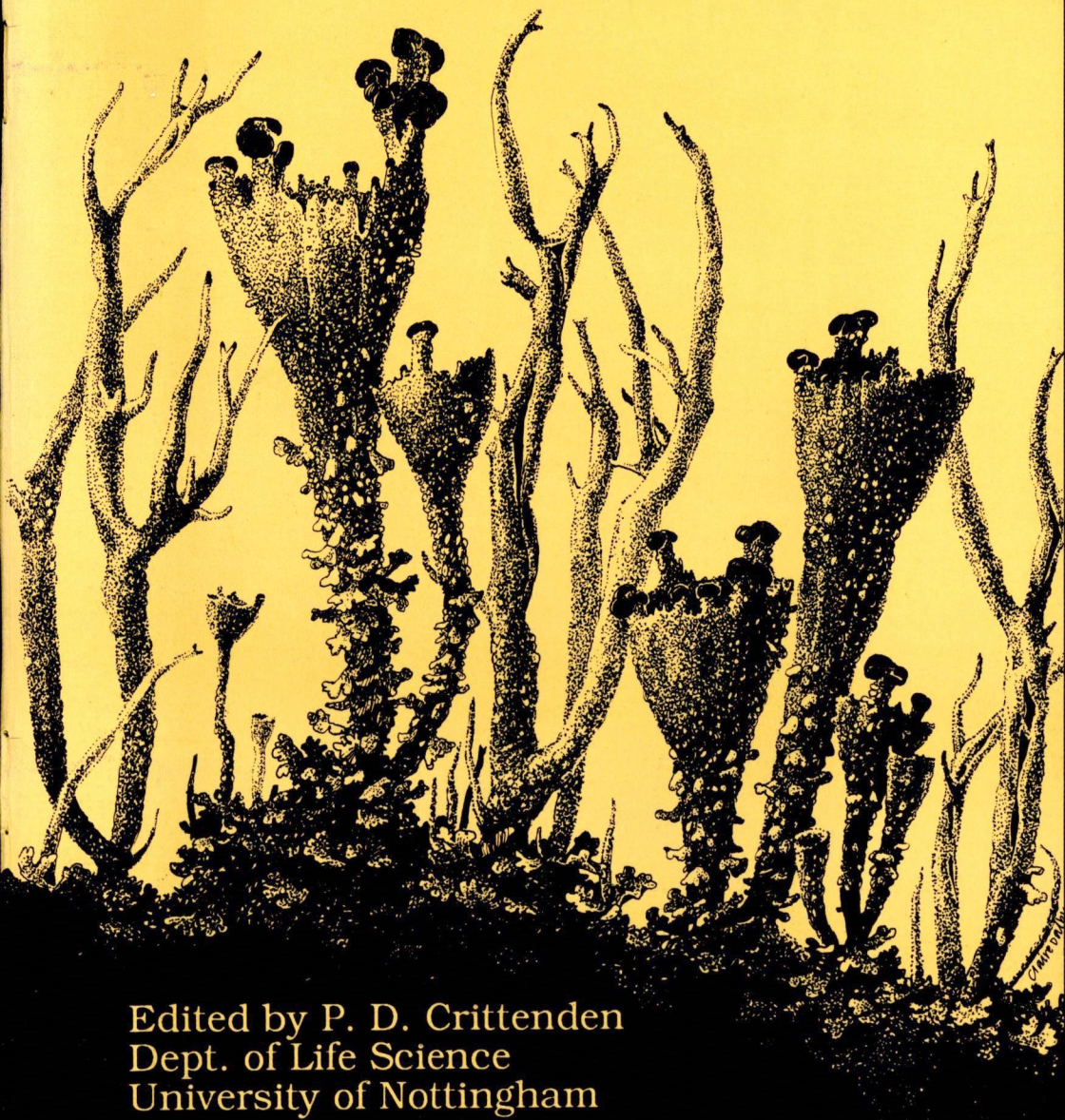


BRITISH LICHEN SOCIETY BULLETIN

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+ key to *Cladonia chlorophaea* group



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Dept. of Life Science
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FORTHCOMING BLS FIELD MEETINGS AND WORKSHOPS

CHURCHYARD LICHEN CONSERVATION, STONELEIGH,
WARWICKSHIRE

Organiser: Kery Dalby

10 October 1992

COUNTY ANTRIM AND COUNTY DOWN

Leader: Brian Coppins

17 - 26 October 1992

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Annual rates except where indicated

(Dollar rates are two times the Sterling Rate except where indicated)

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SUBMISSION DEADLINE

Please would intending contributors to the Winter 1992 issue of the *Bulletin* submit their copy to the Editor by 18 September.

Cover artwork by Claire Dalby

THE LIFE OF AN ITINERANT LICHENOLOGIST

"Robbed by the rain
Driven by the snow
I'm damp and dirty
But don't you know
I'm still willin' "

Lowell George

Some years ago, locked away in a sealed biotechnology laboratory in the centre of industrial Teesside with only one, rather sad-looking tree visible through the windows (which wouldn't open), I thought "there must be something better than this!" Unfortunately I didn't know what! I also lacked the conviction to give up the security of a steady income, throw myself upon the mercies of my own initiative and go and find out what it might be. Fate, however, was about to take a hand - I was made redundant.

What now (I thought)? This wasn't the first time I had found myself in this position and, in all probability, it wouldn't be the last. The answer came in the next BLS Bulletin - The National Trust were looking for someone to do some lichen survey work for them in Northern Ireland. At that time I was very much an amateur with very little experience of field survey work but ... why not? How many people were there who could do the work - and how many of those would be willing (or able) to go to N. Ireland! Come to that, did I want to go to N. Ireland?

I decided that I did and, presumably because they couldn't get anyone else, so did the NT. So I went ... and spent a week, stumbling and fumbling around on superb maritime heaths and in lush oceanic woodlands, totally out of my depth but having a wonderful time. I managed to make over 30 new vice-county records so I can't have done that badly but, most importantly, the seed of an idea was sown.

Next came a request from the Nature Conservancy Council (again in the BLS Bulletin) for someone to look at some woods in SW Scotland. Would they pay my expenses? They did and again I had a great time, wasn't quite so much out of my depth and managed to produce a reasonable report at the end of it. Things were beginning to take shape. Could I make a living at this? Could I, at least, make more than I was getting on Social Security? (Which wouldn't be difficult). It must be worth a try.

The year 1989 didn't start well. I hadn't worked for about 6 months and the DHSS were pressuring me to get a job, my car was slowly falling apart (well,

quite quickly actually) and I couldn't afford to get it repaired, my girl-friend of some years had run off with someone young enough to be my son and, all in all, I was getting rather fed up with the whole business. Maybe this notion of making a living out of something I actually wanted to do was just a bit of childish foolishness and I really ought to get a proper job. Fate, however, had other ideas. A friend of a friend - the warden of a local nature reserve (yes, they do have them on Teesside) - during a chance meeting in a pub (where else) just happened to mention that The National Trust for Scotland were advertising for seasonal rangers. Nothing to loose, I phoned them the next morning (Thursday) to be told that the closing date for applications was the following Monday but "if we send you a form by first-class mail you should get it tomorrow morning and you might be able to get it back to us in time". The next morning the form arrived; where did they want wardens? Arran, Glen Coe, Ben Lawers - Ben Lawers! That sounds interesting. "Seasonal ranger/naturalist required for 14 weeks from June to September on an NCC funded contract." That's the one for me. Now I had an hour to fill in the form and get it back in the post.

A letter, a few days later, informed me that my application had been received - now all I could do was wait. Meanwhile, I was whisked off to Aberystwyth, at a few days notice, on a short contract for the Nature Conservancy Council. Six weeks crawling around on my hands and knees on disused metal-mines in February and March left me with nothing worse than a short, sharp dose of 'flu - not the pneumonia that the conditions seemed to merit. I remember sitting huddled behind a wall on a Welsh hillside watching the snow rapidly obliterate any recognisable features of the landscape (my car was three miles away) and pitying the poor fools I had left behind in their warm, cosy, aseptic lab in Teesside. I was loving every minute of it! At the end of the six weeks I had accumulated two first modern British records (*Placynthiella hyporhoda* and *Melaspelia interjecta*) and four species new to science (an *Arthonia*, a *Vezeadaea*, and two species of, what appeared to be, an undescribed genus!) I was hooked again. All thoughts of getting a 'proper job' were banished to the realms of childish foolishness.

In the middle of this a letter had arrived from Edinburgh inviting me for an interview for the Ben Lawers job. Also during this period, by another of those quirks of fate that appear to influence the most important events, a paper had appeared in *The Lichenologist* entitled "The Lichen Flora of Ben Lawers" by Gilbert, Fox and Coppins, and it just so happened that on my application for the job I had given as my referees . . . Oliver Gilbert and Brian Coppins. I suspected that the decision as to whether I would get the job had already been made. If they wanted a lichenologist then I was home and dry. If they didn't, then why were they even bothering to interview me?

I drove from Aberystwyth to Perth, went for the interview and spent much of the time chatting with Ros Smith (NCC, ARO for Perthshire) about Welsh metal mines. It just so happened that she had done her PhD at Liverpool on heavy-metal tolerance in plants and, consequently, knew many of the sites I was working on! I got the job. Things were looking up, fourteen weeks in one place. Now all I had to do was to learn what some of these things looked like: *Protothelenella*? *Pyrenopsidium*? *Pyrenopsis*? *Ropalospora*? *Sagiolechia*? *Schadonia*? There were whole genera here that I'd never even heard of! Here we go again, into the deep end!

The first few weeks were rather hectic; long days in the field (or on the hill) followed by evenings at the microscope trying to sort out what on earth I'd got. Slowly it began to take shape - if this is *Miriquidica griseoatra* then this must be *Lecidella bullata* and, therefore, this has to be *Micarea crassipes*! But what's this pale-fruited pyrenocarp with 3-septate spores, or this *Catillaria* with multispored asci, and as for this strange, soreciate *Rhizocarpon* . . . ??? The answers were, *Leucocarpia biatorella* (new to Britain), an undescribed species and an undescribed genus respectively - and it didn't stop there. After a few weeks I had accumulated a box full of specimens that didn't appear to fit into the accepted scheme of things and I was getting progressively more and more confused. A week in Edinburgh with Brian Coppins helped - he managed to sort out many of them but a residue remained that defeated even him! I began to realise that there was more here than could be done in fourteen weeks and this was only one mountain - albeit, the best. What about the rest of Scotland? However, September was approaching and with it the end of my contract. The prospect of returning to life on Teesside was just too horrific to contemplate. I could be unemployed in Scotland just as well as on Teesside - a lot better in fact - plus I had a lot more chance of getting work here than I ever did in the north of England. The decision was made. I was staying.

During the next year I didn't make a lot of money, but I survived. I also got to go to some superb places - I visited Kinloch Hourn (one of the most isolated places on the west coast of Scotland) not once but twice, did some reconnaissance on Beinn Eighe and the Trotternish ridge (Isle of Skye) for future contracts, and was also one of the fortunate three who did Ben Nevis by helicopter (see Oliver Gilbert's article elsewhere in this issue). Some days, when the sun was shining, the thought that I was actually getting paid for doing this seemed too good to be true. Then there were the bad days: 2500 ft up in the Creag Meagaidh NNR in February, a blizzard was raging and I was trying to survey a relict *Betula* wood and having to scrape the snow off the trees before I could see what was growing on them! Then I thought "How much am I getting paid for this!"

One of the most significant events of the year happened 4000 ft up on Aonach Mor in the Ben Nevis range:-

Brian Coppins - "Have you got any Pd Alan? I think this is *Lecidella bullata*."

Me - "Here you are."

Brian - (He tests the specimen) "Doesn't seem to want to go."

Me - (Looking at the lichen) "looks like *Micarea subviolascens* to me."

Brian - "I think your right, my son. In fact, I'm sure your right."

Me - (thinks) - "I've just identified a *Micarea* for Brian Coppins! I've arrived!"

In fairness it must be said that Brian had only seen the species in the field once before, and that was some years ago on Beinn Dearg, while I had been finding it fairly regularly over the past year.

I should perhaps mention at this point that working on Scottish mountains is a little different from surveying an English churchyard. For a start the site is often remote: a 2-3 hour hike being the usual prelude to a day's work, often over rough ground and always uphill. Then there's the weather which is rarely warm, often windy and usually wet! Even when it's not actually raining the hills are often covered in cloud and then you're working in a thick fog which soaks your clothes, steams up your hand-lens, makes your note-book and collecting packets soggy and is generally unpleasant - it's also rather dangerous. However, it's the good days you remember. Crawling out of a tent at 3000 ft after three days of stumbling around in the clouds and discovering that this morning you are above them is an experience not soon forgotten; and besides when the lichens are good, what's the weather got to do with anything! A friend tells the tale of a day in the field with me in Sutherland. We'd had a five mile hike to get to the site - which included a 2500 ft climb - the rain was lashing down and it was bitterly cold; but I hadn't noticed. This was a site which no lichenologists had ever visited before and it was superb. "Look", I kept saying, "this is *Lecanactis abscondita*" or "I'm sure this is *Catillaria scotinodes*" and "I think this is that undescribed *Fuscidea* I told you about" but she was unimpressed. "You've got ten more minutes and then I'm going". I sulked all the way back to the car; but I'd seen enough and I'll be back next year.

The stories are endless. There was the two day expedition to a piece of woodland in Knoydart only to find that it had burnt down a couple of years before but nobody had thought to tell me; an uncontrolled 70 ft slide down a snow bed on Aonach Mor - followed by a further 40 ft tumbling over the rocks at the bottom which wasn't so much fun; the ancient, hitch-hiking crofter on Harris who sang me a song in Gaelic and after ten miles I felt like I'd known him for ten years; the corncrakes on Skye "crax-crax"-ing far into the night . . .

Last year I had as much work as I could reasonably handle. I was fully employed on short contracts, mostly for the Nature Conservancy Council for Scotland, doing the field work in the summer and spending winter writing reports. I visited the Isle of Skye three times - or was it four? I've lost count - the Outer Hebrides twice, West Sutherland twice plus the Dornock Firth and Beinn Eighe. So far this year I've got nothing! I have to wait until March/April for the NCCS to find out how much money is available; it may be a lot, it may be nothing but it will probably be somewhere in between. One year I may end up washing dishes and busking on the streets of Stirling. There's no job security and sometimes the strain of not knowing where you're going to be next month (or week) and rarely spending very long in one place gets a bit wearying. It also plays havoc with personal relationships! It may not be an ideal life-style but it has its compensations and I know that if I did get a regular job again I'd soon be dying of boredom.

Slainté mhath

Alan Fryday

JANUARY MEETINGS 1992

Evening buffet and lichen quiz

Twenty three people attended this event in the agreeable surroundings of the rooms of the Royal Entomological Society of London. The number attending was slightly fewer than in previous years. Perhaps some would-be attenders were put off by the introduction of a lichenological quiz rather than the more familiar book sale. As it happened, members need not have worried as this was very much a light-hearted affair. This year a buffet was provided by Café Suze. Starters were taramasalata and crudites followed by a main course of lamb tagine on rice with green salad or moussaka for vegetarians. Dessert was a rather delicious chocolate roulade and cream. The lichen quiz was provided by Oliver Gilbert and Albert Henderson. Members formed teams of three - the more senior and learned members of the Society suddenly finding themselves rather popular! However, both Oliver and Albert had devised a wide variety of questions for both amateur and professional (see below), so that even the expert was frequently perplexed. For instance a good knowledge of the layout of Duncan and the BLS mapping card was useful, so too was a knowledge of Latin or Greek.

Oliver showed some slides of lichens which we were asked to identify. These were often difficult and perhaps some clues could have been given in instances where there are several species which look very much alike in the field. The overall winner was the Sandy O'Dare, Brian Coppins and Mary Hickmott team which achieved the grand score of 17 (out of 30) and were duly presented with a fine bottle by Oliver Gilbert. Scores varied widely: it is rumoured one group achieved one point! Afterwards, a good selection of slides were shown from a range of field meetings in Britain and also from Jamaica by Howard Fox. It was a pleasant evening, there being good opportunities for people to socialise and to catch up on news. Members who still fear quizzes need not worry as we understand that this is unlikely to be an annual event.

1992 Annual General Meeting

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

Exhibitions

An interesting range of exhibits was on display, though more use could have been made of the 9 Maler Haley boards which had been erected to form a 3' x 30' span on a bench top and two 6' x 6' boards at the back of the room! Amongst the smaller exhibits were photographs of the BLS meeting at Rogate, two nice examples of lichens photocopied by colour xeroxing from 35mm transparencies at a High Street processor for £2.50 a print. The resolution was quite good in view of the cost and certainly adequate for reproduction in most reports. Tom Chester issued the "Churchyard Challenge" as published in the Winter *Bulletin*: interested members are requested to send an SAE with two 28p stamps to Tom for a copy of the "Churchyard lichens list". Also shown were stills of a mite (*Balaustrium mucorum*) on the apothecia of *Xanthoria* using a camcorder, an interesting double exposure of Oliver Gilbert going to super-human lengths to collect lichens, and some pictures of corticolous, foliose species from the Australian Northern Territories. The succession of lichens on a horizontal oak gate bar in E. Devon was monitored over the period '87 to '89. Here *Physcia tenella* was reported to be replaced by *Xanthoria parietina*. Among the bigger exhibits were selections from the archives, notes and photographs of new and interesting lichens and information on a research project.

Archives

The archivist had an extensive array of newspaper clippings which mostly relate to lichens and pollution in some form or other. Mark Seaward featured in the *Independent* asking the question why surfaces that have

resisted lichen attack for many years have now become vulnerable. A form of "Concrete Cancer" was reported where lichens were attacking anti-carbonisation chemicals painted in houses to prevent metal joists from rusting. Conflicts between industrial development and conservation also received coverage including the proposal for a new power station at Plymouth. WI Books plans to publish a new book called *God's Acre*; this will include reference to lichens. A series of "Wildlife Reports" were on display written by George Baron and Nick Hodgetts; these serve to popularise lichenology bringing such matters as lichen transplants and resynthesis, Red Data books and commercially valuable substances to the attention of a wider audience.

Parmelia submontana

Exciting news of the discovery of a macrolichen new to Britain. It was recently found by Brian Coppins and Sandy O'Dare in Dumfriesshire growing on *Acer pseudoplatanus* and the top of a gravestone. It resembles *Parmelia sulcata* chemically but has granular to nearly isidioid soredia and the thallus is more elongate, loosely attached to the substratum and is trailing in well developed specimens. It is a Mediterranean - South European montane species.

Lecidea exigua

Reported also by Brian and Sandy. Recently found on smooth bark of *Corylus* in damp woodland, Tavistock. Otherwise confined to woodlands in W. Germany and Switzerland, Northern Spain and North America. Most likely to be confused with *Japewia carrollii* but is distinguished by the KC+ orange thallus and smaller, thin-walled ascospores. The small size of the apothecia and smaller spores will distinguish it from miserable, poorly pigmented forms of *Lecidella elaeochroma*.

The effect of simulated acid rain on the cation content of *Stereocaulon paschale* and *Cladonia stellaris*.

Minna-Maarit Kytöviita and Peter Crittenden reported on 2 experiments carried out on these lichens in subarctic woodlands to monitor net cation exchange during acidified and natural rainfall events and with four months of simulated acid rain. They concluded that acid rain may result in downward migration of Ca^{2+} and Mg^{2+} due to enhanced ion exchange. Consequently the ratios $\text{Ca}^{2+}/\text{K}^{+}$ and $\text{Mg}^{2+}/\text{K}^{+}$ were reduced in the apices of acid-affected lichens.

Dry weight measurements indicated that *Cladonia* growth decreases or ceases under conditions of acid rain - this could be due to the known sensitivity of photosynthesis to low pH in *Cladonia*. They suggest that the $\text{Ca}^{2+}/\text{K}^{+}$ ratio in lichens may prove a useful biomarker for acid deposition.

Lectures

David Richardson began the afternoon programme with a lecture on lichens and water stress. The topic was appropriately introduced with several slides from the Negev Desert. Here several lichen species are found on rocks of north-facing slopes, including *Ramalina maciformis* and *Teloschistes lacunosus*, but small rocks of south-facing slopes were mainly colonized by endolithic lichens. Free-living cyanobacteria also occur on larger rocks. Professor Otto Lange's classic studies on *R. maciformis* showed how the lichen undergoes fairly abrupt diurnal variation in water content under the influence of wetting by nocturnal water vapour/dew-fall and drying in the early morning desert sun; a brief period suitable for photosynthesis and other metabolic activities thus occurs just after dawn.

