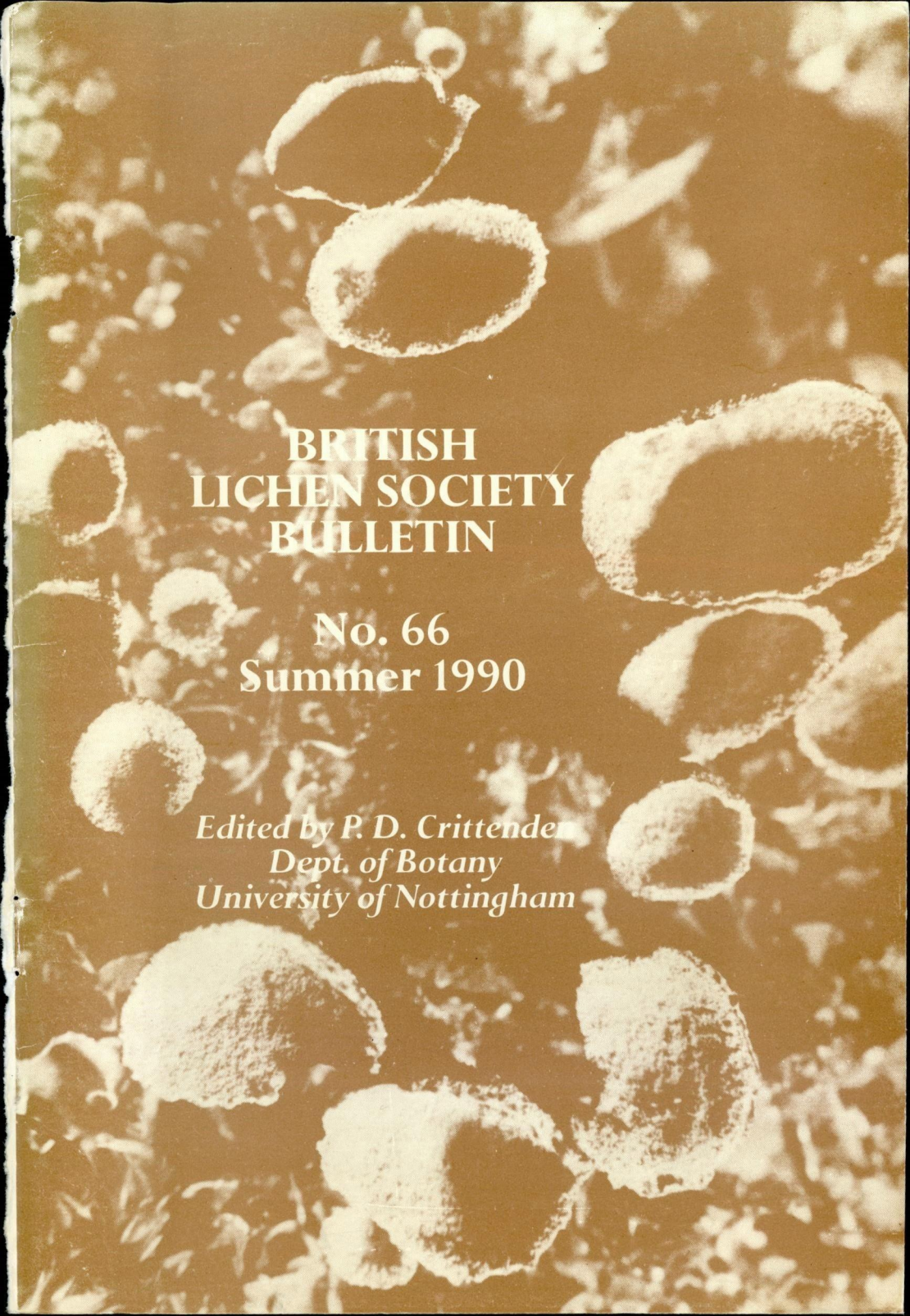

BRITISH LICHEN SOCIETY BULLETIN

No. 66
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Edited by P. D. Crittenden
Dept. of Botany
University of Nottingham

FORTHCOMING BLS FIELD MEETINGS

THE GOWER PENINSULA

Leaders: Alan Orange and Peter James 10 - 15 September, 1990

CASTLETON, DERBYSHIRE

Leaders: Brian Fox and Oliver Gilbert 19 - 22 October, 1990

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SUBMISSION DEADLINE

Please would intending contributors to the Winter 1990 issue of the Bulletin submit their copy to the editor by 18 October.

Cover design by Ceri Leigh

PETER JAMES RETIRES

At the end of March, Peter James retired from his post as Deputy Keeper of Botany at the Natural History Museum, London. Below several members of the Society record aa few words of appreciation.

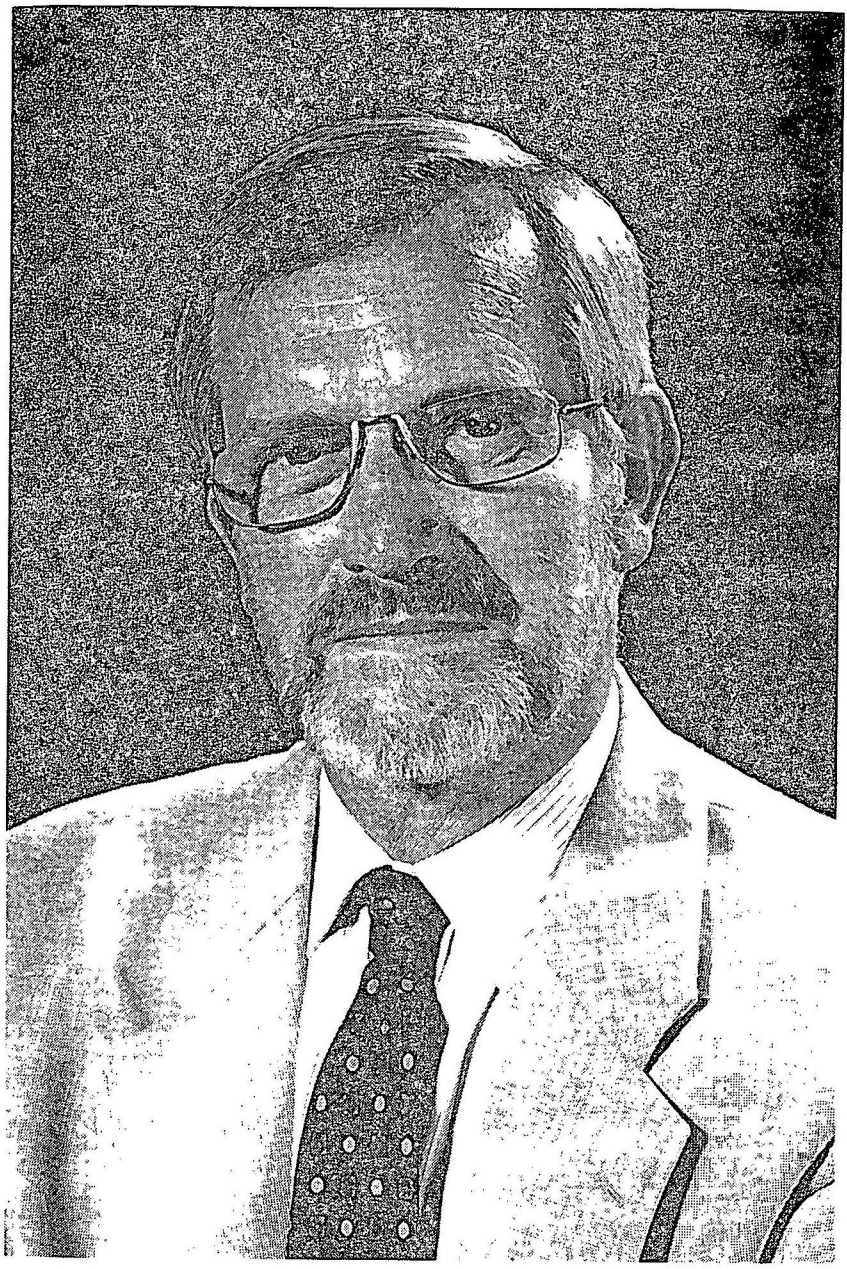
Perhaps the retirement of Peter James is not quite such an earth-shattering event to the world at large, but in the sphere of lichenology this is an apt moment to record some of his achievements and the impressions he has made during the course of his career. So the following is a sincere tribute to a teacher, with a sprinkling of light-hearted and rather tongue-in-cheek observations on a friend.

Peter is a person with an extraordinary fund of knowledge; he has a clarity of vision and a flair for perception that encompass not only the British lichen flora, but lichens in a world-wide perspective. When called upon to contribute towards a large and important project he is able to motivate an amazing amount of energy and zeal.

It is always a rewarding experience to be in the field with Peter; not only is he an easy companion but he will draw attention to a hitherto overlooked habitat with the lichen species all carefully and exactly described, so enriching one's knowledge for the future. He has the ability to describe a lichen so that you really "see" the pertinent features: texture, colour, shape, form, variation, ecological parameters, habitats, distribution, together with some significant microscopic detail.

As a person, Peter is a bit of a contradiction; remote, yet accessible; intensely serious and dedicated, yet wonderfully lively in company with a mischievous delight in the occasional saucy joke. When he is in good form, reminiscences of days past are related, such as the close encounter on an expedition to the Auckland Islands with a rampant bull elephant seal which mistook the recumbent form of the young Peter James in a sleeping bag as an unvanquished member of his harem. Then, as a young National Service soldier, of his first meeting with Josef Poelt at Munich, and of the many memories of staying with Ursula Duncan during the compilation of *An Introduction to British Lichens*. There are also the lively debates, ranging from discussing the merits of page 3 in the Sun, to the best way to prepare chanterelles for cooking, or the most sympathetic interpretation of a particular piece of Bach.

He is a shy, gentle, somewhat vulnerable man, yet he is intolerant over injustice and quite prepared to stand up and be counted when necessary. He is normally mild mannered and polite, but I don't think I



would care to upset him! Having said that, I must make mention of the obverse side of the great PWJ -- he can be infuriating about returning data! A weakness that is borne of his over-riding good nature, where he will never say "No". Why? Partly, I think, because of his natural curiosity, but probably more from good intentions and a genuine desire to help *all* those aspiring to develop their interest in lichens. He has the implicit belief that he will have time, if not now then "one day", a delusion that we all suffer from, to a lesser or greater degree. So over the years, one learns to accept this and adjust tactics accordingly, i.e. only to approach Peter with specimens to be determined when you can corner him, show him the specimen and actually get him to hand it back!

To me, Peter epitomizes the British Lichen Society - an institution - (hmm, that will make him laugh!) - that has built up national and international respect and excellence; that sets very high standards and yet, thank goodness, is essentially *human*. That is what makes him accessible to the professional and the amateur, and why we hold him in such fond high regard. I wish Peter every happiness in his retirement and hope that all his "one days" will be realised.

Sandy O'Dare

I first met Peter James in the Natural History Museum in the early 60's at the children's club, where he was one of the scientific staff who gave up time at weekends to teach and run field trips for children who came every Saturday, whatever the weather. Since then Peter has continued to share his knowledge and enthusiasm with amateurs and professionals alike, in a great variety of subjects.

