</i>							o			
2356	<i>chlorophaea</i>	o			o	o		o			
372	<i>ciliata v.c.</i>	o				o			o		
373	<i>ciliata v.f.</i>						o	o			
375	<i>coniocraea</i>					o	o		o		o
381	<i>cyathomorpha</i>					o		o			
383	<i>digitata</i>	o									
1749	<i>diversa</i>					o		o	o		o
384	<i>fimbriata</i>					o					
386	<i>floerkeana</i>			o		o		o	o		
389	<i>furcata s. f.</i>	o				o	o		o	o	
391	<i>glauca</i>					o					
376	<i>humilis</i>			o							
395	<i>luteoalba</i>							o			
396	<i>macilenta</i>					o	o		o		o
	<i>monomorpha</i>						o				
408	<i>polydactyla v.p.</i>	o			o	o			o		
409	<i>portentosa</i>	o				o		o	o		o
410	<i>pyxidata</i>	o			o	o					
359	<i>ramulosa</i>							o			
412	<i>rangiformis</i>					o					
416	<i>squamosa s.lat</i>						o		o		

417	<i>squamosa</i> v. s								
421	<i>subcervicornis</i>	o			o	o	o		o o
422	<i>subulata</i>	o			o				
426	<i>uncialis</i> s. b.	o			o	o	o		o
751	<i>monticola</i>	o							
429	<i>Cliostomum</i> <i>griffithii</i>				o				
440	<i>Collema</i> <i>crispum</i> v. c.			o			o		
446	<i>dichotomum</i>					o			
445	<i>flaccidum</i>					o			
450	<i>glebulentum</i>					o			
457	<i>subflaccidum</i>								o
459	<i>tenax</i> v. l.		ot	o		o			
472	<i>Cornicularia</i> <i>normoerica</i>					o			
524	<i>Dermatocarpon</i> <i>deminuens</i>					o			
481	<i>leptophyllodes</i>					o			
487	<i>luridum</i>	o				o			
175	<i>Diabaeis</i> <i>baeomyces</i>	o			o	o	o		o
489	<i>Dimerella</i> <i>pineti</i>			o					o
491	<i>Diploicia</i> <i>canescens</i>			o	o		o		
492	<i>Diploschistes</i> <i>caesioplumbeus</i>		o						
495	<i>scruposus</i>	o	o		o				o
496	<i>Diplotomma</i> <i>alboatrum</i>		o	o		co	o		
497	<i>chlorophaeum</i>		o						
500	<i>Dirina</i> <i>massiliensis</i> f. s.	o			os				o
Lf	<i>Endococcus</i> <i>rugulosus</i>					o			
504	<i>Enterographa</i> <i>crassa</i>				o				
967	<i>zonata</i>	o							
511	<i>Evernia</i> <i>prunastri</i>	o			o		o	o	
987	<i>Flavoparmelia</i> <i>caperata</i>	o			o				o
515	<i>Fuscidea</i> <i>cyathoides</i> v. c.		o			o		o	o
521	<i>lightfootii</i>	o							
527	<i>lygaea</i>	o				o	o		
525	<i>praeurptorum</i>	o							
526	<i>recensa</i>	o				o			o
532	<i>Graphis</i> <i>elegans</i>	o			o				
533	<i>scripta</i>				o				o
620	<i>Halecania</i> <i>ralfsii</i>		o						
1704	<i>viridescens</i>	o		o					
557	<i>Herteliana</i> <i>taylorii</i>				o				
	<i>Homostegia</i> <i>piggottii</i>				o				
1125	<i>Hyperphyscia</i> <i>adglutinata</i>			o					
578	<i>Hypocenomys</i> <i>scalaris</i>						o		
582	<i>Hypogymnia</i> <i>physodes</i>	o	o	o	o	o	o	o	
583	<i>tubulosa</i>	o					o	o	
1013	<i>Hypotrachyna</i> <i>revoluta</i>	o		o	o				
1023	<i>taylorensis</i>				o				
699	<i>Immersaria</i> <i>athroocarpa</i>	o				o			
573	<i>Ionopsis</i> <i>lacustris</i>	o				o	o		o
591	<i>Lasallia</i> <i>pustulata</i>					o			
1835	<i>Lauderlindsaya</i> <i>acroglypta</i>								o
592	<i>Lecanactis</i> <i>abietina</i>				o				
609	<i>Lecania</i> <i>aipospila</i>		o						
613	<i>cyrtella</i>			o					
616	<i>erysibe</i>	o	o	o			o		

318	Megalaria	<i>pulverea</i>	o						
993	Melanelia	<i>elegantula</i>	o						
995		<i>exasperata</i>	o						
996		<i>exasperatula</i>	o						
998		<i>fuliginosa s.f.</i>	o o	o			o o		o
997		<i>fuliginosa s.g.</i>	o o	o	o				o
1020		<i>subaurifera</i>	o		o		o		
868	Melaspilea	<i>granitophila</i>			os				
873	Micaria	<i>bauschiana</i>	o						
874		<i>botryoides</i>							o
1720		<i>coppinsii</i>	o			o			
877		<i>denigrata</i>	o						
719		<i>erratica</i>		o					
879		<i>leprosula</i>			o	o			o
880		<i>lignaria v. l.</i>	o		o	o o			o
883		<i>melaena</i>				o			
887		<i>prasina</i>	o		o				
891		<i>subnigrata</i>	o						
739	Miriquidica	<i>leucophaea</i>	o		o	o o	o		o
550	Mycoblastus	<i>caesius</i>			o				o
908		<i>fucatus</i>	o			o			
1881		<i>sanguinarius</i>					o		
75	Mycoporum	<i>antecellens</i>			o				o
1576		<i>lacteum</i>							o
917	Nephroma	<i>laevigatum</i>							o
918		<i>parile</i>				o			o
920	Normandina	<i>pulchella</i>			o				o
921	Ochrolechia	<i>androgyna</i>	o		o		o o		o
926		<i>parella</i>	o	o o	os		o o		o
927		<i>subviridis</i>	o		o				o
931	Omphalina	<i>ericetorum</i>					o		
959	Opegrapha	<i>calcareo</i>		o o					
947		<i>gyrocarpa</i>	o	o	os	o			
1842		<i>parasitica</i>					o		
958		<i>rufescens</i>			o				
962		<i>sorediifera</i>			o				
964		<i>varia</i>		o					
943		<i>vulgata</i>		o	o				
556	Ophioparma	<i>ventosa</i>	o			o o			
972	Pachyphiale	<i>carneola</i>			o				
974	Pannaria	<i>conoplea</i>							o
1006	Parmelia	<i>omphalodes</i>	o			o		o	o
1015		<i>saxatilis</i>	o o	o	o o	o o o o	o	o	o
1022		<i>sulcata</i>	o o	o	o				
1032	Parmeliella	<i>triptophylla</i>							o
1007	Parmelina	<i>pastillifera</i>	o	o					o
1024		<i>tiliacea</i>	o						
1034	Parmeliopsis	<i>ambigua</i>	o			o			
1008	Parmotrema	<i>chinense</i>	o	o	o				
989		<i>crinitum</i>			o				
1042	Peltigera	<i>horizontalis</i>			of				o
1043		<i>hymenina</i>	o		o	o o			o
1045		<i>leucophlebia</i>				o			
1047		<i>membranacea</i>			o	o			