In many environments water is frequently delivered as rainfall, and water uptake by most lichens is rapid. Rhizines may be important in water uptake and retention. In some species of *Umbilicaria* water absorption occurs largely through the lower surfaces (eg *U. muhlenbergii*). Thallus water-holding capacity is correlated with the structure of the medulla and cortices. On sudden rewetting of a dry thallus there is a rapid evolution of CO₂ and a loss of metabolites such as polyols into the surrounding water suggesting that rewetting may be a stressful process; these rewetting losses are less extensive in lichens from dry habitats. However, with the exception of a few habitats such as those studied by Professor Tom Nash in the USA, sudden wetting is probably a rare event. All lichens absorb water vapour from humid air but in contrast with species containing green algae, lichens with cyanobacterial photobionts cannot resume photosynthesis unless wetted with liquid water. This difference is nicely illustrated in phycosymbiodemes (lichens in which part of the thallus contains a green alga and another, sometimes independent part contains a cyanobacterium) as elegantly shown by the research of Dr Alan Green in New Zealand.

Next, Andrew Farmer talked about research that he undertook while at Imperial College on the effects of acid rain (ie wet deposited acidity) on epiphytes in sessile oak woodlands. Two sites were studied and compared in detail: Ardery Woods, on the shore of Loch Sunart (NW Scotland), supporting many rare, atlantic lichens and bryophytes including a well-developed *Lobarion pulmonariae* community, and Seatoller Wood at the head of Borrowdale (Lake District) in which the *Lobarion* community has shown considerable decline since the 19th century (*Lobaria scrobiculata*, *Pannaria rubiginosa* and *Parmeliella atlantica* have all become extinct at this site and a further eleven species are considered to have become much rarer). Annual mean SO₂ and NO₂ concentrations at Borrowdale, although

higher than at Sunart, are still very low. However, wet deposited acidity is considerably greater at Borrowdale and the pH of stemflow at this site is consistently lower than that of rainfall (this is not the case at Sunart). Evidence suggests that Seatoller Wood has been, and is still, subject to considerable acid deposition. For example, the pH and exchangeable cation content of both bark and surface soil are lower at Borrowdale compared to Sunart. At both locations there is inter-tree variation in bark pH, and at Sunart those trees supporting the *Lobarion* community have a higher pH and cation exchange content. The nitrogen concentration in the moss *Isoetecium* was found to be higher at Borrowdale than at Sunart and it is believed that nitrogen deposition may cause eutrophication and reduction in species composition.

Are current levels of pollution at Borrowdale detrimental to lichens and bryophytes, or was the decline in epiphytes caused by higher pollution levels in the past? The results of *Lobaria* transplants into Seatoller Wood suggest that conditions here are still inimical to epiphytes although it is possible that the low bark pH represents an irreversible (or long-term) habitat change. It is thought that exposure to low pH in laboratory experiments causes damage to cell membranes as indicated by potassium loss. Long term exposure to more moderate levels of acid deposition may result in cation loss from cell walls and, therefore, nutrient depletion.

Paul Harrisson's lecture concerned the effect of low temperatures on net photosynthesis and dark respiration in the antarctic lichens *Usnea antarctica*, *U. aurantiaco-atra* and *Umbilicaria antarctica* (*Himantormia lugubris* was also investigated but gas exchange rates in this species were below detection levels - this has been confirmed quite independently by Ludger Kappen of the Institut für Polarökologie, Christian-Albrechts-Universität, Kiel, Germany). Net photosynthetic rates were measured using an irradiance value of $200 \mu\text{mol m}^{-2} \text{s}^{-1}$ in the 400-700 nm waveband (Photosynthetically Active Radiation). During the summer period (December to March) on Signy Island ($60^{\circ} 43' \text{ S}$, $45^{\circ} 36' \text{ W}$), in the maritime Antarctic, irradiance values of around $200 \mu\text{mol m}^{-2} \text{s}^{-1}$ were fairly common for much of the day under the usually heavily overcast sky. Maximum rates of net photosynthesis occurred at 0°C in *U. aurantiaco-atra*, 5°C in *U. antarctica* and 13°C in *Umbilicaria antarctica*. However, at -5°C appreciable rates of net CO_2 uptake were still maintained in the *Usnea* species and small but significant rates were observed in *Umbilicaria*. In contrast, dark respiration rates in both species increased with temperature and were greatest at the highest experimental temperatures. In both *Usnea aurantiaco-atra* and *Umbilicaria antarctica* the optimum water contents for CO_2 assimilation decreased markedly with increasing temperature. At 25°C , in the light, net

CO₂ release occurred over most of the water content range for all three lichen species - this was also the case at 20°C for *Usnea aurantiaco-atra*, and near full hydration at 19°C *Umbilicaria antarctica*. Drying curves for *Umbilicaria* revealed that rates of water loss from wet thalli remained constant down to c24% water content by dry weight and then the loss rate declined exponentially. The percentage of free water remaining (P_w) at the onset of the exponential decrease in the rate of drying is governed by a simple geometric relationship:
$$P_w = \frac{[(2 \delta \pi r^2) / (\pi r^2 h)] \times 100}{[(2 \delta) / h] \times 100}$$

where h and r are the respective height and radius of the disc-like thallus and δ is the hydrated thickness of each cortex [cf. Harrisson *et al* (1991) *Journal of Insect Physiology*, 37 (12): 883-890].

Following afternoon tea, Mark Seaward took us back to the Chernobyl Disaster of 1986 in which a pressurized water reactor went out of control releasing the radioisotopes ¹³⁴Cs and ¹³⁷Cs in a ratio that is a characteristic signature for this source. Lichen survey work in Poland has since revealed the extent of the fallout. *Umbilicaria* spp proved very useful for monitoring radioactive fallout; for one thing quite large biomasses of *Umbilicaria* can be gathered without significantly depleting the stock and therefore it is possible to meet the required mass of lichen for detection of background levels. The radionuclide contents of *Umbilicaria cylindrica* and *U. deusta* were surveyed in the early 1980s. Material from some 20 sites at a range of altitudes in the Karkonosza Mountains was analyzed for numerous radionuclides, particularly ¹³⁴Cs and ¹³⁷Cs, providing a unique benchmark against which post-Chernobyl radionuclide burdens can be compared. Post-Chernobyl levels were in the range 120-18200 Bq Kg⁻¹ ¹³⁴Cs and 470-36600 Bq Kg⁻¹ ¹³⁷Cs which were in general 150 x greater than levels before the nuclear accident. Rather interestingly, radionuclide burdens in lichens were correlated with altitude above 800m both before and after the Chernobyl accident. Following Chernobyl, on 28, 29 and 30 May, SW Poland was subjected to high rainfall which was responsible for the deposition of the radioactive fallout: there was little rain during the previous 3 or the subsequent 4 days. The radionuclide content of lichens was also investigated in remoter areas of SE Poland in August 1988; here the Chernobyl signature ratio was also detected but radionuclide burdens were lower than those found in the mountains with *Umbilicaria* containing 600-1300 Bq Kg⁻¹ ¹³⁷Cs. Combustion of lignite in Czechoslovakia to the south is thought to be the major source of the "background" radionuclides found in lichens. The efficiency of lichens as bioaccumulators was very well illustrated by this study.

The final talk of the afternoon was by Oliver Gilbert concerning lichen habitats in chalk grassland. Much of the chalk is covered by superficial

deposits (and barley!), consequently the best examples of chalk grassland are found on slopes. The lichen flora on chalk is richest in the southeast, especially the maritime chalk. Three distinct habitats are important for lichens in this ecosystem: calcareous soil, chalk pebbles and flints. Seventy-four terricolous species have been found; most are "fussy" species. However, good terricolous sites are difficult to find. A total of 65 species have been found on chalk pebbles; the best sites for "chalk pebble" species appear to be those subject to low level disturbance (eg rabbit grazing only). If the site is too stable the pebbles become overgrown by grasses but, at the other extreme, high level disturbance by, for example, sheep also has a negative impact on survivorship. Seventy-seven species have been found on flints and the larger the flint the better it is likely to prove as a lichen habitat. The terricolous lichen flora is best developed on steep slopes subject to land-slip, old drover or packhorse roads, old chalk pits (perhaps because the pH is higher) and at sites where the grassland is at its thinnest. *Pachyospora verrucosa* is one of the gems confined to this habitat on the chalk in southern England. *Verrucaria bryoctona* occurs around anthills which are also refugia for several other terricolous species. Interestingly, many species found on chalk pebbles are also common urban species and many common species on flints are also churchyard species. Oliver commented on the decline of the Breckland rarities: several factors, including episodic pollution were suggested to explain the deterioration. Many of the lichens surviving are in poor condition.

William Purvis, Gill Douglas & Peter Crittenden

SECRETARY'S REPORT FOR 1991

My most eagerly awaited lichenological event of 1991 was the final hand-over of the manuscript of the Lichen Flora of Great Britain and Ireland to the Natural History Museum's Publications in the autumn. Galley proofs are expected to be received in February, page proofs in May with printing during July and anticipated publication in September. The Flora will run to some 700 pages and the cover price is expected to be £60, though members of the Society will receive a discount. The BLS has the option of further reducing the price by directly subsidising the fixed costs. The Society is in a strong financial position and this aspect will be considered over the coming months by Council.

On Friday 4 January over 30 members attended a booksale and buffet held at the Royal Entomological Society of London, and on Saturday 6 January the Annual General Meeting was held in The Natural History Museum. In the afternoon there was a stimulating lecture meeting on the Ecology and Ecophysiology of Lichens.

Council met on four occasions in January, April, September and October. Three Society field meetings were held at Rogate, Ireland, and Llandudno lead by Trevor Duke, Howard Fox, Peter James, David Richardson and Francis Rose: these were all well attended.

Four Issues of the *Lichenologist* amounting to 410 pages were produced under the Senior Editorship of Dr Brown, and two issues of the *Bulletin* totalling 89 pages by Dr Crittenden.

The Conservation Committee is organising a meeting on Churchyard Conservation in Warwickshire during October 1992 which aims to reach a consensus view on recording and management.

There have been two significant new initiatives taken up by Council. First, it introduced a new system of referees to ease the burden of identifications by certain members. Second, it has introduced the concept of "Overseas Correspondents" whereby the BLS pays for membership subscriptions in cases where payment by normal means is difficult. Currently there are 8 such members in Eastern Europe. In return, such members are invited to contribute items of lichenological interest in their country to the *Bulletin*.

Now that the Flora is almost behind us, the Society must look for new challenges. One such is the need for an up-to-date atlas which is currently under consideration for publication during Mr Dobson's term as President. However, the success of any such venture will depend on the records received by its members.

The Society has currently 534 members plus 1 junior associate member, and 33 new members joined the society during 1991.

William Purvis

COMPOSITION OF COUNCIL

The current rules state that "the officers of the Society shall be the President, the Vice-president, the Secretary, the Treasurer, the Senior Editor, and such others as the Council shall decide." Furthermore, the rules also state that "Council shall consist of the officers of the Society and of eight members . . .". Therefore, Council has a very great power to determine its composition and size, and the balance between elected and ex-officio members.

In the early days of the Society, the number of elected members of Council equalled, or occasionally slightly exceeded, the number of ex-officio members. For many years now the number of ex-officio members has considerably exceeded the number elected, though at the most recent AGM, members approved that there should now be a further 2 making a total of 8 elected members. At the Council meeting in March, Council proposed that the number of officers with voting rights at Council meetings should not exceed the number of directly elected members. Council further proposed that, in addition to the 5 officers already mentioned in the rules, viz. President, Vice-president, Secretary, Treasurer and Senior Editor, a further 2, notably *Bulletin* Editor and Conservation Officer should also be recognised as officers, as both these positions involve a great deal of contact with the membership. This means that only these 7 officers (and ultimately 8 elected members) will have voting rights; other posts which are currently regarded as "officers" will in future be regarded as "observing members". This is in no way intended to belittle the important functions carried out by such persons, but aims to ensure an even greater democracy. This proposal will be put to the next AGM for ratification.

William Purvis

FROM THE PRESIDENT'S CHAIR

This chair is still warm after Prof Richardson's successful term as President. It will take me a while to settle in but, during my time in office, the Society should complete several publishing ventures. The most important of these is the publication of the much needed *Lichen Flora of Great Britain and Ireland*. This is due to be published towards the end of this year. Even when this is published I suspect that many of us will be reluctant to give up using our battered but beloved copies of "Duncan".

I am determined that during the next two years we will succeed in producing a new atlas of macrolichens. To make this atlas as accurate as possible we will need the help of members to send records to Prof Seaward, the mapping recorder (address on the inside back cover). He will be pleased to send you mapping cards to complete but a stamp for the return postage would be appreciated. You will have seen from the recent *Lichenologist* that there are still a number of areas where even common species need to be recorded. Prof Seaward has put an immense amount of work into the mapping scheme (in the first volume of lichen maps the dots all had to be put on by hand) and it is up to us to support him.

Wearing my other hat as Treasurer, I said at the AGM that I would verify the cover under our new insurance policy. The situation is that we have £1,000,000 third party insurance during all official meetings. This cover also extends to any accident that occurs between members during a meeting. If you are on an unofficial expedition you are not covered, but you will probably find that you have personal cover under most household policies. If several of you are going into the field together, and you agree that any other members would be welcome to join you, please write to the Secretary in good time. This would then count as an official meeting. We are also covered for product liability if any of our mugs, teeshirts etc, give rise to a claim.

I was also asked to separate out any book sale at the AGM weekend in the published accounts, and I will do this in the future Annual Accounts. It is worth pointing out that the book sale is an entertaining event where you can buy good and often rare books at reasonable prices. It also makes a very valuable contribution to the funds. The recent accounts cover 18 months and two Annual General Meetings. In January 1990 the net return to the society of the book sale was £356.25. In January 1991 a more specialised sale took place, limited to lichenological books, and this gave a net return of £90.75. We are grateful to the organisers and hope that they will be willing to organise more sales in the future.

Let us hope that the weather this year will prove good for field trips and that I may meet many of you during the year at these events. At least if it is pouring with rain we can console ourselves that it is good for the lichens.

Frank Dobson

PROFILES OF NEW HONORARY MEMBERS

Dr Francis Rose

Few people have done so much for the Society as Dr Francis Rose, who was elected an Honorary Member at the 1991 Annual General Meeting. For many years he has served (with statutory breaks) on the Council, and in 1980-1 was the Society's president. As a member of the group that has toiled for several years on the production of the forthcoming lichen flora of the British Isles he has shared in the exhilaration and the exasperation it has sometimes evoked and he has brought to it his unsurpassed knowledge of the distribution of lichens in these islands. Though his special love has always been the still surprisingly rich lichen flora of the New Forest, his studies of ancient parklands throughout Britain - and indeed in the western European mainland - have shown what supremely important refugia these are for many rare lichen species. He was the originator of the RIEC, an index to evaluate the lichenological importance of woodlands. His skill in seeking out important sites in unpromising terrain is legendary, as is his tenacity of purpose often extending into evening twilight.

Bryophytes were the first group of plants to arouse a specialised interest, and Francis began to study them even when he was a boy in Kent; his PhD thesis was on bogs, which they largely compose. Then in 1949-51 he published in three parts a comprehensive bryophyte flora of Kent in the *Transactions of the British Bryological Society*. Bryology is an interest that has never left him and continues to run in tandem with lichenology. At the same time his broad knowledge of the flowering plants, including grasses and sedges, and in addition the ferns and their allies, has enabled him in "retirement" to produce two comprehensive handbooks with keys to the species found in the British Isles and adjacent parts of the Continent. As the son of an artist he has inherited his mother's skill, and has himself produced beautiful botanical illustrations of grasses and sedges.

Still indefatigably tramping the countryside with his lichen record cards, he continues to discover localities, unknown or long overlooked, that are often in urgent need of conservation. In fact the records he has made form one of the richest and most important databases this country has of its corticolous lichen flora.

[In Bulletin 68, CUDBEAR incorrectly reported that Peter James had been elected an Honorary Member at the 1991 AGM: Francis Rose was elected to honorary membership on this occasion, Peter James having been elected an Honorary Member in 1981. CUDBEAR and the Editor apologise to Dr Rose for this mistake.]

Dr Dharani Dhar Awasthi

Dr Awasthi is the leading lichenologist of the Indian subcontinent, a position consolidated over 40 years by a steady flow of high-quality publications. Born in the Pithoragarh district of Uttar Pradesh, Dr Awasthi graduated from Lucknow University in 1943, proceeding to an MSc in 1945, and a PhD in 1960. The subject of the latter was a fully referenced catalogue of the 1310 lichens then reported from the Indian subcontinent, later published as *Beihefte zur Nova Hedwigia* 17(1965). He was appointed Lecturer at the University in 1952, and has remained in Lucknow throughout his distinguished career, apart from a period working with Professor W A Weber at the University of Boulder, Colorado in 1960-63.

From this basal *Catalogue*, he produced a series of regional monographic treatments systematically tackling numerous lichen groups, confronting even the most "difficult" head on and producing the workable keys necessary for the development of the subject in India. Examples of genera tackled, along and in conjunction with various students, most notably Krishna Pal Singh, and including his daughter Garima, are *Anaptychia* (1960), *Bacidia* (1987), *Buellia* (1981), *Cetraria* (1982), *Collema* (1980), *Parmelia* (*Amphigymnia*, 1976), *Phaeographina* (1973), *Phaeographis* (1979), *Physcia* (1960), *Pyxine* (1980), *Rhizocarpon* (1977), and *Usnea* (1986). These revisions have been supplemented by floristic studies on sites in, amongst other regions, Darjeeling, Himalaya, Kashmir, Nepal, the Nilgiri Hills, and Uttar Pradesh, and also notes on additions to the Indian lichens. A long-standing particular interest has been the Physciaceae, and in 1975 he prepared a world monograph of *Dirinaria*, a previously notoriously difficult tropical genus.

As a result of such long-term research, Dr Awasthi has now produced keys to the 697 macrolichens (1988) and 1150 microlichens (1991) known from India, Nepal and Sri Lanka. It is fitting that these crowning achievements to a distinguished career, which demonstrates, and inspires by, how much can be attained through long-term planned systematic research, should be recognized by election to Honorary Membership of the Society.

Professor Dr Otto L Lange

With the election of Prof Dr Otto L Lange, of the Lehrstuhl für Botanik II der Universität Würzburg, Germany, to Honorary Membership of the British Lichen Society we are acknowledging our gratitude for the many ways in which he has contributed to international lichenology. Although amongst his earliest publications was the description of a new *Gonohymenia* species, and even work on heavy metals, Prof Lange soon directed his research to the influence of environmental factors on respiration and photosynthesis, for which he is now justly famous. Such a bald statement fails to show the diversity of his approach, with not only lichens but also mosses and vascular plants, where his coverage has ranged from extremes of temperature, salinity, and acidification to even more extensive work on the effects of desiccation and supra-optimal thallus water contents. His precise laboratory studies, counterbalanced by pioneering work on measuring gas exchange in the field, combined with his interest in lichens from many different habitats, from deserts (Negev to Namibia), Antarctica, Chilean fog communities to New Zealand rainforests, has resulted in an unequalled understanding of lichen physiological behaviour. From this has developed his recent work showing the need for liquid water in reactivating photosynthesis in previously desiccated cyanobacterial photobionts. At the same time he has continued his involvement with studies on the basis of German forest decline and photosynthesis of *Arbutus* in Portugal! Not unexpectedly, such a polymath has often been called upon to act as a referee or editor, resulting in another distinguished facet to his career from which many have benefited. His knowledge and experience has been freely, modestly, and enthusiastically shared with colleagues from around the world. For those fortunate enough to reach Würzburg, stimulating discussions may be further enhanced while sampling excellent Franconian wine. This generosity of spirit is reflected in the long list of names of his collaborators, amongst which, as a true sign of a talented educator, are many who have subsequently gone on to establish independent careers. Otto Lange's scientific reputation is assured for many generations to come and, as a British Society with international members, we are proud to mark the unique, innovative contribution to lichenology made by this unassuming and charming individual.