My first job as a lichenologist began, with Peter supervising my survey of the lichen flora of Tycanol. I would meet him off the last train to Carmarthen usually on a Friday night, and put him on the sleeper late on Sunday or Monday night. Francis Rose had found Tycanol in 1972 and recorded 170 epiphytic lichens in the gnarled twisted oakwoods on the slopes of the Presceli hills. But the rocky outcrops in the woodland and on the open moorland proved as rich as the trees, the streams running off unimproved moorland and the ancient walls of old enclosures supported rare and local species that I would never have noticed, but Peter has an unerring eye for the 'right' habitat. Frequently he would extract a specimen saying 'interesting', it would disappear into his bag, and I would write a note in my book, hoping that I would be able to match it to a specimen in the NHM much later . But when it came to my final list for the site, Peter added several species

that I had never caught up with. I also learnt on these short visits that Peter is a naturalist in the old sense; I ran a moth trap on suitable nights at Tycanol and one of these coincided with a weekend visit from Peter. He remarked that he hadn't looked at moths for years and would like to look at the catch. We went to Tycanol early in the morning where I had put the trap on an open knoll surrounded by woods. It was the largest catch that I ever had: Peter recognised and named most of the 47 species. These western oak woods are the home of the beautiful Merveille du Jour that has since been camouflaged by Claire Dalby on the Museum's poster *Lichens and Pollution.*

Finally when I had drafted the Tycanol report Peter suggested that we go to Strumble Head and look at coastal sites on this volcanic headland as well as edit the report. Coastal lichens were a new area for me, and by the end of the day my head was reeling with new species. That night I dreamt of a lichenological chaos of characters making up the strangest assortment of species. Since then I have worked on other coastal sites with Peter and begun to learn the richness and diversity of this habitat. The recently initiated coastal survey will give many of us a chance to continue learning from Peter.

That his knowledge is on another level to most of ours was most apparent when I collected lichens in South East Asia in 1988/89. Before leaving Borneo I posted the specimens from Kinabalu to the NHM, and received an enthusiastic letter back detailing many of the specialities that I had found. Since returning I have realised how difficult it is to identify anything in this region, and how dependent I am on both Peter and the quality of the world-wide herbarium at the NHM that he has contributed so much to.

Peter is retiring from deputy keepership of the Botany Department at a time when the museum is going through a period of dramatic change. Even so, many of the projects that he initiated are still in demand. The monitoring of acid rain using lichen communities, begun by Peter in 1985, is being continued at least for 1990, and his input will still be considerable. The coastal lichen survey has only just begun, a project that he will oversee for some time (see p.30). The British lichen flora is an ongoing saga in which he has played a major role and will continue to do so. In all these projects, and may others that were shelved for lack of time, his enormous experience in the field and in the herbarium is paramount. I for one look forward to learning more lichenology from Peter, and to not having to get him back to the museum for Monday morning, but I also hope that he will now have time to pursue lichenology and all his other wide-ranging interests.

Pat Wolseley

When he completed his national service Peter James took up his post at the Natural History Museum in 1958. In June of that year he and I visited north-west Scotland and made a large collection of lichens. One of our problems was to dry them, so that we were alarmed when the waitress in our hotel at Inchnadamph came to our table at dinner one evening and said to Peter, "I'm sorry to have to tell you that your specimens have fallen into the soup." She had the tact to speak low so that the other guests should not be alarmed by the knowledge that a quantity of lichens placed on the rack above the kitchen stove to dry had slipped off into a cooking-pot below - fortunately in their packets, so that the specimens themselves were undamaged when retrieved from the soup. The collections we made on that trip all ended up in the museum, Peter's going there immediately as of duty, mine following later as a gift. Surprisingly this was the first substantial collection of lichens from the British Isles to have been added to the herbarium this century.

When I first met him Peter was still in his 20s, rather a tall young man whose expression, studious in repose, readily broke into a smile. Now, with the passing years a beard that sprouted on an expedition to South America has been allowed to remain, the brown hair is streaked with grey, and the studious expression has taken on a judicious cast as well. But he has always been the welcoming host at the museum. To a visitor arriving at his department his opening words would be, "Now, is there anything I can get you?" An expert in a key position, his friendly help to visitors, amateur and professional alike, has been an unobtrusive, unsung benefit to the British Lichen Society as well as to lichenology more generally. The touchstone by which a scientist's reputation is apt to be judged is the papers he has published. It is a matter of publish or perish. Peter has of course made a reputation in that way, but for him more than most scientists it is necessary to look beyond the publications to the man himself for a true measure of the impetus he has given to botany.

As well as exerting a diffuse but none the less positive influence in this way on lichenology Peter has a love of the arts, especially music and the theatre, that makes him a cultivated host over dinner (which as an expert cook he may have prepared) and one of those rare professional men who can entertain his guests without ever mentioning his work. Despite an alert sense of humour, often witty in its expression, and a sociable disposition, fate has decreed that he remain a bachelor. A slight formality in his manner (as Ursula Duncan also possessed) perhaps reflected in his youth the wariness that a traveller feels as he steps up to the customs barrier at a foreign airport; now in middle age it

has evolved into an expression of innate courtesy.

From Swinscow, D. (1989) *Reap a Destiny. Divagations of a Taoist.* London: Memoir Club of the British Medical Journal.

For thirty years PWJ has dominated British lichenology. Anyone who entered the Society in the 1960's or 1970's will remember how it was thought there was nowhere he had not collected, no specimen he could not identify, we relied on him absolutely. Academically he must have felt somewhat isolated: for example few members were able to fully appreciate the scholarship and research that went into his New Checklist of British Lichens (1965) which, incidently, was quickly adopted on the continent. Most of that generation learnt their trade from Peter, either at the museum or in the field. Fortunately for us he has always given a higher priority to encouraging others than to accumulating publications, though he has been known to mention that he felt he was in danger of becoming a machine for naming lichens. I hope that when he considers the healthy state of British lichenology he thinks it has been worth while. Another of his aims is to ensure that a good range of recently collected, reliably named material is present in the herbarium for reference. This requires considerable discipline and the BM collections are a testament to his activities from the Scilly Isles to the Shetlands, from the Norfolk coast to Killarney. A long spell as editor of *The Lichenologist* (1958-77) involved much 'blood, sweat and tears' but it was this period that launched and elevated the BLS and British lichenology into the present enviable world position. Peter has always been keen not to allow British lichenology to become too insular in outlook.

Just as school children find it hard to visualise that their teachers have a life outside the classroom, those who have mostly known PWJ at the museum may have wondered about the man behind the formidable array of knowledge. An invitation to supper at his flat in Barons Court is an event to be savoured and will probably not be issued till you have dined together several times at restaurants in South Kensington. Peter is an accomplished cook who takes a pride in planning unusual menus. Music and books also figure largely in his relaxation with an emphasis on Bach, Berlioz, biographies and current affairs.

The rows of cacti on the windowsills represent a special interest, and are just the tip of the iceberg, his main collection of 600 spp. being held at his sisters' house in the Midlands which he visits at weekends. I have noticed that many people who end up in high administrative posts

possess an interest in cacti; do such well organised, neat plants, represent an ideal they are striving towards or is their attraction that they can be neglected for long periods? Those hoping to discover eccentricities will largely be disappointed. I can, however, report that he has never learnt to drive, I have never seen him run, nobody calls him Pete.

Promotion to Deputy Keeper of Botany in 1977 was only accepted after much heart searching as he knew it would limit the time he could devote to lichens. He discovered however, that administration at that level could be unexpectedly interesting and rewarding and he excelled in promoting departmental publications and in steering scientific research through a difficult period. Additionally he must have been cheered to see how many of the people he had helped were developing into experts and that lichenology was now more broadly based and an increasingly important subject both environmentally and biologically. About this time he began to dazzle us with another skill, becoming adept at TLC through a personal project to accumulate chemical data on all British lichens. Peter intends to carry on working in the museum after his retirement, so the maestro, our friend and teacher, will continue to be around, as he has been since he first nurtured our interest in lichens.

Oliver Gilbert

NEW EDITOR FOR THE BULLETIN

In the British Lichen Society's thirty two years' history there have only been two previous editors of its Bulletin: Jack Laundon (1963-1979) and Oliver Gilbert (1980-89). Therefore if a change in editorship is not a significant event it most certainly is an infrequent one. At a Council meeting in September of last year Oliver announced that after ten years of service as editor he wished to retire from office; he felt that it was time for a change and that there should be an opportunity for someone with new ideas and a fresh approach to take on the job. So who might be the new editor? From amid the discussion that followed a voice said "Why not Peter Crittenden, what's Crittenden done for the Society"? Not very much I thought, realizing that my attempt to look invisible by slinking down in my chair and gazing at the ceiling with a vacant expression had failed miserably. And so it happened that despite my resolve not to take on more work I became the new editor. Well after all it was indeed an opportunity to serve the Society. It is also an honour.

However, it was not until I set about my editorial duties that I began to fully appreciate the importance of the Bulletin to the Society and the delight with which it is read by our members. The honour, then, is not so much in the kudos of having ones name on the front cover but more to do with being entrusted with the responsibility for a publication that is held in such high esteem.

Many members will not know me and so a brief profile of myself follows. I joined the Society in 1969 when I was an undergraduate studying Botany in London at Westfield College. I moved to the University of Sheffield in 1971 to do research for a Ph.D on the effects of air pollution on crop plants; here my lichenological interests were helped along by getting to know Oliver Gilbert and David Lewis. Then in 1975 I went to work with Ken Kershaw at McMaster University in Canada on nitrogen fixation by *Stereocaulon paschale*, an important mat-forming lichen in the boreal forests of north central Canada. I returned to Sheffield in 1977 as a Junior Research Fellow in the Department of Botany and established links with the Kevo Subarctic Research Station in Finnish Lapland where I continued working on the ecology of subarctic lichens. In 1981 I took up my present post as a lecturer in plant ecology at Nottingham University.

While an undergraduate I discovered that there was a cryptogamic herbarium at the Natural History Museum and therein a section that dealt with nothing but lichens (was this some kind of paradise!). Subsequently I was lucky enough to hold two summer vacation studentships in the lichen herbarium under the guidance of Peter James. I am very pleased that publication of the first Bulletin under my editorship should coincide with the appearance of several appreciations of Peter James. This gives me a timely opportunity to thank him personally for stimulating my interests in lichens and giving me opportunities at crucial times.

I am grateful to all those officers and members of the Society who have helped me to get to know the ropes in my new job. I am especially indebted to Ceri Leigh for putting so much effort into designing the new cover: this was just one of several alternative designs that she prepared. Finally I would like to thank Oliver Gilbert on behalf of the Society for his excellent stewardship of the Bulletin during the past ten years. Shortly after becoming editor Oliver upgraded the Bulletin's format from A4 sheet to the current A5 booklet with a stiffened cover. I hope that any future changes for which I am responsible will be as positive as those instigated by my predecessors.

JANUARY MEETINGS 1990

Book Sale, Slideshow and Buffet.

The Booksale was again a convivial affair raising £356 for the Society. Frank Brightman and Mark Seaward amazed and amused us with their stunning knowledge and off-the-cuff wit, and pulled off many worthwhile sales . . . and also some unlikely ones. The addition of the slideshow to the evening made it even more enjoyable, and Felicity Priest came up to her usual excellent standard of catering. This Friday evening activity has proved to be very successful over the past few years; if you have any other ideas of what else might be done on this evening, please mention it in the questionnaire (see below).

