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BRITISH LICHEN SOCIETY BULLETIN

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FORTHCOMING FIELD MEETINGS

Ilfracombe - Devon(15 - 20 April 1988).

British Lichen Society Flora Workshop/Systematics Association Training Course.

Leader: Professor D. L. Hawksworth

The Gower Peninsula - South Wales (15 - 26 August 1988).

Leader: Mr. P. W. James.

Howgill Fells - Cumbria (21 - 24 October 1988).

Leader: Dr. O. L. Gilbert

LICHEN IMPOVERISHMENT WITHOUT AIR POLLUTION

On 7th October 1987, the UK Central Electricity Generating Board confirmed its plans to build the world's largest sulphur extraction plant at Drax power station in Yorkshire as a component of a £600 million anti-pollution programme. The installation of such equipment is long overdue, indeed as far back as 1971 Peter James and myself stressed that such equipment should be included in new power station designs during a public inquiry in Plymouth. It is also apposite that this announcement should be made in the course of the European Year of the Environment, which otherwise promised to pass almost unnoticed by lichenologists.

With the UK, falling mean sulphur dioxide levels have led to improvements in the lichen flora in many urban areas; recolonization has been documented in Birmingham, London, Newcastle upon Tyne, and the West Yorkshire connurbation. In the case of London, improvements are continuing. In 1984 I discovered a second site for Parmelia caperata in Ruislip, and in September 1987 Brian Coppins turned up a small thallus of P. sulcata in Hyde Park (a site in which it was not seen during a detailed examination of the site for such thalli in 1980). However, while such improvements are gratifying, this situation does not seem to be mirrored in rural less-polluted parts of the country where signs of deterioration are still found. Unfortunately too few figures are available from pollution recording guages in such areas to pin-point changing pollution patterns. In south Devon it is nevertheless salutary to note that the extremely sulphur dioxide sensitive Usnea articulata has been disappearing from exposed situations in the area during the last 5 - 7 years; it has been lost from some situations where it formerly grew spectacularly (e.g. Morleigh).

This note has been stimulated by observations on the changing status of some of the rare lichens in south Devon over the last 18 years. A comparison of the losses of species from well studied areas in the UK which were polluted and those which were less so showed that while up to 90% of the lichens found since recording began has been lost from those affected by air pollution, 9 - 15% had still disappeared from sites where this could not be considered as a major factor. Concern over why such changes occur have largely been eclipsed during the last 10 - 15 years by that over the effects of air pollution, but I believe that the time is now ripe for those concerned with lichen conservation and lichen physiology seriously to examine the significance of other factors.

The need for anxiety in this respect can be illustrated by some examples from south Devon. In the case of the Slapton Ley Nature Reserve, at least 26 lichens (9% of the flora) have disappeared since 1961. This is partly due to loss of habitat from a combination of the effects of Dutch Elm Disease, building and wall maintenance and destruction, changes in sea defences, and burning scrub. It is however but a part of the picture as many species still hang-on, but in such reduced quantities. Usnea ceratina grew to 42 cm in Duck Marsh at Slapton in 1970; now not only is the species absent there but the willow trees on which it grew have mainly died and disappeared and those remaining are mostly dying --- however, small pieces of the lichen still occasionally turn up in other parts of the Reserve. Nearby, at Widdicombe House above Torcross, a line of mature sycamores long famous for the abundance of Teloschistes flavicans is dying; Anaptychia ciliaris and Physcia tribacioides were not refound there this summer, and this last species has also been lost from Beeson due to orchard felling and from Slapton due to scrub burning. On Dartmoor, the only tree known to support T. flavicans lost this between 1985 and 1987 as a result of being "topped" for safety reasons and subsequent upgrowth of new shoots; at that site, at Buckland-in-the-Moor, the populations of Lobaria pulmonaria are also being reduced dramatically due to the vigorous growth of ivy. At Goodrington, near Paignton, trees supporting saucer-sized colonies of Parmelia quercina were found to have been felled on a visit this summer, and nearby at Berry Head, Brixham, the terricolous lichen communities associated with limestone crags have been greatly reduced by excessive visitor pressure. This story could be extended .....

In 1974, together with Brian Coppins and Francis Rose, we prepared a review stressing factors other than air pollution that deleteriously affected lichen communities*: nutrient-enrichment, agricultural sprays, water pollution, maritime pollution, woodland managment, heathland management, quarrying and mining, public pressure, other organisms, and overcollecting. Reflecting on the research in these fields, it is salutary to find that our level of knowledge of many has scarcely advanced over the last 13 years. Proposals for research grants in these areas merit priority consideration by Research Councils.

Even in the absence of special funding, we can learn a great deal by comparing the past and present lichen floras of single sites, taking note of changes in the habitat itself. As such changes can be long-term, the most stisfactory way to preserve the base-line data is by the publication

of detailed lists of the species present at a site together with indications of the range of habitats, communities, and factors that seem as though they could pose future threats. Without such studies stretching back into the last century (and even beyond!), it would not have been possible to chart the changes in the lichen flora of sites such as Epping Forest and Charnwood Forest. All members of the British Lichen Society can make a major contribution in this regard by "adopting" important sites, surveying them, and publishing the results in appropriate local journals, a policy I have adopted myself over the last 20 years. Such articles are also important when sites become threatened and can have some positive influence in public debates.

A variety of factors other than gaseous air pollution affecting lichens are to be considered at the Society's Annual Lecture Meeting on Saturday 9th January. I hope that this will serve to stimulate an increased awareness of such factors, and further a desire to increase the present level of site documentation.

D. L. HAWKSWORTH
President

*In The Changing Flora and Fauna of Britain (ed. D. L. Hawkesworth), pp. 47-78. Academic Press, London & New York.

GRANTS FOR FIELDWORK

At the Annual General Meeting of the Society held on 21 February 1987 it was announced that Council would give favourable consideration towards applications for modest financial assistance toward the costs of members attending Society Field Meetings, Lichen Workshops, Field Study Centres, etc., or incurred in lichenological projects.

The object is to assist and encourage members of the Society who are students, unemployed, or others where costs otherwise prohibit attendance. Such occasions provide valuable means of increasing lichenological knowledge, especially where experts are always at hand and very willing to assist.

As the scheme has only just been adopted no fixed sum has been allocated per meeting, and each application will be assessed on its merits. It is envisaged, however, that Council will impose limits especially where overseas travel is involved. Council will require a short report from successful applicants who, it is expected, will complete Mapping Scheme Record Cards when appropriate.

Further details and Application Forms are available from the Secretary; a stamped and addressed envelope should be enclosed with enquiries.

ANOTHER FOLIOSE LICHEN FOUND IN INNER LONDON

It was Paeony time in the Chelsea Physic garden and also a chance for David Galloway, Jack Laundon, John Henry Looney and myself to see the Hypogymnia physodes which Oliver Gilbert had reported from two Catalpa spp. in an earlier bulletin (58:28). We found this species without any difficulty. The thalli were small, no bigger than 1cm diam., but were still quite common on the two trees Oliver mentioned and were also found above head height (we borrowed a ladder!) However, our best find was a small fragment of Parmelia subaurifera on Catalpa bigonioides, about 1cm across at its widest part, with poorly formed lobes and isidia. It looked as if this fragment had once been part of a larger thallus and was far from healthy. A photograph was taken which included a scale to monitor its future progress (if any!).

Parmelia subaurifera was recorded by Dillenius from Charlton Wood in the 18th century and from Tooting by Crombie late last century. More recently, Rose and Hawksworth (Nature 289:289-292 (1981) reported an increase of this and other species in NW London. However, the closest then known locality to Trafalgar Square with Parmelia subaurifera was given as Osterley Park, W of Kew Gardens.

