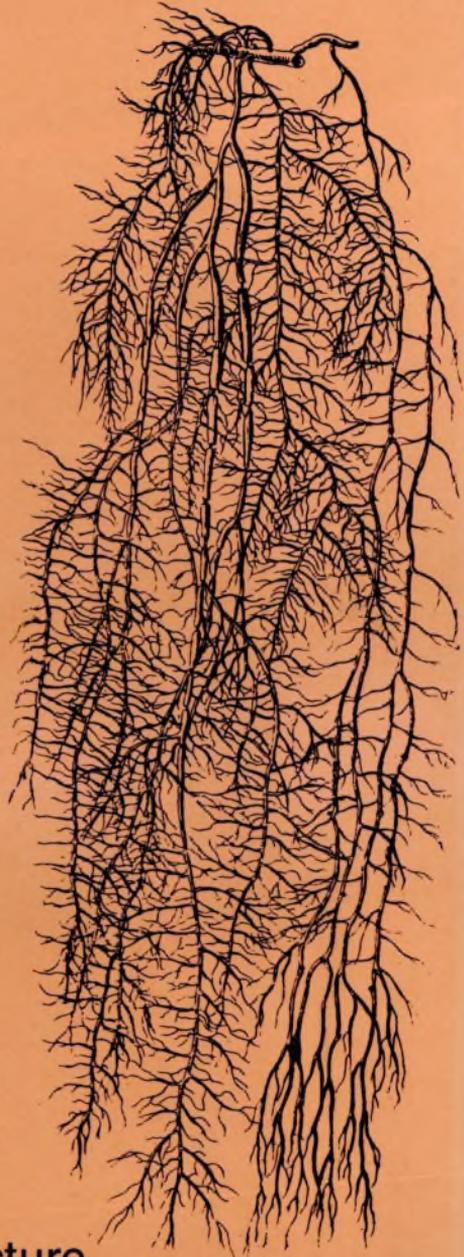


No. 64
Summer 1989

**BRITISH
LICHEN
SOCIETY
BULLETIN**



Edited by O. L. Gilbert
Dept. of Landscape Architecture,
The University, Sheffield S10 2TN

FORTHCOMING BLS FIELD MEETINGS

North Norfolk

20 - 22 October 1989

Leader Peter Lambley

LICHENS AND HISTORIC WORKS OF ART

My observations on Italian monuments over the past six years strongly indicate that many lichen species create micro-environmental effects at the thallus/substratum interface which lead to mechanical damage to stonework on a time-scale of ten, or even fewer, years. Various lichens are implicated, their aggressive behaviour no doubt promoted by particular man-made environmental conditions. Furthermore, forces generated by climatic wetting and drying of the lichen thallus cause it to expand and contract, which in turn mechanically disrupts the substratum. Taken in conjunction with the chemical breakdown of substrata by lichen acids, etc., it is clear that all these biogeophysical processes are highly significant.

In urban and suburban areas, where many important works of art are to be found either in situ or exhibited by museums in the open-air the ambient climate and associated atmospheric pollutants should be taken into consideration, particularly since the latter dramatically affect the lichen flora: in Rome I have observed that several of the more toxi-tolerant species with an aggressive behaviour are actively colonizing a very wide range of substrata. Whilst accepting that there has been a dramatic increase in damaging air pollution over recent decades, nevertheless, it would appear that long-standing monuments have not been subjected to this type of lichen attack before, since their delicate carving has survived relatively undamaged until recently. Two explanations are offered: certain lichens are now exploiting (or have evolved to

exploit) new environmental conditions and/or monuments have been naturally or even purposely protected from lichen attack in the past.

A dramatic and alarming case of mechanical disruption of a substratum by a lichen has been reported in The Lichenologist (20: 291-294, 1988): in 1986, the rims and shoulders of several terracotta pots scattered about a cloistered lawn at the Museo Nazionale Romano in Rome were lightly colonized by occasional thalli of Lecanora muralis, the largest representing no more than 15 years' growth, which were causing demonstrable damage: a central blister, created by the crowding of apothecia, had pulled away a significant fragment of the substratum. Re-examination of the pots in 1988 revealed further surface blistering and flaking induced by the lichen thus substantiating the interpretation made two years earlier. The aggressive behaviour of L.muralis and its effects on the substratum at this site are being carefully monitored (Fig.1).