1990 Annual General Meeting

It was decided at this meeting to circulate the minutes of the AGM with the *Bulletin*, so little will be mentioned here that can't be read in the minutes. However, a new office was established - a Publicity Officer. He has already prepared a questionnaire in order to present to Council the member's views as to what they would like to see their Society doing for them. Please fill in your questionnaire and send your comments - only then can Council put your ideas into action.

Exhibitions

The following items were on display at the AGM:

Black Label Advert. Saxicolous lichens used as background for drinks advert. Jeremy Gray had also obtained from the photographer the proofs and four 10" x 8" transparencies which were displayed on a light box.

Greeting cards by Claire Dalby.

Claire Dalby's Picture Book. A booklet of pen and ink drawings by the artist.

Xenova - a major U.K. initiative in exploiting products of lichen fungi. A4 sheet outlining the collaboration between Xenova Ltd., Biocatalysts Ltd., Dept. of Botany, University of Nottingham and CAB International Mycological Institute - David Hawksworth.

A plea for help with the Saxicolous Lichen Survey from Kery Dalby.

Shetland Lichens - a recording strategy by Kery and Claire Dalby. Two A3 sheets of work in the Shetlands.

Specimen of *Toninia kolax* (Poelt) on *Placynthium nigrum* in Ireland - Howard Fox.

Census Catalogue of Irish Lichens - Mark Seaward.

Display of maps and proposals for development in the Cairngorms and a petition - Help save this outstanding heritage site. Trevor Duke.

Lichen anti-dandruff shampoo - Mary Hickmott.

Long-tailed tit's nest blown down in the storms - Mary Hickmott.

Display of lichen species associated with slate - Malcolm Senior.

Demonstration of new B.L.S. logo - Jeremy Gray.

Photographs of Galloway meeting - Brian Fox.

Lectures

The morning session of the AGM ended with two lectures. First Francis Rose told us about his **New Index of Ecological Continuity.** Francis explained the purposes of Indices of Ecological Continuity as applied to the epiphytic lichens of old woodlands or parklands. Older woodlands or parklands with mature trees have a larger number of epiphytic lichens per unit area (1 sq. km. has proved a convenient unit) than more recent, planted or secondary woodlands. They also tend to contain a suite of species not normally found in more recent woodlands. Because they can give evidence of the age, and ecological continuity of a mature woodland habitat, these have been called ancient woodland indicator lichens. The correlation breaks down in ancient coppiced woodlands where few or no mature trees are present, and also in such areas as NW Scotland where some of these lichens are widespread and active colonists in the favourable moist, unpolluted climate.

The species concerned are members of the Lobarion community, which not only includes larger lichens like *Lobaria, Sticta* and *Parmeliella* species but also many smaller crustose species such as *Thelotrema lepadinum, Thelopsis rubella,* and *Pachyphiale carneola.*

Since 1976 a group of 30 species has been used as an indicator of ancient woodland in Britain. Because not all these are found throughout Britain, a figure of 20/30 species has been considered as a reasonable maximum number indicating little-disturbed primary woodland, and a value of 100% has been given to this figure. Francis emphasised that the concept is a statistical one: the occurrence of only a few species from the Index list has little significance, but the probability of ancient woodland relics being present increases as the number grows.

This index is the *Revised Index of Ecological Continuity* (RIEC). Further field work has made it clear 1) that there are many more than 30 such species in our epiplytic lichen flora and 2) that there is regional variation in the lists of significant species.

Accordingly a *New Index of Ecological Continuity* (NIEC), containing 70 species has been devised for use in lowland England, Wales, and S W Scotland. Disturbed or recent woodlands produce low values of the New Index as does the RIEC, but the NIEC is more sensitive in separating the good from the outstanding sites and enables a better ranking of sites for conservation assessment purposes. Values below 20/70 indicate only moderately rich old woodlands: 30/70 is very good indeed; 40/70 is outstanding. The New Forest as a whole (some 9000 acres of old woodland) has the highest NIEC value with 62/ 70 NIEC species. Different Indices have been devised for the oceanic West of Scotland (WSIEC) and for the more continental East of Scotland (ESIEC). Interestingly, the last is very effective as a continuity index in the old oakwoods of West Denmark, while the NIEC works very well in Brittany and in the western Pyrenees.

These studies have provided us with a useful tool for assessing not only the 'ancientness' of a woodland, but also its importance in conservation terms.

The second lecture was given by Brian Coppins on **Lichens of the Scottish Native Pinewoods**. Brian explained that in post-glacial times, *Pinus sylvestris* reached Scotland from the south in c. 8000BP, and eventually dominated much of the Scottish Highlands north and west of the Highland Boundary Fault. These pine forests were not monocultures but contained much birch, rowan, aspen, juniper and in the west, holly. On better soils pine was also mixed with oak, elm, hazel, and on wetter soils alder and willow.

Over the centuries the pine forest has been reduced to an area of some 10,500 ha (26,000 acres), only 1600 ha (4000 acres) of which is dense forest. Most of the present forest area is scattered into about 30 major blocks, the majority of which are nature reserves or SSSI's.

In contrast to the deciduous forest of Britain, the native pinewoods have received scant attention - indeed, there are virtually no 19th century lichen records, and the first species list was not made until 1958 when Peter James and Dougal Swinscow visited Coulin Forest. Since his arrival in Edinburgh in 1974, Brian has endeavoured to redress this situation, with many field trips, often accompanied by colleagues including Richard Brinklow, Trevor Duke, Tony Fletcher, Paul Harrold, Peter James, Francis Rose, Martha Sherwood and Lief Tibell.

These excursions have so far revealed 339 epiphytic lichens, with 164 species being found on the bark or lignum of pine. Of the 339, 19 species are found only in the native pinewoods. Complementing the previous lecture by Francis Rose, a **Pinewood Index** was presented. The major difficulty encountered in producing this index was the necessity to take into account the enormous east-west climatic variation across the Scottish Highlands, which is very much reflected by the pinewood floras. The pinewoods can be sorted into three major climatic/floristic groups: Western (W), Central (C) and Eastern (E). Accordingly, the Index comprised 50 species: 20 that are generally distributed; 15 confined to the W and C groups; and 15 confined to the E and C groups. Using this index the 'Top Ten' pinewoods (with the number of index species in brackets) are:

1. Glen Strathfarrar (C) (36)
2. Glen Affric (C) (32)
3. Glen Guisachan (C) (30)
4. Coulin (W) (30)
5. Black Wood of Rannock (C) (29)
6. Rothiemurchus (E) (26)
7. Achnashellach (W) (24)
8. Ballochbuie (E) (23)
9. Loch Maree (W) (23)
10. Abernethy (E) (22)

Brian considered this list to be rather provisional as a few major areas of pinewood still remain to be surveyed, e.g. Loch Arkaig and Glentanar. Also, more old pine plantations need to be surveyed; those so far studied hold few index species, e.g. Braco (5) and Culbin (3).

To end his talk Brian showed a series of slides depicting the range of pinewood habitats and their characteristic lichens. Unlike most deciduous forest habitats, the richness of the pinewood flora is much dependent on the significant presence of dead mature trees, both

standing, decorticate specimens, and fallen trunks ("bones"). The slow rate of decay of pine lignum appears to have led to the evolution of a rich and specialised flora on this substrate in various conditions and degrees of exposure. To conserve the lichenological interest of our native pinewoods it is essential that the woodlands exist as a mosaic of age classes with moribund sectors an important component.

Open day in the lichen section of the National History Museum.

For most members of the BLS the Natural History Museum is an imposing building in South Kensington which provides a wealth of experience from the staff in the lichen section, houses a superb herbarium of specimens and is the place to go when the lichen-going gets tough. However, it was obvious from the fascinating exhibitions organised for the afternoon following the AGM that a lot more goes on behind the scenes than immediately meets the eye.

David Galloway demonstrated a colourful display of *Southern Hemisphere Lichens* in the Fern Section. His personal selection of specimens, photographs and literature, both historic and up-to-date was interesting and informative. Upstairs in the laboratory, Pat Wolseley, who had been co-opted to the Lichen Section for the day, showed an array of *South East Asian Lichens* which she had collected recently from her trip to Indonesia. Many still required identification or confirmation, but her lively talk whetted the appetite to see more of the fascinating species not found in this country.

Back in the Lichen Section, Nick Stewart provided a useful hands-on demonstration of the *British Lichen Flora Red Database* which he has been working on at CABS. The power of the computer with the variety of fields in the database showed admirably what an individual tool computing has become in the analysis of data and the production of reports. William Purvis and Peter James gave short talks on *Lichen Monitoring/Lichens and Metals* and backed them up with a display of lichens associated with metal-rich substrates and some of the tools of the trade for field work and monitoring.

Finally, in the Mineralogy Library at the end of the Lichen Section, Jack Laundon had chosen a delightful selection of historical documents and bound herbaria. His extensive knowledge of this aspect of the Department was refreshing and revealing, but led to a disturbing discussion on the future of this sort of work in the Department. Present Government attitudes are apparently merely resource-driven and therefore this type of research is given a very low priority.

Grateful thanks are extended to the exhibitors for the time and effort that they put into organising such a well prepared Open Day and our best wishes to them for the future in these difficult days of financial stringencies.

Tim Moxham

LICHENOLOGIA

It is unusual, to say the least, to see the obituary of a lichenologist as the main one, occupying twenty column inches, at the top of the Court and Social page of the *Daily Telegraph*, as happened recently when the death of Mackenzie Lamb was reported. Admittedly, it was a curiously slanted obituary, especially perhaps the final paragraphs concerning his personality, and as a whole it was as remarkable for what it left out as for what it included. Lamb was Assistant Keeper of Botany at the Natural History Museum from 1935 to 1946, and then continued his lichenological studies in America, spending the last eighteen years of his professional career as Curator of the Farlow Herbarium. On retirement, he gave the rest of his life to working on lichens both in the field and in the study.

In the latter part of what may be called his "London Period", from late 1943 to 1945, he was seconded from the Museum to the Royal Navy to take part in secret operations in the Antarctic, and the obituary has more to say about this brief period than it has about his professional work to which the rest of his life was devoted. As well as being an indefatigable field worker, he made many monographic studies. He was always prepared to tackle difficult genera, such as *Stereocaulon*, and he pioneered modern approaches to Southern Hemisphere genera such as *Placopsis*.

Many powerful rumours have circulated about Lamb, in addition to those mentioned in the obituary about exploits in Antarctica; just one may be mentioned here, to the effect that his devotion to the safekeeping of the Museum lichen collections led him to sleep with them during the height of the German bombing attacks on London in 1941 and 1942. He is remembered by members of the British Lichen Society as the person who did so much to keep lichenology alive internationally when it was at a low ebb, and who made significant contributions to the study of antarctic lichens at a time when others were content with publishing, short uncritically compiled lists of species.