Jack Laundon also noted several plants of sterile Placynthiella icmalea (det. BJC) on a sloping trunk of Diospyros lotus. An overlooked species for London.

O. W. PURVIS

A LICHEN IN MY BEER

Whilst running the lichen course this last summer in Scotland, I was intrigued to hear that the photographic group, also at Kindrogan, had been to Pitlochry, the nearest town to the Centre, and had found lichens growing on the internal walls of an hotel lounge. Questioning produced the fact that the hotel was the Airdanair though they could not tell me what the lichens were.

It all sounded exciting, so our group investigated. After many blank gazes from the local populace, it was established that the hotel in question was in fact the Ardanaigh Hotel and we had to be very nice to the proprietor, who, although he could not serve us afternoon tea, did open up the bar, not for liquid refreshment, but to allow us to investigate briefly.

The reason for the lichens being on the inside walls, was because the wall had been an outside one and when an extension was built, the wall became internal, complete with its lichen flora. Not very extensive coverage, for only three taxa were recorded, Lecanora dispersa, Caloplaca citrina and C. saxicola. It is unlikely that with the dry atmosphere and poor light, they will thrive, though they may remain pickled as herbarium specimens.

CHRIS. HITCH

BRITISH LICHEN SOCIETY FLORA WORKSHOP/SYSTEMATICS ASSOCIATION
TRAINING COURSE - DEVON FRIDAY 15 - WEDNESDAY 20 APRIL 1988

Leaders: Dr. B. J. Coppins, Prof. D. L. Hawksworth, Mr. P. W. James, Prof. D. M. Moore and Dr. O. W. Purvis.

Introduction: This course will provide a unique opportunity for both amateur and professional lichenologists to test the accuracy and style of the Flora in the laboratory and field. Devon has a rich and varied lichen flora and it will be possible to find in excess of 400 lichens. Taxonomic training will also be provided.

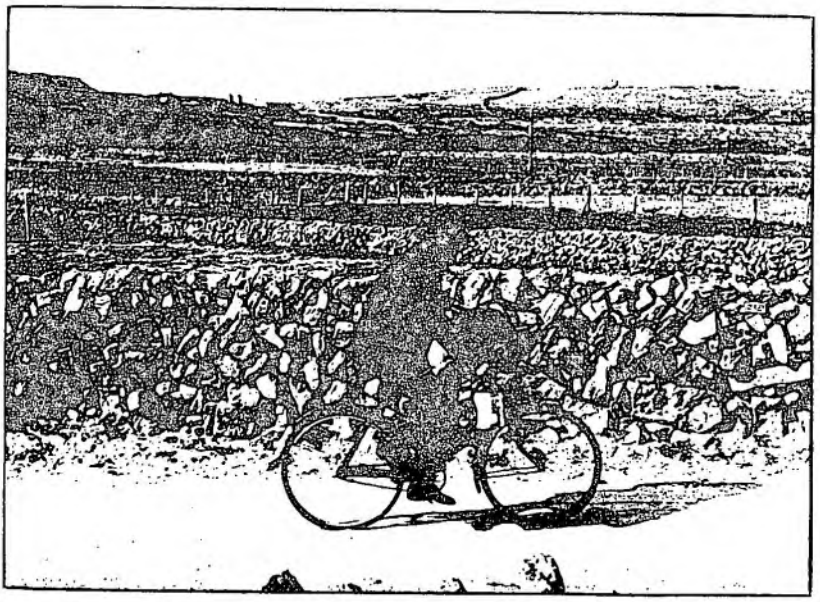
Funding: Through the generosity of the Systematics Association, a limited number of bursaries will be awarded to enable amateurs to attend. Anyone wishing to apply for a grant should complete the tear-off slip on the Field Meeting Broadsheet and send it to Prof. D. L. Hawksworth.

Venue: Granville Hotel, Granville Road, Ilfracombe EX34 8AT. Tel: (0271) 62015 (Prop. Mr. John Northcott) Cost B&B £10.00, £4.00 evening meal. Please make own bookings and complete tear-off slip at end of Field Meeting Broadsheet. Accommodation may be limited and early booking is advised.

PRELIMINARY PROGRAMME

15th p.m.	Dinner.
	Introduction to Workshop (Prof. D. L. Hawksworth)
16th a.m.	Breakfast
	Lab. session: Introduction and arrangement of Flora (Dr. O. W. Purvis)
	Field excursion: Torrs Park, 1 km W of Ilfracombe (Grid ref: 12/47-50-)
p.m.	Lab. session: Key testing - identification of heathland lichens
	Dinner
	Lecture: Generic concepts in pyrenocarpous lichens (Mr. P.W. James)
17th a.m.	Breakfast
	Field excursion: Black Tor Copse, c. 7 km SW Okehampton (Grid ref: 20/56-89-)
p.m.	Lectures: Synopses of difficult crustose genera (Aspicilia, Caloplaca, Acarospora, Buellia, etc.) [Various speakers, 15 mins. each]

18th	a.m.	Breakfast
		Lab. session: Key testing - identification of woodland lichens and granite floras.
	p.m.	Lunch
		Lab. session and testing of sterile key
		Dinner
		Lecture: Discussion of generic criteria in lecideoid genera [Dr. B. J. Coppins]
19th	a.m.	Breakfast
		Lab. session: Generic key discussion [Peter James]
		Field excursion: Valley of Rocks, 2 km NW Lynton (Grid ref: 12/49-70-)
	p.m.	Lab. session: Key testing - identification of maritime and saxicolous groups
		Dinner
		Lectures: Synopses of difficult pyrenocarpous genera (Arthopyrenia, Verrucaria, Tehlidium, etc.) [Various speakers, 15 mins. each]
20th	a.m.	Breakfast
9.00-11.00		Discussion on nomenclature, synonyms and consistancy in terminology (Adv. Cttee)
11.00-12.00		Discussion of schedule for completion of Flora
		Depart



THE IRISH FIELD MEETING, SUMMER 1987

During the first half of the field meeting we studied the varied habitats in the Sligo area. Although mature ancient woodland is scarce, good Lobarion associations were found. The luxuriance of lichen growth and the variety in species was very exhilarating. Many of the species encountered were new to me, and long hours were spent in the evenings with coffee and keys working up my collections! Whilst in the field centre David Richardson and Roy Alexander set up a Peltigera identification service, whereas Mark Seaward and I took on Cladonia. These turned out to be difficult tasks, but ploughing through numerous keys usually brought success! Peltigera proved particularly tricky and few concrete names were pinned on specimens of the P. membranacea / P. canina group: the shape of the rhizinae varied depending where on the thallus you looked, and naming often resorted to the "it should be" principle! The expert eye of Pat MacCarthy for saxicolous species (particularly pyrenocarps), and his useful comments in the field, gave me an excellent start on groups which I had not yet dared to attempt. Many of the specimens he identified for me are species new to the University of Reading Lichen Herbarium.

Whilst in Connemara the group task was to survey the National Park. The Park itself is sited in a well recorded square, but detailed species list and conservation suggestions for sites of specific Park interest were needed. Not only were some impressive lichens found, but the rugged terrain and splendid upland scenery made this part of Ireland a delightful area for fieldwork. The requirement for a separate annotated species list for each site enforced repetitive thoroughness in recording. This was particularly helpful for me for really getting to grips with the more common lichens.

During the field meeting I collected almost 250 fully labeled lichen specimens which have now been incorporated into the Reading Herbarium: 28 of these are species not previously present in the herbarium, and a few have been sent away for expert determination. A complete computer print-out of the labels has also been sent to Mark Seaward for addition to the meeting's record cards.