1050		<i>praeclata</i>	o		of			o
1056	<i>Pertusaria</i>	<i>albescens</i> v.a.	o	o	o			o
1057		<i>albescens</i> v.c.	o		o			o
1058		<i>amara</i> f.a.	o		o		o	o
1070		<i>aspergilla</i>	o		o			
1064		<i>coccodes</i>						o
1066		<i>corallina</i>	o				o	o
1075		<i>haemisphaerica</i>			o			
1076		<i>hymenea</i>	o		o			o o
1077		<i>lactea</i>			os	o	o	
1078		<i>lactescens</i>		o			o	
1079		<i>leioplaca</i>	o		o			o
1087		<i>pertusa</i>	o		o		o	
1089		<i>pseudocorallina</i>		o			o	
1669	<i>Phaeophyscia</i>	<i>endococcina</i>				o		
1107		<i>orbicularis</i>	o	co	o		o	
1108		<i>sciastra</i>				o		
1110	<i>Phlyctis</i>	<i>argena</i>	o		o	o	o	
1111	<i>Phyllopsora</i>	<i>rosei</i>			o			o
1112	<i>Physcia</i>	<i>adscendens</i>	o	o	o		o	
1113		<i>aipolia</i>	o					
1114		<i>caesia</i>		co	o		co	o
1116		<i>dubia</i>	o					
1119		<i>stellaris</i>	o					
1120		<i>tenella</i>	o	o	o			o
1126	<i>Physconia</i>	<i>enteroxantha</i>			o	o		
1127		<i>grisea</i>	o		o	o		
1133	<i>Placopsis</i>	<i>gelida</i>	o			o		
1723		<i>lambii</i>					o	o
732	<i>Placynthiella</i>	<i>icmalea</i>	o			o		
788		<i>uliginosa</i>					o	
1135	<i>Placynthium</i>	<i>flabelliforme</i>				of		
1145	<i>Platismata</i>	<i>glauca</i>	o	o		o		
1150	<i>Polyblastia</i>	<i>cruenta</i>					o	o
1167	<i>Polysporina</i>	<i>simplex</i>			o			o
1168	<i>Porina</i>	<i>aenea</i>			o			
1180		<i>lectissima</i>						o
1181		<i>leptalea</i>			os			
1184	<i>Porocyphus</i>	<i>coccodes</i>				o		
562	<i>Porpidia</i>	<i>cinereoastra</i>	o	o		o	o	o
1790		<i>contraponenda</i>					o	
564		<i>crustulata</i>			o	o	o	o
567		<i>hydrophila</i>				o		
568		<i>macrocarpa</i>				o	o	o
565		<i>melinodes</i>					o	
1690		<i>soredizodes</i>			o		o	
572		<i>tuberculosa</i>	o	o	o	o	o	o
1189	<i>Protoblastenia</i>	<i>rupestris</i>		o		co	o	
633	<i>Protoparmelia</i>	<i>badia</i>	o			o	o	o
1193	<i>Pseudovernia</i>	<i>furfuracea</i> v.c.	o			olg		
2363		<i>furfuracea</i> v.f.				o	o	
1196	<i>Pseudocyphellaria</i>	<i>intricata</i>						o
1637	<i>Psilolechia</i>	<i>leprosa</i>		o				
1200		<i>lucida</i>	o		o		o	

2070	<i>Punctelia</i>	<i>subrudecta</i>	o		o	o		o		
1989		<i>ulophylla</i>	o		o	o				
85	<i>Pyrenocollema</i>	<i>halodytes</i>								
1224	<i>Pyrenula</i>	<i>macrospora</i>								o
1225		<i>occidentalis</i>								o
1228	<i>Pyrrhospora</i>	<i>quernea</i>	o		o	o				
1234	<i>Ramalina</i>	<i>farnacea</i>	o		o	o		o	o	
1240		<i>siliquosa</i>		o						
1257	<i>Rhizocarpon</i>	<i>geographicum</i>	o o			o o	o o o o			o o o
2334		<i>infernulum f.l.</i>					o			
1037		<i>infernulum f.s.</i>	o							
1264		<i>lavatum</i>					o			o o
1267		<i>oederi</i>	o			os o	o			o o
1249		<i>petraeum</i>	o				o			
1266		<i>reductum</i>	o		o	o	o o o o			o o
1250		<i>richardii</i>		o						
722	<i>Rimularia</i>	<i>furvella</i>	o							
1285	<i>Rinodina</i>	<i>confragosa</i>		o						
1289		<i>gennarii</i>		o o			o			
1291		<i>isidioides</i>								o
1298		<i>sophodes</i>	o							
1311	<i>Schaereria</i>	<i>cinerorufa</i>	o				o			
1898		<i>fuscocinerea v.f</i>	o				o			
1315	<i>Schismatomma</i>	<i>decolorans</i>				o				
Lf	<i>Sclerococcum</i>	<i>sphaerale</i>								o o
1320	<i>Scoliciosporum</i>	<i>chlorococcum</i>		o						
1322		<i>umbrinum</i>		o		o	o o			
	<i>Skyttea</i>	<i>nilschkei</i>								o
1324	<i>Solenopsis</i>	<i>candicans</i>		o						
1326		<i>vulturiensis</i>		o o						
1332	<i>Sphaerophorus</i>	<i>fragilis</i>	o							
1333		<i>globosus</i>				o				o
1343	<i>Staurothele</i>	<i>fissa</i>					o			
1563	<i>Stenocybe</i>	<i>pullatula</i>	o							
1564		<i>septata</i>				o				o
1352	<i>Stereocaulon</i>	<i>dactylophyllum</i>				o				
1355		<i>evolutum</i>					o			
1357		<i>nanodes</i>								o
1359		<i>pileatum</i>								o
1363		<i>vesuvianum v.v.</i>	o	o		o	o o			o o
1366	<i>Stricta</i>	<i>canariensis duf.</i>								o
1367		<i>fuliginosa</i>								o
1369		<i>sylvatica</i>								o
630	<i>Tephromela</i>	<i>atra</i>	o o	o o		o	o o o o			
654		<i>grumosa</i>					o o			
1810		<i>pertusarioides</i>	o							
1408	<i>Thelopsis</i>	<i>rubella</i>				o				o
1410	<i>Thelotrema</i>	<i>lepadinum</i>	o			o				o
1565	<i>Tomasellia</i>	<i>gelatinosa</i>								o
1415	<i>Toninia</i>	<i>aromatica</i>		o o			o			
1581	<i>Trapelia</i>	<i>corticola</i>				o	o			o
1432		<i>involuta</i>	o			o	o o			o
1434		<i>obtegens</i>					o			
1595		<i>placodioides</i>	o	o			o			o o

692	<i>Trapeliopsis</i>	<i>flexuosa</i>	o	o						
726		<i>gelatinosa</i>	o				o		o	
727		<i>granulosa</i>	o						o	
1582		<i>pseudogranulosa</i>	o				o	o	o	
1438	<i>Tremolecia</i>	<i>atrata</i>	o				o	o	o	
1446	<i>Umbilicaria</i>	<i>cylindrica</i>						o	o	
1451		<i>polyphylla</i>						o		
1455		<i>torrefacta</i>						o		
1469	<i>Usnea</i>	<i>cornuta</i>	o				o			
1461		<i>flammea</i>							oCa	
1817		<i>fragilescens</i> v.m.					o			
1471		<i>subfloridana</i>								o
1640		<i>wasmuthii</i>							o	o
1473	<i>Verrucaria</i>	<i>aethiobola</i>							o	
1476		<i>aquatilis</i>							o	
		<i>funchii</i>								
1492		<i>glauca</i>				o				
1495		<i>hochstetteri</i>				o				
1504		<i>maura</i>				o				
1510		<i>nigrescens</i>	o	o	co	o			o	o
1514		<i>prominula</i>				o				
1499		<i>rheithrophila</i>							o	
1518		<i>vinidula</i>				o				
1524	<i>Wadeana</i>	<i>dendrographa</i>								o
988	<i>Xanthoparmelia</i>	<i>conspersa</i>	o	o			o	o		o
1005		<i>mougeotii</i>	o							
1526	<i>Xanthoria</i>	<i>calicicola</i>				o			o	
2364		<i>candelaria</i>				o	o		o	o
1538		<i>ectaneoides</i>				o				
1528		<i>elegans</i>	o							
1530		<i>parietina</i>	o	o	o	o		o		o
1531		<i>polycarpa</i>	o			o				