CUDBEAR is always pleased to receive comments, corrections and suggestions from members, through the Editor, or direct from those who have penetrated the disguise of the nom-de-plume. Two press cuttings have been submitted recently. One concerns a foliicolous lichen, *Strigula subtilissima*, from the tropical rainforest of Queensland, Australia. Obviously leaves are unstable substrata for lichens, compared with bark or rock; in rainforest they remain on the trees for an average of five years, so the lichens have to complete their life-cycles fairly quickly. Rogers has shown that *S. subtilissima* has a record rate of growth for a lichen; he thinks this may be due to its penetrating below the cuticle of the leaf (not usually the case with foliicolous species) and thus gaining access to extra nutriment. The other cutting is concerned with rock weathering. Nearly fifty years ago Polynov found that in the mountains of the Caucasus lichens disintegrated rock surfaces to form a "lichen dust" horizon that was sometimes several mm thick, thus playing a significant role in soil formation. Now Schwartzman and Volk have shown that on Hawaiian lava flows weathering takes place 100 times as quickly when there is lichen cover as it does on bare rock. Their interest however is that the weathering process removes carbon dioxide from the atmosphere and thus reduces the "greenhouse effect". It is fashionable nowadays to talk about the "Gaia Hypothesis" which has passed through many phases and changes but which seems to mean that organisms make more far-reaching changes in environmental conditions than used to be thought possible. This seems to be an example of plants (lichens) making the temperature of the earth lower than it might have been.

The picture is from a new book entitled *Tarnung and Tauschung*, published in Leipzig, and illustrates a retelling of the well-known *Biston betularia* story. It is amusing to see the map of Britain from a Central European point of view, slightly tilted, but it seems unkind for a country whose principal fuel is brown coal to put such emphasis on smoke pollution in Britain. Usually in popular accounts of industrial melanism emphasis is placed on the deleterious effects of atmospheric pollution in macrolichens. Commonly a tree trunk is depicted covered with *Parmelia* species and similar lichens, with the type variety *betularia* of the moth nestling amongst them, beautifully camouflaged; on the other hand, the variety *carbonaria* stands out conspicuously. This version of the story makes no reference to lichens, and the type variety is shown camouflaged on clean birch bark; another picture shows the melanic variety even better camouflaged on sooty birch bark. The current issue of the *Biological Journal of the Linnean Society* is devoted to a review of

past and present knowledge of this subject; it is a report of a workshop held on *Biston betularia* in 1987.

CUDBEAR

BACIDIA AUERSWALDII : EXTINCT IN THE BRITISH ISLES OR OVERLOOKED?

Whilst compiling lists of species for the *Red Data Book*, Nick Stewart asked me to find a moment to check on the only known British location for *Bacidia auerswaldii*. Walter Watson had collected it in March, 1927, in May and June, 1935 and March, 1937 and described it in 'Lichens of Somerset' (*Som. Arch. Nat. Hist. Soc.*, 1930):

> "*Bacidia effusa* Auersw. (*Lecidea auerswaldii* Stiz.; *Bacidia effusela* Zahl.) First record for the British Isles (L.N. III).
> 5. In cracks of bark of an old elm near Norton Manor, (1927) Taunton."
>
> (Note: 5 - refers to the botanical vice-county; L.N. III - refers to Watson, W. "Lichenological Notes, III" *Journal of Botany*, 1928, pp.17-21).

Additional information from the specimen packet elucidated by Nick Stewart was that the species grew in the crevices of the bark of old

elm, preferring the more shaded and damper cracks and was associated with a community of the Xanthorion parietinae alliance; including *Bacidia phacodes* and *B.rubella*.

B.auerswaldii is similar to *B. biatorina* in appearance, with only microscopic differences:

> *B. biatorina* - ascospores > 45µm, 7-16 (22) septate;
> *B.auerswaldii* - ascospores 20-26µm (3-) 5-6 (-7) septate.

Outside Britain, *B.auerswaldii* is found in Europe and the Canary Islands. (Draft of the British Lichen Flora - *Bacidia*).

The association of the species with the Xanthorion parietinae alliance on an old elm suggests a tree in an open, sunny situation, on the edge of a wood or in parkland, or maybe in a hedgerow - fairly open with some nutrient enrichment from grazing animals. However, the mention of a "shaded, damper side" rather indicates that the tree was not growing completely isolated in the open; so the edge of a wood, shaded on one side by shrubs or trees seems more possible.

A visit to the Somerset County Records Office enabled me to get a good copy of the 25" O.S. map of 1930 with Norton Manor, just north-west of Taunton. The Manor is shown with well-established gardens and grounds, especially the parkland to the east of the house where scattered clumps and individual trees were shown. Three coverts were also marked in this open parkland area, planted with shrubs, deciduous and coniferous trees growing along the way. I had the whimsical vision of Walter Watson strolling along these footpaths on a pleasant Sunday afternoon, pausing by parkland trees to indulge in that irresistible urge that lichenologists understand!

So, one fine day, finding myself in Taunton with time to spare, I drove out to find Norton Manor. I was surprised to see a sign in red pointing to "Norton Manor Camp" and upon turning into the road, was stopped by a barrier and accosted by a huge soldier carrying a rifle. He was very polite, "Yes madam, can I help you?" All I could reply was "Gosh, this place has changed a bit since 1930". He gave me a rather old fashioned look and said I was obviously looking well for my age and told me to proceed to the Guard Room. Norton Manor, it appears, was acquired by the army in 1939 and a large number of wooden huts were erected to form a military hospital in the parkland. To-day this is now the H.Q. of 40th Command The Royal Marines and has been extended

with more buildings, a parade ground, parking areas and a large playing field. I explained to the soldiers in the Guard Room that I had called by chance to look "a um, plant that has only ever been found near Norton Manor and was last seen in 1937". They wanted to know what the plant looked like, especially as one of them was keen on gardening! Hell, how do you describe a *Bacidia*? I looked at this grinning bunch of soldiers and said, in all seriousness, "It looks like khaki crumbs stuffed in the cracks of tree bark".

Well, surprisingly, they allowed me to tour the grounds of Norton Manor, although I was accompanied by a guard the whole time. Nothing remains of the parkland and the hedgerow elms have all gone through Dutch Elm disease. Of the remaining trees observed no suitable mature deciduous trees in sheltered sunny position with Xanthorion parietinae alliances were found: algal growth was abundant on trunks in isolated situations beside the playing field or other boundaries. A wooded hill behind Norton Manor is to-day under routine woodland management for timber and as a training amenity for the troops. There is an abundance of ivy on most trunks, including the only ancient trees found remaining at the site, some large pollarded oak and ash at one point along the boundary. These trees supported *Lecanactis premnea* and *Enterographa crassa*, which perhaps suggest the former richness of this site.

So, as far as Norton Manor is concerned, it seems that *Bacidia auerswaldii* is no longer there through loss of habitat. However, it may be worth checking any *B. biatorina* .....

Sandy O'Dare

CONSERVATION NEWS 3

The jollier reading predicted in the last issue has proved to be rather more of the same . . . variety being the spice of life however, we can always hope for the great news next time (i.e. that the Government's green pigmentation will be confirmed as permanent rather than possibly fugitive). In the meantime, many BLS members will know of the Red Data Book for cryptogamic plants being prepared by Nick Stewart of CABS with NCC funding; this is intended to provide a factual basis for the definition of rare species, so that they can be given protection under the terms of the Wildlife and Countryside Act, 1981. Nick Hodgetts (NCC's 'Lower Plants Man") is raising the status of the cryptogamic groups which have, for many reasons, been rather neglected in the past.

Once we know which species are rare (and perhaps threatened) on an objective basis, we can proceed to the vital step of identifying actual geographical locations where special management or protection is needed. The foundation stone for the lichen Red Data exercise is the BLS Mapping Scheme, which provides the distributional framework. For conservation purposes, rarity is being assessed in terms of species frequencies within the 10-km squares of the National Grid. A copy of the CABS database is now in existence at the Natural History Museum, London. I understand that Nick Stewart's expertise has been essential in charting a course through the database 'manual'.

After identifying the rare species, we must locate those sites where they grow. In the last issue I referred to the habitats selected by the Conservation Committee for special study; we have now got human names to attach to these lichen habitats. They are:

Tom Chester (churchyards)
Vince Giavorini (chalk and flint pebbles)
Peter Lambley (lowland *Cladonia / Calluna* heathlands)
Jack Laundon (shingle and pebble beaches)
Sandy O'Dare (lowland rock outcrops, ancient monuments/sarsen stones)
Pat Wolseley (maritime and coastal)

Information needed (whenever possible) is as follows:

Site name (as on O.S. maps) and grid reference
Nature of the site (e.g. sea cliffs, cliffs with oak woodland)
Species list (even short lists will do, but obviously the longer the better)
Details of any distinctive features which indicate potential for further study.

At this stage we are mostly asking members to extract information from the literature, or to pass on personal knowledge. The exciting bits come later when we know where the gaps are . . . Please don't be over modest - it is amazing how often potentially valuable sites are actually known to very few people. It is also true that because of chance discoveries in the past, certain localities have been repeatedly visited, yet nearby sites may be equally rewarding. Information on different parts of extensive sites is also needed - gone are the days when we need take note of only a single one as being 'representative' of the rest . . . . PLEASE PASS ANY INFORMATION THAT YOU HAVE TO THE PEOPLE LISTED ABOVE.

Plantlife is having an increasing relevance to the BLS Conservation Committee. The essential points at this stage are that Plantlife, off to an excellent start, is now planning the details of the 'interface' between it and the specialist societies (such as the BLS), and Clive Jermy, in his new capacity as Secretary of Plantlife, will soon be informing us of the mechanisms involved. The intention is that we will offer the specialist guidance, and Plantlife will act as the campaigning body to support particular projects. The whole exercise will thus be building on the firm foundations already laid by CABS.

Kery Dalby
Conservation Officer

Postscript: Please note that I am taking early retirement from the Biology Department at Imperial College in September 1990. To avoid an already confused situation, please send all correspondence for me to my home address (132 Gordon Road, Camberley, Surrey GU15 2JQ).

MAJOR UK INITIATIVE IN EXPLOITING PRODUCTS OF LICHEN FUNGI

Lichens have been making news in the scientific press recently in the form of reports with such titles as "Symbiosis for lichens project" (Laboratory News) and "Lichen research initiative" (Chemistry in Britain). This unusual interest concerns a collaborative research programme on lichen-forming fungi that has attracted a grant from the Department of Trade and Industry of over £250K. The collaboration involves scientists from the University of Nottingham's Botany Department, CAB International Mycological Institute (CMI), Xenova Ltd of Slough and Biocatalysts Ltd of Pontypridd. The project is aimed at exploiting lichen-forming and lichenicolous fungi grown in pure culture as sources of novel biochemicals. Collection and identification of the lichens is the responsibility of Professor David Hawksworth and John David at CMI, collections being made both in the UK and overseas. The lichens are then transferred to Drs Peter Crittenden and Fraser Campbell at Nottingham who are responsible for the isolation of the mycobionts. When the isolated fungi have been grown in agar to a sufficient biomass they are passed on to Xenova and Biocatalysts where they are being grown in batch liquid culture and evaluated as sources of commercially exploitable metabolic products. Xenova will concentrate its effort on the search for novel pharmaceuticals and agrochemicals. Biocatalysts will search for commercially valuable enzymes for use in biosensors, biotransformation reactions and diagnostic kits. The genesis

of the project, which commenced last December, was nearly three years ago when Prof. John Peberdy and Peter Crittenden at Nottingham approached industry for support. Scientists at Xenova became convinced of the great potential offered by lichen fungi as sources of novel compounds. However there are many difficulties to be overcome relating to problems of isolation and of achieving sufficiently high growth rates in a group of organisms renowned for their slow growth: all involved are aware of the very real scientific challenges that the project presents. Of course it is one of the characteristic features of lichens that they produce a wide range of secondary metabolites. However, lichen fungi cannot be readily cultured or cultivated when in the symbiotic state. By growing the fungi without the photobiont in pure culture this problem is partially circumvented. Since it is only necessary to collect a single specimen of a lichen species in order to initiate numerous cultures the project does not pose a problem to lichen conservation.