MARK WATSON

The man carrying the can on a bicycle in County Wicklow

The rather poor reproduction (opposite) is of a postcard that was not brilliant in the first place. It was sent to the President by members attending the Sligo excursion with the inscription

The man on the bike with a tin
Found Bryoria brown, long and thin
With no President here
- to make it all clear
We gave up and went for a gin.

PORLOCK, JEWEL OF SOMERSET

By the time I reached Bossington car park the sun had begun to melt away the morning mist. It was to be warm and sunny, perfect for exploring the coast and for once we were free of the "clutter constraints" imposed on the lichenologist whilst straining to identify lichens in the wet.

Sandy O'Dare had joined me for the day and after a welcome pot of hot tea on the front lawn of a "morning coffee served here" establishment, to which I will be eternally grateful, we set off to climb towards the craggy cliffs of Hurlstone Point. This particular Ascent of Man and of course Woman was a world apart from the Bronowski notion. To my mind the first quarter of an hour or so of a lichen field outing is pure mental preparation. Getting into the right frame of mind in order to pace oneself and gather momentum involves, I believe, a replaying of the entire video (however fuzzy) of the 1980 Checklist through one's head as quickly as possible with the body on automatic pilot. To assist the process conversation in some form is highly desirable. Having caught up with the news, those of a nostalgic disposition may wish to reflect upon the decline and fall of the Lecidea empire or those halcyon days of Lobaria laetevirens, but for the many with a passion for lively discourse of the kind which rouses the emotions to the full, the "dustbin species" debate is a must. This operates like a balloon debate, which, instead of throwing out people, throws out species which don't seem to fit in anywhere. The "dustbin" is a category of species renowned for their awkwardness, that having most likely slipped through the net many years ago, are re-emerging just now to embarrass us all. For example, blue-grey stains on acid rocks in hilly country, with vague blackish fruits which could be anything, belong to Lecidea confluens. Stirring stuff! Of the most daring topics for discussion in the field few can better one or two of the following:

* identifying a species of Peltigera from a crumpled portion;
* what criteria define a spore?
* the merits and demerits of pipe tobacco;
* who exactly is CUDBEAR?
* the popularity of facial hair with leading British lichenologists.

Whatever the banter, avoid the ultimate error common amongst beginners, that of mentioning or even hinting, at the urgent need for a "good" key to Cladonia squamules!

To me the village of Porlock, shunning publicity and not screaming to be noticed by passing tourists, has always held a strange fascination. While standing on the narrow path above Hurlstone Point one cannot fail to detect a mysterious sense of importance about the place. Did Walter Watson ever stand here to feel its influence? Even if he did, he nevertheless had a near miss, for if his boot had made contact with the Heterodermia obscurata thalli which marginally impinge on the line of the track, I'm convinced he would have recorded it.

As both of us reversed down the slope from the track onto the spongy cushions of thrift, eye-level vision revealed a healthy population of terricolous lichens. We listed 23 species. Amongst them were Teloschistes flavicans, Parmelia taylorensis, Dimerella lutea (an unfamiliar but typical maritime habit, hugging the underside of broken cushions and squashed flat against the mineral soil), Leprocaulon microscopicum, Bacidia scopulicola and the exquisitely designed Parmelia endochlora. A large fertile patch of Solenopsora vulturiensis was longingly admired. From here we continued to follow the winding track east a little way to where it crosses a wide valley of Cladonia rich boulder scree and searched in vain for Heterodermia leucomelos. Instead, the tape ran Cladonia cervicornis, fimbriata, foliacea, squamosa, portentosa, furcata, rangiformis, floerkeana, ciliata, chlorophaea, etc., etc., etc.

To escape the lure of the Sirens we headed towards a huge plate-like rock outcrop. The sandstone ledges were bulging with sticky masses of vascular plants and bryophytes and were draped with bundles of Sphaerophorus globosus, but were far from easy objects to traverse. Up here Pertusaria lactea and Lepraria neglecta were in their element but unfortunately we weren't, and slowly but surely our squamulose bodies convoluted and plicate, descended the face.

And so to lunch along the beach, where Sandy unravelled the lichen mosaics of the pebble-strewn shore; furlong upon furlong of Lecidea lactea and Buellia stellulata. To the rear of the beach, a dry stone wall held a well kept secret which Sandy by chance had happened upon; a magnificent development of Lecanora subcarnea looking not unlike a dirty green Pertusaria crust.

The afternoon? Well that's another story altogether. Nice finds of Lecanora varia and many awkward specimens to identify. I've made my excuses. A great day.

VINCE GIAVARINI

APPROACHES TO LICHEN AESTHETICS II

Our Thomistic examination of Parmelia saxatilis (Bulletin 60) revealed the inherent similarity between the aesthetic apprehension of a lichen and its morphological taxonomic investigation, both activities dependant upon a detailed awareness of the plant's particularity (claritas = quidditas, whatness) i.e. upon the recognition of its distinguishing characteristics, the individuality of each creature, celebrated by Hopkins:

"Each mortal thing does one thing and the same,
Deals out that being indoors each one dwells."

Subsequent approaches in this series will all, in one way or another, depend upon awareness of the individuality of the lichen under consideration, echoing the Keatsian dictum: "Beauty is truth", and illustrating how a proper aesthetic understanding can quicken and subsume scientific awareness.

Although the Thomistic approach need not be limited to cases of cyclic or related thalli, we shall now adopt a different approach to clarify some sources of aesthetic impact in squamulose lichens. We shall construct a model, informal rather than rigorous, of a squamulose lichen thallus, showing how aesthetic delight in such a lichen derives from a perception of the spatial forces and tensions interacting within it.

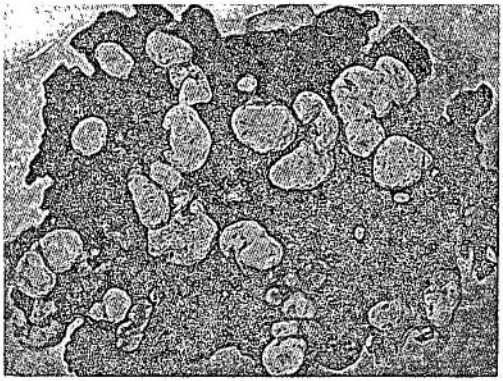


Figure 1.

Toninia caeruleonigricans

(Photograph by Adrian Hick)

2. Informal model for the construction of a squamulose lichen thallus

a) We begin with a bare visual field, represented by a large circle (fig. 2a).

b) The mind invests this field with a sense of location by providing it with a mental grid. We represent this by an orthogonal network of lines (fig. 2b).

c) Our field still lacks interest. Attempting to remedy this, we populate the field with identical circles one grid unit in diameter (fig. 2c).

d) Much of the flatness and lack of interest remaining is due to sameness of pattern in the field. We proceed to introduce further interest by