Professor Sir David Smith

David Smith was elected an honorary member at the 1992 Annual General Meeting. He has been associated with the society since its inception, being one of a small group of 24 lichenologists who were founder members at a meeting in 1958 organised by Dr Dougal Swinscow another of our Honorary Members.

David Smith began his researches on the physiology of lichens with the late Professor Jack Harley at Oxford who was an expert on another symbiotic system, the association between fungi and tree roots. On completing his PhD and becoming a lecturer at Oxford, he supervised a series of research students. He was a stimulating supervisor, helpful and yet tolerant. He encouraged his students to publish their results and he wrote many excellent review papers which provided the ideas for the next phase of the research. After some fifteen years of lichen physiology research, he applied his lichen ideas to a new material, the symbiosis between algae and animals eg corals and sea anemones. When asked why, he once said "consider the trials of collecting lichens with the joys of going on a coral reef expedition". His administrative burden gradually increased; he first became Professor at Bristol, and then Oxford and more recently Principal and Vice-Chancellor at Edinburgh. However, he has kept an ongoing interest in lichen research. Indeed, last November David presented the Keynote address at the 1st International Symbiosis Congress in Israel entitled "The Symbiotic Condition" in which he reviewed our current understanding of many symbioses, especially lichens.

David Smith has always had a reputation of being an excellent lecturer and many of us recall with envy his amusing and masterful presentation "What can lichens tell us about 'real' fungi?" which he gave in 1977 at Tampa. A transcript of this is in the BLS library and an abridged version was published in *Mycologia*. David Smith was for many years an active member of the British Lichen Society and was elected President in 1972-73. He was made a fellow of the Royal Society and later received a knighthood. After hearing from our Secretary with regard to the proceedings at this year's BLS Annual General Meeting, David Smith wrote to say that he was delighted to be elected an Honorary Member of the Society.

**LICHEN QUIZ HELD AT THE EVENING BUFFET,
3 JANUARY 1992**

Questions 1-10, slides 21-30 by Oliver Gilbert

Questions 11-20 by Albert Henderson.

Teams of three.

1. A photograph of which lichen appears as the frontispiece in "Duncan"?
2. Which is the first lichen described in "Duncan"?
3. In "Duncan" which lichens are separated by the following couplet?
Disc C+ yellow, P-
Disc C+, P+red.
4. What lichen are the Egyptians known to have used in embalming?
5. What is the full name of the lichenologist whose initials are JMC?
6. What are the first and last lichens on the current mapping card?
7. Who wrote the following lines?
"The living stains, which nature's hand alone,
Profuse of life pours forth upon the stone,
For ever growing where the common eye,
Can but the bare and rocky bed describe."
8. List three of the four countries which have the most overseas BLS members.
9. In which year did the BLS hold events to celebrate its silver jubilee, organise a spring field meeting on Coll and Tiree, and hold a summer field meeting at Exeter?
10. Which lichen was Bible fodder?
11. Which lichenologist might be suspected of belonging to a secret society?
12. Which lichen name, when translated, means "Like needles from Trondheim"?
13. Which lichen has had the misfortune to be called the Insignificant Wind Lichen?
14. What is unusual about *Verrucaria serpuloides*?
15. After what lichen is Orchella Street in Leeds named?
16. What lichen was figured in the first BLS greetings card designed by Claire Dalby?
17. Which space project provided evidence for the presence of lichens on Mars?
18. What two 7 letter surnames of well known lichenologists can be extracted from the following array of letters: IIIIHAAASN?
19. What lichen is said to relieve loss of appetite, respiratory troubles and diarrhoea?
20. What is the *Lichenologist's* letter of the last quarter?

21-20. These were colour slides, for identification: *Xanthoria elegans*, *Caloplaca teicholyta*, *Acarospora sinopica*, *Bacidia rubella*, *Cetraria pinastri*, *Bryophagus gloeocapsa*, *Allantoparmelia alpicola*, *Fulgensia bracteata*, section of an apothecium of a *Physcia*, and a photograph of the Rev W Johnson.

The quiz was won by a team consisting of Brian Coppins, Sandy O'Dare and Mary Hickmott (17 points), second was a team that included William Purvis, Trevor Duke and Peter Crittenden (15 points).

Answers

1. *Coniocybe furfuracea*.
2. *Verrucaria psammophila*.
3. *Lecanora carpinea* and *L. pallida*.
4. *Pseudevernia furfuracea*.
5. James Morrison Crombie.
6. *Acarospora amphibola* and *Xylographa vitiligo*.
7. George Crabbe.
8. USA (48), Germany (47), Sweden (24), Spain (20).
9. 1983.
10. *Lecanora (Aspicilia) esculenta*.
11. Mason Hale.
12. *Belonia nidarosiensis*.
13. *Hypogymnia physodes* [see *Bulletin* 50]; *physodes* is derived from a Greek word meaning "to blow".
14. It is a totally submerged marine lichen.
15. *Roccella*.
16. *Cladonia cervicornis* var *verticillata*.
17. The Viking project.
18. Asahina, Nash III.
19. *Cetraria islandica*.
20. H, the surnames of all major contributors to the last number started with the letter H.

William Purvis

ATLAS OF SUSSEX MOSSES, LIVERWORTS AND LICHENS

This book by F Rose, R C Stern, H W Matcham, and B J Coppins includes the first comprehensive lichen county flora of Sussex ever published. It contains numerous dot-distribution maps, many of which are tetrad-maps. It also includes a 25-page account of the ecology and habitats of Sussex, which should be useful both to resident and visiting botanists.

To obtain a copy, please send a cheque for £6.50 (price £5.00, plus £1.50 for postage) to: Booth Museum of Natural History, 194 Dyke Road, Brighton, Sussex, BN1 5AA.

Francis Rose

CONSERVATION NEWS 6

The BLS will be organising its first meeting on the practical conservation of lichens on 10 October 1992 at the National Agricultural Centre, Stoneleigh in Warwickshire. The meeting will take the form of a workshop on the conservation of churchyard lichens.

BLS members do not need to be reminded of the extraordinary richness of lichens in churchyards in Britain (Tom Chester's frequent contributions in BLS Bulletins are proof enough), but we need to coordinate our efforts to protect the lichenological value of these sites (unique in Europe). Those responsible, as owners or managers or as parishioners or local advisers, do need specific guidance on how to handle practical matters - do we clean tombstones, what do we do about overhanging yew trees (integral to so many churchyards), how far are the lichens themselves to blame for say the deterioration of some external walls? Informed guidance is essential, taken with a proper sense of proportion and respect for the primary purposes of churchyards.

Of course many of these matters have been explored before, but the Conservation Committee feels that the time is now fully ripe for the BLS to play its part in bringing together balanced views, backed by the Society's unrivalled technical expertise. General statements of intent or more precisely-defined legislation certainly have their part to play, but they do not provide the assistance needed at practical levels in the specific context of lichen conservation.

Speakers will include Peter James (a general perspective), Francis Rose (ecological factors), Tom Chester (site and species recording) and Eve Dennis (churchyard conservation enterprises already in action). Additionally there will be time set aside for a site visit and for general discussions and debate, as we wish to exchange ideas and see how far we can come to consensus views on practical steps to take us forwards.

The meeting will be open to all (non-members of the BLS will be very welcome). If you wish to participate, please contact Kery Dalby (132 Gordon Road, Camberley, Surrey, GU15 2JQ) giving your name, address and a second class stamped addressed envelope. A more detailed programme will be issued to those who have replied, nearer the time. Note that I will not be contactable between 6 July and 13 August.

There will be a registration fee of £5 per head, with a further £6 per head if you wish to have a mid-day meal provided at Stoneleigh (their catering is much recommended). Please do not send any payment at this stage - merely confirmation of your interest in attending.

Kery Dalby

LICHENOLOGIA

The inclusion of *Evernia* in considerable quantity in *pot-pourri* on sale in a Dublin shopping centre reported by David Richardson in the previous issue of the *Bulletin* is connected with the practice adopted by commercial manufacturers of the product (but not usually by amateur or cottage industry makers of *pot-pourri*) of adding cheap essential oils (often oil of lavender, sometimes even orange oil) to the flower petals and other aromatic plant material in the mixture. The oils are absorbed strongly by the lichen and then evaporate slowly over a long period. This function of *Evernia* as a fixative for perfumes has been known at least since mediaeval times, and in the eighteenth century the scented powder that was applied to wigs consisted largely of the ground-up lichen. It has always seemed to me that this fixative property may be related to the absence of a lower cortex. The *Evernia* thallus has a faint, pleasant odour of its own as can be perceived when it is moistened with alcohol. Another use for a lichen is brought to mind by a newspaper report referring to a young man (Mr Scott, an Australian) who was lost for six weeks while trekking solo in the mountains and had to be rescued by helicopter. It stated that he survived "on a diet of lichens and a chocolate bar". In the nineteenth century powdered *Cetraria islandica* was added to cocoa to absorb some of the excess fat present in it. Later, better presses were developed to extract the fat from the raw material, and the addition of lichen powder was discontinued.

In January the Annual General Meeting was, as always, well attended and interesting, with some stimulating lectures in the afternoon, and the unusual "excitement" of a ballot for Council Members in the morning. In his annual report the Chairman of the Conservation Committee spoke loyally (or quixotically) in support of English names for lichens, but the rest of us may remain unrepentantly against them. The matter arose because the Schedule to the Wildlife and Countryside Act that lists protected species is in course of revision, and will include up to thirty cryptogams. A bureaucrat in the Department of the Environment instructed English Nature (successor, in part, to the Nature Conservancy Council) to provide English names for them, and government employees have to do what they are told; all the more reason therefore for others to speak out against such lunacy. The efforts being made at the present time to achieve a common European conservation policy in the EC will not be helped if the twelve constituent states all set about inventing their own local nomenclature. With regard to the "auction" of new scientific names mentioned last time, so far two *nomina novae* have been "sponsored" for considerable sums: both of them are insects. However, it seems unlikely that this dubious practice will spread to other groups of organisms.

In the members' exhibition at the last AGM Howard Fox showed a recently published quarto volume that he came across in a Dublin bookshop which had a dust jacket that consisted of a life size reproduction of a colour photograph of a rock surface completely covered with lichens. It was a diary entitled *The Attic Book of Special Days for Women*, with feminist notes for every day, mostly about famous or notorious women. No reason for the choice of design was given. The decorative potentialities of lichens are becoming recognised by designers, although they don't seem to look at them very closely (in this case the photograph was upside down). I was reminded of the cover of the Folio Society's edition of Lewis Carroll's *The Hunting of the Snark*, where lichens are represented on the boulders of a rocky landscape, admittedly quite effectively, by splashes of coloured inks. On the other hand, the drawing of the "great boulder" in the Folio edition of Mervyn Peake's *Gormenghast*, described in the text as "a great lichened thing, pockmarked by time", is certainly pockmarked, but shows nothing that could be recognised as a lichen. Designers and illustrators appear to be resurrecting the early nineteenth century romantic notion of lichens as "time stains".

The Swiss lichenologist Philippe Clerc has been finding *Usnea* species with interesting geographical distributions, for instance *U. wirthii*, recently reported in the *Lichenologist*. Even more remarkable is the distribution of *U. madeirensis*, common in Macaronesia and widespread in Europe, extending to the Caucasus; and occurring on both the east and west coasts of North America. It seems to be rare in Britain, or possibly overlooked; it was collected in Kent by E. Forster in 1849, and in this century there are records from the West Country and from Scotland. The species is remarkable for its range of growth form; it may be longly or shortly pendulous, much branched or not, or bushy and suberect. The latter form could easily be mistaken for *U. subfloridana*, but the medulla is thinner and more compact, and thin layer chromatography shows the chemistry to be different. It would be worthwhile checking specimens in private herbaria to see whether *U. madeirensis* has been collected and misidentified.

CUDBEAR

[High] COUNTRY DIARY: THE NEVIS INCIDENT

We all agreed it had been a hard week. Good weather had forced us out day after day onto the high ground where we had surveyed until dusk before stumbling back in the dark to our B & B with only time for a swift visit to the pub before it closed. It was no coincidence that the summit of Ben Nevis had been left until last, no-one was relishing the 4,400 ft slog up the tourist path from the sea-level car park. As we sat over our drinks trying to raise some enthusiasm for this final undertaking an incident occurred that may have a considerable influence on future survey work in the Highlands. We realised that the man at the next table was a helicopter pilot. Ten minutes later a deal had been struck; we turned in that night as excited as school children.

Next morning was grey with a hint of rain in the air and I was dismayed to see that the cloud base was at 2,000 ft. We hurried over breakfast and rendezvoused at the helipad behind Fort William railway station where Captain Peter Clunas already had his machine revving up. He explained that because of the cloud he would have to drop us about halfway up the mountain near the CIC hut but this would save us two hours. After receiving brief instructions about safety we were soon airborne and chatting to each other through the intercom. The helicopter covered the ground very fast heading up the valley towards the hut at the base of the north cliffs; it was exciting but also a little disappointing not to be getting the lift to the summit we had anticipated. Once we were below the cliffs a small miracle occurred: a hole appeared in the clouds through which blue sky was visible. Peter immediately flew vertically 2,000 feet up the north face and we emerged into bright sunshine. In a twinkling, before we realised what was happening, the helicopter had landed on the summit and the pilot was shouting to us to disembark; we tumbled out and ran stooping under the blades to a safe distance, then almost before we'd had time to turn round and wave he was airborne, anxious to get off while the hole in the clouds was still there.

I was completely stunned. We were in hot sun on a small island of rock looking across a sea of fleecy white clouds through which the tops of the highest hills protruded, everything was completely still and quiet. It had taken only six minutes to reach this new world: it was so unexpected, we were almost speechless with amazement and wonder. Adding to the sense of unreality was the temperature: it was so hot that within a minute we stood stripped to the waist as we identified the Cairngorms, Ben Lawers, the Cuillins of Skye and the tops of other peaks up to 50 miles away. As the confusion wore off we started to work the northern edge of the summit



On the summit of Ben Nevis

plateau, still very much on an adrenalin high, shouting our finds to each other and conferring over unfamiliar specimens. After a couple of hours the first weary tourists started to arrive, they appeared taken aback by our presence. We worked non-stop till 11 am, took a break, then beavered away till 1 pm finding much of interest. By then our chisels were blunt and the knuckles of our left hands badly bruised. After lunch we still felt amazingly fresh so split up to cover the corries and late snow patches.

(For an account of the lichens found see *Lichenologist* 24.)

Oliver Gilbert

APPROACHES TO LICHEN AESTHETICS 5

In previous parts of this series (see *Bulletin* 60, 61, 64 and 66) we examined the overall structure of lichen thalli, noting how their aesthetic impact is intrinsically related to their mode of spatial occupation and individual morphology. Very many lichens, of course, like most lower plants, are on too small a scale to yield their individual richness of appearance to the naked eye. Many of the commonest and most distinctive features of lichens are seen easily only at some degree of magnification. All lichenologists know the pleasure and wonder expressed by non-lichenologists on their first view of a lichen through a hand-lens or dissecting microscope. Whereas higher plants quickly make a powerful aesthetic impact upon the unaided vision, which soon discerns in them considerable detail of structure and colour, most lichens do not command aesthetic apprehension of the same degree until placed under a magnifier. The obvious exceptions merely serve to press home the general rule; and even the exceptions, such as the Pixycup Lichens, the Map Lichen and the Writing Lichens, show only a poor shadow of the interest and richness they reveal under the hand-lens.

Resemblances

To view lower plants at x10 or x20 magnification is, then, to enter a new visual world in which every lichen can be seen to occupy space in accordance with particular genetic, functional and environmental influences acting on it. At this level, a patch of *Cladonia fimbriata* (see Fig 1) can become a miniature woodland, where we may at any moment encounter a marauding springtail or mite. It is a woodland, too, with its own distinctive canopy (see Fig 2), reminiscent of adjacent radar saucers. Note, too, how the stretching, exploratory effect of leaning podetia (Fig 1), growing aslant on a shady bank, differs from the balanced stolidity typical of the same species on well lit, level terrain. The similarity to trees is even greater in subgenus *Cladina*. Witness the popularity of *Cladonia portentosa* in model railway shops. Such resemblance to tree formations or, in the case of some scyphiferous *Cladonia* podetia, to castle turrets, and resemblances in other genera and species to objects in our everyday macro visual world, indicated by such names as Map Lichen, Writing Lichen, Lungwort and Dog Lichen (from an inferior view of the thallus), are direct visual metaphors, occurring in only a small proportion of lichen taxa. Their musical equivalent would be the most obvious onomatopoeic motifs of programme music.

Lines and waves

We noted how *Cladonia fimbriata* podetia (Fig 1) can establish an exploratory, searching effect, brought about by leaning, wavering lines of growth. We can see a more energetic activity in the patch of *Cladonia*

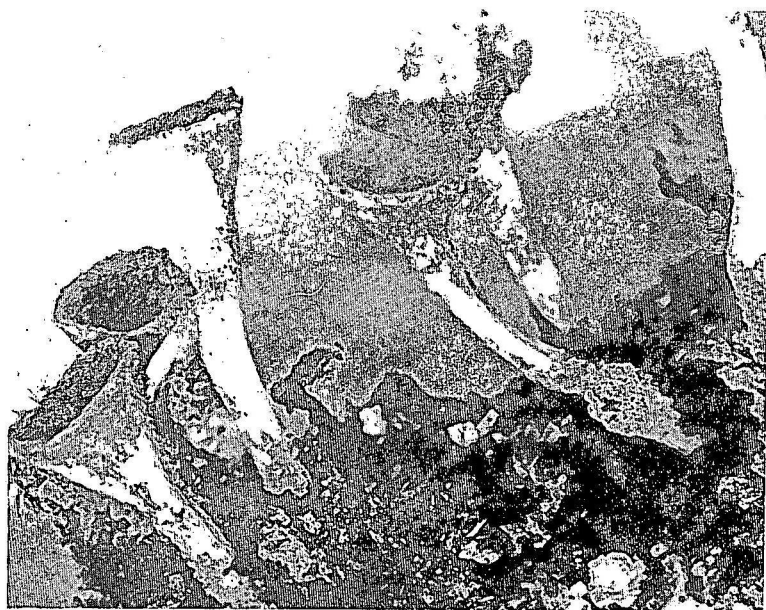


Fig 1. *Cladonia fimbriata*, from a bankside

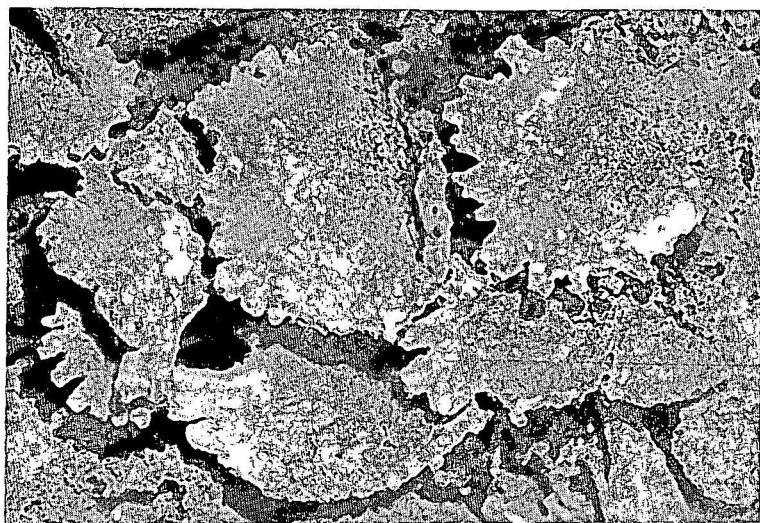


Fig 2. Canopy of *Cladonia fimbriata*

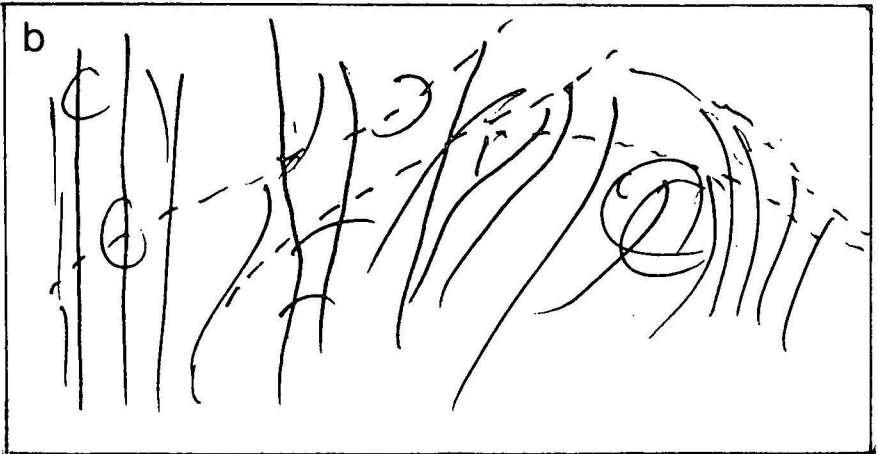
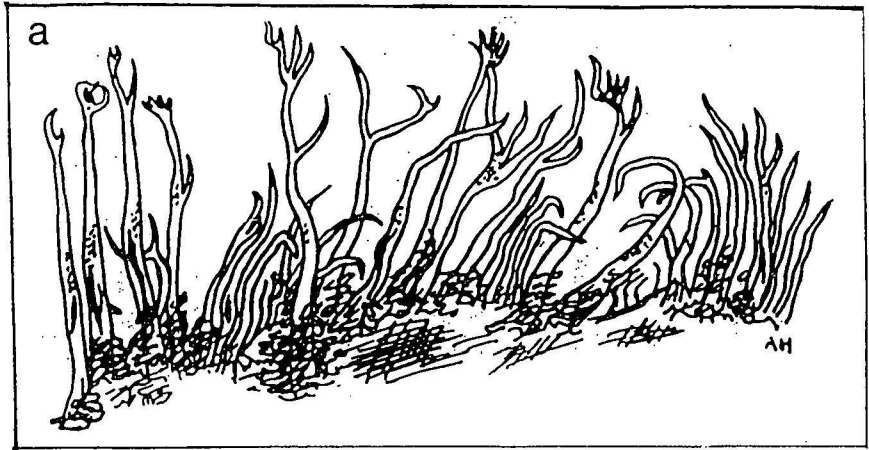


Fig 3. A patch of *Cladonia subulata*, Heath Common, W. Yorks (a), and lines of force generated in the above *Cladonia* patch (b)

subulata pictured in Fig 3a. Figure 3b indicates the dynamic lines and waves (shown by dotted lines) of tension and energy we are aware of in Fig 3a. Such lines of force are generated by departure from the suppositional rectangular grid which can be regarded as background norm (see *Bulletin* 61, page 11, Fig 2).