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The above advertisement for Iceland Moss Cocoa was kindly provided by Alison Corley. It is reproduced from *The Entomologist's Record and Journal of Variation* (Centennial Volume Jan/Feb 1990). She notes that although it is claimed to be nutritious and digestible it probably tasted unspeakably foul!

APPROACHES TO LICHEN AESTHETICS 4

Earlier (Bulletin **64**, pp. 38-39), we noted the decisive role played by thallus type (e.g. crustose, foliose, fruticose) in a lichen's aesthetic impact. There are other more detailed elements of lichen structure to be considered. One such element is thallus perforation.

Thalline perforation.

Dependent basically upon the sort and degree of perforation shown by particular lichens, we can suggest the following range of perforation types:

a) longitudinal fissures and fenestrations
   e.g. *Cladonia cariosa*
b) ± circular or polygonal holes
   e.g. *Menegazzia terebrata, Physcia adscendens*
c) ± planar net formations
   e.g. *Ramalina menziesii*
d) ± columnar net (pseudocoralloid) formations
   e.g. *Cladia retipora*.

Although the nature of aesthetic effect in these different types varies considerably (as it may from one individual to another of the same type or species), one prime feature is common to the impact of them all. This common feature is the imaginative 'opening up' of the space occupied by the thallus. Our visual encounter with perforation in the thallus invites our mental penetration of it, so that we become aware of the organism not only as a body seen and experienced from the outside, but also as a presence in a spatial lattice or continuum which we can move through and view imaginatively from any point inside the lattice, enhancing our awareness of the structure of the lichen concerned, and rendering our apprehension of it more subtle and intricate. This effect is comparable to that achieved by Barbara Hepworth when she pierced an ovoid sculpture with one or more holes, or by Henry Moore when he broke his reclining figure archetype into two or more separate sections. Here, too, we are in each case invited to enter the space occupied by a body or form, and experience that form and its mode of spatial occupation from the inside outwards, as well as from our normal stance outside it.

Alternatively, we can consider this extension of our awareness from another, more mathematical point of view. Topologically, any imperforate thallus, crustose, foliose or fruticose, is reducible to a sphere or disc, and is said to be simply connected (of connectivity order 1: see fig 1a). A

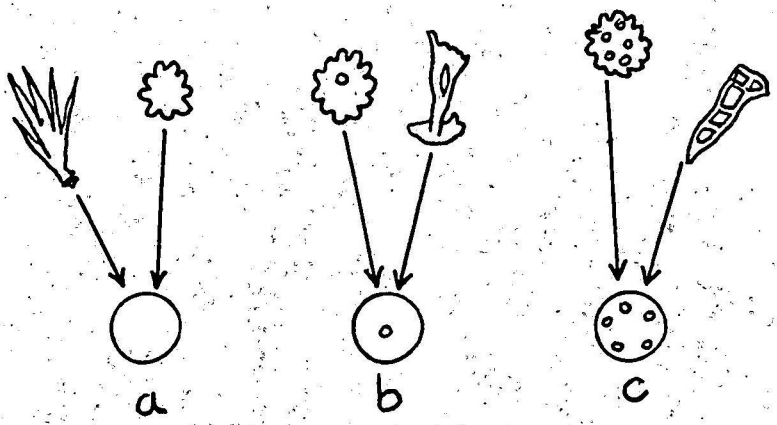


Figure 1. Topological reduction of thalline domains
a) simply connected (of order 1)
b) doubly connected (of order 2)
c) sextuply connected (of order 6)

thallus with just one perforation, however, is not so reducible. Its ultimate reduction will be a torus or annulus (hoop or ring) (of connectivity order 2: see fig. 1b). A thallus with numerous perforations will be a multiply connected domain reducible to a disc with numerous holes piercing it (if the number of holes is x, it will be of connectivity order x + 1: see fig. 1c). The order of connectivity of a body is a topological invariant of its domain. Each hole present in a lichen thallus raises its order of connectivity by one.

Their high order of connectivity is at the root of our astonishment at the architectonics of such lichens as *Ramalina menziesii* (see fig. 2) and *Cladia retipora* (see fig. 3), which present us with braced frameworks reminiscent of the engineered Firth of Forth bridge and of the naturally evolved sponge skeleton, both of a high order of connectivity. Once again, too, we find ourselves confronted by the close relationship between aesthetic effect and biological function. As well as the tensile strengths imparted by their braced frameworks, such netlike thalli also have, for instance, a high atmospheric humidity condensation quotient, and a high degree of fragment trappability on breakage of the thallus. Awareness of these functional aspects only increases our awe at the intricate beauty of such elegant lichen forms.

Note. A fine analytic study of the netlike thallus can be found in: Sanders, W. (1989) Growth and development of the reticulate thallus in the lichen *Ramalina menziesii*. *American Journal of Botany* **76** (5): 666-678.

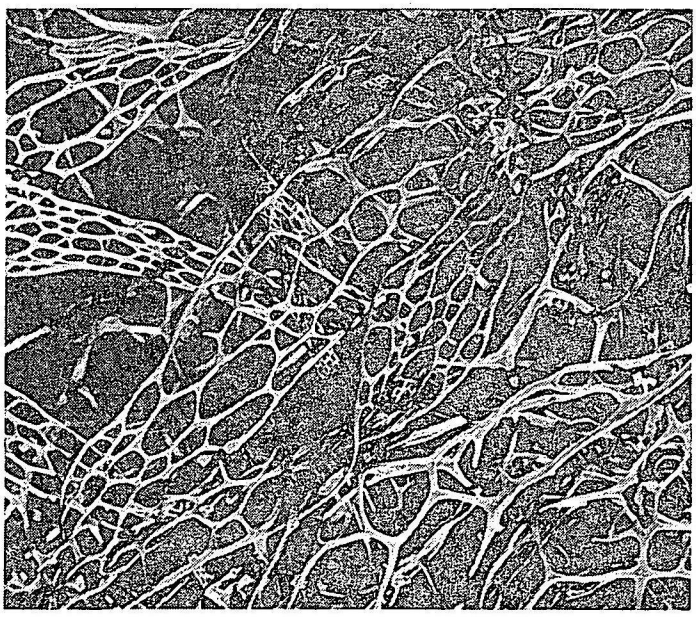


Figure 2. Detail of netlike thalli of *Ramalina menziesii*

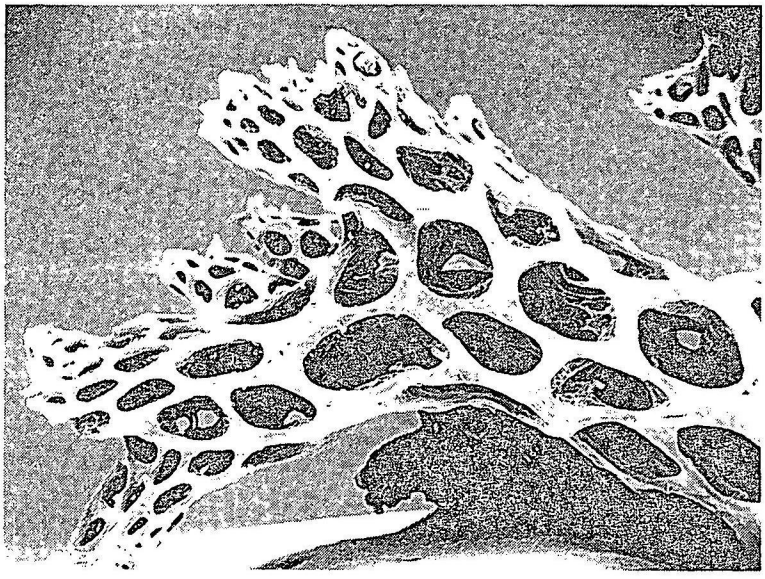


Figure 3. Detail of pseudocoralloid thallus of *Cladia retipora*

Acknowledgement I am grateful to Mr. A. Hick for scanning electron micrography, and to Dr. A. Fife and Mr. K. Mabin for the provision of *Cladia retipora* material from New Zealand.

Albert Henderson

LARGE LICHENS

In response to Oliver Gilbert's article "Where are Britain's Largest Lichens?" (Bulletin **65***) Prof. G. Degelius writes the following:*

"I myself have some notes on large specimens which may be of some interest. All specimen are *simple* (thus not small ones grown together) and usually circular; all are on stone. In my book the *'The Lichen Flora of the Island of Vega in Nordland, Northern Norway'* (1982) I have published several notes on very big lichen specimens seen on that island e.g.:
Anaptychia fusca (=*runcinata*) (p.75): up to 75cm diam. (central parts of the thallus vanishing).
Aspicilia myrinii (p.79): more than 30 cm diam.
A. nordlandica (p.79): up 30 cm diam.
Lecidea confluens (p.78): up to several dm diam.
Parmelia alpicola (p.91): c.70cm diam. (central parts vanishing).
P. pulla (p.93): up to 30 cm diam.
Pertusaria corallina (p.97): up to 30 cm diam.
P. dealbescens (p.97): 40 x 23 cm diam.
Rhizocarpon alpicola (p. 106): up to 30 cm diam.

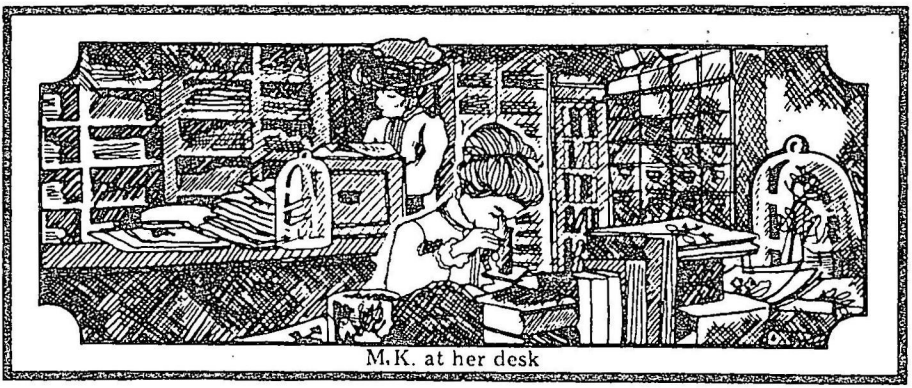
I have seen specimens of *Collema cristatum* (in Nordland, northern Norway) up to 30 cm diam. The literature seems to be poor in statements."

POSTER : MATILDA KNOWLES, 1864-1933, AN IRISH LADY LICHENOLOGIST

Any dinner at which two or more are gathered together in the name of the great god, *Lichenes*, should include a toast 'To the ladies', whose service to the science of lichenology is so apparent. Consequently, I was delighted when, at the last AGM, Jack Laundon drew me through the labyrinthine shades of the Lichen Herbarium in the Natural History Museum to a poster celebrating the Irish botanist, Matilda Knowles.