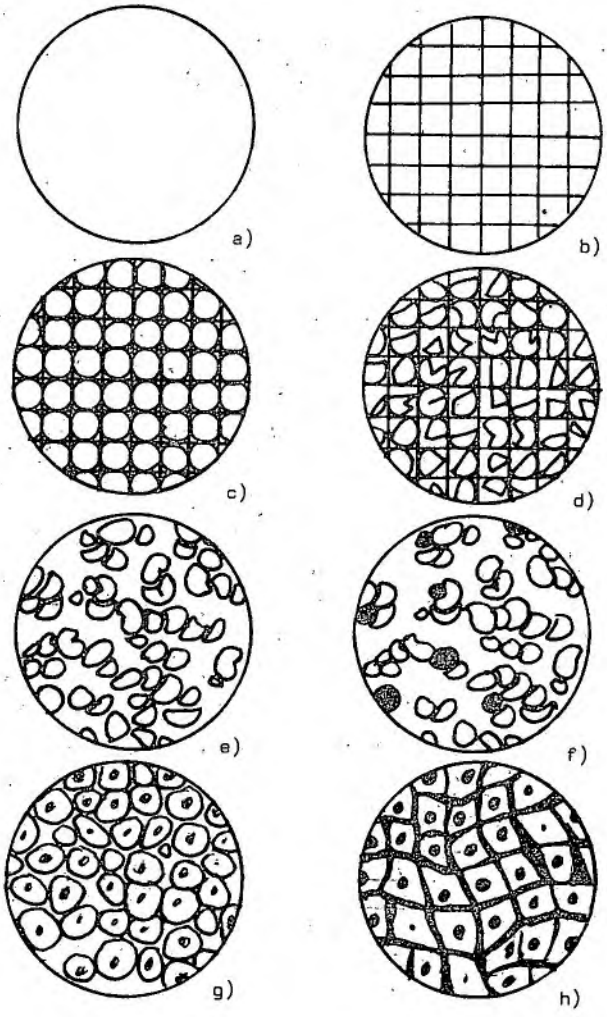


Figure 2. Informal model for the construction of a squamulose lichen thallus

exercising a portion of each circle, noting the tensions and interplay of energies this creates (fig. 2d).

e) We remove the grid-frame, and allow the various shapes resulting from our excisions to respond to one another in shape, size and position, in one of the many different possible ways suggested by the forces and tensions our excisions created (fig. 2e).

f) After a little further enrichment we have produced a structure (fig. 2f) not far in appearance from certain squamulose lichens such as Toninia

caeruleonigricans (fig. 1). We realise that the aesthetic delight of such a plant comes very much from the visual dance, the interplay of energies, forces and tensions created by the arrangement and interaction of parts of such a scattered squamulose thallus.

It may be noted that partial excision of each circle in the field population is not necessary for the production of a passable likeness to an actual thallus. Consider figure 2c. If we remove the grid-frame, allow some slight variation in comparative shape and size in the circle population, and introduce some smaller inscribed darkened circles, we have (fig. 2g) a tolerable likeness of Aspicilia contorta, We note that this lichen's nearness in design to the stable pattern of figure 2c lends it an air of repose and overall balance lacking in the first thallus we modelled (figure 2f). Or, returning again to fig. 2c, if we allow the populating circles to shrink and darken and the grid-frame to grow wavy and its lines to undergo irregular thickening, we can even obtain figure 2h, reminiscent of the crustose areolate thallus of Rhizocarpon geographicum.

Our model has clarified the nature of the aesthetic pleasure we take in some squamulose lichens. It may also suggest that the interplay of energy we have discerned in squamulose formations arises, in actual lichen thalli, from the dictates of substrate and other ecological factors and from physiological and genetic necessities, their nearest equivalent in our model being the dictates of tension and force caused by our excisions (fig. 2d).

Acknowledgement: I should like to thank Mr. A. Hick for the photograph of Toninia caeruleonigricans.

A. HENDERSON

Dictionary of British and Irish Botanists and Horticulturalists

Staff of the Botany Library, British Museum (Natural History) are collecting information for a supplement to Ray Desmond's Dictionary of British and Irish Botanists and Horticulturalists. The original text has been converted to machine-readable form, to which amendments and new information are being added. Please send corrections, additional information for existing entries and new biographical information on botanists, horticulturalists (including gardeners, landscape gardeners and nurserymen), plant collectors and botanical artists to: Mrs. Chris Ellwood, Botany Library, British Museum (Natural History), Cromwell Road, London SW7 5BD.

LICHEN STUDIES AND EXPERIMENTAL DESIGN

This article is indirectly the result of my observing some problems in the presentation of data and the use of statistical methods in a recent volume of the *Lichenologist* and directly because I pointed this out to those concerned! However, in the same volume there is also a paper which deserves commendation for its high standards; so although this is primarily meant to address problems of statistics and research design, perhaps it is useful for all of us to reconsider the framework of science which we work within. I am not attempting to cover fully the philosophical or practical aspects of this meeting of theory and empirical method, but only to appeal to lichenologists to improve both their methods and their papers submitted to the *Lichenologist*.

Green (1979), in his book on sampling design and statistical methods lists ten principles to use when conducting an environmental study. The first of these is "Be able to state concisely to someone else what question you are asking. Your results will be as coherent and as comprehensible as your initial conception of the problem." (Green 1979, p25). This concept superficially is obvious and of course is always thought to be part of the definition of a research problem but it is one that often seems to be omitted. He lists other more typical advice related to design problems, but one additional point is the necessity of using a pilot study, to test the methods and design before use. Again this is a concept we all like to think we have carried out, but how often is this actually put into practice?

Neither of these ideas are startling, yet were they and the concomitant theories and restrictions considered more carefully, fewer problems would occur in the scientific literature. Platt (1964) in a paper to *Science* on strong inference discusses how certain systematic methods of scientific thinking are more profitable than others, and with foresight discusses how this has helped and would continue to help the field of molecular biology. He notes "strong inference consists of applying the following steps to every problem in science, formally and explicitly and regularly: 1) devising alternative hypotheses; 2) devising a crucial experiment (or several of them), with alternative possible outcomes, each of which will, as nearly as possible, exclude one or more of the hypotheses; 3) carrying out the experiment so as to get a clean result; 1') recycling the procedure, making subhypotheses or sequential hypotheses to refine the possibilities that remain; and so on." (Platt 1964, p

347). He is suggesting that we should always try to determine what experiment could *dis*prove a hypothesis, thereby narrowing the options to the probable cause. In an appeal to quality and integrity, Branscomb (1985), discusses how unintentional self-deception can obscure the interpretation of the results of an experiment and lead to problems in science. He gives an example from physics and asks the question of how much further work is required on a hypothesis, even when the answer obtained is that expected, and in agreement with others! In another example of the speed of light, newer equipment showed that all earlier values, which were similar to each other, were also similar in their errors to the later determined value, which was even outside the earlier error range.

In a more practical vein, in the Bulletin of the Ecological Society of America, Wang (1986) discusses the use of statistics in ecology (where in one volume of *Ecology* a number of papers made errors), and notes how the misuse of statistics had also occurred in agronomy, horticulture, phytopathology, and probably among other disciplines. Wang briefly discusses the importance of basic statistical assumptions, and notes Hurlbert's 1984 paper (see below) on pseudoreplication, which is worth reading in itself, beyond its obvious important statistical value. Wang concludes with three points for Journals to help improve the quality of the research reported: 1) to require a statement that the authors have made an attempt to have their statistics checked; 2) to provide documentation, not to be published, to the reviewers to allow them to understand the procedures properly; and 3) to let the reviewers state whether or not they had checked the statistics or if the paper should be sent to a statistician. In the same volume of the Bulletin there was another pertinent paper on writing with precision, clarity and economy (Mack 1986), which might make for other useful points of discussion within the BLS. One relates to a quotation attributed to Churchill that "This paper, by its very length, defends itself against the risk of being read." (Manchester 1983 in Mack 1986).