The aesthetic impact in these latter cases is abstract and expressionist in type, working on our awareness on the basis of principles neatly summed up by Gauguin: a willow is called "weeping" because descending lines are sad.

Areas

Area divisions, too, generate visual energies and tensions. Which, for instance, is the background colour, black or white in Fig 4? The alternating

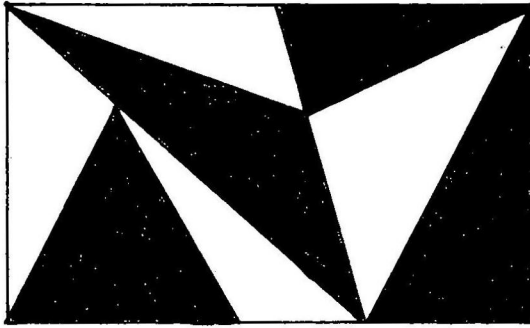


Fig 4. Black or white background?

possibilities give the surface aesthetic vitality. Other colours, too, may set up such vital tensions, as may the various shades and tones of any colour (Fig 5). Such tensions may be amplified when the divided areas are of different sizes. Regularity of area division, colour and size can, like the entirely regular background grid, impart an effect of stability and rest. This is rarely the case with lichen mosaics, which usually attract attention with an element of visual dance.

Area divisions may consist in comparatively small, well separated islands within the thalline area as a whole, giving the intriguing dotted or dashed, stippled or flecked effects achieved by *Graphis*, *Opegrapha* (Fig 6) and *Arthonia* or, rather differently, the areolate stem patterning of *Cladonia rangiferina*. These and many other possible arrangements excite our aesthetic interest because of their inherent visual tensions and energies.

Albert Henderson

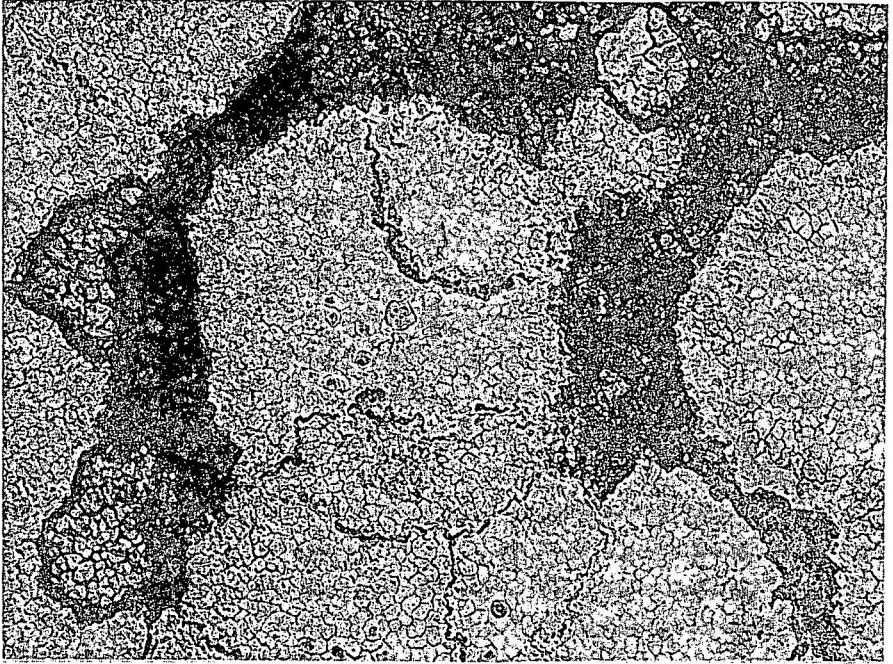


Fig 5. *Aspicilion calcareae* mosaic

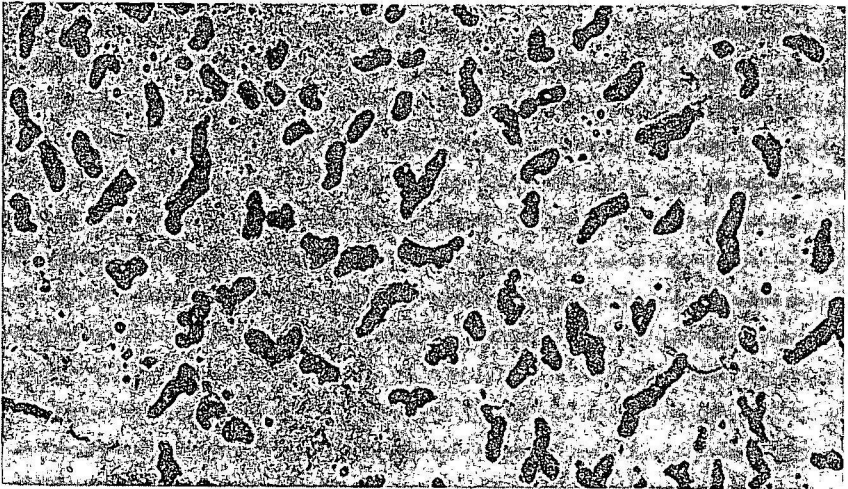


Fig 6. *Opegrapha niveoatra*

A MICROSCOPIC TEST FOR CONFLUENTIC ACID

Confluentic acid is a long-sidechain depside produced by a number of lichens the presence of which has, until now, only been detectable by thin layer chromatography.

The new test involves mounting a thin section of an apothecium (or thallus) in water under a cover-slip, viewing it with a compound microscope and then flooding the slide with 10% KOH. If confluentic acid is present a stream of what appear to be small oil-droplets will be seen to issue from one or more points of the section after a few seconds, often forming a complete 'halo' round it after about a minute. This effect is best observed with a x40 objective and reduced illumination.

The test was checked by carrying out TLC on a number of specimens from the *Lecidea confluens* / *L. lapicida* group. All those specimens which produced "oil-droplets" with K contained confluentic acid, while those which did not contained either stictic acid or no substances. A number of specimens of *Porpidia* were also checked by TLC which confirmed the specificity of the test: all those reacting with K contained confluentic acid despite the fact that some of those not reacting with K did contain other long-sidechain depsides.

In addition to distinguishing between *L. confluens* and *L. lapicida*, this test is useful in the identification of *Porpidia* spp. British species of this genus which (usually) contain confluentic acid include *P. cinereoatra*, *P. speirea* and *P. tuberculosa* while *P. crustulosa*, *P. macrocarpa* and *P. soredizodes* are among those that do not. It should be stressed, however, that the reaction is totally empirical and no chemical basis for it is proposed. There is also no guarantee that it will be reliable in other groups of lichens.

Alan Fryday

CANDID CAMERA: THE BEST CAPTIONS

The best three captions submitted for the last bulletin's *Candid Camera* were (in order of merit as judged by the Editor):

"I've often wondered what lavflora meant!" (Tom Chester)

"I didn't know it was so easy to tell the sex of a lichen" (Dennis Brown)
and

"There's more parietina on the other one" (Anon)

CLADONIA RANGIFERINA IN NORTHERN ENGLAND

Until recently the only known sites for *C. rangiferina* in Northern England were on the high Cheviots in Northumberland (VC 68) (Gilbert 1980, p369). However, I added a further site in lowland peat-moss in Westmorland (VC 69) (Corner, in Anon 1981) and during the past decade I have found many sites in the Lake District and one from the Northern Pennines, all in Cumberland (VC 70). Derek Ratcliffe (pers comm) had already recorded this lichen from single sites in both areas in 1960 and had the records confirmed by SA Manning. It seemed appropriate to provide an update on the distribution of this interesting lichen in a region in which it has been previously overlooked.

Cladonia rangiferina is a very rare to locally common species in the Lake District where it was first discovered by Derek Ratcliffe on Robinson (GR 35/21) in 1960. It still occurs there and I have found it in the following additional 10km grid squares: 35/11,12,22,23,32 and 33. Although it is usually found above 500m, ascending to 850m on the east side of Skiddaw (GR 35/22), it descends to 230m on Lonscale Fell (GR 35/22) and on the east side of St Johns-in-the-Vale (GR 35/32) where it is commoner than at the higher elevations. So far it seems virtually confined to the Skiddaw slate mountains of the northern Lake District where lichen heath is better developed than on the Borrowdale mountains to the south. It is always associated with *Cladonia arbuscula*, *C. portentosa* and *C. ciliata* and can be picked out by the purplish coloration and smooth cottony cortex. This association occurs on steep banks and rocky areas with *Vaccinium myrtillus* and occasionally *Calluna vulgaris*.

The first record from the Northern Pennines was from Bellbeaver Rigg (GR 35/73) on Alston Moor by Derek Ratcliffe in 1960 and I added a second site on Stony Rigg, Cross Fell (GR 35/63) in 1980: both sites are at 610m, the latter in *V. myrtillus* heath.

Observations made on Great Calva (GR 35/23) in the Lake District over 12 years suggest that intensive sheep grazing is deleterious to the *Cladonia* heath since *C. rangiferina* has disappeared from the open hillside and is now confined to a rocky area of *V. myrtillus* heath which is protected to some extent from grazing. This view is contrary to Seaward and Hitch's (1982, p 42) statement that *C. rangiferina* benefits from grazing.

One difficulty encountered with early collections was the variability of the K + y reaction with some thalli reacting K-. However, Krog (1968) reported K- strains from Alaska and Alan Frydāy hopes to check some of the collections for atranorin by TLC.

Acknowledgements

I wish to thank Derek Ratcliffe for allowing me to use his early records, Oliver Gilbert for his initial help and Alan Fryday for throwing light on the subject.

References:

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- Gilbert, O L (1980). Lichen Flora of Northumberland. *Lichenologist*, 12: 325-395.
- Krog, H (1968). Macrolichens of Alaska. *Norsk Polarinstitut Skrifter*, 144: 75-76.
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Roderick Corner

INAUGURAL MEETING OF BRITISH LICHEN SOCIETY

Jack Laundon is to publish an account of the inaugural meeting of the British Lichen Society which was held at the Natural History Museum, London, on 1 February 1958. Unfortunately the records of this historic meeting are incomplete, and it is therefore intended to publish details so as to present a record of who was present and how the Society was formed.

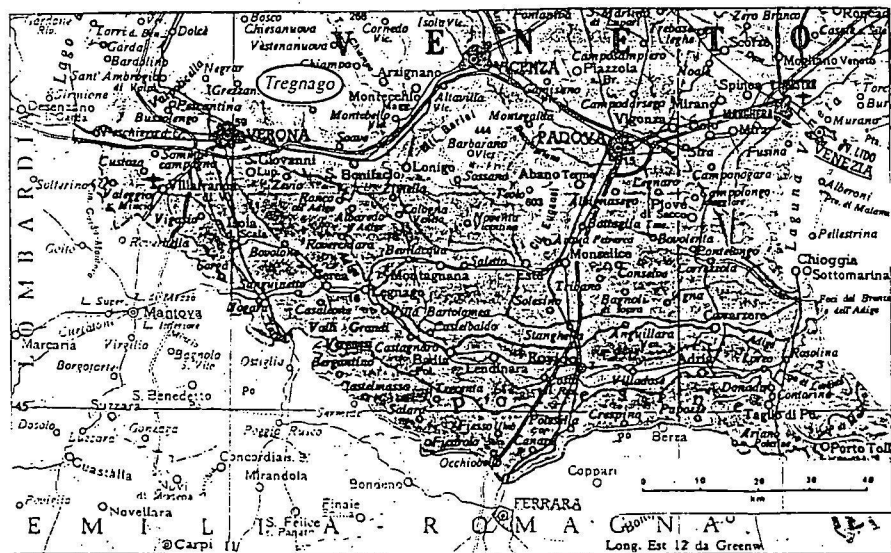
Please would persons who attended this meeting inform me that they were in attendance, and also send names of others who they remember were there. Reminiscences of the meeting would also be appreciated, as well as contemporary views on its achievements. My address is 14 Victoria Avenue, Morden, Surrey SM4 6DL; telephone 081-648 4155.

Jack Laundon

PLACIDIOPSIS CUSTNANI & CO.

Has any BLS member, on coming upon Massalongo's elusive pyrenocarp, *Placidiopsis custnani*, paused to wonder why some authorities refer to the species as *P. custnani*, some use *P. custani*, while others choose versions ending in double "i"? An analysis of 10 references to the species, from apparently impeccable sources, indicates that the British, with the exception of the 1980 Checklist, have preferred "*custnani*" or "*custnanii*", whilst the continentals have tended of late to favour "*custani*" or "*custanii*". For anyone who has not had the fun of tracing the name back to its origin, the question arises: From whom, what or where comes this "*cust(n)ani(i)*" that so confounds the experts?

In his original description in *Lotos* 6 p.78 (1856), Massalongo reveals that the species was named after the place where it was found, "growing on the ground between mosses, in the town of **Custnano**, now known as Scorgnano, nr Tregnago, in the province of Verona, Italy" (see figure). Dr Giuliano Lazzarin, who is in charge of the Massalongo herbarium in the Natural History Museum of Verona, suggests that the name *P. custani* or *custanii*, which appears in many lichenological works, is the result of an error in



The small town of Scorgnano (on the site of the ancient Custnano) is located between the first "g" and the "n" of the name of Tregnago (ringed), a town c 17 km NE of Verona.

interpretation of the original name. He points out that the name *Custnano* does not come from Latin, and has no significance whatsoever in this language; it probably has its origins in the Cimbrian language, an old Bavaro-Tirolese dialect, spoken in the past throughout the whole of the Illasi valley. The Cimbri were a Germanic tribe from North Jutland, who over-ran Gaul in the 2nd century BC, and were eventually annihilated by Marius in the Po Valley in 101 BC.

With regard to the choice of "i" or "ii" as the ending of a specific name, the Botanic Rules, rather chauvinistically, permit a genitive ending in "ii" only if the species is named after a male whose name ends in any consonant other than an "r" preceded by an "e". So *P. custnani* wins. End of mystery? Not quite. No roots are known in the remains of the Cimbrian language likely to have produced the name "*Custnano*" or explain its unexpected first "n". Perhaps the name therefore became associated in the minds of some later continentals with the French botanist *Custan*? Had the name originated thus, the use of a double "i" ending would, of course, have been correct.

Peggy Cayton and Albert Henderson

LICHENS IN POT-POURRI

Just before Christmas I bought a packet of "Seashore" from the local Asda store. This is a pot-pourri packed by "Albion Botanicals" of Cambridge. It contained a small handful of *Pseudevernia furfuracea* heavily impregnated with perfume. I kept a small piece of this in water, topped up from the tap everyday for a month but the fragrance persisted. The dry thallus was still "active" at the end of February. I also found a small 25 mm piece of *Ramalina fraxinea* and a slightly smaller fragment of *R. calicaris*: both were fertile.

L. Holmes

A KEY TO THE *CLADONIA CHLOROPHAEA* GROUP IN EUROPE, USING MICROCRYSTAL TESTS

Cladonia chlorophaea and the related species *C. pyxidata*, *C. pocillum*, *C. humilis* and *C. fimbriata* form a group of conspicuous and attractive lichens with regularly cup-shaped podetia and brown apothecia. *C. chlorophaea* shows a remarkably varied chemistry, and the chemotypes have often been given the rank of species. However, the chemistry of the group shows only a poor correlation with morphological features such as colour, shape of podetial cups, and presence and size of soredia, which are often too variable or inconstant for reliable identification. Thus the taxonomic treatment of the chemotypes remains controversial.

Whether or not the chemotypes are given formal taxonomic recognition, it is still of interest to be able to distinguish them, as they show some differences in their ecology and distribution. Most of the taxa found in Europe have a very wide distribution in the rest of the world. All the European chemotypes are known to occur in Britain except *C. homosekikaica* and *C. imbricarica*. Apart from *C. pyxidata*, *C. pocillum*, *C. fimbriata* and *C. chlorophaea sensu stricto* which contain only fumarprotocetraric acid, the most frequent taxa in the British Isles appear to be *C. cryptochlorophaea*, *C. merochlorophaea* chemotype I and *C. humilis* chemotype I.

The microcrystal method of identifying lichen compounds relies on the characteristic forms that the crystals assume when the compounds are recrystallised in particular solvents. The technique was developed as a routine taxonomic tool by the Japanese botanist Asahina in the 1930's, and was widely used by lichenologists into the 1960's. Since then, the technique has been largely superseded by the far more sensitive and reliable methods of thin-layer chromatography. However, microcrystal methods retain some potential for use at home or on field meetings, or in a few cases where it may be more convenient than TLC. The technique is only really practicable where specimens belonging to a small number of species of known chemistry need to be separated.

The method for using the microcrystal test can be summarised as follows:

1. Place lichen fragments (at least half a podetium) on a microscope slide on a hot-plate or similar warm surface.
2. Let a drop of acetone fall onto the fragments; when it is dry repeat a few times until a pale deposit surrounds them.
3. Lightly brush away the dry fragments; if the deposit is very thin, scrape it together with a clean razor blade.
4. Place a very small drop of the crystallising solution (see below) onto a small coverslip and invert it over the deposit.

5. Heat (but do not boil) preparation on hot-plate or over spirit-lamp.
6. Remove from hot-plate and allow to cool; observe with microscope after a few minutes, or in some cases up to several hours later.

Walker and James (1980) should be consulted for a more complete account of the technique. Thomson (1967) gave a useful account, with numerous photographs of substances found in *Cladonia*. A common cause of failure is likely to be too small an amount of lichen extract, or the use of too large a drop of solvent.

The following crystallising solutions are likely to be the easiest to obtain, and only these have been used in the key:

GAW - glycerol: ethanol: water, 1:1:1

GE - glycerol: glacial acetic acid, 1:3

Glycerol is obtainable from chemists. When ordinary violet methylated spirits was substituted for ethanol, recognisable crystals were obtained in at least some cases. It is sometimes possible to find acetone in shops which supply art and printing materials.