A FOLIICOLOUS COMMUNITY IN SOUTH WALES

Communities of obligately foliicolous lichens on evergreen leaves are mostly associated with the moist tropics, with rare European outliers in France and the Caucasus (Sérusiaux 1989). In the British Isles there are very few native trees or shrubs with evergreen leaves, but there are many introduced evergreen species grown as ornamentals. Parc Cefn Onn in Cardiff, in Glamorgan, is a public park where ornamental shrubs, mainly species of *Camellia* and *Rhododendron*, have been planted in a setting of semi-natural woodland. The park is on gently rising south-facing ground at an altitude of c. 120 m and is 9 km from the coast. Lichens are found locally on evergreen leaves here, but are best developed in a very small, sheltered, but well-lit valley. The best examples are on *Camellia* spp. and *Skimmia japonica*, but they also occur on *Rhododendron* sp., *Sarcococca confusa*, *Sycopsis sinensis*, and a species of bamboo.

A total of 162 leaves, from shoots bearing lichens on some of the leaves, were examined in October 2000, October 2002 and January 2003. Leaves were assigned to an age group, with the current season's growth designated as year 0. Leaves of the current season's growth had no lichens, but small black pubescent growths of the non-lichenized *Dennisia babingtonii* were frequent. Leaves of the previous four years' growth (years 1-4) carried a community dominated by *Fellhanera bouteillei*, *F. viridisorediata*, *Fellhaneropsis myrtillicola*, and the alga *Phycopeltis arundinacea*. Only one leaf older than this (year 5) was seen, but was already yellowed and carried only *Phycopeltis*. All these three lichens were able to produce apothecia on leaves of year 1, which had only been available for colonisation for less than 18 months. Thalli of *Fellhanera viridisorediata* were mostly sterile, but soredia are produced early. Other lichens which were able to complete their life cycle on leaves were *Gyalideopsis anastomosans*, *Bacidia chlorotricula*, and possibly *Bacidia arnoldiana*, but only immature apothecia of the latter were seen, on leaves of year 3.

Other lichens, and the bryophytes found on the leaves, are merely colonists unable to produce propagules within the life span of the leaf. Some of these, such as *Physcia* cf. *tenella* and the hepatic *Metzgeria furcata*, appear to have arrived as soredia or spores, judging by their growth form, whereas the moss *Hypnum andoi* had arrived as one of the rain of fragments dislodged from nearby oak trees by birds.

The alga *Phycopeltis arundinacea* is a member of a mainly tropical genus; it forms very thin disc-shaped orange colonies. It is under-recorded in Britain, but is frequent in Wales in humid woodland, often growing on leaves of ivy (*Hedera helix*). It is a constant member of the lichen community at Parc Cefn Onn, but it is less demanding, and also thrives on leaves which have no lichens. Sometimes it is so abundant that the leaves of some shrubs become orange-brown in colour, contrasting with the leaves of the current season which bear black spots of *Dennisia*.

The lichen community is not confined to leaves here, but this is where it is most conspicuous. Some of the species can be found in small quantities on twigs amongst the leaves, and *Fellhanera bouteillei* was abundant on twigs of a deciduous *Rhododendron*. *F. viridisorediata* was seen on larch (*Larix*) twigs a few kilometres from the park.

The composition of the community on 137 leaves is shown below, treating each leaf as a relevé; the roman numerals are constancy classes as used in the National Vegetation Classification (e.g., class V means the species occurred in 81-100% of the relevés), and the minimum and maximum cover on the Domin scale is shown. It would be better to combine several leaves as one relevé, since the leaves are probably smaller than the minimal area of the community, but it is likely that the outcome would be very similar.

Phycopeltis arundinacea	V (2-8)
Fellhaneropsis myrtillicola	IV (1-5)
Fellhanera viridisorediata	III (1-8)
Fellhanera bouteillei	III (1-5)
Metzgeria furcata	II (1-2)
crust of algae and fungi	I (5-7)
Bacidia arnoldiana	I (4-5)
indet. fungus	I (2-3)
Trentepohlia abietina	I (1-6)
coccoid and colonial algae	I (1-5)
Dennisiella babingtonii	I (1-4)
Physcia cf. tenella	I (1-2)
Melanelia subaurifera	I (1-2)
Microlejeunea ulicina	I (1-2)
Bacidia chlorotricula	I (1-2)
filamentous algae	I (1-2)
Gyalideopsis anastomosans	I (1-2)
Lepraria lobificans	I (1-2)
Parmelia saxatilis/sulcata	I (1)
Hypnum andoi	I (1)
Parmeliaceae	I (1)

Unfortunately, the community has little in common with the obligately foliicolous communities found in some humid ravines in France. Instead, it appears to belong to the association *Fellhaneretum myrtillicolae*, a community widespread in Europe on the twigs of *Vaccinium myrtillus* (Spier & Aptroot 2000). The example at Parc Cefn Onn is developed on an even more ephemeral substratum, and differs in the absence particularly of *Dimerella pineti* and *Fellhanera subtilis*.

References

- Spier, L. & Aptroot, A. (2000) *Fellhanereturn myrtillicolae* ass. nov., the lichen association on *Vaccinium myrtillus*. *Herzogia* **14**: 43-47.
- Sérusiaux, E. (1989) Follicolous lichens: ecological and chorological data. *Botanical Journal of the Linnean Society* **100**: 87-96.

Alan Orange

CHECKLIST OF LICHENS OF GREAT BRITAIN AND IRELAND - CORRECTIONS: 2

Below are further corrections to the 2002 Checklist, adding to those given in *BLS Bulletin* **91**: 50-52. Thanks especially to Bernard Abbott, Tony Fletcher, Howard Fox and Jack Laundon for informing me of these errors.

All but one of the corrections concern author citations or dates of publication, which do not affect the use or spelling of names, or their BLS code numbers. The one exception is that *Hymenelia* 'rhodopsis' should be corrected to 'rhodopis'. Not also the important correction to Appendix I - *Leptogium hibernicum* is very much extant in both Ireland and Scotland!

Please note that these corrections do not include recent additions to the 2002 Checklist or recent nomenclatural changes.

Except where indicated otherwise, the corrections are given as corrected lines. Generic names are included as points of reference, except where author citation and date are given - this latter case is a correction.