Produced jointly by the Equal Opportunities Commission for Northern Ireland and Ulster Museum, it is one of a set of four, paying homage to Irish women scientists: Mary Ball, zoologist, 1812-1898; Sydney Thompson, geologist and artist, 1847-1923; Matilda Knowles, botanist, 1864-1933; and Maude Jane Delap, marine biologist, 1866-1953. Accompanying information sheets summarise the biographies of these ladies. The set was originally intended to honour six Irish women scientists who merit greater recognition than they have in general received, but money allotted to the project unfortunately ran out with the course only two-thirds run.

We learn that: W. J. Knowles, Matilda's father, an insurance agent with an interest in prehistoric man and in natural history, introduced her to the Belfast Naturalists' Field Club in her teens, where she met Robert Lloyd Praeger, who became a life-long friend. With Praeger, Isabella Leebody and other botanists, she attended field meetings. Though women were not then able to take degrees at Trinity College, Dublin, she attended natural science classes at the Royal College of Science and Art in Dublin. In 1902 she obtained a post in the Botany Section of the Dublin Museum. Later she became Assistant to Professor Johnson.



Detail from the poster honouring Matilda Knowles

About 1923, when he retired, she took charge of the botanical collections. Her first published essay, in 1897, was on County Tyrone's flowering plants. In 1909, Annie Lorrain Smith invited her help on a survey of the lichens of Clare Island, County Mayo, part of a complete investigation of its natural history. The investigation became famous for the numbers of new species and first Irish records it produced. From that time, Matilda's main study was lichens. Her devotion culminated in the publication by the Royal Irish Academy of her crowning work, *The Lichens of Ireland*, 'one of the finest pieces of work ever carried out in any section of the Irish flora'.

The four posters are, sadly, now out of stock, but photographs of them and the information sheets are obtainable from: Ulster Museum, Botanic Gardens, Belfast, BT9 5AB, Northern Ireland, on payment of a fee to cover photocopying, p and p.

Albert Henderson

NEW, RARE AND INTERESTING BRITISH LICHEN RECORDS

(Contributions to this section are always welcome. Please submit entries to Frank Brightman, South London Botanical Institute, 323 Norwood Road, London, SE24 9AQ, in the form of species: habitat: locality: vice county (V.C.): grid reference (G.R.): date: comments: recorder. Grid references may be abridged in the interest of conservation; they will be omitted when the record has been published elsewhere).

Anaptychia ciliaris: on wind-blown ash; abundant, fine fertile material, about 10 feet up trunk on SW face. Whiddon Deer Park, Castle Drogo, Devon, VC 3, South Devon. GR 20/72-89-. 1990.

A.M. O'Dare

Arthonia anglica: on small ash tree in bottom of valley woodland, Tramps Wood, Millook Valley, Bude, Cornwall, VC 2, East Cornwall, GR 20/18-99-, 1989. Fourth British record, determined B.J. Coppins.

F. Rose, N. Henderson, R. Smithers and K. Sandell.

Arthonia astroidestra: on holly tree in bottom of valley woodland, Trengayor Wood, Millook Valley, Bude, Cornwall, VC 2, East Cornwall, GR 20/18-98-, 1989. Determined B. J. Coppins.

F. Rose, N. Henderson, R. Smithers and K. Sandell.

Arthonia astroidestra: on oak in coastal woods; Portledge, Devon, VC 4, North Devon. GR 21/37-23-. 1989. Determined B. J. Coppins.

A.M. O'Dare

Arthonia invadens: on thallus of *Schismatomma quercicola*, growing on oak; Arlington Court, Devon, VC 4, North Devon. GR/21/61-40-. 1990. Fourth British Collection, determined B. J. Coppins.

A.M. O'Dare

Biatorella fossarum: Ham Hill, Stoke-sub-Hamdon, Somerset, VC 5, South Somerset. GR 31/478172, 1989. Only known from this site; old records under this name refer to *B. hemisphaerica*. Determined B. J. Coppins.

A.M. O'Dare and K. Sandell.

Catinaria grossa: on old hollow ash pollard; Whiddon Deer Park, Castle Drogo, Devon, VC 3, South Devon. GR 20/72-89-. 1990. Second Devon site, previously recorded nearby at Chudleigh Rocks, by D. L. Hawksworth.

A. M. O'Dare.

Chaenotheca ferruginea: on Scots pine in wood pasture; fine, fertile material. The Argory, Co. Armagh, Northern Ireland, VC H 37, Armagh. GR 23/87-57-. 1989. On old larch; Murlough Bay, Co. Antrim, Northern Ireland. VC H 39, Antrim. GR 34/20-40-. 1989. Surprisingly, these are the first records for this species in Ireland. My thanks to M. R. D. Seaward for drawing my attention to this. (See Seaward M. R. D., *Census Catalogue of Irish Lichens*, 1984).

A. M. O'Dare

Gyalecta derivata: on sycamore in parkland; Ugbrooke Park, Devon, VC 3, South Devon. GR 20/87-78-. 1989. First Devon record; probably overlooked as *G. truncigena*.

A. M. O'Dare

Gyalidiopsis muscicola: overgrowing mosses on ash: Dunsland, Devon, VC4, North Devon. GR 21/40-04-. 1990. Amazing minute, shiny, brown curved fan-shaped fruiting structures, (hyphophores). V. Giavarini has recorded this from Dartmoor. Determined B. J. Coppins.

A. M. O'Dare

Hypocenomyce sorophora: North Ocknell, New Forest, Hampshire, VC 11, South Hants, GR 41/24-11-. 1990. New to Britain; determined B. J. Coppins.

K. Sandell.

Melaspilea interjecta: on damp, vertical acid rock; disused metal mine (Rheidol Utd.) Cwm Rheidol, Ceridigion, VC 46, Cardigan, GR 22/71-78-. First modern British record. Not a synonym of *'Encephalographa' cerebrina*. Determined B. J. Coppins.

Alan Fryday

Parmelia perlata: on piece of shale from colliery spoil heap, Baddesley Ensor, Warwickshire, VC 38,. Warwick, GR 42/276976. 1989.

J. S. Walton.

Placynthiella hyperhoda: on consolidated spoil, disused metal mine (Cwmerfyn), Pen-bont-rhyd-y-beddau, Ceridigion, VC 46, Cardigan, GR 22/70-82-. Confirmed as a British species (cf. *Lichenologist* **16**(3), 1984). Associated species - *Vezdaea acicularis, V. leprosa*.

Alan Fryday.

Placynthium garovaglii: on shaded vertical limestone, East Gill, Keld, Swaledale, Yorkshire, 250m, GR 35/89-01-, and Rais Wood, Hubberholme, Langstrothdale, Yorkshire, 300m, GR 34/91-78-. VC 65, North Yorkshire. Locally frequent. Typically forms small, densely grey

pruinose orbicular patches with blue-black fruits and pro-thallus. Probably not as rare as recent records (or lack of them) suggest.

Alan Fryday.

Ramonia nigra: on lignum inside old hollow ash pollard; Whiddon Deer Park, Castle Drogo, Devon, VC 3, South Devon. GR 20/72-90-. 1990. Second record of this lichen, growing in a similar habitat to the first gathering in the Lake District. (See Coppins, *Lichenologist* **19**(4): 409-418, 1987).

A. M. O'Dare.

Sarcopyrenia gibba: on concrete parapet of dam wall, Lochan na Larige, Ben Lawers, Perthshire, altitude *c.* 510m., VC 88, Mid Perth, GR 27/60-39-, and at Backwater Dam near Kirriemuir, Angus, altitude *c.* 300m., VC 90, Angus. GR 37/25-58-. (See O.L. Gilbert's records for the Peak District, altitude 300m., in BLS Bulletin **65**, 1989.)

R. C. Munro.

Schismatomma graphidioides: on old ash pollard, Whiddon Deer Park, Castle Drogo, Devon, VC 3, South Devon. GR 20/72-89-. 1990. Second modern record this century; previously found by Francis Rose in Horner Woods, Exmoor. 1977. Determined B.J. Coppins.

A. M. O'Dare.

Teloschistes flavicans: wind-blown oak; Becka Falls, Devon, VC 3, South Devon. GR 20/75-80-. 1990. Small thallus, about 18 feet up the trunk, on NW face, with *Parmelia caperata, P. perlata, P. saxatilis, Evernia prunastri, Frullania* sp. and mosses. Previously thought to have disappeared from Dartmoor, but may be surviving high on the trunks of other trees.

R. Wolton.

COASTAL LICHEN SURVEY

Since Tony Fletcher and the BLS workparties prepared the assessments of epiphytic and lowland heathland habitats in the British Isles in 1982 and 1984, there has been a need to survey and evaluate our rocky coasts. There are extensive areas of ancient and undisturbed (by man) habitats that support species rich lichen communities in a variety of diverse situations. There are also coastal areas threatened by development or by agricultural improvements, about which we have very little lichenological information. Using the BLS site data, a geological map, and the 1:50000 Ordnance Survey maps, a list of coastal sites of known or potential lichen interest has been drawn up at the NHM, in order to highlight areas that need surveying.

In addition to this PWJ has made a preliminary list of species that are indicators of habitat richness and diversity on rocky coasts and in sites with maritime heath. These species often occupy particular niches in maritime communities, such as *Sclerophyton circumscriptum* or *Roccella* spp., so that getting one's eye in for maritime communities and indicator species is essential for this recording. PWJ will be overseeing this part of the project, and PAW will be attempting to keep up with the data processing of all coastal sites. We have already included Nick Stewart's RDB data in the programme, and hope to be able to provide field workers with site maps and any information already available. Peter has offered to run a workshop to introduce people who are interested in recording coastal saxicolous species to maritime lichen communities and indicator species. We hope to run this as a long weekend from 29 June to 1 July, at a site in Pembrokeshire. Please contact PAW at the NHM if you want to find out more about the workshop, or the site and indicator species list.

Peter James and Pat Wolseley

CHURCHYARD LICHEN RECORDS

If you were at the Annual General Meeting, you may remember that I distributed a rather hurriedly prepared list of actual or possible saxicolous churchyard lichens. A number of you have been kind enough to return the list to me with corrections and additions as well as further useful information. The main list has now been extended to incorporate all ecclesiastical buildings (including ruins) in the British Isles, their graveyards and boundary walls or fences, and all related substrates. This list contains brief information on habitat, general distribution and status and currently extends to 407 species. Sub-lists are being compiled for each separate substrate including the many varieties of "stone", bark, wood, mosses, soil, metals and the associated run-off, glass, plastic, and even rubber dustbin lids! These lists indicate vice-county distribution and give precise locations for the less common species, together with source references to articles, lists, etc, in *The Lichenologist* and/or Bulletin. There is a sub-list of lichenicolous fungi. I am also building up a list 'Literature pertaining to British churchyard lichens' similar to the one by Jack Laundon in each Bulletin. Finally, I am collecting interesting snippets of information, for example, the largest churchyard lichen (see Bulletin **65**:p22). All of the above data is at present being fed into an Amstrad PC1640 computer using a basic word-processing programme, with the intention of transferring it shortly to a more sophisticated data-base.

I should be delighted to receive any contributions ranging from minutiae to reprints of articles or vice-county lists. It would be particularly useful to have site lists for the richest churchyards in each vice-county. If, in turn, you would like a full list to annotate, it would be helpful if you could send me a large stamped-addressed envelope with a 30p stamp.