Pseudoreplication (Hurlbert 1984) is the process of using inferential statistics incorrectly, to test for treatment effects (or observed differences), with data from experiments where treatments are not replicated or the replicates are not statistically independent. To determine whether or not true replication is present partially relates to the independence of the samples. Two samples in the same growth chamber therefore would not be independent. Other factors which must be considered include temporal change, procedural effects, experimenter bias, experimenter-generated variability, inher-

ent variability and random factors. Statistical concepts are often complex and the correct use of methods should involve careful consideration. However, a discussion of various statistical methods and assumptions is beyond these comments and I refer you to the above papers and statistical texts such as those by Snedecor and Cochran (1980) or Sokal and Rohlf (1981) for further information.

Briefly, it is up to any particular investigator to determine first what question is being addressed and then to postulate null hypotheses to test aspects of the problem. Only by disproving null hypotheses can one limit the problem under investigation and make significant contributions to science. These tests of the hypotheses need careful design to test what is desired to be tested, and also to be within the limits of the method, whether statistical or experimental. Only when the above factors are allowed for in the design can statements be properly made, related to the solution of the question asked.

J.-H. LOONEY

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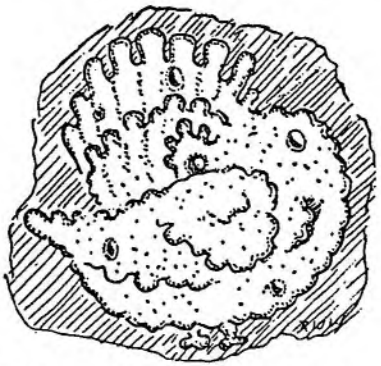
Across the Irish Sea, for a week in Connemara and then a further week in Sligo, a group of enthusiatic members filled in numerous gaps in the recorded distribution of many less rare species of lichens. As well as organising and leading the excursion, David Richardson acted as chef and provided haute cuisine for the party. Previously he, and other leading members of the Society, had been in Berlin for the Botanical Congress, where the International Lichen Association dinner seems to have been a success (although David was not chef on that occasion); I am told that afterwards an Italian lichenologist wrote in a letter very appreciatively of the "songs and jokes of Hawksward". No doubt Seaworth contributed to the occasion as well. Lichens give pleasure as well as providing a basis for serious study, and apparently they also enrich the language; Arthur Miller writes in his recent reminiscences of Marilyn Monroe that when she laughed, people who were with her laughed too, until they were "as limp as lichens" (not a simile that would have occurred to me).

My illustration this time was first published seventy years ago in a book entitled



The Lichen.

How to tell the birds from the flowers. The author, who was a professional mathematician, contrasted in verse the greedy habits of hens with those of lichens, which

Exist in only two dimensions;
A life restricted to a plane,
On rocks and stones a greenish stain.
They live upon the simplest fare,
A drop of dew, a breath of air.

In the early days of North Sea oil pollution-conscious visitors to the remoter parts of our coasts were misled by the black coating below the barnacle line, and reported spurious oil spillages. Now everyone knows that it is Verrucaria maura, or at least that it is a lichen, and naturalists generally are familiar with the notion of lichen zonation on the rocky shores of temperate seas, with a black zone between tide marks, a grey zone above this, and a yellow zone higher up. Less familiar is a similar notion in connection with fresh waters. Pereira, Casaves and Llimona have surveyed the margins of creeks and glacial lakes at altitudes above 2500 m in the Sierra Nevada, Granada, and observed a not entirely dissimilar zonation of lichens. On the lowest rocks subject to maximum flooding is a Verrucaria zone (V. aquatilis and other species); higher up where flooding is sporadic is an Aspicilia zone, and above this a yellow zone. Corresponding with the barnacle line is a narrow zone of Staurothele clopimoides and Dermatocarpon weberi; altogether a striking parallel with the seashore.

Beyond the other end of the Mediterranean in the Negev desert Schachak, Jones and Granot (it is rare nowadays to come across a paper by a single author) have been investigating the grazing behaviour of snails on lichens such as Caloplaca alocica growing on limestone boulders. We are all familiar with the radula tracks (tooth marks) of snails on the surfaces of saxicolous lichens in the oceanic climate of Britain, but it is interesting to learn that the same thing happens in a hot, dry desert. The snail Euchondrus desertorum scrapes grooves nearly half a centimetre deep in the limestone (the tissues of Verrucaria species penetrate twice as deep as this), thus obtaining scanty nutriment and producing a lot of limestone dust. In the Negev apparently they weather the rock at a rate of about one tonne per hectare per year.

The President drew my attention (through the Editor) to an item in The Times with the title "Tweed passes the test". The British Medical Journal had received an enquiry to the effect that "since lichens have been known to become contaminated by radionuclides, is there any danger in using them for dyeing ?" Wisely, the Journal referred the question to William Purvis, who provided a very full and clear answer. He said, amongst other things, that amateurs use "cudbear" for dyeing, but are discouraged from doing so on conservation grounds, and concluded (giving convincing reasons) that it is unlikely that there are currently any dangers in the use of British lichens for dyeing.

CUDBEAR.

Psilolechia leprosa: AN OVERLOOKED SPECIES?

Psilolechia leprosa, is a rather inconspicuous, grey, Lepraria - like lichen with pinkish brown apothecia and which has a helpful C+ red reaction. It was first described as a new species earlier this year in the Lichenologist 19(1):29-42. It had then been recorded from sheltered, slightly calcareous, copper-rich rocks in Norway, Sweden, Greenland and Britain. In Britain, its known localities included three Cornish mines and it was also found on Ben Lawers. Since the publication of this article it has been found in copper mines in Scotland and Wales, on a mudstone outcrop in Lancashire and on a churchwall in Warwickshire. (Full details of these localities are given in the "New, rare and interesting" section elsewhere in this Bulletin). The latter two records are interesting because of their implications for the ecology of the species. The mudstone outcrop is not associated with any mineralisation. The church wall on the other hand is heavily stained by copper from grilles protecting stained glass windows.

The species should particularly be looked for on other churches where there is obvious copper staining on the walls, especially in areas receiving relatively little SO_2 air pollution.

Churchyards are much frequented by lichenologists in Britain and I urge you to discover whether this species is overlooked or genuinely local. So please test any grey "Lepraria" fragments you may encounter with C; there are no C+ red Lepraria spp. in Britain, and they do not have pinkish fruits! I look forward to hearing of your records.

O. W. PURVIS

Gyalidea diaphana, new to Scotland

Gyalidea diaphana (Körber ex Nyl.) Vezda was found on stones at the bottom of streamlets in Glen Clova, between Ben Tirren and White Hill, VC 90 (Angus), at two localities GR 37/375741 and GR 37/387.731 in August 1987. Altitude 600-800 m, leg. Robin Munro (E). This is the first report of this species outside the Sudeten Mountains in Czechslovakia and Poland. When fresh (wet) it appears as a black stain with tiny (c. 0.3 mm in diameter) but distinctive, watery-violaceous coloured apothecia; when dry the apothecia become blackish and very inconspicuous.

B. J. COPPINS.

JANUARY MEETINGS 1988

Nominations

Nominations for Officers for 1988 and three members of the Council for the period 1988-89 should be sent in writing to the Secretary, T.H. Moxam, Dept. of Plant Sciences, University of Bath, Claverton Down, Bath, Avon BA2 7AY before 26 December 1987, please. No person may be nominated without their consent. Mrs. Barbara Benfield, Professor David H.S. Richardson and Mrs. F. Joy White retire from Council and are not eligible for re-election as Council members.

Venue

This year, all meetings will be held at the Royal Entomological Society of London, 41 Queen's Gate, London SW7 5HU, just around the corner from the British Museum (Natural History). Council will meet in the afternoon of Friday 8 January 1988 at 14.00 (please let the Secretary have any items that you wish Council to discuss), then in the evening at 18.00 there will be the book sale and on the following day, Saturday 9 January 1988, there will be the A.G.M. and exhibition meeting in the morning and the lecture meeting in the afternoon.