The spot-reactions with K and C should be carried out on a microscope slide under a dissecting microscope. It is convenient to place the lichen fragment in a small drop of K and observe for a minute or two to detect any pink or reddish reaction. If a small drop of C is then added, a fleeting but distinct wine-red colour indicates a positive KC reaction. Note that different chemotypes can grow together, so it is best to test only one podetium at a time. A small part of the podetium can be used for the spot-reaction, and the remainder extracted for a microcrystal test.

Fumarprotocetraric acid is commonly, but not invariably, found in all of the taxa, and its presence is indicated by a PD + red reaction. It does not form crystals in either GAW or GE. Traces of atranorin have been reported in some specimens of *C. chlorophaea* s.s., *C. pyxidata* and *C. pocillum*. Suitable controls for some of the substances found in the group are *Cladonia rangiformis* for rangiformic acid, *Ramalina lacera* (*R. duriaei*) for bourgeanic acid, *Cladonia rei* for homosekikaic acid, and *Sphaerophorus globosus* for sphaerophorin.

The precise form of the crystals produced will depend on the solvent used and the concentration of the substance, and may differ somewhat in different parts of the preparation. However, with a little practice, it is quite easy to distinguish the crystals typically formed by each of the chemotypes. Doubtful results or findings of rare taxa should be confirmed by TLC.

Key to European taxa of the *Cladonia chlorophaea* group and related species, using microcrystal tests.

1. Basal squamules veined below, K + yellow, often dominant; podetia without soredia **C. cyathomorpha** Stirton ex W. Watson

Basal squamules not veined below; podetia usually dominant 2

2. Podetia with corticate granules, soredia absent; KC -, no distinctive crystals formed in GAW or GE (fumarprotocetraric acid)
 **C. pyxidata** (L.) Hoffm. and **C. pocillum** (Ach.) O-J. Rich

Podetia with farinose to granular soredia, rarely soredia absent but then distinctive crystals formed in GAW and GE 3

3. Podetia covered almost to base of stalk by farinose soredia, K-, no crystals formed in GAW or GE (fumarprotocetraric acid) . . . **C. fimbriata** (L.) Fr.

Podetia corticate at least at base 4

4. Podetia pale and greenish-grey, finely to coarsely sorediate above, most of stalk corticate; cups not proliferating from rim; K - or + yellow, KC - 5

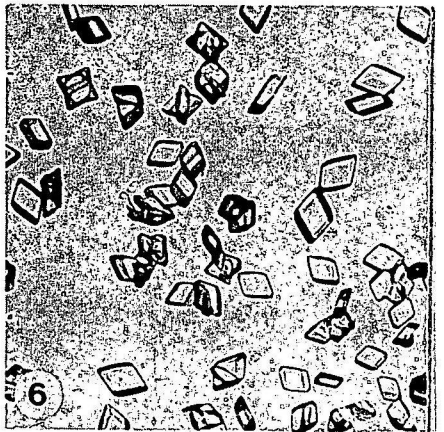
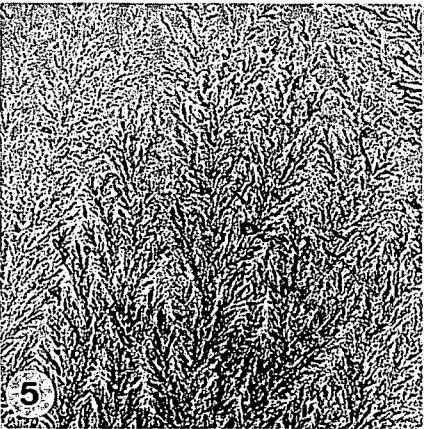
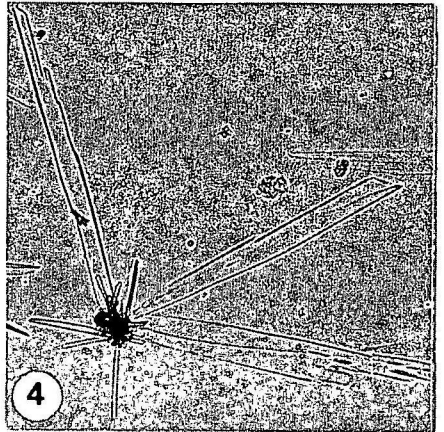
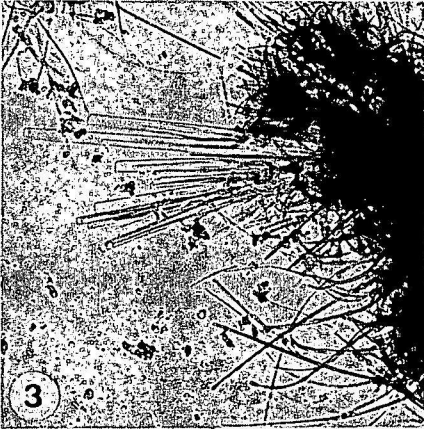
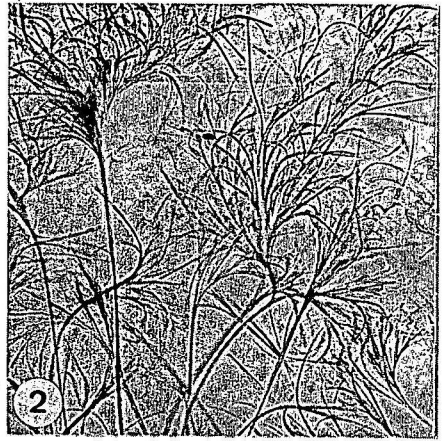
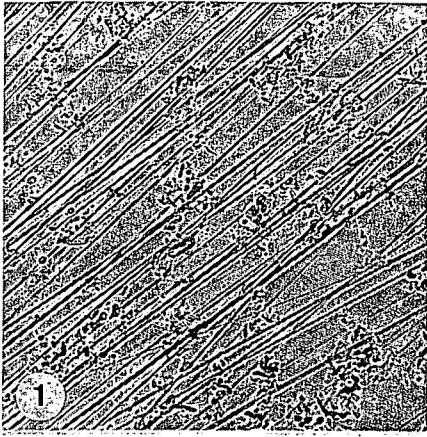
Podetia pale greenish-grey to dull grey-green or brown, soredia often coarse, sometimes absent; cups sometimes proliferating from rim; K- or + reddish, KC - or + red 6

5. Podetia K + yellow; ± rod-shaped crystals with pointed ends may be formed in GE, but are often difficult to produce (atranorin)
 **C. humilis** (With.) Laundon chemotype I (**C. conoidea** Ahti).

Podetia K - ; in GE very long and narrow straight needle-like crystals formed (Fig 1), in GAW crystals similar but less well-formed (bourgeanic acid) **C. humilis**
 chemotype II (var. **bourgeanica** Archer, syn **C. conista** *auct.*)

Figures:

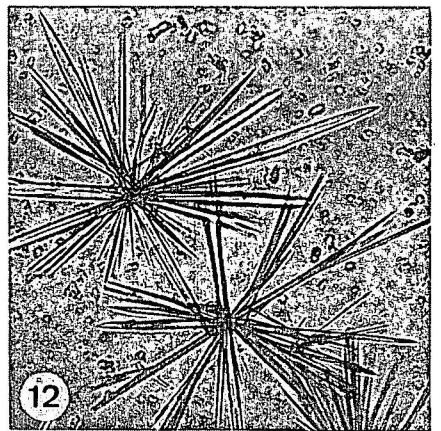
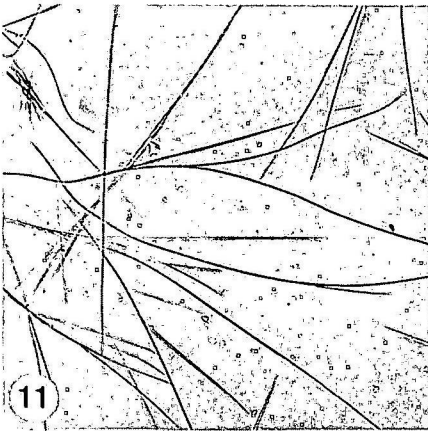
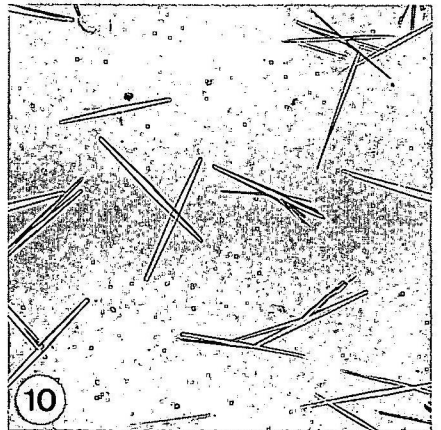
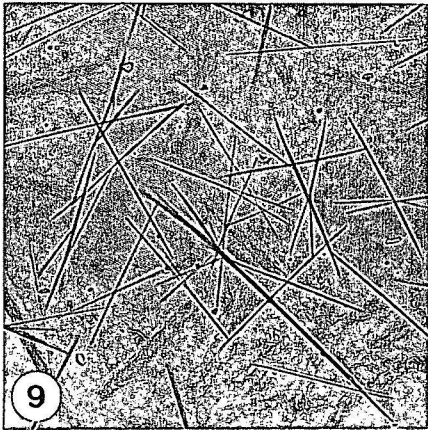
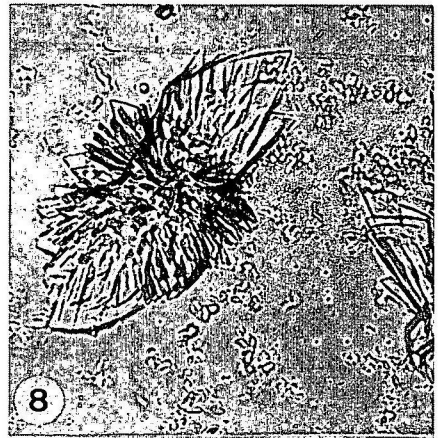
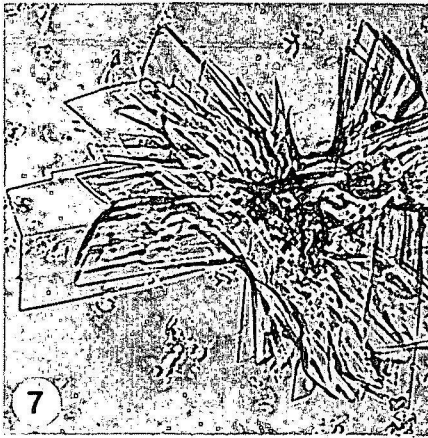
1. bourgeanic acid in GE (x 200).
2. cryptochlorophaeic acid in GAW (x 200).
3. cryptochlorophaeic acid in GE (x 200).
4. merochlorophaeic acid in GAW (x 200).
5. rangiformic acid in GAW (x 200).
6. sekikaic and homosekikaic acid (combined crystals) in GE (x 200).



6. In GAW and GE no distinctive crystals formed; podetia with granular soredia, K-, KC-..... **C. chlorophaea** s.s. (Flörke ex Sommerf.) Sprengel.
- In GAW and GE distinctive crystals formed 7
7. Podetia K + pink or reddish (slow), KC + fleeting but distinct wine red 8
- Podetia K -, KC - 9
8. In GAW crystals needle-like, curved, forming branching patterns (Fig 2); in GE with clusters of straight crystals but with distinctly curved crystals also present (Fig 3) (cryptochlorophaeic acid)..... **C. cryptochlorophaea** Asah.
- In GAW and GE crystals parallel-sided, thin and blade-like, typically with oblique apices, often in clusters (Fig 4) (merochlorophaeic acid, 4-0-methylcryptochlorophaeic acid) **C. merochlorophaea** Asah. chemotype I.
9. In GAW crystals very small, forming feathery branching patterns, sometimes with some larger, very thin crystals (Fig 5), in GE patterns similar but less well-formed (rangiformic acid) **C. asahinae** Thomson.
- In GAW and GE crystals different: larger, stocky or needle-like 10
10. In GE crystals short and broad, shortly pointed or obtuse (Fig 6); in GAW crystals similar but more pointed (sekikaic and homosekikaic acids)..... **C. merochlorophaea** Asah. chemotype II (var. **novochlorophaea** Sipman).
- In GE and GAW crystals blade-like or needle-like 11

Figures:

7. homosekikaic acid in GE (x 480).
 8. homosekikaic acid in GE (x 480).
 9. grayanic acid in GAW (x 200).
 10. grayanic acid in GE (x 200).
 11. sphaerophorin in GAW (x 200).
 12. sphaerophorin in GE (x 200).



11. In GE crystals typically broad, thin, blade-like, with oblique to truncate or V-shaped apices, often closely overlapping in radiating clusters (Figs 7 & 8); in GAW similar but less well-formed (homosekikaic acid)
 **C. homosekikaica**
 Nuno (reported only from Iceland, ?Majorca, Wyoming, Japan)

In GE crystals needle-like or in part broadened and gradually tapering to apices 12

12. In GE crystals mostly in the form of broad needles gradually tapering to narrow but often obtuse apices (Fig 10); in GAW crystals in the form of fine needles (Fig 9) (grayanic acid); cups long-stalked, usually sorediate **C. grayi** G K Merrill ex Sandst. (widespread taxon).

In GE crystals needle-like, or broadened and gradually tapering to acute points, often in spiky branching clusters (Fig 12); in GAW similar, or slender, straight or flexuose needles may predominate (Fig 11) (sphaerophorin); cups sometimes almost stalkless, soredia absent
 **C. imbricarica** Krist. (reported only from Iceland, Norway and Wyoming)

References:

Thomson, J W (1967). *The Lichen Genus Cladonia in North America*. University of Toronto Press [pages 13-32, figs 1-60].
 Walker, F J and James P W (1980). A revised guide to microchemical techniques for the identification of lichen products. *British Lichen Society Bulletin*, **46** (suppl): 13-29.

Alan Orange

NEW FLORA OF DORSET

It is hoped to produce a new Flora of Dorset by 2000, which will include cryptogams as well as vascular plants. Any lists of lichens from Dorset localities would be most welcome. The total of 497 species reported for the County in 1976 (*Lichenologist* 8) has now increased to 621 (including previous extinctions). There is a fairly even coverage of grid squares, but 30/88, 30/89, 31/50 and 40/08 are exceptionally rich in lichens, while 30/66, 31/62, 40/19 and 40/01 have been under-recorded. Specialists should be encouraged to look at evanescent species of soils, at old churchyards, and the rock exposures of Purbeck and Portland. A BLS meeting during the next few years would doubtless produce many new records. Vince Giavarini and I are co-operating in assembling new data for the County.

Humphrey Bowen

STORM-RELATED DAMAGE TO *RAMALINA SILIQUOSA* ON FAIR ISLE

Following a prolonged period of very strong winds on 19-20th December 1991 at Fair Isle, Shetland, much of the isle's *Ramalina siliquosa* fully exposed to these winds turned a light reddish brown colour. *R. siliquosa* is abundant on the isle's numerous dry stone walls, older stone buildings, rock faces and tops of older fence posts. The change in colour was immediate and marked. I had not previously observed this phenomenon in twelve years' residence and the unusual nature of this event was confirmed by other islanders, including a keen botanist of retirement age who could not recall seeing it before and a crofter who recalled one previous occurrence in his youth some thirty or more years ago.

Anyone who listens to the BBC Radio Shipping Forecasts will know that severe storms are of frequent occurrence at Fair Isle, so why should this storm have had such a devastating effect on those plants subjected to the full brunt of the wind? The wind was severe gale or stronger from the south-west for all of 19th December from 0725 GMT (including storm 10 and occasionally storm 11 in late morning - maximum gust 82 knots at 1135 GMT) and severe gale NW until 1100 GMT on 20th December, an uninterrupted 28 hour period of extremely strong winds. There was some rainfall on 19th (2.1mm from 0900-2100 GMT), very little on 20th (when rainfall readings may have related entirely to sea spray) and none on 21st. The relative humidity on 20th was 75.6%, below the Fair Isle mean, and

even lower on 21st at 69.4%. Thus the wind on 20-21st constituted a drying wind. On 21st the temperature dropped steadily throughout the day to a minimum air temperature of -0.4° in the evening. Winds were light. The combination of sub-zero temperatures and light winds is rare at Fair Isle (D. Wheeler pers comm). One other noteworthy feature was the lack of sun. There was no sun at all on the days 17th-22nd December inclusive.

The damage was restricted to west facing surfaces, ie those surfaces exposed to the wind. I have always associated *R. siliquosa* with habitats adjacent to the sea and thus imagined it capable of coping with salt-laden winds. Was this, however, an overdose of salt, with the absence of rain (after 19th) with drying winds preventing the plants from rebuffing excess salt, or was it the effect of an air frost following the stress of a prolonged gale or a mechanical reaction to constant buffeting over many hours? Is this a known phenomenon and, if so, what is the cause?

I express my thanks to Dave Wheeler of the Fair Isle Meteorological Station for providing detailed weather data.

Nick Riddiford
Schoolton
Fair Isle
Shetland ZE2 9JU

[This article was accompanied by several striking colour transparencies showing damaged and undamaged R. siliquosa but, since the difference would not be clear in black and white, the photographs have not been reproduced here. Ed.]

THE BOTANICAL RESEARCH FUND

The Botanical Research Fund annually, in May, makes awards of a modest nature for a wide variety of research projects in botany to those who do not have access to the usual and more major sources of support. It also sometimes assists students and others in more general furtherance of advancement in the botanical field. Enquiries and applications should be made to the Hon. Secretary of the Fund - Professor Keith Jones, 57 Marksbury Avenue, Richmond, Surrey, TW9 4JE.

Keith Jones

"NOTES AND QUERIES" - A PROPOSAL FOR A NEW REGULAR COLUMN

I am currently fascinated by lichen reproduction, dispersal and colonisation. Some of the questions I would like to ask are basic questions an ecologist might ask; several examples follow. How many apothecia of *Lecanora dispersa* are there in London? What contribution do lichen ascospores make to the spora of a city? Do they release their spores at dawn like some other ascomycetes? How mobile are they and how far does the average spore travel? Are there any aberrant populations that could be used to study these phenomena? Taking a hedgerow species, what proportion of the available hedge surface is covered in *Lecidella elaeochroma*? What is the proportional resource allocation to spore production? What is the rate of spore production, and of colonisation? In different lichen habitats is biotic or passive dispersal more important? Is there a strong correlation between propagule shape/size and dispersal mechanism (insects, rainsplash? etc), habitat/substrate, and microclimate? Why do foliose species with cyanobacterial photobionts tend to produce digitate isidia in Oceanic Woodlands? Why do terricolous species produce squamules and schizidia (*Cladonia* spp., *Degelia atlantica*, *Fulgensia fulgens*, etc)? Are soredia in foliose lichens (eg Parmeliaceae and Pyxinaceae) an adaptation for dispersal in the forest canopy? Why do species in the *Graphidion scriptae* tend to have elongate septate spores? (Are they specially adapted for impaction on bark water films at low windspeeds?). Why does *Pertusaria* produce such enormous spores? What are the seasonal and climatic requirements for successful dispersal and colonisation? It would be most interesting for all members to review their experiences of some common species such as *Xanthoria parietina*, *Ramalina farinacea*, *Lecanora dispersa*, *Parmelia coniocarpa (perlata)*, *Lecanora conizaeoides*, *Physcia tenella*, *Lecanora chlorotera*, *Lecidella elaeochroma* etc and I am sure there are some answers to the above questions scattered in the literature.

Research in lichen biology is seriously underfunded. Unless lichen enthusiasts have a suitable forum to report ideas, observations and results of little experiments that they do, there is little hope in being able to answer these questions in the near future. Lack of communication in hard copy means that the insights gained from years of observation in the field and by experiment are shared only among a few members with whom you regularly meet and converse. I would argue that this information should be made available to a wider audience. The enigma of lichen biology and symbiosis draws many members to the Society. The provision of a forum such as "Notes and Queries" set in the long tradition of natural history in the British Isles would, I think, admirably achieve the aims (1) to

encourage a broader membership to participate in the Society, and (2) to communicate in hard copy little observations and pet theories on all aspects of lichen biology for debate. I would like to close with the following excerpt from Thomas Taylor's lichen account in Mackay's (1836) *Flora Hibernica*: "lichens prefer the purest of air and prefer to face the prevailing wind . . ."