Tom Chester
19 Lawyers Close, Evenley, Brackley, Northants NN13 5SJ
[Tel (0280) 702918]

SHAKESPEARE AND LICHENS

Every lichenologist must have been asked, at least once, if Shakespeare makes any allusion to lichens. The answer is, not directly, since in his time lichens were not known as such and would be referred to as moss or stains on rock. The closest link I have discovered between Shakespeare and lichens comes in Sonnet 55.

Nor marble, nor the gilded monuments
Of princes, shall outlive this powerful rhyme;
But you shall shine more bright in these contents
Than unswept stone, besmear'd with sluttish time.

In this context 'unswept' can be interpreted as uncleaned and lichen correlated with 'besmear'd with sluttish time'.

Oliver Gilbert

FROM THE ASSISTANT TREASURER .....

Although you may have already paid your 1990 subscription of £20.00 (due on 1st January last!) it is not too late to join the 76 members who have opted for three-year or five-year membership (£57.50 and £90.00) by paying the difference and thus enjoying a slightly reduced subscription.

Now that I have members' addresses on computer I am able to sort by county or country. If you wish to know which members are in your area I would be happy to supply a list. United Kingdom membership is 272. The membership in Europe is 189 of which there are 45 members in Germany, 23 in Sweden, 21 in Spain and 19 in Norway. The membership in other European countries is in single figures. In the rest of the world there are 56 members in the U.S.A., 11 each in Canada and Australia and 32 elsewhere.

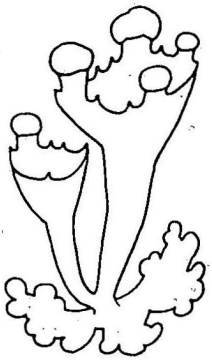
During the last year, mostly in communications from Banks, our Society has variously been referred to as:
'British Then Society'. When? one might ask or are we members of some Oriental Cult?
'British Lechen Society' which with the 'British Licher Society' sounds vaguely indecent.
'British Richen Society'. My German is not up to this!
'British Lychen Society'. Presumably involved in the study of old-fashioned lychens, and inevitably
'British Kitchen Society'. Is there really one, or is this a comment on the society in which we live?!

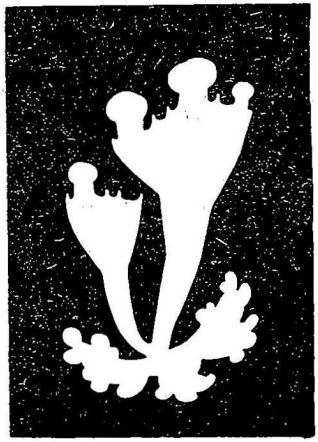
Jeremy Gray

BLS LOGO

The Council and Annual General meetings in January approved the new logo for the British Lichen Society. The stylised *Cladonia* was designed by Dennis Brown, Jeremy Gray and Tim Moxham and drawn to camera-ready quality by Claire Dalby.

An can be seen from the illustrations below it can be used in a variety of ways, outline, relief or, though not seen here, two-colour (silver-grey podetia with red apothecia). It will be used wherever the Society's name appears, but apart from the obvious uses on publications, literature and stationary, the coloured logo can also be used on mugs, clothing, ornaments, etc., or whatever members would like to see it on. This particular lichen promises to be the most ubiquitous known to lichenologists, knowing no boundaries of substrates - it will be paper-icolous, clothes-icolous, drinking-receptacle-icolous, in fact what-ever-you-like-icolous. Please read the enclosed questionnaire and send us your comments.





It is hoped to provide, in the near future, a wider range of facilities for members, regional meetings, more grades of membership, and more articles to buy. The logo is obviously something visual that can immediately be associated with the Society and will have the benefit of drawing the various aspects of the Society together, providing a common focal point.

Please complete and return the questionnaire as soon as possible, so that the Society can start providing more of the sort of facilities that members want.

Tim Moxham.

MASON ELLSWORTH HALE, JR. (1928 - 1990)

It is my sad duty to announce the death of Mason Ellsworth Hale, Jr.

Mason was a Senior Scientist and a former Chairman of the Department of Botany. He died 23 April 1990 at his home of renal cell cancer after a long illness.

Mason was internationally known for his lichen research. He joined the staff in 1957 and built the third largest lichen collection in the world. His 1967 (revised 1974, 1983) *Biology of Lichens* was the first comprehensive introductory treatment of lichens in English. His 1969 (second edition 1979) *How to Know the Lichens* became the standard guide for North American Lichens. His baseline research on growth-rate and lead content of lichens, begun almost 40 years ago, provided some of the first documentation of the impact of pollution on our environment. His research focused on large and widespread lichen families, *Parmeliaceae* (foliose) and *Thelotremataceae (*crustose), using new chemical and scanning electron microscope techniques. His most recent work, a revision of *Xanthoparmelia* with >400 species (in press), utilizes pioneering computer techniques, including the use of data bases to analyse relationships, make identifications and automate descriptions.

Mason was a respected colleague and friend to us and to many all over the world. We will miss him.

L. E. Skog, Chairman
Department of Botany, NHB 166
National Museum of History
Smithsonian Institution
Washington, DC

Lichenologist **21** (4) was published on 13 November 1989 and **22** (1) on 17 February 1990.

AHMADJIAN, V. 1988. The lichen alga *Trebouxia*: does it occur free-living? *Pl. Syst. Evol.* **158:** 243 - 247. [Answer: no. It appears that *Trebouxia* "has evolved from the soil alga *Pleurastrum terrestre*." "Although *Trebouxia* does not form natural populations, lichen synthesis may still occur in nature."]

BRIGHTMAN, F.H. AND SEAWARD, M. R. D. 1989. Obituary. Arthur Edward Wade, MSc, FLS 1985-1989. *Lichenologist* **21:** 379-381. [Biography containing several unfortunate errors. Arthur Wade was injured in 1917 not 1918. His first paper was *The flora of Aylestone and Narborough Bogs*. There is no evidence that Arthur first suggested a need for a society devoted to lichenology, in fact he favoured lichens forming a section of an existing society. At the inaugural meeting of the society he was the only person to support F.A. Sowter's amendment that the name 'British Lichenological Society' be adopted. P.W. James edited *The Lichenologist*, whilst T. D. V. Swinscow was responsible for its production. Arthur Wade was the sixth honorary member of the BLS, not the first. J. H. Tallis did not attend one of Arthur's lichen courses.]

GILBERT, O.L. 1990. The lichen flora of urban wasteland. *Lichenologist* **22:** 87-101. [100 species recorded from this little-studied habitat in various towns in Britain. Discussion of ruderal lichens. *Lecidea polycarpella* Erichsen and *Micarea excipulata* Coppins are new British records.]

HAWKSWORTH, D.L. 1990. Notes on British lichenicolous fungi: VI. *Notes R. bot. Gdn Edinb.* **46:** 391-403. [Comments on eleven lichen parasites new to the British Isles, including three new species.]

HAWKSWORTH, D. [L.] & McMANUS, P. 1989. Lichens that tell a tale. *Country Life* **183** (44): 144-145. [Changes in the lichen flora of London. In the issue of 2 November 1989.]

LAUNDON, J.R. 1989. Lichens at Dungeness. *Bot. J. Linn. Soc.* **101:** 103-109. [Review of the lichen vegetation. *Porpidia soredizodes* (Lamy ex Nyl.) Laundon is a new combination; this was published on 29 September before the same combination was made by Knoph, Hertel and Rambold. The term 'bird farming' is published.]

LUMBSCH, H.T. 1989. Die holarktischen Vertreter der Flechtengattung *Diploschistes* [Thelotremataceae). *J. Hattori bot. Lab.* **66:** 133-196. (Monograph of 14 species, together with keys and maps.]

RAMBOLD, G. 1989. *A Monograph of the Saxicolous Lecideoid Lichens of Australia (excl. Tasmania).* [*Bibliotheca Lichenologica* 34] Cramer, Berlin. ["Most of the lecideoid genera comprise widely distributed species." New combinations of British species are *Clauzadeana macula* (Taylor) Coppins & Rambold (*Lecidea macula* Taylor) and *Micarea erratica* (Körber) Hertel, Rambold & Pietschmann (*Lecidea erratica* Körber).]

STENROOS, S. 1989. Taxonomy of the *Cladonia coccifera* group. *Annls bot. fenn.* **26:** 157-168, 307-317. [*Cladonia borealis* Stenroos sp. nov., *C. diversa* Asperges, *C. metacorallifera* Asahina, and *C. pleurota* (Flörke) Schaerer are reported from the British Isles, whilst *C. coccifera* is apparently absent.]

Jack Laundon.

SECRETARY'S REPORT FOR 1989

I think it would be fair to say that the Society's year has been dominated by the production of the "Lichen Flora of Great Britain and Ireland". Certainly many experts and amateurs alike have been out and about in the field, examining specimens, corroborating records and poring over keys adding the fine-tuning that is promising to make this book the finest, most complete lichen flora produced for these islands. The subject also dominated some Council meetings as several publishers were interested in producing the book, but the contract has now gone to the British Museum who have drawn up a draft contract. The copyright of the new book will be vested in the British Lichen Society, and the Society will receive 10% royalties on sales. Members will be eligible for a 30% reduction (post free) and the publication date is due late this year, or more probably, early in 1991. The fact that the Flora is well on schedule, thanks to the devotion and hard work of the grant recipients, the Flora Committee and many others, makes this date look promising.

On Friday 6 January 1989 a booksale and buffet was held in the Meeting Room of the Royal Entomological Society of London, attracting about 40 members, and on Saturday 7 January the Annual General Meeting was held in the warm surroundings of the Jodrell Laboratories,

Royal Botanic Garden, Kew. 56 members attended, though more arrived for the afternoon visit to CAB International Mycological Institute, arranged by Professor Hawksworth, and for the lectures. A further Special General Meeting was called in September in the Flett Theatre, Geological Museum, London to propose an increase in overseas subscription rate for 1990 to match the increase in sterling subscriptions agreed earlier at the Annual General Meeting. The large attendance of overseas members at this Special Meeting, who were also attending the IAL symposium on Tropical Lichenology, was particularly heartening especially as they agreed the increase in dollar subscriptions. Consequently, apart from Junior Associate Membership which remains at £5, there is an increase in subscription rate from £15 to £20 and $30 to $40 (Life members £200 or $400) for 1990. To sweeten the pill, a new reduced subscription rate, payable three or five years in advance, was also approved at this Special Meeting, which should reduce the Treasurers' work load. The Society's accounts are in a very healthy state, and in connection with this, we have heard that Mrs. Trudy Side's house has now been sold, and the executors await the solicitors to release the cheques to the four recipient Societies, of which the British Lichen Society is one. £500 was donated to C.A.B.S. for conservation work in 1989.

The BLS hosted a reception for the IAL symposium on Tropical Lichenology in the Flett Theatre on Monday 4 September. The Society also purchased a batch of Aquapads inscribed with the Society's name, adding to publications and greetings cards as facilities for members. Claire Dalby produced a fourth design of greetings card for the Society and a further updated mapping card has been printed including the Society's name on it along with the CEGB and the University of Bradford.

In September Professor Hawksworth attended, on behalf of the Society, a European Mapping Conference hosted by Professor Wirth in Stuttgart, Germany. His report confirmed that the BLS mapping scheme is second to none in the world and years ahead of many countries.