Book Sale

The book sale has become, through its success, a regular annual event in the calendar of the British Lichen Society and this year it is being held on the Friday evening between 18.00 and 21.00 in the Meeting Room of the Royal Entomological Society. The admission charge of £7.50 covers the cost of a buffet and one glass of wine.

Frank Brightman and Mark Seaward will again be in charge of the proceedings and will be happy to give advice on reserve prices of sale items. Members are asked to bring along any books, journals, reprints, illustrations or other ephemera with lichenological, botanical or natural history interest, and the proceeds of all sales will be split on a 50:50 basis between the person selling the item and the Society. If you are unable to attend the sale but would like to sell any items, please make arrangements with either Frank Brightman or Mark Seaward. Unsold items will be made available the next day at the A.G.M. for those unable to attend the book sale.

Members wishing to attend please send a cheque for £7.50 (payable to "The British Lichen Society") to The Secretary by 30 December 1987 so that arrangements for catering may be made.

Annual General Meeting, Exhibitions, Slides and Lecture Meeting

The Annual Gemeral Meeting will be held in the Meeting Room of the Royal Entomological Society at 10.30 a.m. on Saturday 9 January 1988. After the A.G.M. there will be the usual exhbition meeting to which members are invited to contribute; this is a valuable forum to show fellow lichenologists items of iterest and to discuss informally many topics of mutual interest, so please bring along your exhibits and help to make it a success. There will also be a member's slide show. The lecture meeting will take place in the afternoon.

Summary

10.00 R.E.S. Rooms open to B.L.S. members.

10.30 Annual General Meeting.

1. Apologies for absence.
2. Minutes of A.G.M. 21 February 1987.
3. Matters arising.
4. Officers' reports.
5. Meetings 1988-1989.
6. Election of Auditor.
7. Election of three members of Council.
8. Election of Vice-President (Council's nomination: Professor D.H.S. Richardson).
9. Election of President (Council's nomination: Dr. B.J. Coppins).
10. Any other business.

11.30 Exhibition Meeting.

12.30 Lunch (no formal arrangements).

14.00 Lecture Meeting (see programme on next page).

The Final Word on a B.L.S. Logo

No final decision was made about adopting a logo for the Society, though we are grateful to those persons who submitted suggestions. The Cladonia featured on the front of the Society's prospectus has been used on the new headed notepaper and will appear on the joint Linnean Society/B.L.S. publication "Horizons in Lichenology" which should be available early in the new year. Perhaps, by default, it could be considered as a logo.

LECTURE PROGRAMME

Our Changing Lichen Flora

14.00 Introduction, Our changing lichen flora.
(D.L. Hawksworth, CAB International Mycological Institute).

14.15 Preliminary studies on the effects of acid rain in upland Britain.
(J.-H.H. Looney, British Museum (Natural History)).

14.30 Changes in the Lobarion communities in the Lake District.
(I.P. Day, Cumbria).

14.45 Woodland managment changes and their effect on the lichen flora.
(P.A. Wolseley, Somerset).

15.00 The impact of dutch elm disease on the lichens of the British Isles.
(M.F. Watson, University of Reading).

15.15 The changing status of morphs of the peppered moth (Biston betularia) in relation to lichens and air pollution.
(K. Rigby, University of Manchester).

15.30 Tea

16.00 Changes in the lichen flora of Suffolk churchyards.
(C.J.B. Hitch, Suffolk).

16.15 Improvements in the lichen flora of the Midland counties.
(B.W. Fox, Cheshire).

16.30 Lichens, urban denizens.
(A. Henderson, University of Leeds).

16.45 General discussion.

Forthcoming exhibition

An exhibition of Botanical Illustrations by Claire Dalby R.W.S.,R.E., including the original paintings for the wallcharts "Lichens and Air Pollution" and "Lichens on Rocky Seashores" published by the British Museum (Natural History) which will be for sale, will be held from 26th January to 19th February 1988 at the Consort Gallery, Sherfield Building, Imperial College, Exhibition Road, London SW7. The gallery is normally open Monday - Friday 9 a.m. - 5 p.m., Saturday 9 a.m. - 1 p.m., but visitors are advised to check by ringing 01-589 5111 ext. 3372.

25. Absconditella celata — A tiny, hidden secret.
Derivation:
abscondo (Latin) = I put out of sight
-ellus (Latin diminutive suffix) = little
celo (Latin) = I conceal

26. Coniocybe furfuracea — With head dusty, and covered in scaly powder.
Derivation:
konis (Greek) = dust
kybe (Greek) = head
furfures (Latin) = bran
-aceus (Latin suffix) = like

27. Endocarpon pusillum — With fruits immersed, and weakling.
Derivation:
endon (Greek) = within
karpos (Greek) = fruit
pusillus (Latin) = very small, weak.

28. Gyalecta jenensis — With fruits like empty bowls, coming from Jena.
Derivation:
gyalon (Greek) = a hollow
jenensis (Latin) = hailing from Jena, East Germany.

29. Lempholemma botryosum — Slimy-sheathed, in grape-like clusters.
Derivation:
lemphos (Greek) = snivel, slime
lemma (Greek) = bark, peel, rind, an outer covering or sheath
botrys (Greek) = a bunch of grapes
-osus (Latin suffix) = having in plenty

30. Opegrapha areniseda — With slits like writing, at home in sandy places.
Derivation:
ope (Greek) = an opening, hole
grapho (Greek) = I scratch, draw, write
arena (Latin) = sand
sedes (Latin) = seat, abode

31. Pachyphiale fagicola — With fruits like stoutly-made bowls, dwelling on beech.

Derivation:
pachys (Greek) = thick
phiale (Greek) = a flat bowl
fagus (Latin) = a beech-tree
-cola (Latin substantival element) = an inhabitant of

32. Usnea hirta — Hairy moss.

Derivation:
oshnah (Arabic) = moss
hirtus (Latin) = rough, hairy

33. Verrucaria elaeomelaena — Endowed with warts and oily-black.

Derivation:
verruca (Latin) = a wart, a steep place
-arius (Latin suffix) = having, possessing
elaion (Greek) = olive oil, any oily substance
melas (Greek) = black, swart.

A. HENDERSON

Lichenoj to Okcidenta Europo Illustrita determinlibro

by G. Clauzade and C. Roux (1985)

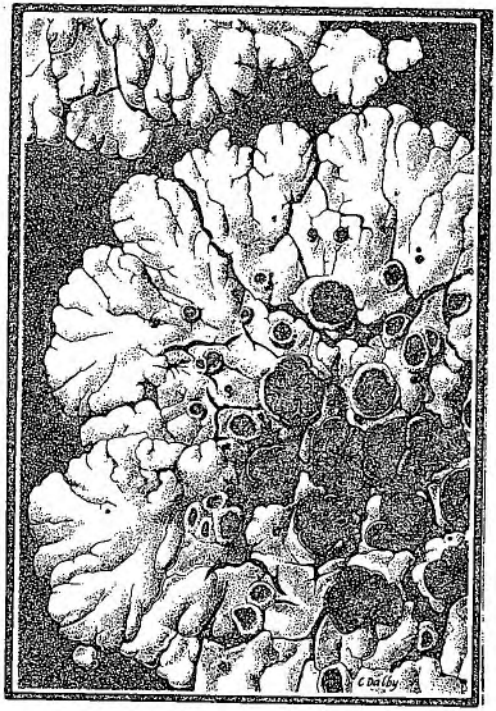
This important and comprehensive book was reviewed in the Lichenologist 19(3) (1987). Dr. Roux wishes to point out: "The reasons which led us to choose Esperanto instead of French when we wrote our book are stated in both languages in the opening pages (p. 5-8). An Esperanto Dictionary by J. C. Wells (a "Teach Yourself" book) is available in bookshops in Britain, in most cities in Western Europe, and in the U.S.A. Esperanto is far from being obsolete, but a living language and gaining ground these last years in scientific circles. Two scientific Academies have already adopted it as a preferential instrument on account of its qualities of precision, concision, clarity, and learning simplicity. It is considered that one person in a thousand can use it throughout the world. The recent Congress of the Centenary of the language gathered nearly 6000 persons from 73 nations in Warsaw, where during a week the language was freely used in every way, from small talk to the handling of most specialized subjects in every sphere. An important number of members of both Houses of Parliament (about two hundred) would not object, and may even be favourable to the teaching of the language in the schools of Britain, under certain conditions".