Howard Fox

[A good idea. Contributions to "Notes and Queries" are invited. Ed.]

LETTER FROM AN OVERSEAS CORRESPONDENT

Czechoslovak lichenology in 1991

Further to my previous article (see *Bulletin* 68), I now report the lichenological events of 1991 in chronological succession.

Professor J Poelt, leading lichenologist and cryptogamologist, has written numerous papers, some of them being well known also to a broad botanical community, eg. his keys for determination of lichens: J Poelt, *Bestimmungsschlüssel Europäischer Flechten* (1969); J Poelt and A Vězda, *BEF Ergänzungsheft I* (1977), *Ergänzungsheft II* (1988). Prof Poelt has constantly been in scientific contact with Czechoslovak lichenologists, from the time of the oldest and now deceased (M Servít) to the current younger generation (E Lisická and J Horáková), and has rendered different services to each of them. He has also published the results of his studies in Czechoslovak botanical journals. For all these reasons, the Annual General Meeting of the Czechoslovak Botanical Society (CSBS), held on 18 February 1991, elected J Poelt an Honorary Member.

On 16 March, the Czech radio Prague broadcast a programme called *Meteor* which included a lecture by Z Černohorský on lichens: their life, function in nature, and importance for man, including bioindication of air pollution by means of epiphytic species.

On 19 April the Biological Group of The Institute of Pedagogics in Brno organised a course for determination of lichens in collaboration with the Bryological and Lichenological Section of CSBS. The course was lead by A Vězda and concluded with an excursion to the valley of the Rokytná River; it was attended mainly by biology teachers in grammar schools.

In May, the newsletter *Bryonora* 6 was published. The lichenological content was under the following headings: Anniversaries (eg. G Beck-Managetta, T Haenke, J S Presl, M Jarkovský); Guide to other societies VI - The American Bryological and Lichenological Society; Selected lichenological bibliography 1985-1990; Czech and Slovak lichenologists' contribution to mapping of lichens in Europe, particularly of *Anaptychia ciliaris* and *Parmelia caperata* (our participation was organised by I Pišút).

The 4th Bryological and Lichenological Days were held from 20 October to 1 November in the castle of Smolenice (W Slovakia). The conference had international participation, having "Threat and conservation of lichens and bryophytes in Central Europe" as the main topic; it was organised by the Slovak Botanical Society (Bratislava); the Czechoslovak Botanical Society (Prague) and the Slovak Academy of Sciences' Institute of Botany, Bratislava. About 40 people attended, 11 of them from abroad: Austria (1), Denmark (1), Germany (4), Hungary (3), Poland (1), and Romania (1).

The following lectures were presented on lichenological subjects and discussed: R Türk, Lichen constitution and sensitivity to chemical changes of the environment; V. Alstrup, Pesticide effects on lichens; I Lipnicki, Motives and first effects of practical lichen conservation in Poland; J Liška, 200 years of lichenological research in Czechoslovakia; I Pišút, Red list of extinct, missing and threatened lichens in Slovakia; J Liška, Distribution of selected lichen species in Bohemia; A Lackovičová and I Pišút, Bioindicational research of lichens in the region of Spišská Nová Ves (E-Slovakia); Z Kyselová, Bioindication of air pollution in the High Tatra Mts. Three posters were presented on lichenological topics (by K Bartók, E Farkas and L Lökös, and P Scholz). It is planned to publish all lectures (in English or German) as a special volume of *Bryonora*.

Two excursions were made during the conference. On 30 October, a half-day excursion to the vicinity of Smolenice Castle (eg. vertical walls of limestone rocks with *Xanthoria papillifera*). The following day, three localities were visited by bus: 1) Malé Karpaty Mts; Holý vrch Hill, not far from the village of Trstín, dolomite substrate, 250-300 m asl. (*Squamarina lentigera*, *S. cartilaginea*, *Fulgensia fulgens*, *Cladonia symphycarpa*); 2) Zobor Hill above the town of Nitra, SW slope, limestone earth, Pleška Reserve, 400 m (*Cladonia magyarica*, *C. convoluta*, *C. furcata* ssp. *subrangiformis*, *Peltigera rufescens*); 3) Štiavnické pohorie Mts, Kamenná Hill above the village of Vyhne, S slope, rhyolite block scree, 400 m (*Parmelia stygia*, *P. incurva*, *P. omphalodes*, *P. glabratula* ssp. *fuliginosa*, *P. disjuncta*, *Umbilicaria subglabra*, *U. polyphylla*, *U. hirsuta*).

The conference was concluded on 1 November and participants departed by the conference bus from Smolenice to Bratislava. However, they did not miss the opportunity to stop in Sv. Jur (St Georgen), native town of A Zahlbruckner, to have a group photo taken there in front of his birth house with a memorial plaque (see also ILN 22(1): 21 [1989]).

In December, the newsletter *Bryonora* 7 was issued, including the following lichenological parts: Interesting floristic findings (eg. *Lobaria pulmonaria*, *Normandina pulchella*, *Parmelia sulcata* c.fr., *Solorinella asteriscus*); Anniversaries (A P De Candolle, D-F Delise, F Wurm); Deaths (I M Lamb, J J Barkman, V Vareschi); Czechoslovak lichenological bibliography IV (in which it is noted that A Vězda has now edited 2500 numbers of his lichens selecti exsiccati).

The 5th Bryological and Lichenological Days will be held at the end of September 1992 in Krkonoše (Giant Mountains, Riesengebirge), N-Bohemia.

Zdeněk Černohorský

SOUTH-EAST REGIONAL FIELD MEETINGS 1991

These day trip meetings in South-East England are not "high-powered" but are designed to appeal both to those with no previous field knowledge of lichens and to those who have some knowledge but are keen to improve their expertise with further field experience. In the two years that I have been running these excursions, a small but enthusiastic core of clientele has built up but we are keen to have new recruits. Perhaps the following account of the group's activities might encourage others to attend the meetings.

On the weekend of 3-4 August two East Sussex trips were organised: to some coastal churchyards on the Saturday and woodland in the north of the vice-county on the Sunday. Early drizzle gave way to warm sunshine as we tackled the well-groomed, terraced and airy churchyard at Bishopstone where several large chest tombs were immediately found. Chests always enhance the effectiveness of lichen instruction as the party can gather round and look at the demonstrated species in comfort instead of having to join the queue in front of the headstone.

A wide range of the common calcareous species was noted including *Verrucaria glaucina*, *V. viridula*, *Toninia aromatica* in the cracks and recesses, and the more obscure *Catillaria lenticularis*. Smooth-barked trees near the churchyard gate yielded fine colonies of black-fruited *Lecidella elaeochroma* while on a nearby sycamore *Parmelia soledians* was growing. This species was also found on headstones and is something of a coastal speciality in Kent and Sussex, its frequency declining rapidly away from the coastal fringe. Superficially not unlike the generally commoner *P. caperata*, it has a K + yellow to red reaction and soredia of a different texture. *Caloplaca crenularia* was found on acid stone and *C. decipiens*, a relatively scarce species in Sussex, on the church's south wall.

Our arrival at Friston after lunch coincided with the start of a wedding. It was decided not to detract from the big day with our strange churchyard rituals so we resolved to return later after first taking a look at Jevington Churchyard. It was the trees, especially the sycamores with their most interesting corticolous flora, that held our interest here. *Parmelia sulcata* was discovered in a fertile condition on two trees and no fewer than 8 species of *Pertusaria* were recorded including *P. flavida* and *P. multipuncta*. Other species of note included *Haematomma ochroleucum* var. *porphyrium*, *Physconia distorta*, *Schismatomma decolorans*, *Ramalina fastigiata* and *Hyperphyscia adglutinata*. Later back at Friston we added *Cliostomum griffithii* on sycamore, *Caloplaca rudermum* on the south wall and, as a result of careful examination of copper run-off, *Psilolechia leprosa*.

The lichen flora of Nap Wood next day proved somewhat disappointing even in the sheltered gills. Certain indicator species of bark acidification were noted: *Parmelia saxatilis*, *Ochrolechia androgyna*, *Platismatia glauca*, *Foraminella ambigua*, *Hypogymnia tubulosa* and *Cetraria chlorophylla*. However, *Lecanactis abietina*, some of which was fertile, was found in abundance and both *Graphis scripta* and *G. elegans* were present on beech and holly. Two *Usnea* species were located, *U. cornuta* and *U. ceratina* and the lichenicolous fungus *Licheniconium erodens* was pointed out. The weekend ended with a visit to the large churchyard at Eridge. Here flagstones had attracted a number of "acid" species such as *Caloplaca crenularia* and *Aspicilia gibbosa*. The flora of a large oak looked distinctly sick and had clearly been subjected to some detrimental pollution influence since a previous visit. *Parmelia reticulata* was still present however on this tree while powdery *Chrysothrix candelaris* formed distinctive bright yellow patches in the recesses of the bark. *Pertusaria coccodes*, *P. hymenea*, *Ochrolechia androgyna* and *Schismatomma decolorans* were also present.

By contrast, the lichen floras of the three South Essex churchyards visited on 23 November were poorer but still allowed plenty of scope for the beginners in the group to work at "fixing" species in their minds. Greensted enjoys a reputation as the oldest surviving Saxon log church. The wooden beams however are much too well preserved to harbour lichens. However, species of low, damp stonework were in evidence, notably *Trapelia obtegens*, *T. placodioides*, *Caloplaca isidiigera* and the brown, lobed *Parmelia verruculifera*.

Particularly prominent at Stapleford Abbots Churchyard were the convex areolae of *Aspicilia contorta*, many of them with apothecia in a crater-like depression in the top. Also of note here were *Caloplaca decipiens* and *Haematomma ochroleucum* var. *porphyrium* with its beautiful white-fringed margin forming a large patch on the north wall. Beset by bell-ringing practice and encroaching darkness, we ended the day at Havering-atte-Bower Churchyard where *Caloplaca decipiens* was again seen plus, in typical habitat, overgrowing mosses on a ledge of the north wall, *Bacidia sabuletorum*.

Keith Palmer

INVITATION TO IRELAND 1992

In Ireland, one of the unifying themes for lichenologists has been lichen recording for the BLS mapping scheme. After the publication of the Flora, I would hope that one of the priorities of the BLS will be the publication of lichen distribution maps. Ireland has received approximately 60% coverage with an average of c 60-70 species per recorded 10km square. The lichen census catalogue (Seaward 1984) has been a very important stimulus for recording but is gradually becoming dated. Perhaps a revised edition could be produced in the near future. Records from some of the intensively surveyed areas show that often 200-300 species can be found within a square, even in the midlands. It is obvious that a lot more work needs to be done before a satisfactory lichen atlas can be produced.

Following the interest generated with the 1991 BLS summer field meeting in Western Ireland, I would like to encourage more lichen enthusiasts to contribute to lichen recording in Ireland. Essentially this involves enticing members to come to "Discover Ireland" on vacation, and then supplying them with mapping cards, progress maps and a census catalogue, and

pointing them to interesting areas to record lichens. One attraction of Ireland to the absolute beginner is that there are still hundreds of 10km squares of virgin territory to explore. The discovery of a new record can be very rewarding, and is one of the joys I cherish. I think it is very important to share this among all the members of the BLS especially to encourage beginners firstly to have the confidence to make an identification, and subsequently to enable them to make a contribution to lichen distribution studies such as the BLS mapping scheme. The draw for the expert is that overlooked species and neglected habitats in Britain are just as neglected in Ireland!

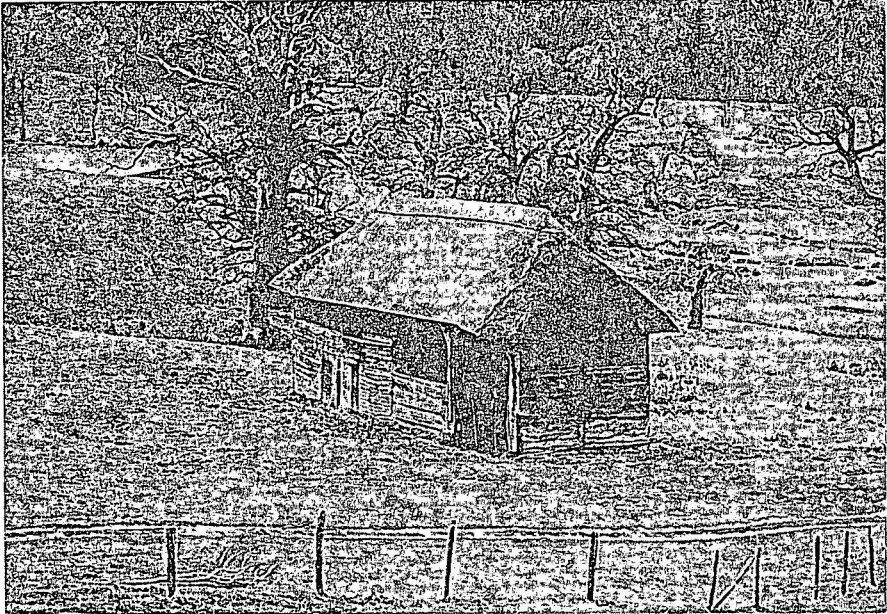
As a first step in this initiative I hope to run three fieldtrips over the summer to various parts of Ireland. The meetings are scheduled for the third weekend of the month (rendezvous at 10.30am for tea each Saturday and Sunday morning at site indicated for 11.00am start at grid reference quoted). If you plan to come from overseas it might be advisable to warn me beforehand to expect you. If you would like to come or have any difficulties with the arrangements I can be contacted in writing or phoned on (0507) 31101 (or Tel INT. + 353 507 31101). Irish Tourist Board B & B Accommodation is readily available near all the sites. These trips are reported more fully in the field meeting circular. Briefly the dates, sites and main habitats are: 19/20 June, Glendalough, Co. Wicklow, Leadmines & fenceposts; 18/19 July, Askeaton, Co. Limerick, Limestone & Urban wasteland; 10/20 September, Kenmare, Co. Kerry, Oceanic woodland & coastal communities.

I hope that these arrangements will encourage some more lichenologists to venture across to Ireland for a while and perhaps fit in one or two days of organised lichen recording.

Howard F Fox
Coursetown House
Athy, Co, Kildare
Republic of Ireland.

A FURTHER NEGLECTED HABITAT

One of the more unusual habitats encountered during the BLS Rogate Field Meeting (1991) was an ancient timber-boarded Sussex barn (see photograph). This oak-clad building, set in a medieval deer park, was initially ignored but when members eventually made their way over to it they were rewarded with the following lichens. *Chaenotheca phaeocephala* - first UK record this century; *Thelomma ocellatum* - new to Sussex; *Cyphelium tigillare* - formerly known in West Sussex but recently regarded as extinct in the vice-county; and the very local *Candelaria concolor*. It was thought that the lichens were favoured by the timber not having been creosoted. An investigation of the lichen flora on such barns and its relationship to that occurring on decorticated tree boles would make a valuable study. Francis Rose tells me that last century Borrer and others recorded the following additional species from wooden barns in Sussex. *Calicium quercinum*, *C. abietinum*, *Chaenotheca chrysocephala*, *Chaenothecopsis debilis*, *Cliostomum corrugatum*, *Lecanora farinaria*, *Lecidella pulveracea*, *Rinodina pyrina* and *Tornabea scutellifera*; there are also unusual *Cladonia* species to look out for. Some of these rare lignicolous lichens may still be around.



Timber-boarded Sussex barn

Oliver Gilbert

"LICHER" AT LARGE

Perhaps, after all, the word "lichen" should rhyme with "kitchen". It could then more readily be used as an acronym for "lichen churchyard enthusiast"! And a person who spends an inordinate amount of time listing churchyard lichens could then be known as a "licher" (the equivalent of an ornithological "twitcher")! The only problem is that the word has a slightly dubious ring to it. My intentions have already been called into question by the unfortunate juxtaposition of my last article and a certain photograph. I must reassure readers who may have their doubts that I do not normally frequent these less than hallowed precincts and was merely, quite innocently and in the course of duty, trying to examine a particularly interesting fruiting body at close quarters!

The Top Twenty Churchyard Challenge has already been taken up with relish. There are five new entries from as far apart as Mereworth in West Kent and Claudy in Northern Ireland, while St Tudno's on the Great Orme, surveyed during the BLS Autumn Field Meeting, is now far and away the richest site in Wales. Not to be outdone, I have recently made two further visits to Wappenham in Northamptonshire and increased the total to over 100. Keep the records coming in, so that the promised revised list is ready for the next issue.

Basing the importance of a churchyard site purely and simply on a raw total is, of course, not entirely satisfactory. It would be useful if an assessment technique similar to that used by the BSBI for flowering plants could be devised which also takes into account other criteria, such as rarity value, diversity of habitat and, perhaps, the presence of indicator species.

I have now started to compile a list of the sites already surveyed in each vice-county. The following example indicates the lay-out so far adopted, each major survey occupying a separate line with a cumulative total at the end:

CHURCHYARD	GRID REFERENCE	RECORDERS	SURVEY DATES	SPECIES TOTAL
Trotton	41/836225	BJC	1971	
		BLS	1991	127***

Note that figures not letters are used to indicate the 100km square, the recorders' names are abbreviated (I shall keep a key!), and that the year rather than the precise date is all that is required. The species total does

not, at this stage, include lichenicolous fungi. I am trying to devise a star system based on the criteria already mentioned with the most important sites receiving three stars.

The whole question of assessment will be discussed at the Stoneleigh meeting in October (see Conservation News 6,p21). I hope that, by then, some recording guidelines will be available for you to consider. If one is passing a site with an hour to spare, what, for example, should be recorded beyond a mere tick list of species? At the other extreme, what further information would be worth gathering from a local churchyard which one visits many times? Site lists arrive through my letter-box in many forms and it would, I think, be helpful to have some degree of standardisation. In connection with this and to avoid confusion, it would be useful to have an agreed set of abbreviations, especially when filling in a mapping card. Please ring me or write to me with your comments and ideas so that anything produced for Stoneleigh represents as wide a view as possible.

In a previous article, I mentioned that the 1783 record of *Aspicilia subcircinata* by Rev Relhan at Grantchester may have been the first ever reference to a churchyard lichen. Recently, I was involved with a course at Madingley Hall, Cambridge, and had the opportunity to return to Grantchester to see if the species was still there. Sadly, my search proved fruitless. The boundary wall on which the lichen had been found two centuries ago was now in deep shade from a line of trees. Thanks, however, to Dr Max Walters, I was able to visit Kings' College library and photograph Relhan's original, hand-painted drawing.

By the time you read this, I shall have helped to preach the conservation message at a Day Seminar for Diocesan Advisory Committees at Stoneleigh on 21 May. Two of the other speakers, Dr Anthea Brian (Herefordshire Nature Trust) and Dr Eric Robinson (President, Geologists' Association) will again be with me on 27 June at a Churchyard Conservation Training Day at Colwall Church near Malvern. Also, this summer, the natural heritage of Gloucester Cathedral precinct will be studied by 22 specialist recorders. A presentation of findings is planned as part of a Creation Festival in late September. It is hoped that, eventually, in collaboration with WWF, a handbook will be produced to stimulate other cathedrals and abbeys to set up their own projects.

Please contact me if you would like further details of these or similar initiatives. In the last *Bulletin*, I offered to compile a register of fellow-lichers, but so far I have had no takers. How about it!

Tom Chester
tel. (0280) 702918

HELP FOR A NEWCOMER!

I have recently joined the "lichen team" at the Natural History Museum and begun a research project working on selected lichen algae. I am working with William Purvis and Dave John (a phycologist) and have been spending the last few months isolating, culturing and identifying algae from a range of lichens. I am now concentrating my efforts on algae isolated from lichens found in metal-rich environments with the hope of identifying them and determining their role in the observed metal tolerance.

One of the most interesting lichen genera that I have been working with is *Veizdaea*. This is an ideal experimental organism because the phycobiont, *Leptosira*, is filamentous and the lichen has been collected under zinc coated wire fences, a metal contaminated environment. This is where my request for help arrives! I would be very grateful if anybody, whilst out "lichenising", could keep a look out for any *Veizdaea* spp. If you would be kind enough to make a collection for me (I don't need large samples) I would appreciate it. All donations will be gratefully received at The Natural History Museum, Cromwell Road, London, SW7 5BD. It would be useful if donors could also enclose a note indicating the location and general habitat of the material. Thanks very much for your help.