Arthrurhaphis

aeruginosa R. Sant. & Tønsberg (1994) {LF} **1916**

Byssoloma

marginatum (Arnold) Sérus. (1992) **1557**

Catapyrenium

Placidium pilosellum (Breuss) Breuss (1996)

Chaenotheca

ferruginea (Turner ex Sm.) Mig. (1931) **0344**

gracilentia (Ach.) Mattsson & Middelb. (1987) **0467**

Chaenothecopsis

debilis (Sm.) Tibell (1975) {F} **0778**

Enterographa

elaborata (Leight.) Coppins & P. James (1979) **0505**

Hymenelia

rhodopis (Sommerf.) Lutzoni (1995) **0595**

Ionaspis rhodopis (Sommerf.) Blomb. & Forssell (1880)

Julella Fabre (1879)**Lecania**

rabenhorstii (Hepp) Arnold (1884) **1708**

Lecanora

dispersa (Pers.) Sommerf. (1826) **0646**

Lecidella

pulveracea (Schaer.) P. Syd. (1887) **0801**

Lempholemma

L. myriococcum (Ach.) Th. Fr. (1861)

Leptogium

hibernicum M.E. Mitch. ex P.M. Jørg. (1973) **0836**

Lichina

confinis (O.F. Müll.) C. Agardh (1821) **0851**

Macentina

Psoroglaena abscondita (Coppins & Vězda) Hafellner & Türk (2001)

Parmelia [synonyms]

P. borrieri Turner (1808) **0985** = *Punctelia*

Polyblastia

efflorescens Coppins (1992) **1724**

Punctelia

borrieri (Sm.) Krog (1982) **0985**

Parmelia borrieri Turner (1808)

Rimularia

Lecidea furvella Nyl. ex Mudd (1861)

Sarcopyrenia

beckhausiana (J. Lahm) M.B. Aguirre, Nav.-Ros. & Hladún (1990) **1985**

Staurothele [synonyms following species entries as shown]

areolata (Ach.) Lettau (1912) **1679**

S. clopima auct. p.p., non (Wahlenb.) Th. Fr. (1881)

fissa (Taylor) Zwackh (1862) **1343**

S. clopima auct. p.p., non (Wahlenb.) Th. Fr. (1881)

Thrombium

thelostomum (Ach. ex J. Harriman) A.L. Sm. (1911) **1813**

? = *Pyrenocarpon flotowianum* (Hepp) Trevis. (1855)

Toninia

aromatica (Sm.) A. Massal. (1855) **1415**

opuntiioides (Vill.) Timdal (1991) **1905**

Vulpicida

Cetraria juniperina (L.) Ach. (1803)

Appendix 1

Replace entry for '*Leptogium hibernicum* ...' with:

Leptogium hildenbrandii (Garov.) Nyl. (1856)

Appendix 2

Bacidia hemipolia (Nyl.) Malme (1895)

Lecidella euphorea (Flörke) Hertel (1980) **0799**

Appendix 3

Sarcopyrenia beckhausiana (J. Lahm) M.B. Aguirre, Nav.-Ros. & Hladún (1990)

Brian Coppins

LITERATURE PERTAINING TO BRITISH LICHENS - 32

Lichenologist 34(4) was published on 18 September 2002, 34(5) on 20 November 2002, and 34(6) on 17 December 2002...

Until now, papers in *The Lichenologist* have not been included in this listing. Such papers, which record taxa new to the British Isles or propose nomenclatural changes that affect British taxa, will now be included, from 2002 onwards. This is to provide a continuous, near comprehensive source of references following on from the 2002 Checklist, along with entries in the 'New Rare and Interesting' series in the *BLS Bulletin*.

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

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

CALATAYUD, V, NAVARRO-ROSINÉS, P & HAFELLNER, J 2002. A synopsis of *Lichenostigma* subgen. *Lichenogramma* (Arthoniales), with a key to the species. *Mycological Research* 106: 1230-1242. Includes a key to the eight species, only one of which (*L. elongata*) is so far recorded from the British Isles.

COPPINS, A M & COPPINS, B J 2002. *Indices of Ecological Continuity for woodland epiphytic lichen habitats in the British Isles*. London: British Lichen Society. Pp 36. ISBN 0 9540418 4 4. Soft covers, A4 format. Price: £5; £3 + 50p postage to BLS members. A compilation of all the Indices that were mostly originally devised by Francis Rose. Includes detailed sections on, for example, how to use the Indices, the value of their consistent use, and their shortcomings.

COPPINS, A M, COPPINS, B J & QUELCH, P R 2002. Atlantic Hazelwoods: some observations on the ecology of this neglected habitat from a lichenological perspective. *British Wildlife* 14: 17-26.

COPPINS, B J 2002. Lichens of Edinburgh and the Lothians. In: SMITH, P M, DIXON, R O D & COCHRANE, M P (eds) *Plant Life of Edinburgh and the Lothians*: 84-92. Edinburgh: Edinburgh University Press. An overview of the principal habitats and their characteristic or noteworthy lichens to be found in the Lothians [VCs 82-84].

DIEDERICH, P 2002. *Kalchbrenneriella* Diederich & M.S. Christ., a new genus to accommodate the lichenicolous hyphomycete *Torula cyanescens*. *Bryologist* 105: 411-414. *Torula cyanescens* Kalchbr., a hyphomycetous parasite of *Usnea* spp., is described as *Kalchbrenneriella cyanescens* (Kalchbr.) Diederich & M.S. Christ. [This

parasite is frequent in part of western Scotland, especially on *U. flammea*, and gives the thalli a white-frosted appearance].

DIEDERICH, P, ZHURBENKO, M & ETAYO, J 2002. The lichenicolous species of *Odontotrema* (syn. *Lethariicola*) (Ascomycota, Ostropales). *Lichenologist* **34**: 479–501. **Odontotrema pertusariae* Etayo, Diederich & Coppins, a parasite of *Pertusaria hymenea*, is described from Perthshire and Argyll.

EKMAN, S & JØRGENSEN, P M 2002. Towards a molecular phylogeny for the lichen family Pannariaceae (Lecanorales, Ascomycota). *Canadian Journal of Botany* **80**: 625–634. Indications from the sequences from 21 species indicate: (a) *Fuscopannaria* and *Protopannaria* are well defined genera within the Pannariaceae, except that *Fuscopannaria* subg. *Micropannaria* (*F. leucophaea*) is not a member of Pannariaceae s.str.; (b) *Degelia* subg. *Amphiloma* (e.g. *D. plumbea*), and possibly also *Parmeliella triptophylla*, do not belong to Pannariaceae s.str.; (c) *Moelleropsis nebulosa* should be included within *Fuscopannaria*, but that *M. humida* is far removed from the Pannariaceae.

EKMAN, S & TØNSBERG, T 2002. Most species of *Lepraria* and *Leproloma* form a monophyletic group closely related to *Stereocaulon*. *Mycological Research* **106**: 1262–1276. The evidence for the title of this paper is based on a phylogenetic study using molecular sequence data. Not showing a close relationship with *Stereocaulon* is *L. lesdainii*, thus confirming its treatment in the monotypic genus *Botryolepraria*. The results corroborate the opinion of Kukwa (2002; see below) that *Leproloma* should be regarded as a synonym of *Lepraria*. The results further indicate that *L. elobata* is specifically distinct from *L. lobificans*, and that *Lepraria borealis* should be treated as a distinct species and not as a synonym of *L. caesiaolba*.

FLETCHER, A 2002. Lichens and lichenicolous fungi - 2001. *Rep. Bardsey Fld Obs.* **45**: 82–86. This updates the author's unpublished checklist of 2000, with additional taxa and a re-assessment of collected material of the genus *Usnea*.

FOX, H 2001. New records of ascomycetes from bogs in Ireland. *Irish Naturalists' Journal* **26**: 477–478. Includes records of *Mniaecia* spp. and *Thelocarpon epibolum*.

FRYDAY, A M 2002. A revision of the species of the *Rhizocarpon hochstetteri* group occurring in the British Isles. *Lichenologist* **34**: 451–477. **Rhizocarpon caesium* Fryday is described, with material cited from many sites in Scotland, Wales and Ireland, and **R. infernulum* f. *sylvaticum* Fryday (syn. *R. 'oceanicum'* Fryday ad int.) is described, with many specimens cited from England, Wales, Scotland and Ireland. This taxon accounts for many British records of *R. hochstetteri*, as does the type forma, **R. infernulum* (Nyl.) Lynge (1934).