Disfigurement problems of ancient monuments have arisen from the use of unsympathetic materials for their reconstruction in the past. For example, an important funerary monument at the Museo Nazionale Romano has been thoughtlessly reconstructed from a variety of materials: the juxtaposition of calcareous and non-calcareous materials, particularly the use of heavy cement pointing over acid stonework, has resulted in the first instance in lichen colonization of the alkaline substrate; from such points several species have spread onto more important areas of the monument. Travertine is also subject to lichen colonisation initiated at mortarwork (Fig.2)



Fig. 1 Measurement of lichen thalli on terracotta pots
(Museo Nazionale Romano)

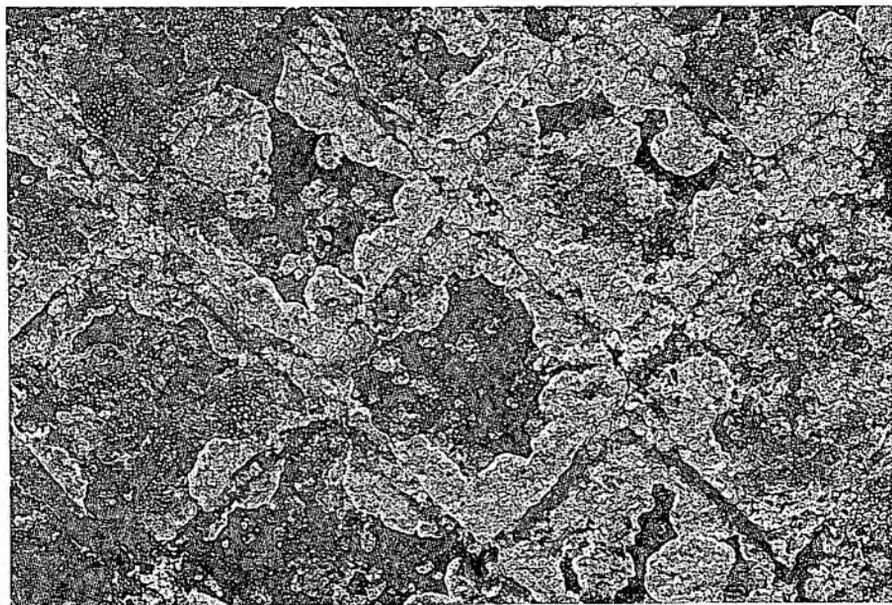


Fig. 2 Extensive lichen colonization of travertine 'opus reticulatum'
initiated at mortarwork (Ostia Antica)

An archaeologically important sarcophagus at Villa Madama near Rome gives cause for concern; almost the entire surface of each of the three exposed faces is covered with lichen, the only uncolonized areas being near water spouts where the action of running water and the presence of lead has evidently inhibited their growth. Similar inhibitions can be observed on many monuments where metal pins, cladding, guttering, etc. have been utilized in their reconstruction or for their protection from the ambient environment. For example, at Villa Adriano near Tivoli, remains of walls bearing Roman frescoes have been crudely protected from further erosion by capping with lead and concrete; rainfall run-off from the protruding edges of the lead has had the unintentionally beneficial effect of suppressing lichen colonization.

Historically interesting sites have always attracted the attention of lichenologists; their floras more often than not include something out of the ordinary. Ostia Antica near Rome, which I have visited on three occasions, is no exception, being rich not only archaeologically but also lichenologically: the maritime Roccella phycopsis, for example, densely clothes the brickwork of the magnificent Capitolium; it is also found at other archaeological sites I have visited at a greater distance from the sea, usually on large Roman building blocks, monoliths and old churches. Ramalina siliquosa has a similar gross morphology and ecological amplitude in Britain and Ireland, being essentially a maritime species that occasionally occurs inland on monoliths, stone circles (eg. Stonehenge, Avebury) and old churches. At Ostia Antica, Roccella phycopsis is also found on the now-exposed inner walls of Roman houses, where it is damaging frescoes.

Mosaics are particularly prone to disfigurement, the pattern being disrupted and eventually lost through lichen cover. At Villa Adriano, the distinctive black and white mosaic designs are rapidly becoming disfigured by random colonization; some lichens, mainly Aspicilia spp., show a distinct preference for either black or white tesserae (Fig.3).