Lichen Society Greeting Cards

The third design in this series of lichen cards beautifully executed by Claire Dalby exclusively for the British Lichen Society, shows Solenopsora candicans. The cards are blank inside so that they can be used for any occasion. They are sold in packets of 5 at £2.50 (inc. postage). 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. These cards will also be on display at the Annual General Meeting in January 1988.

There are still some cards of Sphaerophorus globosus available at last year's prices of 10 for £3.00.



Solenopsora candicans

IMC IV Regensburg 1990

The Fourth International Mycological Congress (IMC IV) will be held at the University of Regensburg, West Germany, from 28 August to 3 September 1990. An organizing committee and advisory board has been established consisting of Prof. Dr. K. Esser, Bonn; Prof. Dr. W. Gams, Baarn, Netherlands; Prof. Dr. F. Grosmann, Stuttgart-Hohenheim; Prof. Dr. M. Moser, Innsbruck, Austria; Prof. Dr. F. Oberwinkler, Tubingen; Prof. Dr. J. Poelt, Graz, Austria; Prof. Dr. H. O. Schwantes, Giessen; and Prof. Dr. A. Bresinsky, Regensburg. It will be the aim of the IMC IV to include a broad variety of different topics related to both modern and classical approaches to the world of fungi. The congress venue is appropriate as 1990 is the 200th anniversary of the death of Jakob Christian Shaffler, (1718-1790) a citizen of Regensburg and a famous mycologist in the time of Linnaeus, and of the foundation of the Regensburgische Botanische Gesellschaft, the society that was the original publisher of the well-known botanical periodical Flora and is regarded as the oldest surviving botanical association in the world. The scientific programme of the congress will leave enough time to enjoy the charming old city of Regensburg, founded in 179 A.D. by Marcus Aurelius, with its old streets, squares and buildings, some originating from the time of the Romans. A special programme of forays, excursions, and sightseeing tours will be offered before and after the congress, thus giving the opportunity to visit the best places of Bavaria, the Alps and elsewhere. Further information and a form for pre-registration will be distributed later in 1987. All scientists working on fungi in different fields of biology are invited to join the Regensburg Congress, which, because of the easy access from many parts of Europe, is expected to be the largest International Mycological Congress yet held. Further information can be obtained from Prof. Dr. A. Bresinsky, Institut fur Botanik, Universitat Regensburg, Universitatsstrasse 31, Postfach 397, 8400 Regensburg, West Germany.

BLS/ITALIAN Lichen Society Meeting

A joint meeting of the Italian Lichen Society and the British Lichen Society will be held in September 1988 to provide a further opportunity to explore the lichen flora of Italy with the expert guidance of Professor Nimis. The meeting will take place over 5 days and is based near Rome. The theme is "Lichens and Monuments" and will include visits to special sites not normally open to the public. For further details, please write to: Mrs. A. M. O'Dare, Springfield, 13 Barrows Road, CHEDDAR, Somerset BS27 3AY.

NEW, RARE AND INTERESTING BRITISH LICHEN RECORDS

(Contributions to this section are always welcome. Please submit entries in the form species: habitat: locality: vice county (V.C.): grid reference (G.R.): date: comments: recorder. Grid references may be abridged in the interests of conservation; they will be omitted when the record has been published elsewhere).

Alectoria sarmentosa: On sandy heath, Cuthill Links, VC 107 (East Sutherland), GR 28/7--8--, (1987). The first British record near sea level.

B. J. Coppins and T. Keating.

Candelariella medians forma steepholmensis.

On the flat top of a limestone headstone in the churchyard at Collyweston, near Stamford, Lincs (VC 53), GR 43/996028, (1987). A single thallus, surrounded by several thalli of f. medians.

Two small thalli on a limestone headstone in the churchyard at Castor, Cambs (VC 29), GR 52/125985, (1987). In an open south-facing aspect.

Candelariella vitellina forma flavovirella.

On a window ledge (with f. vitellina) on the south wall of the church at High Halden, Kent (VC 15), GR 51/902373, (1987).

K. Palmer.

Leptogium saturninum: On aspen, Strath Carnaig, VC 107 (East Sutherland), GR 28/7--98-, (1987).

B. J. Coppins and T. Keating.

Macentina abscondita: At the base of a juniper bush, Morrich More, VC 106 (east Ross), GR 28/8--8--, (1987). Previously known only from Eridge Park, Sussex (VC 14).

B. J. Coppins.

Psilolechia leprosa.

On copper-containing rock, Ardtanaig Copper Mine, VC 88 (Mid Perthshire), GR 27/692378, (1986)

B. W. Fox.

On walls of derelict mine buildings in mortar-filled crevices impregnated with blue-green copper minerals, Parys Mountain Copper Mine, Anglesey (VC 52), GR 23/44-90-, (1987).

O. W. Purvis.

Beacon Fell north of Preston, VC 60 (West Lancs), GR 34/56-42-, (1986). On more or less shaded, vertical carboniferous mudstone outcrop not associated with any mineralisation, altitude 210 m.

M. Gosling.

Long Compton church, VC 38 (Warwick), GR 42/287330, (1987). In mortar-filled crevices, heavily copper-stained by run-off from grilles protecting stained glass windows in south and east facing walls.

O. W. Purvis and K. Sandell.

Thamnolia vermicularis: On sandy heath, Cuthill Links, VC 107 (East Sutherland), GR 28/7--8--, (1987). This species is normally montane.

B. J. Coppins and T. Keating.

Weddellomyces epicaloplismum: On north facing wall of Toft Monks church, VC 27 (East Norfolk), GR 62/43-96-, (1987). Parasitic on Caloplaca flavescens; the perithecia are erumpent through bleached patches in the host thallus.

P. Cayton and C. J. B. Hitch.

ADDENDA

Cetraria delisei: Rare amongst montane heath communities, Glas Moel, VC 92 (South Aberdeen, GR 37/1--7--, (1987).

R. Munro and C. J. B. Hitch.

Epilichen scabrosus: Licnenicolous on Baeomyces rufus, minute thall resembling Rhizocarpon geographicum in colour. On soil, Charterhouse, Mendips, VC 5 (South Somerset), GR 31/50-56-. (1987). Associated species: Vezdaea aestivalis, V. leprosa.

V. J. Giavarini.

Lecidea limborina: On granite walls on site of old tin mine, central Dartmoor. VC 3 (South Devon), GR 20/68-8--, (1987). Associated species: Belonia incarnata, Bryophagus gloecapsa, Toninia pulvinata; all four species new records for the vice county.

V. J. Giavarini.

Rhagodostoma lichenicola: Parasitic on Solorina crocea, growing in a snow-retaining corrie on Glas Moel, VC 92 (South Aberdeen), GR 37/16-77-, (1987).