HAFELLNER, J 2002. Zur Diversität lichenisierter Pilze und ihrer Parasiten in den Seckauer Tauern (Ostalpen, Niedere Tauren, Steiermark). *Mitt. Naturwiss. Ver. Steiermark* **132**: 83–137. *Strigula alpestris* var. *alpestris* (Vězda) Coppins is raised to species rank as *Strigula alpestris* (Vězda) Hafellner. *Scoliciosporum compactum* Körb. (1855) is recognized as a distinct species within the *S. umbrinum* complex. [*S. compactum* is circumscribed as (transl.) “Thallus well-developed, of small, blackish, crowded areoles. Apothecia with blue-green epihymenium. Ascospores multi-celled, spirally arranged in the ascus”, but no guidance is given as to how *S. umbrinum* s. str. differs or should be circumscribed.]

HENDERSON, A & LAMBERT, J (comp.) 2002. Yorkshire Naturalists' Union excursions in 2000. *The Naturalist* **127**: 147–172. Lichenology [mostly by A H]: Brough (VC61) (pp 150–151); Oldstead (VC62) (p 156); Lindholme Moor (VC63) (pp 162–163); Wetherby (VC64), by A H & C J B Hitch (pp 165–166); Mickle Fell (VC65), by M R D Seaward & A H (pp 171–172).

HUMPHREY, J W, FERRIS, R, JUKES, M R & PEACE, A J 2002. The potential contribution of conifer plantations to the UK Biodiversity Action Plan. *Botanical Journal of Scotland* **54**: 49–62. Includes summary information and discussion on lichen species-richness in relation to stand age.

IHLEN, P G & FRYDAY, A M 2002. *Rhizocarpon timdalii*, a new lichen species from north-west Europe and north-east North America. *Lichenologist* **34**: 95–100. **Rhizocarpon timdalii* Ihlen & Fryday, a member of the *R. reductum* group, is reported from Caernarvonshire.

KAUF, F & LÜTZONI, F 2002. Phylogeny of the Gyalectales and Ostropales (Ascomycota, Fungi): among and within order relationships based on nuclear ribosomal RNA small and large subunits. *Molecular Phylogenetics and Evolution* **25**: 138–156. Evidence from this study suggests that the Ostropales should be enlarged to encompass the *Gyalectales* [including *Graphidales*] and the *Trapeliaceae*. The fungi concerned are all referable to the ‘Unitunicate Ascohymeniales’ of Tehler (in Nash, *Lichen Biology*: 217–239, 1996). The *Baeomycetaceae* (*Baeomyces*) and *Imadophilaceae* (e.g. *Dibaeis*) are shown not to belong to the *Helotiales* (*Leotiales*): the former belong to the Unitunicate Ascohymeniales, the latter to the Bitunicate Ascohymeniales. Within the enlarged *Ostropales*, the genus *Coenogonium* and its probable synonym *Dimerella* are best treated as a separate family, *Coenogoniaceae*, from the allied *Gyalectaceae*.

KUKWA, M 2002. Taxonomic notes on the lichen genera *Lepraria* and *Leproloma*. *Annales Botanici Fennici* **39**: 225–226. *Leproloma* is considered to be a synonym of *Lepraria*, and the following new combinations are made: *Lepraria diffusa* (J.R. Laundon) Kukwa (*Leproloma diffusum*) and *Lepraria diffusa* var. *chrysodetoides* (J.R. Laundon) Kukwa (*Leproloma diffusum* var. *chrysodetoides*).

MEYER, B 2002. Die Flechtengattung *Clauzadea*. *Sendtnera* **8**: 85–154. In this revision, which includes a key (also given in English), full descriptions, line drawings of apothecial sections, paraphyses and spores, 4 species are recognized, all of which occur in the British Isles: *C. chondrodes* (A. Massal.) Clauzade & Cl. Roux (1985) (syn. *C. cyclisca* (A. Massal.) V. Wirth), *C. immersa*, *C. metzleri* and *C. monticola*. For each species there is a full list of specimens examined and distribution maps (at least for Europe and N. Africa, and adjacent parts of the Middle East). [The recently reinstated, as British, *C. chondrodes* was reported in *BLS Bulletin* **91**: 56 as *C. cyclisca*. Specimens are cited by Meyer also from N Wales and Lismore in Scotland. The cited specimen from Yatton (collected by W. Joshua) is from North Somerset (VC 6) not 'North Wiltshire (VC 7)'.]

MURTAGH, G J, DYER, P S, FURNEAUX, P A & CRITTENDEN, P D 2002. Molecular and physiological diversity in the bipolar lichen-forming fungus *Xanthoria elegans*. *Molecular Research* **106**: 1277–1286. A high genetic diversity was found using in vitro cultures of *X. elegans* from various parts of the world. However, RAPD analysis grouped all 4 isolates from Britain (England) together.

NORDIN, A 2002. *Collemopsisidium angermannicum*, a widespread but rarely collected aquatic lichen. *Graphis Scripta* **13**: 39–41. The new combination *Collemopsisidium angermannicum* (Degel.) A. Nordin is proposed for *Arthopyrenia angermannica* Degel. (1931), with *Pyrenocollema strontianense* as a synonym.

OTTE, V, ESSLINGER, T.L. & LITTERSKI, B 2002. Biogeographical research on European species of the lichen genus *Physconia*. *Journal of Biogeography* **29**: 1125–1141. The world distribution of European species of *Physconia* is discussed, with maps provided for the British taxa, *P. enteroxantha*, *P. grisea* subsp. *grisea* and *P. perisidiosa*.

PALMER, K 2002. Lichen report 2001. *Bull. Kent Field Club* **47**: 73–74. A report of notable finds in the county, including the discovery on Black Walnut at Scotney Castle of *Anaptychia ciliaris*, a species that was thought to no longer occur on trees in the county.

PALMER, K 2002. In "Reports of outdoor meetings 2001". *Bull. Kent Field Club* **47**: 13–41: East Kent Churchyards (pp 22–24).

PALMER, K & NEWMAN, D 2002. In "Reports of outdoor meetings 2001". *Bull. Kent Field Club* **47**: 20–50: Waldershare Park (pp 42–43).

PENTECOST, A & WILLIAMS, J H 2002. Some notes on the microclimate associated with *Thamnolia vermicularis* var. *subuliformis* from Snowdon, North Wales. *Graphis Scripta* **13**: 59–63. The Snowdon *Thamnolia* population is small and declining, perhaps as a result of acid precipitation exacerbated by sheep grazing.

Global warming would not seem to be the cause, given that there seems to be no similar decline in the Cadair Idris population.

PITT, J 2002. In "Reports of outdoor meetings 2001". *Bull. Kent Field Club* **47**: 20–50: Mote Park, Maidstone (p 21); Elham Park, Wood (p 40).

REDHEAD, S, LUTZONI, F, MONCALVO, J-M & VILGALYS, R 2002. Phylogeny of agarics: partial systematics solutions for core omphalinoid genera in the Agaricales (Euagarics). *Mycotaxon* **83**: 19–57. The taxonomy of species previously assigned to *Omphalina* s. lat. or *Clitocybe* is re-evaluated in light of recent molecular-based phylogenetic hypotheses. The new genus *Lichenomphalia* Redhead et al. is described, with the formally rejected names *Phytoconis* Bory (1797), *Botrydina* Bréb. (1839) and *Coriscium* Vain. (1890) as synonyms. The new genus accommodates most of the British '*Omphalina*' species that are included in the 2002 British lichen Checklist: *L. alpina* (Britzelm.) Redhead et al. (syn. *O. luteovitellina*), *L. hudsoniana* (H.S. Jenn.) Redhead et al., *L. umbellifera* (L. Fr.) Redhead et al. (syn. *O. ericetorum*, *O. pseudoandrosacea*) and *L. velutina* (Quél.) Redhead et al. (syn. ?*O. pararustica* - "said to differ from *L. velutina* by presence of 4-spored basidia"). The genus *Arrhenia* Fr. (1849) accommodates *A. griseopallida* (Desm.) Watling (1988). [The lichenicolous *O. cupulatoides* P.D. Orton is not mentioned in the paper, but is probably to be regarded as a synonym of the newly combined *Arrhenia peltigerina* (Peck) Redhead et al.]. [NB: in the preceding, 'Redhead et al.' is shortening of the full author citation of 'Redhead, Lutzoni, Moncalvo & Vilgalys'].