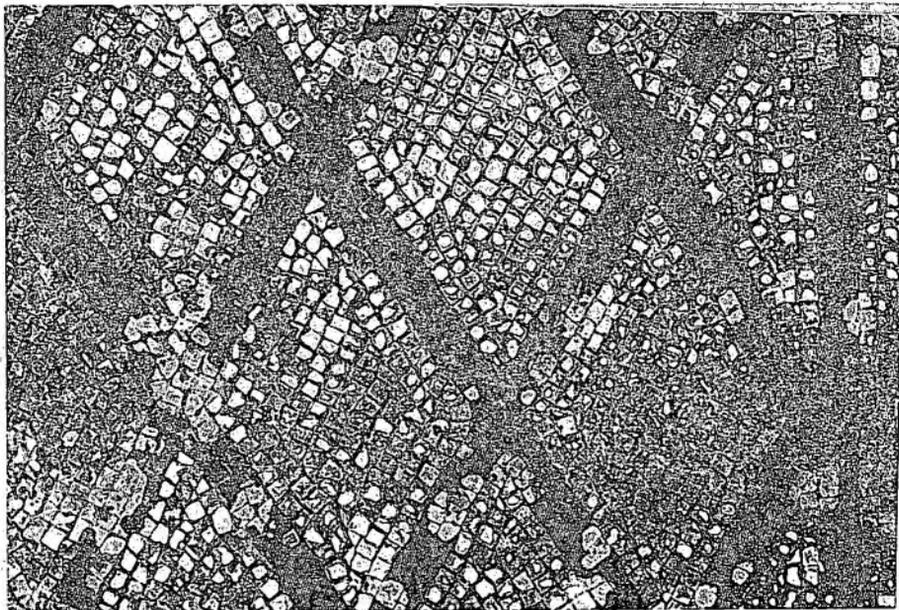


Fig.3. Disfigurement of Roman mosaic by Aspicilia spp. (Villa Adria.

Much of my work in Italy has concentrated on Lecanora muralis and Dirina massiliensis f. sorediata, two ecologically interesting lichens which are now profoundly affecting a wide range of archaeological materials. Both lichens are aggressive colonizers which cause physico-chemical disturbances to their substrata, but the ways in which they act upon them differ considerably. The harmful action of L.muralis is essentially mechanical in nature, with lichen acids playing a secondary role, while the Dirina exerts

an intensive chemical influence, not only producing oxalate at the thallus/substratum interface but also within itself, the hyphal material of its medulla often constituting only a very small proportion of the 'biomass'. The oxalate encrustations obscure detail of sculpture and paintwork and/or mechanically damage the substratum when it is naturally detached or deliberately removed.

At many of the sites I have investigated in Italy, the deleterious effects of the Dirina have been particularly noticeable. At Paestum near Naples, it extensively covers large areas of temple columns, the characteristic thalli and oxalate films of former lichen rosettes adding considerably to the overall visual effect. Although detracting to some degree from the general aesthetic appeal of the works of art, the significance of this lichen on Paestum temples in terms of actual damage caused is negligible when compared with the observed effects of other physical and chemical agencies, which demand engineering rather than lichenological expertise to rectify them!

However, at Palazzo Farnese, a beautiful mansion on a hillside at Caprarola, a circular courtyard has inner walls with cloisters at ground and first floor levels bearing frescoes painted in the 1560s which have seriously biodeteriorated in recent years. My examination of them in 1986 revealed that D.massiliensis f. sorediata is solely responsible for the disfigurement. The lichen attack has intensified over the past three years, being pronounced in many places, often associated with particular colours, but the overall distribution pattern, when viewed at several metres from the frescoes, was highly distinctive in 1986: it was obvious that recent cleaning had distributed lichen propagules from an inoculum, or dispersed them from existing thalli, to create arcs of lichen invasion across the frescoes. The nature and rate of spread of this lichen is currently being monitored. Elsewhere, lichens are

being painstakingly removed from frescoes using a scalpel; since each thallus and associated oxalate interface removed takes with it the colour from beneath, it is then necessary to meticulously repaint each area, a process taking many weeks to restore just a few square metres.

Lichens are usually regarded as agents of major biodeterioration on a geological, rather than historical, time-scale, but work in Italy has produced strong evidence to suggest that recent environmental changes have been conducive to increasingly detrimental invasion by certain aggressive species. Such evidence would help to explain why it is that in addition to the known problems resulting from air pollution, monuments, undamaged for many centuries, appear over the past two decades or so to have become vulnerable to lichen attack; nevertheless, this would not invalidate the theories that in the past, many monuments have been naturally protected by the formation of a 'skin' created by a chemical exudation from the stone itself, or many even have received deliberate application of some kind of protective coating.

Acknowledgements

I am grateful to the many people who facilitated this work, particularly the Italian Ministry of Culture and The British Council. Also my numerous co-researchers, especially Dr. C. Giacobini, of the Istituto Centrale del Restauro in Rome.

Mark R.D. Seaward.