Gill Douglas

MEAD WITH A DIFFERENCE

With the passage of time, lichens have been put to a variety of uses by man. However, never in ones' wildest dreams would one have imagined that the extra kick and superb taste in a glass of honey beer was due to the addition of an extract of *Xanthomaculina hottentotta* (Ach.) Hale! The doubtful should ask Hendrik de Bruin, information officer at the Karoo National Park, near the town of Beaufort West in the Cape Province of South Africa.

During a recent visit to the park Hendrik convincingly told us that his father, the late Jannie de Bruin, used this lichen in brewing what they call "qirri". According to him his father, who was a mixture between a Xhosa and a Bushman, added the lichen extract to the mead to ensure *the* perfect delicately bitter taste and an additional punch.

According to Hendrik his father added dried pulverised roots and stems of the succulent *Anacampseros albissima* Marl. to the honey and water. The addition of these dried succulent parts started the fermenting process. *Anacampseros albissima* is commonly known as "Karemoer" or "Moerbossie" amongst natives of those regions where the plant occurs. The "karee" part of the familiar name is the original Hottentot for "honey beer" and "moer" means yeast in Afrikaans.

Hendrik and his predominantly Afrikaans speaking people know *X. hottentotta* by the vernacular name "klipblom". Literally translated the word means "rock flower". During our visit Hendrik showed us where his father used to collect "klipblom" thalli in the park. He told us that his father ensured the desired qualities in his beer by adding "klipblom" lichen extract to the fermenting brew. The lichen extract was prepared by adding crushed thalli of *X. hottentotta* to a bag containing peas. This mixture was then soaked in warm water and after two or three days the lichen extract was added to the honey brew. This resulted in a master brew with the only drawback that it turned the drinker's mouth yellow after a pint or two! In spite of this trivial imperfection the beer became well known in the region and regular partakers even made up a song about brew master Jannie de Bruin's esteemed beer.

Dirk & Leslie Wessels

A SLICE OF ROCK

Having once taught metalwork and woodwork, I love acquiring and using tools and hardware. Until recently most of these were hand tools, but with advancing age, the advantage of electric power is preferable. Just recently I bought a 4 1/2" angle grinder to slice concrete kerb stones.

My lichen collection contains a number of bulky and awkwardly sized stone samples and, inspiration blossoming, I decided to try out my latest machine. The 4 1/2" model is light enough to hold and operate in one hand. With the rock sample resting on the garage bench and gripped firmly I took my first cut. It proved superb. With loose aggregates like sandstone the wheel slices through like butter. With harder rocks like granites more effort is needed and along with the dust and sparks, molten rock occasionally bubbles forth. It appears to be safe enough (to date!), the only danger being, possibly, an earlier than intended nail trim.

The one major drawback to doing this in a garage is that, for many feet around, the various surfaces and tools assume a unicolorous moonscape kind of appearance. However, outdoor use, with the wind disposing of dust, proved satisfactory providing any wristwatch was first removed. A slightly dusty thallus is quickly rejuvenated by a wash under the tap.

Note: I bought and tried out the UV lamp described by Alan Orange in *Bulletin 68*; it works very well indeed, the orange glow of *Pertusaria flavicans* being visible in merely dull lighting.

Don Smith

FROM THE ASSISTANT TREASURER

Subscriptions

If the copy of the *Bulletin* which you are reading now was addressed to you then your subscription for 1992 has been paid. I am pleased to report that the Society's policy of sending publications only to those who have paid the current year's subscription is making administration simpler and saving your Society the expense of mailing publications to members who subsequently do not pay. If the copy you are reading was not addressed to you then why not join (or rejoin) the Society for 1992. Membership details and subscription rates are inside the front cover.

Numbers

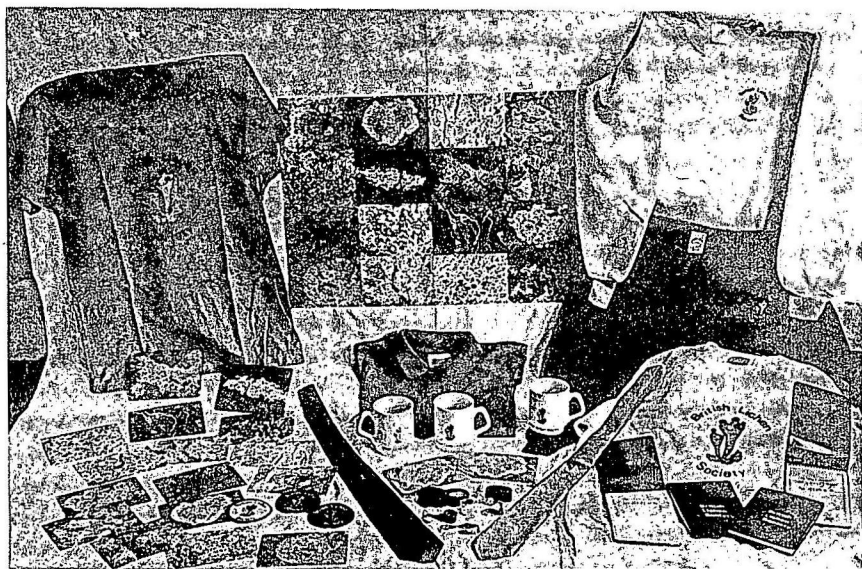
It had been suggested to me that members might welcome the publication of the **telephone numbers**, **FAX numbers** and **E-mail numbers** of other members of the Society. If you would be willing to allow your numbers to be published for use by other members, please write to me (address inside back cover) with the appropriate information. If the response is small, then I shall circulate the numbers which I am sent *only* to those who have sent me numbers, but if the response is considerable the numbers will be published with the Winter *Bulletin*.

Jeremy Gray

“PUBLICITY” FROM THE PUBLICITY OFFICER

I am pleased to say that our venture into publicity material has been extremely successful and well received. Many of you may have already received one of the Society's lichen postcards from friends or colleagues around the world. The 16 pictures, mostly taken by Jeremy Gray and Frank Dobson, can also be pinned up on the wall of your office, lab., front room, study, etc. in the form of an A2 poster which is a run-on of the postcards onto a high quality gloss paper.

In spite of a recession and the annoying problem of getting goods from suppliers, the sweatshirts, T-shirts, sweaters and ties have sold well. Well over half the garments purchased by the Society were sold in the first couple of months, mainly at the AGM. The Society is not out to make a profit on these sales, but merely to provide a facility for members and cover costs. If articles ordered are not in stock they can be obtained from the suppliers but, in order to keep their administrative costs to a minimum, I try and order once a month, so there could be a slight delay. All prices can be found at the back of the *Bulletin*.



Items on sale from the Publicity Officer

For those members who have not yet seen the items for sale, the photograph illustrates the range of stock. The T-shirt to the left of the central A2 poster has a full sized screen-printed logo on the front as does the sweatshirt on the lower right. Sweaters, sweatshirts and polo-shirts are also embroidered with a breast pocket sized logo and the badges (left of centre by the post cards) can also be made from the same jaquard. The ties have a single below-knot motif woven into the fabric and are available in navy, black, brown, bottle-green and charcoal-grey. Hand lenses (centre) are also for sale; prices range from £1.65 to £13.00 depending on the quality of the optics. The cheaper ones are quite acceptable, and make a very useful second lens when out in the field with friends, etc. The water-proof notepads have proved very popular in the field and, along with the packs of postcards and mugs, make ideal presents to give to lichenologist friends when visiting.

There has been a sad saga concerning the mugs. The grey colour of the podetia came out darker than expected and there has been an unhappy period of wrangling over who was to blame. I had hoped that by now we would have had a new batch with the correct colour, but life isn't as simple as that!

The Publicity Committee has met on several occasions, and now that the articles for sale have been purchased and the Regional Representatives have been instigated, we plan to turn our attention to educational material. With the introduction of the National Curriculum it is envisaged that we could produce some project packs aimed at the Secondary school age-group (levels 3-10). Several project topics have been suggested and members of the Society have been asked to produce a work sheet with given headings so that an educational package of projects can be produced with all the projects in a similar format. We would welcome anyone, particularly teachers, who could help read the projects, make constructive comments and help produce this worthwhile pack. The Society gets many requests for help with projects in schools and this will be a valuable asset.

Tim Moxham

REGIONAL REPRESENTATIVES

Council has for some time been considering the possibility of having Regional Representatives in the Society; the Summer 1990 questionnaire confirmed that many of the membership would like them, and the members present at the 1991 AGM voted in favour of such a scheme. So what should be the functions of the Regional Representatives? Below are listed some suggestions, though you may well consider other possibilities. If so, please let your Regional Representative or me know.

Suggested functions of Regional Representatives

1. To contact new members. (Secretary or Assistant Treasurer to pass on names to Regional Reps).
2. To arrange periodic local field meetings, soirées, socials, talks, slide-shows, introductory courses, etc.
3. To channel local information to the Conservation Committee regarding proposed plans, SSSI's, etc.
4. To act as a contact (or suggest someone else!) for BLS field meetings arranged in the Region.
5. To be a local contact point for recording, mapping, records, etc.
6. To accumulate local knowledge, such as expertise, herbaria, collections, museums, good sites, etc.
7. To perhaps act as a contact for young people in the area doing a local project.

It must be emphasized that Regional Representatives are not going to replace Referees, although some might be prepared to help in lichen identification. Nor are the Regional Representatives going to be the County Recorders. The Regional Representatives are there to promote the Society in their area and hopefully provide regional events for members in their locality. The boundaries are in many ways a bit false - members in a county in one region may well find it more convenient to attend a meeting held in another region. Neither is it all going to happen overnight. Often the people who volunteer their services are busy people already. But at least there is now a framework for organising events for members on a more local footing, and we can all expect to see more activity in our own areas.

All this is a tall order for one person to cope with in such large regions, and it is quite possible that the Regional Representatives will have others helping him/her to make the arrangements. Please support your Reps as much as you can, it will be a great encouragement to them.

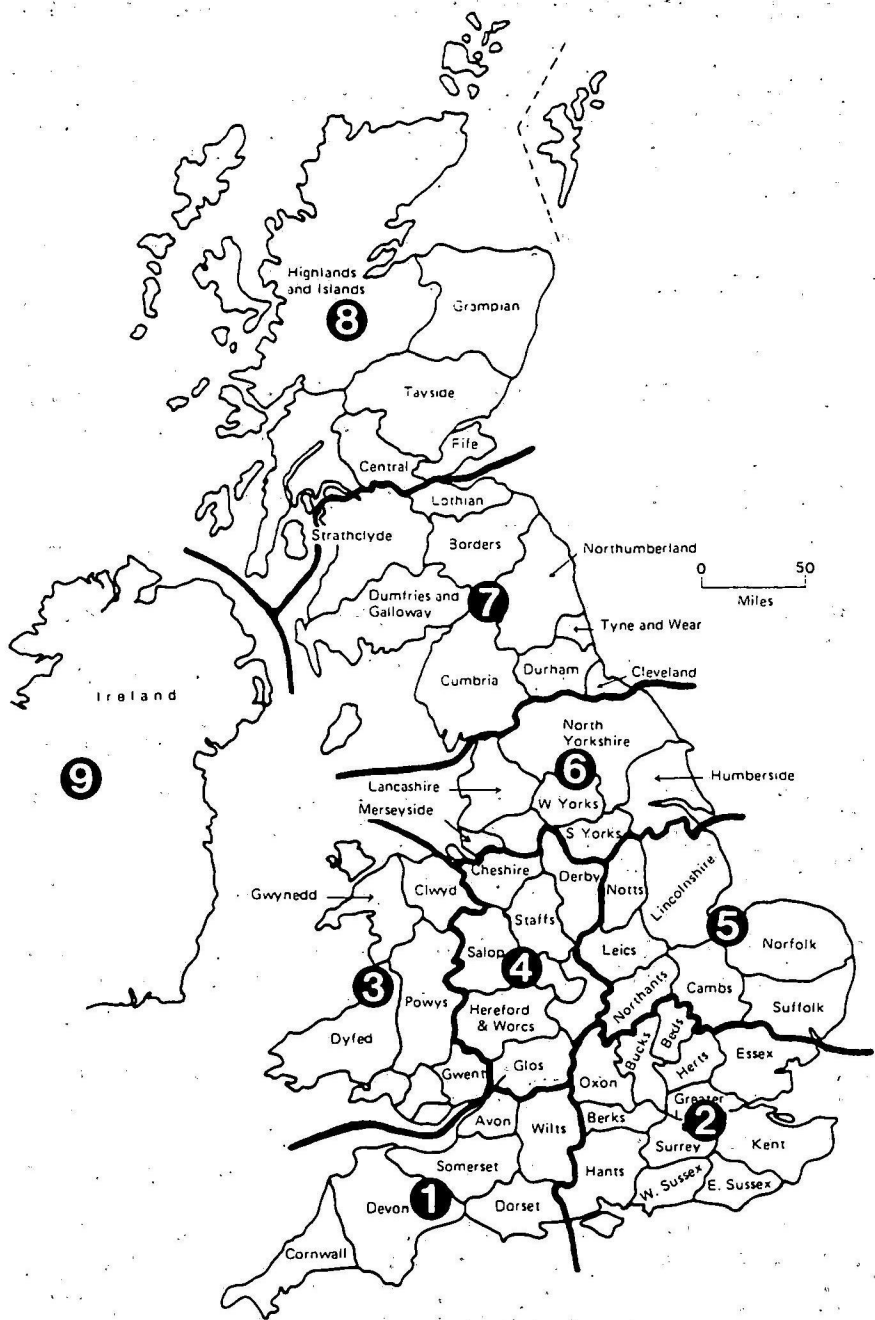
It will be immediately apparent from the list of counties making up the Regions that there is a considerable imbalance in the size of the Regions, the London and South East Region particularly. This was inevitable, and no doubt some changes will have to be made in the light of experience. But we now have a starting point which we hope will soon evolve into a good working regional system.

The Representatives for the Regions are:-

1. SOUTH WEST. Dr David J Hill, Dept for Continuing Education, University of Bristol, Wills Memorial Building, Queen's Road, Bristol, Avon, BS8 1HR.
2. LONDON & SOUTH EAST. (to be arranged).
3. WALES. Mr Ray Woods, NCC, Gwalia, Llandrindod Wells, Powys.
4. WEST MIDLANDS AREA. Mr John S Walton, 6 Allen's Close, Baddesley Ensor, Atherstone, Warwickshire, CV9 2DB.
5. EAST ANGLIA AREA. (to be arranged).
6. YORKS AND LANCS AREA. Mr Don H Smith, Westland, Westfields, Kirkbymoorside, Yorkshire, YO6 6AG.
7. NORTH ENGLAND & SCOTTISH BORDERS. Mr H Norman Hammond, 39 Outgang Road, Aspatria, Carlisle, Cumbria, CA5 3HS.
8. NORTH SCOTLAND. Mr Richard K Brinklow, Dundee Museums & Art Galleries, Albert Square, Dundee, Tayside, DD1 1DA.
9. NORTHERN IRELAND & REPUBLIC OF IRELAND. Mr Howard F Fox, Coursetown, ATHY, Co Kildare, Ireland.

Areas of responsibility for Regional Representatives (and numbers of members).

1. SOUTH WEST	43	2. LONDON & SOUTH EAST	104
Avon	10	Bedfordshire	3
Cornwall	5	Berkshire	8
Devon	11	Buckinghamshire	1
Dorset	5	Essex	9
Somerset	7	Greater London	21
Wiltshire	4	Hampshire	10
Channel Islands	1	Hertfordshire	8
3. WALES	15	Isle of Wight	1
Clwyd	2	Kent	10
Dyfed	2	Oxfordshire	9
Glamorgan (Mid, S, W)	4	Surrey	18
Gwent	1	Sussex (East and West)	6
Gwynedd	5	4. WEST MIDLANDS AREA	24
Powys	1	Cheshire	10
5. EAST ANGLIA AREA	35	Derbyshire	0
Cambridgeshire	7	Gloucestershire	6
Leicestershire	3	Hereford & Worcester	1
Lincolnshire	3	Salop	0
Northamptonshire	3	Staffordshire	0
Norfolk	8	Warwickshire	2
Nottinghamshire	6	West Midlands	5
Suffolk	5	6. YORKS & LANCS AREA	18
7. N. ENGLAND & SCOTISH BORDERS	23	Greater Manchester	0
Cleveland	3	Humberside	1
Cumbria	6	Lancashire	4
Durham	3	Merseyside	1
Northumberland	1	Yorkshire (N, S, W)	12
Tyne and Wear	3	8. NORTH SCOTLAND	17
Borders	0	Central	0
Dumfries & Galloway	0	Fife	0
Lothian	4	Grampian	4
Strathclyde (S)	1	Highland	5
Isle of Man	2	Orkney	0
9. NORTHERN IRELAND (& REPUBLIC OF IRELAND 7)	3	Shetland	0
Antrim	2	Strathclyde (N)	3
Armagh	0	Tayside	4
Down	1	Western Isles	1
Fermanagh	0		
Londonderry	0		
Tyrone	0		



Areas of responsibility for Regional Representatives

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 (VC); grid reference (GR); date; comments; recorder. Grid references may be abridged in the interests of conservation; they will be omitted when the record has been published elsewhere.)

Absoconditella trivialis: on mossy soil over mine spoil, Agneash, VC 71, Isle of Man, GR 24/432863, 1990 (BLS meeting). Determined B J Coppins.

P M Earland-Bennett

Absoconditella trivialis: on compacted soil, woodland at Melton Nature Reserve, Suffolk, VC 25, GR 62/2—5—, 1991. Determined B J Coppins.

P Cayton, P M Earland-Bennett and C J B Hitch

Alectoria sarmentosa ssp. *sarmentosa*: on birch in Glen Achall, VC 105, Wester Ross, GR 28/25-93-, 1991.

F Rose

Anaptychia ciliaris ssp. *mamillata*: with *Stigmidium hageniae* (determined D L Hawksworth, new to Britain) on thallus, on Manx Slate rocks in *Ramalina* zone, Calf Sound, VC 71, Isle of Man, GR 24/173666, 1990 (BLS meeting).

P M Earland-Bennett

Bacidia subfuscula: on brick wall top around iron railings, Henham Park, Suffolk, VC 25, East Suffolk, GR 62/449783, 1991. New to the County. Determined B J Coppins.

P M Earland-Bennett, C J B Hitch and P Cayton

Biatora vernalis: on trunk of oak in sessile oak woodland, Gwynllyn Wood, near Rhayader, Radnorshire, VC 43, GR 22/944696, 1991. New to Wales.

A Orange

Buellia meiosperma: south-facing maritime rocks, Port Kermin, Mull of Galloway, Wigtownshire, VC 74, GR 25/1--3--, 1990. A southern, maritime species. New to Scotland.

A Fryday, B J Coppins and J Winham

Buellia uberior: exposed, acid rock on summits of Meall Corranaich, altitude 980 m, GR 27/61-42- and Beinn Cheathaich, altitude 930 m, GR 27/44-32-, both Mid-Perthshire, VC 88. Previously known in Britain only from Northumberland but probably under-recorded. Resembles a dark form of *B. aethalea* but reacts C+ red.

A Fryday

Catillaria modesta: shaded limestone, altitude 650 m, Meall na Samhna, Mid-Perthshire, VC 88, GR27/48-33-. Previously known in Britain only from West Ross.

A Fryday

Caloplaca approximata: damp, north-facing limestone, altitude 250 m, Corrycharmaig, Glen Lochay, Mid-Perthshire, VC 88, GR 27/52-35-. An arctic species previously reported in Britain only at much higher altitudes, from Ben Lawers and Caenlochan Glen.

A Fryday

Candelariella aurella f. *heidelbergensis*: on the top ridge of a low sloping calcareous tombstone in the churchyard of St. Mary-at-Lambeth, London, VC 17, Surrey, GR 51/30-79-, August 1991.

K Palmer

Candelariella aurella f. *heidelbergensis*: on the vertical face of a concrete post in a car park at Lamberhurst, VC 16, East Sussex, GR 51/67-36-, January 1992.

K Palmer

Chaenotheca phaeocephala: on ancient barn, unpainted and uncreosoted (with *Cyphelium tigillare* and *Thelomma ocellatum*), Parham Park, VC 13, W. Sussex, GR 51/05-14-, BLS excursion, 1991. The first, not recorded in British Isles for c 150 years; the second, not in England for 30 years; the last, new to Sussex. All determined by P W James.