ROUX, C, GUEIDON, C & NAVARRO-ROSINÉS, P 2002. La position systématique de *Polyblastia diminuta*. *Mycotaxon* **84**: 1–20. *Polyblastia diminuta* is considered to be a lichenicolous fungus on the endolithic thallus of other lichens (e.g. members of the *Verrucariaceae*), and is transferred to *Merismatium* as *M. diminuta* (Arnold) Cl. Roux & Nav.-Ros. A key is provided to all 8 species of *Merismatium*, of which *M. discrepans* and *M. nigratellum* are other species so far known from the British species.

STAIGER, B 2002 Die Flechtenfamilie Graphidaceae: Studien in Richtung einer natürlichen Gliederung. *Bibliotheca Lichenologica* **85**: 1–526. A revolutionary, and long overdue reappraisal of the generic delimitations within the Graphidaceae. The proposed new system replaces the spore-based taxonomy with that involving a wide range of morphological characters. In Britain, 4 genera are recognized: *Fissurina* Fée (1824), *Graphis*, *Leiorreuma* Eschw. (1824) and *Phaeographis*. In this monograph, these genera are represented by the following British species: *F. alboscrypta* (Coppins & P. James) Staiger (2002) (syn. *Graphis alboscrypta*); *Graphis britannica* Staiger (syn.: *Graphina anguina* auct. europ.; *Graphis pulverulenta* (Sm. & Sowerby) Leight. (1854), non (Pers.) Ach. (1809); [*Graphis inustula* Nyl. (1877), non Stirt. (1876); however the correct name in *Graphina* would be *Graphina inustula* A.L. Sm. (1911)]; *G. elegans*; *G. ruiziana* (Fée) A. Massal., (syn. *Graphina ruiziana*); *G. scripta*; *Leiorreuma lyellii* (Sm.) Staiger (syn. *Phaeographis lyellii*); and *Phaeographis*

dendritica. [Three British graphids are not treated: *Graphina pauciloculata*, which would probably have been moved to *Graphis*, and *Phaeographis inusta* and *P. smithii*, which would probably be retained in *Phaeographis*.]

TIMDAL, E 2002. *Stereocaulon cumulatum* comb. nov., another crustose species in the genus. *Lichenologist* **34**: 7–11. *Stereocaulon cumulatum* (Sommerf.) Timdal (syn. *Toninia cumulata*).

TØNSBERG, T 2002. Notes on non-corticolous *Lepraria* s. lat. in Norway. *Graphis Scripta* **14**: 45–51. Includes notes on the chemistry and taxonomy of *Botryolepraria lesdainii*, *Lepraria incana* and *Leproloma diffusum*. Also, notes are provided for two further species, both of which can be expected to occur in the British Isles.

WATERFIELD, A 2002. Herbarium records of London lichens. *The London Naturalist* **81**: 35–47. Voucher specimens for lichens of London, in the herbaria at The Natural History Museum (BM), Royal Botanic Gardens Kew (K) and the South London Botanical Institute (SLBI), are assessed and listed. Additions to Laundon's 1970 lichen flora of London (*Lond. Nat.* **49**: 20–69) are noted. The importance of herbaria in biological recording is emphasized.

WATERFIELD, A 2002. Historical records of lichens on Hampstead Heath. *The London Naturalist* **81**: 215–216. Notes on the early records, dating from the late 17th century, from this historically famous site in London. The highlight of its lichenological fame, is that it is the type locality for *Cladonia peziziformis*.

WINCHESTER, V & CHAUJAR, R K 2002. Lichenometric dating of slope movements, Nant Ffrancon, North Wales. *Geomorphology* **47**: 61–74. By comparing the growth rates of *Rhizocarpon geographicum* with those calculated from nearby churchyards, it was estimated that the debris (boulder) flow down the steep slope in Nant Francon had a history of at least 110 years, with major flows in the 1890s and early 20th century.

Brian Coppins

NEW, RARE AND INTERESTING LICHENS

Contributions to this section are always welcome. Please submit entries to Chris Hitch, Orchella Lodge, 14 Hawthorn Close, Knodishall, Saxmundham, Suffolk, IP17 1XW, in the form of species, habitat, locality, VC no, VC name [from 1997, nomenclature to follow that given in the Appendix, see *Bulletin* 79, which is based on the *Biological Records Centre Instructions for Recorders*, ITE, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, E17 2LS, 1974]. Grid reference (GR) (please add letters for the 100km squares to aid BioBase and Recorder 2000 users), altitude (alt), where applicable, in metres (m), date, comments. Determined/confirmed by. New to the. Finally recorder. An authority with date after species is only indicated when the record is new to the British Isles. Records of lichens listed in the RDB are particularly welcome, even from previously known localities. 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.

New to the British Isles:

Acacrospora admissa (Nyl.) Kullh (1871): on top of sandstone headstone in cemetery area opposite churchyard, Dunwich, VC 25, East Suffolk GR 62/47-70-, March 1997. Determined by C. Roux. Part of the *A. nitrophila* complex. Squamules \pm convex, in smallish groups, roughened, matt, dark brown, blackish on the margins and underneath. Ascocarps 0.2 - 0.7mm, dark brown, reddish when wet; margins concolorous with the disc, crenulate, persistent. Paraphyses to 5i at apex. Spores 3-5 x 1-2 μ m. Scandinavia, Finland and Central Europe.

P M Earland-Bennett & C J B Hitch

Rhizocarpon caesium Fryday (2002): (i) on tops of low stable boulders occupying the fluvial mesic zone of the Abha na Feinne River, a tributary of the Owennafeana River, VC H1, South Kerry, GR 01 (Q)/49-13-, alt 140m, July 2001; (ii) on low mid-stream rocks in the fluvial mesic zone of the Loughaderry River with *Pterygiopsis coracodiza* and *Collema glebulentum*, VC H35, West Donegal, GR 13(G)/73-80-, alt 60m, July 2001. Confirmed by A M Fryday. This member of the *Rhizocarpon hochstetteri* group grows on mildly basic often-flushed rocks. Its blue-grey thallus is quite distinctive and unlikely to be confused with other species in the genus. Internally the epihymenium in K is a striking aeruginose colour. Spores are 1-septate. V J Giavarini

Rhizocarpon infernulum (Nyl.) Lynge (1934) *f. infernulum*: colonising areas of copper-contaminated mine spoil: (i) Godolphin Bridge, VC 1, West Cornwall, GR 10(SW)/59-32-, alt 40m, November 2001; (ii) Penberthy Croft Mine, VC 1, West Cornwall, GR 10(SW)/55-32-, alt 40m, December 2001. In Cornwall it appears late in the pioneer succession of low-lying mine spoil that is prone to bouts of seasonal

waterlogging or long periods of dampness. It is usually associated with primary colonising metallophytes, but is easily overlooked in the field for *Rhizocarpon reductum* from which it differs in the mostly brown-coloured thallus, more distinctly rounded, convex apothecia and 1-septate spores.

V J Giavarini

Sclerophora farinacea (Chevall.) Chevall., (1826): on bark of old deciduous trees. Known from two localities: (i) 'Teesdale, Durham', VC 66, GR 45(NZ), collected by J Harriman (BM, as '*Coniocybe pallida*' and '*Calicium cantharellum*'); (ii) 'on old oak trees in wood at Mundon, Essex', VC 18, South Essex, GR 52(TL)/8--0--, collected by H Piggot (BM, as '*Coniocybe pallida*' and later determined in the 1970s as '*C. peronella*'). Both collections determined as *S. farinacea* by L. Tibell in 1980.