JANUARY MEETINGS 1989

Booksale and Buffet

This event was again reasonably well attended and certainly enjoyable. It was held in the delightful surroundings of the rooms

of the Royal Entomological Society of London. In spite of the number of lichenological books that have changed hands over the past few years at these sales, there were still quite a number on offer and the 35 people who attended saw bargains and much heart-searching by those desperately wanting the books being auctioned. The quantity of non-lichenological books was up this year, but there was still lively bidding for these...in fact fears were expressed that the President was planning to change subjects! £135.50 was raised for the Society and we are as usual grateful to Mark Seaward and Frank Brightman for their stalwart efforts on behalf of vendors, purchasers and the Society. I would finally like to mention the superb buffet laid on for us by Felicity Priest - thank you, Felicity, very much.

Annual General Meeting 1989

This year we met in the very warm, pleasant lecture room of the Jodrell Laboratories in The Royal Botanical Gardens, Kew. The Officers' reports took a long time and the meeting overran the timetabled schedule considerably. However, the discussions were fruitful and it was an ideal forum for exchanging opinions. The Acting Treasurer, Mr Frank Dobson, paid tribute to the work of Mr Tallowin upon his untimely death in October and mentioned the need for a replacement Assistant Treasurer. The Senior Editor of The Lichenologist, Dr Brown, thanked Prof. Hawksworth, who was standing down as Co-Senior Editor, for the amount of effort that he had put into the journal during his 19 year editorship, during which time The Lichenologist had established itself as the major lichenological publication in the world. The meeting was informed by the Conservation Chairman, Mr Brightman, that Council had agreed to donate £500 to the Conservation Association of Botanical Societies to assist in their conservation work. Various destinations for field meetings were suggested, many of which may appear on the Lichenological Field Meetings sheet in time.

Council had recommended that Prof. Joseph Poelt should become an Honorary Member and following supporting statements by Prof. Hawksworth and Dr Seaward, the membership voted overwhelmingly in favour. This brings the number of Honorary Members to ten. The membership also voted to increase the subscription rate from £15 to £20 in 1990.

Exhibitions. Richmond Publishing Co. had their usual book sale manned by Frank Dobson, Ms C.L. Burnell showed some of her lichen illustrations and Nick Stewart exhibited details from the forthcoming cryptogamic Red Data Book. Alan Orange demonstrated a new and very common Macentina, Oliver Gilbert a spade with Thelocarpon laureri growing on the wooden shaft, and Peter Earland-Bennett Stereocaulon vesuvianum var. symphycheileoides and photographs of the 1986 Lizard Field Meeting.

Open Day at CAB International Mycological Institute. A very good buffet lunch was laid on at the Institute, just across Kew Green from the Jodrell Laboratories, and afterwards members split into groups to look round the many facilities in the sprawling buildings of the Institute. Our grateful thanks to Professor Hawksworth for arranging the Open Day and to his staff for coming in on a Saturday to show us around.

Back at the Jodrell Laboratories, two lectures finished the day's programme. First Chris Hitch enlightened us about Changes in the Lichen Flora of Suffolk Churchyards. There are 838 religious properties in Suffolk of which just over 500 are churches; he has records to date from 367. Different aspects of church structure and the surrounding churchyard provide niches for different lichen species; all of which are investigated thoroughly. Outside influences play an important role in affecting the richness of the flora. Those churches in farmland are usually poor, whilst the opposite is true where they are protected, and at one church,

Nacton, where the total number of species recorded is just over 100 (this includes some epiphytes on a wooden memorial seat). Normally one expects 60-70 species in a good yard, though this may take all day to achieve.

Some interesting species have been found. Lempholemma chalazanodes is not uncommon on the mortar of basic walls as is Lepruloma vouauxii, which resembles Lepraria membranacea but has a different chemistry. Also on mortar, but in deep shady crevices is Lepraria lesdainii, which reminds one of green cotton wool. Basic substrates on north walls provide a home for Opegrapha chevallieri, now regarded as a synonym of O. saxatilis, in exposed situations, with several Ramalina spp. and more rarely, Lecanactis hemisphaerica. When Caloplaca flavescens is in this situation, it is frequently parasitised with Weddellomyces epicalopisum. The south wall, hot and dry, is usually dominated by Caloplaca spp., with C. ruderum common in the east, but rarer in the west, whilst the opposite is true of C. variabilis and C. isidiigera. A rarity in this habitat is Acarospora umbilicata, with distinctive morphology and heavy white pruina. Church roofs are an important habitat, slates support Parmelia verruculifera, P. pulla, Rhizocarpon geographicum and an undescribed brown Buellia. Amongst other commoner species we have one record of Protoparmelia badia nestling amongst parasitised Candelariella vitellina.