F Rose

Cladonia asahinae: on humus-rich soil around base of tree in young Sitka spruce plantation, altitude 370 m, 6 km east of Trawsfynydd, Merioneth, VC 48, GR 23/76-33-, 1992. Contains rangiformic, norrangiformic and fumarprotocetraric acids. First British record of this chemospecies in the *C. chlorophaea* group.

A Orange

Cyphelium notarisii: on exposed cliff-top fence at Hastings Country Park, VC 14, East Sussex, GR 51/83-10-, August 1991.

K Palmer

Epigloea soleiformis: on bark on the ground, Grassington Moor, Grassington, VC 64, Mid-West Yorkshire, GR 44/021666, 1991.

P M Earland-Bennett *et al*

Epilichen scabrosus: calcareous montane heath, altitude 875 m, Beinn Eighe NNR, West Ross, VC 105, GR 18/9--6--. Parasitic on *Pannaria pezizoides* not on *Baeomyces rufus*.

A Fryday

Gyalidea lecideopsis: on chalk stones (with *Gyalecta jenensis* and *Leptogium cretaceum*) Heyshott Down, VC 13, W Sussex, GR 41/89-16-, 1991. New to South England.

O L Gilbert

Hymenelia prevostii: on chest tombs in churchyards, Bury, VC 13, GR 51/016131, 1991, F Rose and K Sandell; Plumpton VC 14, GR 51/356136, 1991, F Rose; Albury Old Church, VC 17, GR 51/063478, 1991, F Rose. Not recorded in SE England before, probably much overlooked.

Lecanactis hemisphaerica: on north wall of the church at Hamsey, VC 14, East Sussex, GR 51/41-12-, September 1991. Confirmed J R Laundon.

K Palmer

Lecanactis hemisphaerica: on north wall of the church at Rodmell, VC 14, East Sussex, GR 51/42-06-, December 1991.

K Palmer

Lecanora frustulosa: a few plants on one exposed basalt crag, altitude 500 m, The Storr, Trotternish ridge, Isle of Skye, North Ebuades, VC 104, GR 18/49-54-. The only previously confirmed British records are from the Ben Lawers NNR.

A Fryday

Lecanora marginata: Cambrian limestone outcrop, altitude 425 m, north of Beinn nan Cnaimhseag, Inchnadamph NNR, West Sutherland, VC 108, GR 29/27-18-. Previously recorded in Britain only from the Ben Lawers NNR. British specimens have a different chemistry from European collections (principally stictic acid in place of atranorin) and more immersed apothecia.

A Fryday

Lecanora marginata ssp *elata*: acidic mica-schist boulders, altitude 1100 m, near summit of Ben Ghlas, Mid-Perthshire, VC 88, GR 27/62-40-. New to Britain. Differs from ssp. *marginata* (the continental form) in growing on acid rocks and lacking usnic acid. Also recorded from Beinn a' Bhuic, Sgiath Chuil and Beinn Cheathaich (all VC 88) and probably overlooked elsewhere.

A Fryday

Lecidella patavina: vertical, calcareous mica-schist, altitude 950 m, Creag nan Gabhar, Ben Ghlas, Mid-Perthshire, VC 88, GR 27/63-40-. New to Britain. Resembles *L. stigmatea*, from which it differs primarily in the thecium being rich in oil droplets.

A Fryday

Lepraria lobificans: with *Psammia stipitata* (second British record, determined D L Hawksworth) on thallus, on stump in wood, Wangford, Suffolk, VC 25, East Suffolk, GR 62/463778, 1990.

P M Earland-Bennett

Lepraria lobificans: with *Psammia stipitata* (third British record, determined D L Hawksworth) on thallus, on shaded bridge, Ballahovin, VC 71, Isle of Man, GR 24/310753, 1990 (BLS meeting).

P Cayton

Leptogium teretiusculum: on mossy soil in quarry, near Glensford, Essex, VC 19, North Essex, GR 52/839463, 1990. Determined B J Coppins.

P M Earland-Bennett and J F Skinner

Leptogium turgidum: fine fertile material on a chest tomb at Woking Parish Church, VC 17, Surrey, GR 51/02-56-, January 1992. Determined P W James.

K Palmer

Leptorhaphis maggiana: on hazel twig, Newbourne, Suffolk, VC 25, East Suffolk, GR 62/26-42-, 1990. Determined B J Coppins.

P M Earland-Bennett, C J B Hitch and P Cayton

Leproloma anghardianum: on dry rocks below overhang in old slate quarry, altitude 300 m, Rosebush, Pembrokeshire, VC 45, GR 22/078298, 1986. Confirmed J R Laundon, 1991. New to Wales. Two more Welsh specimens are known, from VC's 43 and 48. The species has previously been reported to contain porphyritic acid, roccellic acid and atranorin, but the three Welsh specimens contain rangiformic acid in place of roccellic acid.

A Orange

Macentina abscondita: on inside of peeling bark of dead elm on ground, Darsham Marshes, Darsham, VC 25, East Suffolk, GR 62/421691, 1991. Determined B J Coppins.

P M Earland-Bennett, C J B Hitch and P Cayton

Multiclavula vernalis: damp gullies in acid rocks, Creag Uisebri, Glen Meavaig, north Harris (altitude 150 m), GR 19/09-08- and Teinnasval, Glen Raonagail, west Lewis (altitude 200 m) GR 19/03-25-, Outer Hebrides, VC 110. This genus of basidiolichen was previously known in Britain only from one old record (of this species) from the Shetland Islands. The above collections were the only fertile specimens seen but the species is probably not uncommon in the Outer Hebrides in a sterile state. Determined R Watling.

A Fryday

Mycoporum hippocastani: on hawthorn and holly, Darsham Marshes, Darsham VC 25, East Suffolk, GR 62/420691, 1990. Determined B J Coppins.

P M Earland-Bennett

Parmelia delisei: on tops of two sandstone headstones and one horizontal slab in churchyard at Mereworth, VC 16, West Kent, GR 51/66-53-, August 1991.

K Palmer

Parmelia laevigata: (with *P. taylorensis*) on birch and on rocks in woodlands about Lochinver, VC 108, W. Sutherland, GR 29/10-21- and 29/08-25-, 1991. These records fill a large gap on the NW coast of Scotland.

F Rose

Pertusaria ophthalmiza: on trunk of one oak in fragment of sessile oak woodland, altitude 205 m, Cwm Mynach, north of Penmaenpool, Merioneth, VC 48, GR 23/68-22-, 1991. New to Wales.

A Orange

Physcia clementei: on vertical calcareous headstones at the following churchyards: Yalding, VC 15, East Kent, GR 51/69-50-, December 1991; Moreton Pinkney, VC 32, Northamptonshire, GR 42/57-49-, April 1991; Stanmer, VC 14, East Sussex, GR 51/33-09-, December 1991; Pluckley, VC 15, East Kent, GR 51/93-45-, January 1991.

K Palmer

Ramonia dictyospora: inside a holly pollard, Busketts Wood, New Forest, VC 11, S Hants, GR 41/30-10-, 1992.

N A Sanderson

Ramonia nigra: inside a hollow beech, Long Beech Wood, New Forest, VC 11, GR 41/25-12-, 1991.

N A Sanderson

Roccella phycopsis: luxuriant on the east-facing aspect of a single old boundary *Quercus* at Nunwell Park, Brading, Isle of Wight, VC 10, GR 40/599877, 1991. Otherwise known on the island from three medieval church towers.

C R Pope

Roccella phycopsis: on north wall of Norman church, Portchester, VC 11, S Hants, GR 41/62-04-. Last recorded here (and for mainland Hants) in c1860.

K Sandell and F Rose

Tephromela pertusarioides: vertical, east-facing, micaschist rock, altitude 700 m, Creag na h-Achlarich, Beinn Heasgarnich, Mid-Perthshire, VC 88, GR 27/42-38-. Second British record. Similar to *T. grumosa* but with convex, well-delimited soralia. Determined B J Coppins

A Fryday

Thelidium aeneovinosum: damp, calcareous mica-schist, altitude 550 m, Creag an Lochain, Meall nan Tarmachan, Mid-Perthshire, VC 88, GR 27/64-42-. New to Britain. Confirmed A Orange. Also recorded from Lochan nan Cat (Ben Lawers) and Meall nan Samhna (both in VC 88):

A Fryday

Thelocarpon lichenicola: on soil of bank, Laxey Wheel, Laxey Glen, VC 71, Isle of Man, GR 24/432852, 1990 (BLS meeting). Determined B J Coppins.

P Cayton

Verrucaria bulgarica: on brick on ground in old garden, Billericay, VC 18, E Essex, GR 51/675947, April 1985. Third British site. Also on brick on ground in garden, Billericay, VC 18, S Essex, GR 51/687960, June 1985. Determined P M McCarthy.

P M Earland-Bennett

Verrucaria bulgarica: on old tile on ground in wood, Darsham VC 25, E Suffolk, GR 62/418697, October 1990. Determined P M McCarthy.

P M Earland-Bennett, C J B Hitch and P Cayton

ADDENDA

Buellia badia: new to Britain. The most recent collection, by P M Earland-Bennett, from Shipmeadow Church was made when the roof was being retiled so that a considerable amount of material could be collected. It was

sent to C Scheidegger in Switzerland, who determined it. Specimens have been deposited in BM and E. This species has been recorded in nine localities:

on red brick tiles, Shipmeadow Church, VC 25, Suffolk, GR 62/38-89-, May 1982 and September 1991

on red brick coping stones of a wall, East Bergholt Chapel, VC 25, Suffolk, GR 62/06-34-, June 1982

on red brick tiles, The Whin, Snape, VC 25, Suffolk, GR 62/38-59-, April 1983

on red brick tiles, Bramfield Church, VC 25, Suffolk, GR 62/39-73-, August 1983

on sandstone coping of a wall, Quendon Park, VC 19, Essex, GR 52/51-31(-2)-, June 1984

on asphalt roofing, New Cottage, St Olaves, Norfolk, VC 25, Suffolk, GR 62/46-98-, March 1986

on red brick tiles, Homersfield Church, VC 25, Suffolk, GR 62/28-85-, May 1986

on slates of roof, Great Melton Church, VC 27, Norfolk, GR 63/14-06-, July 1986

on Leicestershire Switland slates, Sheringham Hall, VC 27, Norfolk, GR 63/13-42-, July 1988.

C J B Hitch

Psilolechia leprosa: This species, originally recorded on mine spoil and thought to be rare, is now being found in association with copper run-off around lighting conductors and below window grilles. Between November 1990 to February 1992 it was recorded at 27 Churches (those at Yapton and Climping confirmed P W James).

VC 13, West Sussex: Yapton, GR 41/982035, April 1991
 Climping, GR 51/003025, April 1991
 Rogate, GR 41/808236, April 1991

- VC 14, East Sussex: Barcombe, GR 51/418143, June 1991
 Friston, GR 50/552982, August 1991
 Catsfield Old Methodist Church, GR 51/725137
 Wartling, GR 51/658092, August 1991
 Seimeston, GR 51/510069, October 1991
 Offham, GR 51/401122, December 1991
 Arlington, GR 51/543075, December 1991
 Piddinghoe, GR 51/435032, February 1992
 Icklesham, GR 51/881165, August 1991
- VC 15, East Kent: Goodnestone, GR 61/044616, March 1991
 Minster-in-Thamet, GR 61/311642, October 1991
 Selling, GR 61/038568, December 1991
 Pluckley, GR 51/926454, January 1992
 Benenden, GR 51/808327, February 1992
 Patricxbourne, GR 61/190552, November 1990
 Hinxhill, GR 61/028427, January 1991
 Upper Hardres, GR 61/153507, August 1991
- VC 16, West Kent: Shoreham, GR 51/523616, March 1991
 Sevenoaks, Baptist Church, The Vine, GR 51/
 532553, December 1991
- VC 17, Surrey: Chapel, GR 51/176407, February 1991
- VC 19, North Essex: Great Chesterford, GR 52/51-43-, December 1991
- VC 30, Bedfordshire: Great Barford, GR 52/134518, December 1991
- VC 32, Northants: Peterborough, St John's Church, GR 52/192987,
 December 1991
 Warmington, GR 52/077911, December 1991
- VC 16, East Kent: on a school building, Sevenoaks, GR 51/532536,
 May 1991

K Palmer

LITERATURE PERTAINING TO BRITISH LICHENS - 11

Lichenologist 23 (4) was published on 11 November 1991, and 24 (1) on 18 February 1992.

Taxa prefixed by * are new additions to the flora of Britain and Ireland. Comments in square brackets are mine.

AGUIRRE-HUDSON, B 1991. A taxonomic study of the species referred to the ascomycete genus *Leptorhaphis*. *Bull. Br. Mus. nat. Hist. (Bot.)* 21: 85-192. Accepted British species in *Leptorhaphis* are *L. atomaria*, *L. epidermidis*, and **L. maggiana* (Massal.) Körber. *L. ischnobela* is moved to the genus **Celothelium* Massal. as *C. ischnobelum* (Nyl.) Aguirre, and the superficially similar genus, **Rhaphidicyrtis* Vainio is newly reported for Britain with **R. trichosporella* (Nyl.) Vainio.

APTROOT, A 1991. A conspectus of *Normandina* (Verrucariaceae, lichenized Ascomycetes). *Willdenowia* 21: 263-267. The perithecia sometimes associated with the squamulose thallus of *Normandina pulchella* are considered to belong to the same fungus as the thallus, and not be a parasite (ie. "*Sphaerulina*" *chlorococca*) on it. Similar perithecia associated with a corticolous crustose thallus are recognised as a separate species, *Normandina erichsenii* (Keissler) Aptroot. [This paper takes an opposing view to that of Diederich *et al* (1991; see number 10 of this series) who have applied the generic name *Lauderlindsaya* to the perithecia, those on *N. pulchella* being regarded as parasitic.]

ARMSTRONG, RA 1991. Experimental studies of lobe growth in the lichen *Parmelia conspersa* (Ehrh. ex Ach.) Ach. *New Phytologist* 119: 315-319. Studies on *P. conspersa* in S Gwynedd suggest that adjacent lobes have a considerable degree of independence and that there is little exchange of carbohydrate between them.

HENDERSON, A 1991. *Bryophagus gloeocapsa*, an uncommon lichen on *Zygonium ericetorum*, a pioneer alga of the Ravenscar alum spoil. *Bulletin of the Yorkshire Naturalists' Union* 16: 28-29.

HILL, D J 1992. Lobe growth in lichen thalli. *Symbiosis* 12: 43-55. Photographic measurements of thallus growth in *Diploicia canescens*, *Parmelia saxatilis*, and *Xanthoria parietina* from Devon, Perthshire and Cambridgeshire respectively. The results are discussed in terms of developmental and growth processes involving both symbionts.

ROSE, F, STERN, R C, MATCHAM, H W & COPPINS, B J 1991. *Atlas of Sussex Mosses, Liverworts and Lichens*. 135pp Brighton: Booth Museum of Natural History. Includes a list by F Rose and B J Coppins of the almost 600 lichens recorded for Sussex, with habitat notes, and cited records or dot maps for each species. A chapter by F Rose entitled "The habitats and vegetation of Sussex" is an invaluable "botanist's guide" to the county. This book is dedicated to the late E C ("Ted") Wallace, a founder member of our Society.

SEAWARD, M R D 1991. The lichen herbarium at the Ulster Museum, Belfast. *Irish Nat. J.* 23: 468-469. Summary of contents of the herbarium with list of collectors and break-down of vice-counties and countries represented.

TIBELL, L 1991. Revision of some taxa of Caliciales described by W Nylander. *Ann. Bot. Fennici* 28: 117-121. Specimens under 14 names in H-NYL were revised. *Calicium retinens*, described from Jersey, becomes *Chaenothecopsis retinens* (Nyl.) Tibell. It has short-stalked ascomata growing on a white leprose thallus containing *Trentepohlia*, a red, K-pigment in the stalk and exciple, and 1-septate ascospores. Notes are given on *Calicium diploellum*, originally described from holly in Killarney, and its status is discussed.

TIMDAL, E 1991. A monograph of the genus *Toninia* (Lecideaceae, Ascomycetes). *Opera Botanica* 110:1-137. A revision and new delimitation of the genus, with 48 accepted species. Additions to the British flora are **T. diffracta* (Massal.) Zahlbr., **T. opuntioides* (Vill.) Timdal, **T. physaroides* (Opiz) Zahlbr. (syn. *T. lurida* (Arnold) H. Olivier) and **T. rosulata* (Anzi) H. Olivier. The British specimens, supposedly collected by Crombie in Scotland, of *T. alutacea* (Anzi) Jatta and *T. candida* are considered to be of doubtful provenance. *Toninia tristis* is not cited as British [previously reported in error]. *Toninia havaasii* is confirmed as a synonym of *T. squalida*, and *T. fusispora* is placed in the synonymy of *T. aromatica*, being considered an extreme variant; it is not accorded any infraspecific rank [I believe it should be!]. Owing to problems over typification *T. caeruleonigricans* auct. becomes *T. sedifolia* (Scop.) Timdal [annoying, but easier to spell!]. Other name changes include *T. coelestiana* (Anzi) Vezda (syn. *T. oribata*), *T. episema* (Nyl.) Timdal (syn. *Catillaria*, *Kiliasia* or *Scutula episema*); *T. plumbina* (Anzi) Hafellner & Timdal (syn. *Bacidia plumbina*), and *T. verrucarioides* (Nyl.) Timdal (syn. *T. cervina*, *T. kolax* Poelt). The following are excluded from *Toninia* s. str.: *T. cumulata*, *T. leucophaeopsis* (= *Stereocaulon*), *T. lobulata*, *T. squalescens*, *T. thiospora* (Nyl.) H Olivier (syn. *T. pulvinata*), and *T. tumidula*. *Micarea granulans* (Vainio) Timdal becomes the correct name for *M. subleprosula*.

TRIEBEL, D, RAMBOLD, G & NASH, T H, III, 1991. On lichenicolous fungi from continental North America. *Mycotaxon* 42: 263-296. *Microthelia subfuscicola* Lindsay, based on a specimen from Morrone near Braemar, is regarded as a distinct species, **Arthonia subfuscicola* (Lindsay) Triebel, and not a synonym of *A. glaucomaria*. [I don't know of any modern British specimens of this fungus which parasitizes the apothecia of *Lecanora carpinea*]. Also, *Polysporina dubia* (Magnusson) Vezda is considered to be a synonym of *P. lapponica* (Schaerer) Degelius.

van den BOOM, P P G 1992. The saxicolous species of the lichen genus *Lecania* in The Netherlands, Belgium and Luxembourg. *Nova Hedwigia* 54: 229-254. A useful account [in English!] of this difficult group. *Bacidia cuprea* is transferred to the genus as *L. cuprea* (Massal.) v.d. Boom & Coppins.

WATSON, A & BIRSE, E L 1991. Lichen-rich pinewood, *Cladonia ciliata*-*Pinus sylvestris* community in north-eastern Scotland. *Botanical Journal of Scotland* [formerly *Transactions of the Botanical Society of Edinburgh*] 46: 73-88. An account, including 19 relevés, of this largely overlooked woodland type, which is mainly found in Scot's pine plantations but also in some areas of "native" forest.

Brian Coppins

RHIZOCARPON ADVENUTUM IN ORKNEY

In the summer of 1867 E Rostrup travelled from Copenhagen on a lichen collecting expedition to the Faroes. It seems that he made a brief call in the Orkney Isles, for a specimen from the island of Stronsay has come to light in his Faroes collections at Copenhagen University. It is *Rhizocarpon advenutum* (Leighton) Hafellner & Poelt, growing as a parasymbiont with *Ochrolechia parella* (L.) Ach. It was collected on 20 July 1867. Previous records of *R. advenutum* for the British Isles have all been parasymbionts with *Pertusaria* spp. (D L Hawksworth: *Lichenologist* 15 (1): 18 [1983])

The record is: *Rhizocarpon advenutum*: on *Ochrolechia parella*, Stronsay, Orkney, VC 111, GR 3(10)/6--2--, 1867. Determined V. Alstrup. Leg. E Rostrup.

Vagn Alstrup

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