B J Coppins

Other records:

Correction

Brian Coppins has asked me to inform readers that for the records for Loch a'Mhuilinn in West Sutherland, the vice-county number is VC 108 not VC 107 (Bulletin 91).

Absconditella delutula: on pathside, shady rocks of the ascent path to Cader Idris, VC 48, Merionethshire, GR 23(SH)/72-11-, March 2002.

S P Chambers and S R Davey

Absconditella pauxilla: on upper surface of wooden flood barrier (de-corticate pine) across Badgworthy Water, Exmoor, VC 4, North Devon, GR 21(ss)/79-45-, alt c200m, March 2002. Confirmed by B J Coppins

V J Giavarini

Agonimia repleta: on compacted, copper contaminated, bare and mossy soil by buildings and tracks: (i) Holmbush Mine, near Callington, VC 2, East Cornwall, GR 20(SX)/35-71-, 180m, December 2001; (ii) United Downs (N), VC 1, West Cornwall, GR 10(SW)/74-42-, alt c90m, January 2002; (iii) Poldice Mine, VC 1, West Cornwall, GR 10(SW)/74-42-, alt 75m, January 2002. Determined by B J Coppins.

V J Giavarini

Ainoa (*Trapelia*) *mooreana*: sparse but fertile on damp north-facing shale outcrops, with *Amygdalaria pelobotryon* and *Lecidea phaeops*, Craig Cwmtinwen, Cwmystwyth, VC 46, Cardiganshire, GR 22(SN)/83-74-, alt 480m, September 2002. New to Cardiganshire and most southerly British locality.

S P Chambers

Arthonia fuscopurpurea: locally abundant on ragged *Peltigera hymenina* lobes at abandoned mine site, Trelogan, VC 51, Flintshire, GR 33(SJ)/11-80-, alt 140m, February 2003. New to Flintshire

S P Chambers

Arthonia invadens: on *Schismatomma quercicola* on mature *Quercus* in woodland within parkland, Lanhydrock Park, VC 2, West Cornwall, GR 20(SX)/09-63-, June 2002. N A Sanderson

Arthonia zwackhii: on old *Carpinus* in relict pasture woodland Micheldever Wood, VC 12, North Hampshire, GR 41(SU)/53-38-, April 2001. First modern record for Hampshire. N A Sanderson

Arthonia zwackhii: on trunk of mature *Fraxinus*, south-southwest of Farley Water Farm, east side of Farley Water, VC 4, North Devon, GR 21(SS)/74-46-, alt 245m, March 2002. B J & A M Coppins

Arthopyrenia subcerasi: on *Betula*, The Bell, north side of River Whiteadder, VC 82, East Lothian, GR 36(NT)/67-63-, alt c230, April 2002. New to Southeast Scotland. B J Coppins

Arthopyrenia viridescens: (i) on *Corylus* near the Idris Factory, Cader Idris, Merionethshire, VC 48, GR 23(SH)/72-11-, March 2002. Determined by S P Chambers. (ii) on *Corylus*, Allt y Benglog NNR, VC 48, Merionethshire, GR 23(SH)/80-23-, March 2002. Determined by S P Chambers. New for Merionethshire. S R Davey

Arthothelium ranum: on old *Corylus* in 1808 *Quercus* plantation on flood plain reverting to pasture woodland, Drivers Nursery, New Forest, VC 11, South Hampshire, GR 41/28-04-, February 2001. First Hampshire record. N A Sanderson, B Edwards & F Rose

Bacidia chlorotricula: on dead leaves of *Deschampsia caespitosa*, Caldbeck, VC 70, Cumberland, GR 35(NY)/32-54-, August 2002, collected by P Wilberforce. A neglected habitat perhaps! B J Coppins

Bacidia egenula: on low, shaded, east-facing, ironstone chamfered plinth at base of north transept of Deddington Church, VC 23, Oxfordshire, GR 42(SP)/46-31-, April 2002. Confirmed by B J Coppins. New to Oxfordshire. T W Chester

Bacidia incompta: on lignum of *Fraxinus*, Spye Park, VC 7, North Wiltshire, GR 31(ST)/94-67-, February 2--3. Confirmed by B J Coppins. Second recent record for North Wiltshire. S R Davey

Bacidia viridescens: partly over bryophytes, on low, ironstone-chamfered plinth at base of north wall of Thenford Church, VC 32, Northamptonshire, GR 42(SP)/51-41-, May 2002. Confirmed by B J Coppins. New to Northamptonshire. T W Chester

Bactrospora corticola: on dry side of old *Quercus* in relic pasture woodland, Savernake Forest, VC 17, North Wiltshire, GR 41(SU)/20-67-, November 2001. First record for Wiltshire.

N A Sanderson

Bactrospora dryina: on *Quercus* trunk, in coastal oakwood, peninsula on west side of Port Lunna, Loch Sween, Knapdale, VC 101, Kintyre, GR 16(NR)/76-86-, alt 0-20m, October 2001. Second modern British record.

B J & A M Coppins

Biatoridium monasteriense: in minute amount on the shaded base of an *Ulmus glabra* in wooded ravine, Coed Allt y Benglog, VC 48, Merionethshire, GR 23(SH)/8--2---, alt 250m, April 2002. A rediscovery of Peter James' 1960 record, presumed extinct due to the demise of elms in the wood.

S P Chambers & C J B Hitch

Buellia hyperbolica: on bark of fir, near Nannau Home Farm, Nannau Estate, Dolgellau, VC 48, Merionethshire, GR 23(SH)/746205, alt c280m, May 2002. New to Wales.

V J Giavarini

Buellia leptocline: on metalliferous wall. Coedydd Maentwrog, VC 48, Merionethshire, GR 23(SH)67-41-, March 2001. Determined by B J Coppins. New to Merionethshire.

S R Davey

Buellia sequax: in sheltered nook at base of small Ordovician coastal rock outcrop, Lochtyn headland, near Llangranog, VC 46, Cardiganshire, GR 22(SN)/312553, alt 20m, August 2002. New to Cardiganshire.

S P Chambers

Caloplaca obsurella: abundant and fertile on large riverside *Fraxinus*, Moor Copse Reserve, VC 24, Buckinghamshire, GR 41(SU)/63-73-. New to Buckinghamshire.

S R Davey

Chaenotheca brunneola: saxicolous on rock, Eridge Rocks Reserve, VC 143, East Sussex. GR 51(TQ)/55-33-, January 2003. An unusual substrate for this normally lignicolous species.

S R Davey

Chaenotheca phaeocephala: on ancient, east-facing oak plank weather boards of barn. Draen Far, Newbridge on Wye, VC 43, Radnorshire, GR 32(SN)017557, alt 200m, April 2002. Confirmed B J Coppins. Second Welsh record.

R G Woods, V Giavarini

Chaenothecopsis parasitaster: on *Cladonia incrassata*, Eridge Rocks Reserve, VC 14, East Sussex, GR 51(TQ)5-33-, January 2003. Determined by B J Coppins. New to England and East Sussex.

S R Davey & A Branson

Chaenothecopsis pusilla: on lignum on old *Quercus* in relic pasture woodland, Savernake Forest, VC 17, North Wiltshire, GR 41(SU)/20-67-, November 2001.

N A Sanderson

Chaenothecopsis nigra: on fibrous lignum under fallen old *Quercus* in pasture woodland in ravine, Coedydd Aber NNR, VC 49, Caernarvonshire, GR 23(SH)/67-71-, February 2002. New to Caernarvonshire.