Tombstones are usually rich and, with no natural stone available in the county, are enormously varied providing a habitat for both acid and basic species. This is the site for Sarcopyrenia gibba and Phaeophyscia nigricans, also fertile Lecania erysibe f. sorediata, particularly on newish man-made stones, as it is an early coloniser. Sandstone tombs have a varied flora depending on pH. It is usual to see Physcia dubia, Candelariella vitellina and Xanthoria coralligera on the tops with a rare totally green form in

one instance. On the east side a pale-green Lepraria with a yellow medulla is encountered. Granites support Acarospora spp, very rarely Porina chlorotica, and one is almost certain to see Polysporina simplex here in its totally endolithic form. (Summary provided by Chris Hitch).

Albert Henderson, talking about lichens on unusual man-made substrata said that 'unusual' meant anything from 'distinctive in human terms' e.g. a Thai Buddha's head dating from 1330, to any rare or novel substratum, e.g. a Borg fabric windjammer; and that 'man-made' ranged in meaning from 'affected by man's influence' to 'of man's invention'. Man's increasingly intrusive influence on the environment has meant an increasing provision of all such habitats.

Albert discussed lichens of the 16th century revealed recently on the once outer walls of a former Utrecht monastery when covering plaster was removed by archaeologists. He described the fine stretch of Cladonia heath on alum spoil heaps at Ravenscar, North Yorks, a huge landscape scar of our earliest chemical industry; and then the flora of a bituminous asphalt runway at Skipwith Common, East Yorks., a disused wartime airfield. He finished with a stroll from Leeds centre to a northern suburb, observing en route lichens on bituminous roofing felt, waxed glazing tape and putty, on canvas, on fibre-glass, on iron (rusty garden hoes and innumerable railing stubs), on lead-packing, on paint, on rubber dustbins and recycled rubber granules, on polyurethane-based resin, etc. At the end of his talk the speaker stressed the immense generosity of fellow lichenologists in Britain and Europe in forwarding material and records, a testimony to the spirit of unstinting co-operation that marks the health of lichenology today.

Footnote Following the meetings Mr Jeremy Gray volunteered his services as Assistant Treasurer and has been co-opted to Council.

Noel Tallwin: 1908-1988

The death of Noel Tallwin has robbed the BLS of a Treasurer whose skilful keeping of its accounts was matched by the sound judgment that informed his financial advice. He was in his 80th year.

Noel was born on 23 December 1908 near Norwich and spent his boyhood in Norfolk. So far as is known, there is only the one family with the name Tallwin, and all its male members are hereditary freemen of Norwich. The origin of this distinction is lost in antiquity. At the age of 13 Noel acquired what he liked to call his criminal record, when he was fined six pence in the local magistrate's court for poaching. This suggests that he was already forming that acquaintance with the byways of nature that became throughout his life an ever more absorbing passion.

As a young man in the 1920s he became a radio operator in the Merchant Navy for some years and in this occupation travelled to many parts of the world. On these voyages he learnt to play the mandolin. But after a time he tired of the sea and qualified as an accountant, working mainly in Kent with the British Gas Corporation. In this job he was debarred from service in the Forces during the Second World War, when he joined the Home Guard. After the war he organized the sea scouts in Kent and became scoutmaster at Chatham. Transference as chief accountant to the West Midlands Gas Board followed, and he continued his scouting interests in the Malvern district, becoming district commissioner. At the same time he took to farming as a hobby on the Herefordshire-Worcestershire border; but his work now required him to live in Solihull - not a welcome move. Though not yet 60, he took early retirement and bought a farm at Kidwelly, Carmarthenshire, where he and his wife Georgina lived with the elder of their two sons, Samuel, who ran the farm.

Noel was now able to pursue the study of natural history to his heart's content. Beginning with the fungi, he turned to lichens, but he had in fact a very wide knowledge of the higher plants and of birds. After founding, with others, the Llanelli Naturalists Society, he extended his interests to bridging the gap between naturalists and farmers, running an organization to advise farmers on how to combine the preservation of important natural features on their land with use of it in a financially sound manner. He was a pioneer in this work, which has increased alike in extent and importance over the years.

In 1980 Noel and his wife (who died in 1986) moved to Devon to live on a farm with their son. Three special interests now developed: the Woodland Trust (he was warden of several of its woods), the Rare Breeds Survival Trust, and the World Wildlife Fund. On their behalf he travelled continually round the south-west and in addition worked with his son on the farm. Then, too, for the last 13 years he was the Society's Treasurer. Nor was that all, for he always joined the field meetings held annually in Devon by the south-west group of the British Pteridological Society, often giving them tea at the end of the day with cakes and scones that he had baked himself, and indeed in 1986 published (jointly with the author of this memoir) a note in the Pteridologist on Ophioglossum in woodland.