R. Munro and C. J. B. Hitch.

Thelocarpon laureri: Colonising the top of a gate, otherwise free from lichens, Layham Mill, Suffolk. VC 26 (West Suffolk). GR 63(03-40-, (1987.

C. J. B. Hitch and P. Cayton.

Ramalina Siliquosa Wanted

Professor W. L. and Dr. C. F. Culberson (Department of Botany, Duke University, Durham, NC 27706, USA) urgently require freshly collected specimens of the Ramalina siliquosa group for cultural investigations. Should you feel able to assist please could you mail recent collections by air. This is required to assist in developments of cultural techniques for these lichens as a part of a major investigation of the chemical races produced by cultures derived from single ascospores. Only material with ascomata should be submitted together with full collection details.

Literature pertaining to British lichens - 3

Lichenologist **19**(3) was published on 17 July 1987.

BOYLE, A. P., McCARTHY, P. M. & STEWART, D. 1987. Geochemical control of saxicolous lichen communities on the Creggaun Gabbro, Letterfrack, Co. Galway, western Ireland. Lichenologist **19**: 307 - 317. [Use of lichens as geochemical indicators of two rock types.]

GILBERT, O. L. & JAMES, P. W. 1987. Field meeting on the Lizard Peninsula, Cornwall. Lichenologist **19**: 319 - 334. [Heterodermia cf. isidiophora (Nyl.) Awasthi new to Europe and Collema latzelii Zahlbr. and Solenopsora liparina (Nyl.) Zahlbr. new to the British Isles.]

JAMES, P. W. & WHITE, F. J. 1987. Studies on the genus Nephroma 1. The European and Macaronesian species. Lichenologist **19**: 215 - 268. [Taxonomic account of 14 species. Nephroma helveticum Ach. and N. tangeriense (Maheu & A.Gillet) Zahlbr. accepted from the British Isles.]

MOXHAM, T. H. 1987. Lichens. Bird Life **May/June 1987**: 31 - 33. [Relationships between birds and lichens.]

NIMIS, P. L. & POELT, J. 1987. The lichens and lichenicolous fungi of Sardinia (Italy). Studia Geobot. 7 (suppl. 1): 1 - 269. [Comments on many species. The name Saccomorpha Elenkin is considered to be the correct generic name in place of Placythiella.]

OTT, S. 1987. Sexual reproduction and developmental adaptations in Xanthoria parietina. Nordic J. Bot. 7: 219 - 228. [After spore germination the fungus spreads rapidly over the substrate, associating with foreign algae until it finally forms a symbiosis with Pseudotrebouxia.]

PEVELING, E. (Editor) 1987. Progress and Problems in Lichenology in the Eighties. [Bibliotheca Lichenologica **25**]. Cramer, Berlin. [Review of many aspects of lichenology.]

SEAWARD, M. R. D. 1987. 300 years of Yorkshire lichenology. Naturalist, Hull **112**: 37 - 52. [History.]

SQUIRES, A. E. & HUMPHREY, W. 1986. The Medieval Parks of Charnwood Forest. Sycamore Press, Melton Mowbray. [£48. Includes further information on the dates of the walls in Bradgate Park, Leicestershire, based on Laundon's pioneering lichen studies.]

WHITE, F. J. & JAMES, P. W. 1987. A chemical checklist of British lichens: part 2. Bull. Br. Lichen Soc. 60: 42 -47. [Details of Nephroma and Peltigera with pull-out of TLC patterns.]

J. R. LAUNDON

NEW MEMBERS

The following members joined the Society between March and October 1987. (J.M.) = Junior Member.
Changes of address should be sent to the Assistant Treasurer - F.S. Dobson, 58 Parkway, London SW20 9HF - so that the mailing list can be kept up to date. Council agreed that a new membership list should accompany the Summer 1988 Bulletin and will be distributed to all members with that issue. Please look at your address lable and inform Frank Dobson of any errors or changes so that the published membership list will be as correct as possible.

Mr. Arsenio T. ALFONSO, Departamento de Biologia Vegetal (Botanica), Facultad de Biologia, Universidad de Leon, E-24071 LEON, SPAIN.
Ms. Felicity A.B. BAKER, Whyteleaves, 4 Downview Road, FERRING, West Sussex, BN12 6QR.
Mr. Nick BERTRAND, 21 Congers House, Bronze Street, Deptford, LONDON SE8.
Mr. John P. BLUNT, Nedd, Drumbeg, By LAIRG, Sutherland, Scotland.
Dr. Sherman G. BROUGH, Dept. of Math. & Science Education, University of British Columbia, Vancouver, BC, CANADA.
Dr. Anne M. BRYAN, 31 Colcot Road, BARRY, South Glamorgan, CF6 8BP.
Mr. William CASEY, 4 Foley Gardens, Stoke Prior, BROMSGROVE, Worcs. B60 4LD.
Dr. Angelo DE MARCHI, Instituto di Ecologia, Universita degli Studi di Parma, 43100 Parma, ITALY.
Mr. Kevin DESOISA, 31 Compton Road, Winchmore Hill, LONDON N21 3NU.
Mr. Neill DUNCAN, 24 Woodlands, Constitution Hill, WOKING, Surrey GU22 7RU (J.M.).
Mr. W.H. EWERS, 22 Skiddaw Crescent, WARRNAMBOOL 3280, AUSTRALIA.
Dr. A. FLETCHER, (change of address) 6800 Carlinda Ave., Colombia, MD 21046, U.S.A.
Mr. Howard F. FOX, Coursetown House, ATHY, Co. Kildare, IRELAND.
Mr. Thomas FRIEDL, Lehrstuhl Pflanzenokologie & Systematik, Universitat Bayreuth, Postfach 10 12 51, D-8580 Bayreuth, F.R. GERMANY.
Mr. Gerardo GUZMAN, Facultad de Ciencias, Universidad de Playa Ancha, Casilla 34-V, CHILE.
Mr. Henry Norman HAMMOND, 39 Outgang Road, Aspatria, CARLISLE, Cumbria, CA5 3HS.
Mr. Reidar HAUGAN, Fauskerudvn. 3B, 2390 Moelv, NORWAY.
Mr. Rob B. JARMAN, c/o The National Trust, Spitalgate Lane, CIRENCESTER, Gloucester, GL7 2DE.
Ms. Elizabeth A. JOHN, Botany Department, University of Alberta, Edmonton, Alberta, T6G 2E9, CANADA.
Mr. Jiri LOUN, Eglise National St. Louis des Francais, Via S. Giovanna d'Arco 5, 00186 ROMA, ITALY.
Miss Rona Mary MACDONALD, Kerrol, Idenbane, By Portree, ISLE OF SKYE, Scotland.
Dr. Carmel MOTHERSHILL, 77 Rosemount Estate, Dundrum, DUBLIN 14, IRELAND.
Dr. Taketo NAKANO, Botanical Institute, Faculty of Science, Hiroshima University, Higashi-senda, Hiroshima 730, JAPAN.
Dr. Fred. M. RHOADES, Biology Department, Western Washington University, Bellingham, WA 98225, U.S.A.
Mrs. Catherine RICHARDS, 115 Gordon Hill, ENFIELD, Middlesex, EN2 0QT.
Mr. Jak P.M. SHOWELL, 78 Barnfield Crescent, Wellington, TELFORD, Shropshire, TF1 2EX.
Mr. R.J. SMITHERS, 42 Chilcomb Road, Harefield, SOUTHAMPTON, Hants. SO2 5GQ.
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CONTENTS

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