N A Sanderson

Chaenothecopsis retinens: parasitic on *Schismatomma cretaceum* on old *Quercus* in relic pasture woodland. Thursford Wood, VC 28, West Norfolk, GR 53(TF)/97-33-, November 2001. Determined by B J Coppins. Second world record since first described in 1866 from Jersey.

N A Sanderson & P W Lambley

Cladonia incrassata: on lignum on tall *Quercus* coppice stubs and stumps, Ley Combe, Hawk Combe, VC 5, South Somerset, GR 21(SS)/88-45-, December 2001. First Somerset record.

N A Sanderson

Cladonia incrassata: for details see under *Chaenothecopsis parasitaster*.

Cladonia uncialis subsp. *uncialis*: in shallow quarry by track in sitka spruce forest, Dinlabyre, Newcastleton, VC 80, Roxburghshire, GR 35(NY)/54.91-, alt 260m, November 2002. Confirmed by B J Coppins. Third British record away from its stabilized dune habitats on the east coast of Scotland (B J & A M Coppins, 1992) and on metal-rich river shingle in northwest Wales (S P Chambers, 1997); this collection indicates its increase in inland sites.

R W M Corner

Claourexia chalybeioides: on flushed basic pillow lavas above mountainside cascade, Cwm Cau, Cadair Idris, VC 48, Merionethshire, GR 23(SH)/70-14-, alt 670m, October 2002. New to Merionethshire.

S P Chambers & J B Grasse

Gyalidea lecideopsis: (i) on damp stone fragment on processing floor of abandoned mine building, Minera, near Wrexham, VC 50, Denbighshire, GR 33(SJ)/27-51-, alt 300m, February 2003; (ii) on upper sides of limestone chips and small angular stones embedded in turf on old mine site, Hersedd, Halkyn Common, VC 51, Flintshire, GR 33(SJ)/19-69-, alt 240m, February 2003. New to Wales.

S P Chambers

Gyalidea subscutellaris: over metal-polluted mounds of fine mine spoil, Trelogan, VC 51, Flintshire, GR 33(SJ)/12-80-, alt 130m, February 2003. New to Flintshire.

S P Chambers

Lecidea doliiformis: on lignum of *Quercus*, Parham Park, VC 13, West Sussex, GR 51(TQ)/06-14-, March 2003. Recorded and determined by N Sanderson. New to West Sussex.

S R Davey

Leptogium subtile: on *Fraxinus*, Spy Park, VC 7, North Wiltshire, GR 31(ST)/94-67-, February 2003. Determined by B J Coppins. New to North Wiltshire.

S R Davey

Microcalicium ahlneri: (i) on lignum on old *Quercus* in relic pasture woodland, Savernake Forest, VC 17, North Wiltshire, GR 41(SU)/22-65-, November 2001. (ii) on lignum on standing dead *Quercus* snag in deer park, Melbury Park, VC 9, Dorset, GR 31(ST)/56-05-, December 2001. First record for Dorset.

N A Sanderson

Opograph fumosa: on large *Quercus*, Abbeyleix Woods, VC H14, Leix, GR 21(S)/41-82-, September 2002. Confirmed by B J Coppins. New to Leix.

S R Davey

Parmelina tiliacea: on south-facing *Acer pseudoplatanus* trunk, Caer Rhun, Afon Conwy, VC 49, Caernarvonshire, GR 23(SH)/77-70-, alt 8m, October 2002. Mixed colony, with *P. pastillifera* on the base of the tree and *P. tiliacea* higher up the trunk. New to the vice county.

S P Chambers

Peltigera polydactyla: on waste tip of slate quarry, Treborough Wood, VC 5, South Somerset, GR 31(ST)/01-36-, May 2002. Determined by Oliver Gilbert. First record from southwest England.

N A Sanderson

Porina guentheri var. *guentheri*: on wet north-facing shale block, Craig Cwmtinwen, Cwmystwyth, VC 46, Cardiganshire, GR 22(SN)/83-74-, alt 470m, September 2002. New to Cardiganshire.

S P Chambers

Porina rosei: (i) on base rich bark on two old *Quercus* in relic pasture woodland, Savernake Forest, VC 17, North Wiltshire, GR 41(SU)/22-65-, November 2001. First record for North Wiltshire.

(ii) on base of tall *Quercus* coppice stub, Ley Combe, Hawk Combe, VC 5, South Somerset, GR 21(SS)/88-45-, December 2001. First Somerset record.

N A Sanderson

Porina rosei: on *Quercus*, Abbeyleix Woods, VC H14, Leix, GR 21(S)/41-82-, February 2003. Confirmed by B J Coppins. New to Leix.

S R Davey

Ramonia interjecta: (i) on *Sambucus*, Coursetown, VC H19, Kildare, GR 21(S)/65-95-, September 2002. New to Kildare.

(ii) abundant on *Fraxinus* covered with limestone dust, Cawdor Quarry, Matlock, VC 57, Derbyshire, GR 34(SD)/29-60-, December 2002. New to Derbyshire.

S R Davey

Rhizocarpon amphibium: on upper basic volcanic strata worn smooth in montane stream cascade, above Llyn Cau, Cwm Cau, Cadair Idris, VC 48, Merionethshire, GR 23(SH)/71-12-, alt 640m, October 2002. New to Wales.

S P Chambers & J B Grasse

Rhizocarpon anaperum: on damp north-facing rock face, Craig Cwmtinwen, Cwmystwyth, VC 46, Cardiganshire, GR 22(SN)/83-74-, alt 490m, September 2002. Southern-most British locality and the first VC 46 collection away from mine spoil, though here on iron-rich shale in a former mining valley. S P Chambers

Schimatomma graphidioides: on suppressed *Fraxinus* in 1808 *Quercus* plantation, on flood plain reverting to pasture woodland, Drivers Nursery, New Forest, VC11, South Hampshire, GR 41(SU)/28-04, February 2001. First Hampshire record and first modern record for southern England. B Edwards, N A Sanderson & F Rose

Scoliciosporum curvatum: one tiny patch on the upper side of a *Rhododendron ponticum* leaf in old ornamental woodland garde, west of Cymerau Hall, VC 46, Cardiganshire, GR 22(SN)/69-96-, alt 80m, September 2002. New to Cardiganshire. S P Chambers

Stenocybe bryophila: on liverworts on *Fraxinus* in pasture woodland in north facing ravine, Lype Brake, VC 5, South Somerset, GR 21(SS)/95-37-, December 2001. First Somerset record. N A Sanderson

Stereocaulon delisei: on dry-stone wall top in upland valley, Cwm Pemprys, VC 46, Cardiganshire, GR 22(N)/72-94-, alt 235m, December 2002. New to Cardiganshire. S P Chambers

Sticta limbata: on willow in carr, Abbeyleix Woods, VC H14, Leix, GR 21(S)/41-82-, February 2003. New to Leix. S R Davey

Strigula stigmatella var. *alpestris*: (i) locally frequent on damp basic volcanic rocks, 'The Horns', Crib Goch, VC 49, Caernarvonshire, GR 23(SH)/63-55-, alt 500m, February 2001; ii) Crags above Llyn y Gafr, Cadair Idris, VC 48, Merionethshire, GR 23(SH)/71-13-, alt 480m, August 2001. Confirmed by B J Coppins. New to Merionethshire and most southerly British station. S P Chambers

Strigula taylori: on ancient gnarled *Fraxinus*, Bayneis Reserve near Newbury, VC 22, Berkshire, GR 41(SU)/50-65-, August 2002. New to Berkshire. S R Davey

Toninia thiopsora: along sheltered but well-lit crevices in weakly basic Silurian shale outcrops, Craig Cwmtinwen, Cwmystwyth, VC 46, Cardiganshire, GR 22(SN)/83-74-, alt 480m, September 2002. New to Cardiganshire. S P Chambers

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