At the annual meetings of the BLS Noel's whimsical humour and gentle demeanour endeared him to the members when he rose to tell them about the Society's finances, while the soundness of his advice at Council meetings was a firm guide to the Society's course, as well as of great material benefit to its finances. Noel was a most lovable man who found a deep satisfaction in nature, whether helping to run his farms, caring for the woodlands,

conserving the hedgerows, constructing ponds, or preserving rare breeds from extinction. In these pursuits he worked unceasingly and fruitfully until, while helping his son at sheep dipping in the afternoon of 28 October 1988, the life he had lived so completely came to a peaceful and sudden end.

T.D.V.S.

Mrs A.G. Side FLS

Members of the Lichen Society missed Trudy Side's cheerful and modest presence at the general meeting in January 1988, for she was a regular attender at our annual meetings; but on this occasion she was ill. We were deeply saddened when we heard of her death later in the year. She was a dedicated field botanist with a wide knowledge of all groups of plants. She was also a keen and devoted member of all the relevant scientific societies, from the Linnean Society of London to the Kent Field Club. She was Joint-Secretary (with her husband, Ken) of the Club for twelve years, and had just completed her term as President at the time of her death.

When I first came to know her forty years ago she was Headmistress of a primary school at Stone in Kent. Her weekends and much of her holidays were spent in the field with her husband, an amateur entomologist with a broad interest in plants, who predeceased her in 1979. Her deepest interest was in bryophytes, and in 1970 her An Atlas of the Bryophytes found in Kent was published as Volume 4 of the Transactions of the Kent Field Club. In retirement she continued her studies, and became an expert on those difficult species of Bryum that have small tubers on their rhizoids. She made a considerable contribution to the Kent Field Club's Atlas of the Kent Flora (1982), and in 1986 published an update of her Bryophyte Atlas (Trans. K.F.C. 10, 2).

Trudy was very interested in the British Lichen Society. She always enjoyed the Annual General Meetings, and was full of praise for the exhibitions and lectures that accompanied them. She also attended the Society's field excursions. I have especially pleasant memories of the trip to Tenerife in 1978. Amongst the party were Noel Tallwin, and Trudy and Ken Side. Noel played a very useful role in negotiating with coach drivers and in advising on the respective merits of local wines and liqueurs, as well as taking a full part in the field work. Trudy took a full part too, and found time to photograph flowering plants and lichens and to collect mosses. Trudy was a quiet and retiring person, but those who knew her will miss her very much. With characteristic kindness and generosity, she expressed her fondness and appreciation of the Lichen Society by remembering us in her will.

F.H.B.

LICHENOLOGIA

Nowadays the fashionable political colour is green; it is to be hoped that this trend is permanent, and is not merely the "colour of the month". The general public is aware of, and deplores, the wholesale destruction of tropical forests, and is aware of the harm done to the biosphere by pollution of the air, rivers and other freshwaters, and the sea. Even the Cabinet of the British government, as has been pointed out by Nicholas Garland, has come to resemble Edward Lear's Jumblies: "their heads are green and their hands are blue". The Jumblies, we know, went to sea in a sieve; this perhaps may be taken as a fair description of what politicians do most of the time. But many interested people who are not professional politicians are also vague about the practical problems that face us. More of us than ever before are in favour of the conservation of nature and natural resources, but there are few signs yet of attempts to reduce the consumption of natural

products such as wood and fossil fuels. There is more to clean air than banning lead tetraethyl, which was hailed at every petrol station half a century ago with the rousing slogan "Ethyl is here!" Equally rousing slogans about "going lead-free" are lacking, and the squandering of petroleum continues to increase. On the other hand, an oil-spill from a damaged tanker is not an "ecological disaster" in the sense that the wholesale releasing of man-made chemicals into the environment is; oil has been seeping to the surface of the earth for millions of years and is, to use contemporary jargon, biodegradable, which many insecticides and herbicides are not.

There is a lack of science about much of what passes today for ecology. In fact many people who regard themselves as professional ecologists, and are employed by local authorities and other organisations as such, lack any kind of scientific training; their background is sociology, or perhaps the law. This is causing problems at the present time when efforts are being made to set up some kind of professional organisation for ecologists in the modern sense; it is easy for most professions to agree on minimum entrance qualifications, but for this one it is not. Scientific understanding is necessary for assessing priorities in matters of conservation, and even more so for devising practicable management schemes, but it should be recognised that there is an important non-scientific element as well. We are all in favour of ecological diversity; does this mean that the survival of all species of organism is necessary or desirable? Do we want to conserve mosquitoes? Answers to such questions are not supplied by science. That this is so is obvious from many of the issues discussed by green politicians; for instance, received opinions about what trees to plant in the countryside (prejudice against conifers and exotic species) are more aesthetic than scientific. Mark Seaward and some of his associates mention in a recent report an ancient wall in

central Italy that is built of tufa blocks and is encrusted with upwards of twenty species of lichen. Many of these are colourful, shades of orange, yellow and grey-green predominating, and the effect is aesthetically pleasing; but similar growths on statuary are considered by most people to be objectionable. Seaward has also pointed out cases, especially on terracotta, where lichens cause serious damage. Deciding whether to conserve or destroy lichens in such situations again cannot be based purely on scientific grounds.