Council met on four occasions in January, March, June and September. Four Society field meetings were held in Wigtownshire, New Forest, Hatfield Forest and North Norfolk, and Dr. Hitch has continued to inform members of other lichenological activities through his Lichenological Field Meetings sheet. The Flora Committee and Conservation Committee have met regularly throughout the year. 36 new members joined the Society in 1989 and very few left, making a

current membership of 515. Four issues of *The Lichenologist* amounting to 399 pages were produced under the Senior Editorship of Dr. Brown, and two issues of the *Bulletin* totalling 91 pages by Dr. Gilbert who retires from the post of Editor this year after 10 years in office.

A tremendous amount of hard work goes on behind the scenes of the Society by Officers and other devoted members, to make the BLS a truly professional, specialist society for lichenology both nationally and internationally. To single out every individual meriting thanks would take far too long and even then there is the danger of forgetting some quietly hard-working individuals; to name a handful would be equally unfair and unrepresentative. However, on behalf of the whole Society I would particularly like to thank one person, the retiring President who, as a professional lichenologist, has contributed significantly to lichenology throughout the year, as co-editor of the Flora, has worked long hours on the project and, as President, has chaired some extremely lively Council meetings where people with widely differing views have had their say and decisions have finally been reached amicably. Steering such a difficult ship through such stormy waters has been no easy task, yet he has managed it splendidly to the credit of the Society.

In conclusion, then, but to change the metaphor, this year has been one of heavy spade-work preparing the ground for the production of the Flora, but through it all has been the knowledge that we will be reaping the fruits of these labours in the years to come.

Tim Moxham
(Secretary, British Lichen Society)
Report delivered to the Annual General Meeting 6 January 1990).

DATES FOR YOUR DIARY

The 1991 Annual General Meeting will take place at the Natural History Museum on Saturday 5 January 1991. This will be followed by an exhibition, so please start giving some thought to that now. In the afternoon there will be the usual lecture meeting.

Also on Friday 4 January at 18.00 in the Meeting Room of the Royal Entomological Society of London, 41 Queen's Gate, London, SW7 5HU there will be a booksale, slide-show and buffet.

The next Council meeting will be held on Thursday 20 September 1990 in the Natural History Museum. If you have any items that you would like discussed by Council, please let William Purvis know in good time.

WOODLAND INDICATORS OF ECOLOGICAL CONTINUITY - a correction.

At the A.G.M. in January this year, I circulated copies of Dr. Francis Rose's Indicators of Ecological Continuity. I regret that two species were omitted from the National Indicators of Ecological Continuity (NIEC) list, due to a clerical error. Please add *Lecanora quercicola* and *Wadeana dendrographa* to the NIEC list.

Nick Stewart

SHETLAND LICHENS

I am preparing a checklist of Shetland Lichens. If you have any records for Shetland (including Fair Isle and Foula) which have not yet been submitted to Mark Seaward for the BLS mapping scheme, could you please send them to me? I can extract the information and then pass the mapping data on to Mark. Many thanks.

Kery Dalby

LICHEN SOCIETY GREETING CARDS

Ramalina cuspidata

A reminder that this latest design by Claire Dalby is still available. Packets of 10 are £4.00 (post free), and packets of 5 are £2.50 (post free). Proceeds go to the *British Lichen Society* to which cheques should be made payable. When ordering by post, send to Mrs. A.M. O'Dare, 13 Barrows Road, Cheddar, Somerset, BS27 3AY.

COPIES OF *THE LICHENOLOGIST* WANTED

Mr H Harada has written to say that he wishes to purchase Volumes 1,2,4,5 and 8 of *The Lichenologist*. If anyone can assist then please contact him at: Natural History Museum and Institute, Chiba, Aoba-cho, Chiba 280, Japan.

(It has been suggested to me that a 'For Sale and Wants' column might be included in The Bulletin. I am reluctant to publish numerous requests for *The Lichenologist* but I will consider 'For Sale' notices relating to the journal and useful items such as hand lenses and microscopes. Ed.).

INTERNATIONAL ASSOCIATION OF LICHENOLOGY SUBSCRIPTIONS

Subscriptions for membership of the I.A.L. during the period 1987-1993 costs $20.00 or S.Fr. 32.00 (Swiss Francs). For U.K. members it is probably easier to pay by International Money Order, though the cost of this (about £2.50) + postage to the U.S.A. makes it quite expensive. However it is now possible to pay in £ sterling; the cost is £13.00 and cheques may be made payable to T.H. Moxham (IAL UK subs. a/c), Dept. of Plant Sciences, University of Bath, Claverton Down, Bath, Avon, BA2 7AY.

NEW MEMBERS

The following new members joined the Society between October 1989 and February 1990. (J.M. - Junior Associate Member)

Please notify the Assistant Treasurer of any change of circumstances as soon as possible as this will keep membership records up-to-date and ensure that you receive all Society literature without delay.

Dr. Teuvo AHTI, Kotitorpantie 2E, 00690 Helsinki 69, FINLAND.
Fraser S. CAMPBELL, Dept. of Botany, University of Nottingham, NOTTINGHAM, NG7 2RD.
Dr. Judith V. CLARK, 30 Plynlimmon Road, HASTINGS, East Sussex, TN34 3LT.
Dr. Jose M. ESTEBAN FERNANDEZ, c/o. Lopez de Hoyos No. 184 piso 50B, Madrid 28002, SPAIN.
Dr. Burghard HEIN, Botanisches Museum, Konigin-Luise-Strasse 6-8, D-1000 Berlin 33, WEST GERMANY.
Miss. Janice I. HENDEY, 30 Willettt Close, PETTS WOOD, Kent, BR5 1QH.
Mrs. Barbara LACHELT, 76 Angela Avenue, San Anselmo, CA 94960, U.S.A.
Mr. Francois LUTZONI, 104 Cote du Passage, Levis, Quebec G6V 5S9, CANADA. (change of address)
Dr. Marcelo P. MARCELLI, Rua Guaxupe 949, Vila Formosa CEP 03416, Sao Paulo - SP, BRAZIL.
Mr. D.E. McCUTCHEON, Normans Riding Poultry Farm, Winlanton, BLAYDON-ON-TYNE, Tyne and Wear, NE21 6LA.
Dr. Gary W. MIDDLETON, 8c Grove Park, Camberwell, LONDON, SE5.
Dr. Kyung-Hee MIN, Department of Biology, Sookmyung Women's University, Yongsanku, Seoul 140-742, KOREA.

Ms. Sheila MURPHY, 19 Crompton Green, Castleknock, Dublin 15, IRELAND.

Mr. Barry NATTRESS, 25 West Leigh Drive, West Ardsley, WAKEFIELD, West Yorks., WF3 1DH.

Mrs. Marianne J. OVERTON, Hilltop Farm, WELBOURN, Lincs., LN5 0QH.

Mr. Michael OXFORD, 21 Cains Close, Kingswood, BRISTOL, Avon, BS15 2ZB.

Dr. Aysen Ozdemir, Anadolu Universitesi fen Edebiyat Fak, Eskisehir, TR-26470, TURKEY.

Mr. Lewis S. PROUDFOOT, 17A Philbeach Gardens, LONDON, SW5 9DY.

Mr. Heike SCHWERDTNER, Seebergerstrasse 15/17, 2800 Bremen 1, WEST GERMANY.

Miss Karen A. SIMPSON, 8 Huntfield Road, CHEPSTOW, Gwent, NP6 5SA. (J.M.)

Ms. Irene VAGTS, Groepelinger Heerstrasse 225, 2800 Bremen 21, WEST GERMANY.

PUBLICATIONS FOR SALE

Write to **Academic Press, 24 Oval Road, London NW1 7DX, UK** asking for pro forma invoice (and stating for how many years you have been a member of the Society) for:

The Lichenologist backnumbers 3, 6-7, 9-21. (complete Volumes only)
for members £26.00
for non-members . £80.00

Write to **Mr. J.M. Gray, Myrtle Cottage, Church Lane, Kingston St. Mary, Taunton, Somerset, TA2 8HR, UK** sending remittance with order (payable to The British Lichen Society) for:

Bulletin backnumbers 1-47 (photocopies of A4 sheets) and 48-65.
for members . . . . . £1.50 (each)
for non-members . . £3.00 (each)

Bibliographic Guide to the Lichen Floras of The World (second edition) by Hawksworth and Ahti (reprint from *The Lichenologist* **22** 1) . . . £5.00

Checklist of British Lichen-forming Fungi, Lichenicolous and Allied Fungi by Hawksworth, James and Coppins (1980)
for members £4.00
for non-members . . £6.00

Guide to the Literature for the Identification of British Lichens by Hawksworth (1970) £1.00

Horizons in Lichenology by Dalby, Hawksworth and Jury (1988) . . . £2.50

Key to the Lichen-forming, Parasitic, Parasymbiotic and Saprophytic Fungi by Hawksworth (1983)
for members £3.00
for non-members . . £5.00

Guide to Microchemical Techniques for the Identification of Lichen Substances by White and James (1985) £1.50

Waterproof Notebooks overprinted 'British Lichen Society' £3.50
overseas . . . £4.00

Self-Adhesive Lichen Photographs (33mm size) *Rhizocarpon geographicum, Aspicilia subcircinata, Caloplaca cirrochroa, Peltigera praetextata, Roccella phycopsis, Parmelia saxatilis,* each 10p

Write to **Mrs. A.M. O'Dare, 13 Barrows Road, Cheddar, Somerset, BS27 3AY, UK** sending remittance with order (payable to 'British Lichen Society') for:

Lichen Society Greeting Cards
Ramalina cuspidata . . . . . 5 for £2.50
. . . . . 10 for £4.00
Solenopsora candicans . . . 10 for £3.00

BRITISH LICHEN SOCIETY
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REFEREES (BEGINNERS)
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O.L. Gilbert, PhD, Department of Landscape Architecture, The University of Sheffield, S10 2TN
D. Jackson Hill, DPhil, Department of Continuing Education, The University, Bristol BS8 1HR.

REFEREES (ADVANCED)
B.J. Coppins, PhD, Royal Botanic Garden, Inverleith Row, Edinburgh EH3 5LR. (*Bacidia* and *Micarea* spp. only)
A. Fletcher, PhD, Leicestershire Museums Service, 96 New Walk, Leicester LE1 6TD. (Marine and maritime lichens.)
D. L. Hawksworth, DSc, FLS, FIBiol, CAB International Mycological Institute, Ferry Lane, Kew, Surrey TW9 3AF (Lichenicolous fungi).
P.W. James, BSc, FLS, Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.
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F. Rose, PhD, Rotherhurst, 36 St. Mary's Road, Liss, Nr Petersfield, Hants GU33 7AH (Corticolous lichens).
G. Salisbury, 38 Lostwithiel Street, Fowey, Cornwall. (Thelocarpaceae).
J.W. Sheard, PhD, Address under 'Regional Treasurer'. (*Buellia, Rhizocarpon, Rinodina.*)
L. Tibell, PhD, Institute of Systematic Botany, University of Uppsala, PO Box 541, S-751 21 Uppsala 1, Sweden. (Caliciales s. lat.).

CONTENTS

BULLETIN 66. Issued by the British Lichen Society, c/o Department of Botany, Natural History Museum , Cromwell Road, London, SW7 5BD (Telephone 071 589 6323 ext 552). Edited by P.D. Crittenden, Department of Botany, The University of Nottingham, Nottingham, NG7 2RD, who is author of all unsigned articles, except Lichenologia. The view of contributors are not necessarily those held by the British Lichen Society.

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