Scientific ecologists have to learn to live (and co-operate) with others whose approach is entirely different. Unfortunately some of the latter are enthusiasts looking at only a small part of the picture and whose enthusiasm leads to exaggeration. A case in point is the effects of acid rain on forests. Claims are made that trees in Britain are suffering serious damage similar to that in some places in Europe. Observations in this matter are highly subjective, but as Oliver Rackham has pointed out, our forests do not show the symptoms to be seen in, say, Germany. He goes on to emphasise, however, that the evidence from the study of lichens is clear, and acid rain is affecting the whole of western Europe. We should be grateful to the large number of lichenologists whose patient accumulation of data has put the use of biological indicators of pollution on to a firm basis. The lichens growing on trees that are obviously affected by pollution are mainly those included in Parmelia by Acharius when he proposed the name in 1803. His concept of the genus included species now placed in Lobaria, Physcia, Cetraria and several other genera. By the beginning of this century a process of taxonomic attrition had left Parmelia as a readily recognisable entity. Recently however its splitting has been resumed; at my last count there are now 22 "parmelioid" genera. This makes Parmelia sensu stricto a comfortably small genus for the European, consisting of P. saxatilis, P. omphalodes, the "weedy" species P. sulcata and a few segregates probably best

regarded as subspecies or varieties. But this is a limited (or should I say elitist, or even Linnaean ?) point of view; I was surprised to find that Mason Hale in his latest monograph recognises 38 species on the world scale!

CUDBEAR

COUNTRY DIARY - NORTH EAST YORKSHIRE

A phone call from Edinburgh revealed our President spending his winter evenings grappling with the intricacies of the new flora. He was writing the descriptions for Protoparmelia - yet another new genus. Old, familiar Lecanora badia is now Protoparmelia badia; and worse still, there is now also P. picea and P. montynii to contend with - the latter two distinguished by their narrower spores ('pointed sausages rather than pointed lemons') and different chemistry as revealed by tlc. Tremendous field characteristics - no wonder they're rare! Still, P. montynii only grows on coastal rocks in the S W - so no need to worry about that up here - and P. picea has a darker thallus - which is something; providing the two are considerate enough to grow together of course! Anyway, Brian had a challenge for me. He only had two records of P. picea; one from Braemar, and the other from the summit of Roseberry Topping - about 10 miles down the road from me. William Mudd had found it there in the middle of the last century, could I go and see if it was still around?

William Mudd is someone I identify with rather strongly. He worked much the same area as I do today and I have a photograph of him over my desk, inspiring me on to greater discoveries. It shows a face framed by a longish, straggling beard and a battered top hat whose owner appears to be in the process of being arrested for being drunk and disorderly. It's actually part of a group photograph taken during his time as curator of the Cambridge University Botanic Garden, but the image of the 'illiterate Scotchman who smoked very strong tobacco and smelt strongly of whisky' shines through.

Anyway, the mention of his name was enough to ensure that the next morning found me staring up at 700 ft of mud (no pun intended) known as Roseberry Topping. The only difference from previous visits was that this time it was covered with snow! Was it worth the climb? Would I be able to find anything when I got up there? It takes a real enthusiast (other terms suggest themselves) to search for lichens when you have to scrape the snow off the rocks first. Still, Mudd would have done it. The man who carried an 8 stone sack of specimens up and down 1800 ft, 10 miles across the Northern Pennines from Teesdale to Appleby wouldn't have been put off by a little bit of snow. Besides, it's a bright, sunny day and there's a good view from the top....

I set out along the farm track leading to the bottom of the hill. The snow is starting to melt and the muddy path is even more treacherous than usual. No inclination to look at fence posts, all my attention is concentrated on keeping my feet dry. I stop briefly to inspect a dull green crust at the base of a tree which is probably Micarea prasina, but I can't get excited about it. Fortunately this is a well trodden path in summer and the National Trust - who own the site - have provided steps up the initial stages. Usually I disapprove of such luxuries but today they are more than welcome. It gives me the opportunity to stop paying all my attention to where I'm putting my feet and start looking for some lichens. This is Porpidia country - P. macrocarpa is everywhere on the rocks and stones - along with P. crustulata and P. tuberculosa. I know from experience that beneath the snow, on the ground and in rock crevices, lurk numerous, stunted Cladonias, but today I can ignore them with a clear conscience. This is not a day for making lists.

The top of the hill has been quarried in the past so that huge boulders litter the slopes. This looks more promising, so I leave the security of the path and contour across 50 ft of virgin snow.

towards them. Here the flora is different, Lecanora gangaleoides is the dominant species with Fuscidea cyathoides, Rhizocarpon geographicum and R. obscuratum; but no Protoparmelia. Perhaps it's under the snow. Perhaps it's not here at all! This is not easy terrain. The tops of the boulders (which slope at all angles) are free of snow, but between them it has drifted so as to obscure any gaps, making crossing from one to the other a hazardous business. After sinking in above my knees for the third time I decide that Protoparmelia is not to be found around here and make for the summit.

The south side is a sheer cliff, totally devoid of lichens - not even Micarea bauschiana in the underhangs, so I head to the right and start up the path to that side. This winds its way between huge slabs of stone and suddenly, in the centre of a vertical rock surface, is the unmistakable, dark-brown thallus of Protoparmelia. It must be more than coincidence that the best specimens always grow in the centre of a rock, perhaps it's an evolutionary defence mechanism against chisels. Anyway there is no way I can collect a decent sized specimen without leaving an unsightly scar on the rock, so I look around and notice a few other plants, but none better situated for collecting. They all appear to be the same colour so I scrape off a few fruits from a couple of them and press on. Over the next few minutes I encounter the same situation three or four times until I have half a dozen packets containing Protoparmelia fruits.

On towards the summit. So far I haven't seen another soul since leaving my car about two hours ago and the prospect of having the summit to myself for the first time ever is particularly pleasing. However, as I crest the final rise I see a figure standing by the trig. point and my heart sinks slightly. Fortunately he appears to be about as sociable as I am at the moment and heads off in the

opposite direction as I approach. The view is spectacular! Thirty miles away across a white landscape, the Pennines rise out of the mist, while to the north Teesside forms an impressive spectacle against the backdrop of the sea. Behind me the North York Moors are dark and brooding in the fading light, reminding me that this is December and I can't linger long. But I can stay a few minutes to soak up the atmosphere and reflect on the day. It has certainly been an interesting one, and enjoyable; but have I been successful? Have I found P.picea? You'll have to wait for the flora.

Alan Fryday

SOME RETROSPECTIVE WAFFLE

Please don't blame me - blame the Editor - he egged me on, though it was so long ago he has probably forgotten that he wanted me to write some account of how I became interested in lichens, and, though he was too polite to put it that way, how on earth I ever became president of the BLS!

Well! it was twenty years ago, but when I contemplate the eminence of the lichenologists who nowadays occupy that position the somewhat rugose octogenarian countenance tends towards the rufescent, if not rufous. Apart from running a pioneer nursery course at BANGOR I have contributed precisely nil to the knowledge of lichens, and never could identify more than the commonest ones. It was their symbiotic nature that fascinated me, at a time when the Establishment was distinctly non compos mentis and even lecturing about mycorrhizas was considered to smack too much of the deadly (to careers) 'muck and magic' school.

Of course, it was not as a sub-lichenologist that I was so generously allowed to preside (jointly) at that first, historic, combined symposium of the British Mycological and Lichen Societies

on 27 September 1968. It was as a lichenophilic mycologist; and my contribution to lichenology was to insist audibly that lichens are not an eccentric sort of liverwort but an important part of the Fungal Kingdom - a point sundry people seem to have noticed before, from de Bary on, but it has been pushed aside, especially by mycologists, with a few notable exceptions. Incidentally, after looking at soil fungi I am not at all sure I believe in fungal species with all that scandalous anastomosing a-going on, so I can't help wondering about lichen-fungi. What are they up to on rocks and bark and so on? In my notorious view the fungal species should be a large taxon, and much more use should be made of sub-specific categories. My attempt to introduce the term 'The Phycotrophic Fungi' (Lichenologist 4, 323, 1970) did not catch on, but I noticed that it was mis-printed as a page heading, and in the list of contents, as 'Phycotropic Fungi'. Now I wonder if there is anything in that? After all, it is still a mystery how the fungus finds its algal partner. Is it all chance?

It is perhaps worth noting that R.M. Jackson (Nature, 180, 96, 1957) observed that fungal hyphae showed a strong tropic growth towards plant roots, the proximity of which also overcame the mycostatic effect of soil on the germination of fungal spores. This was attributed to the exudation of carbohydrates by the roots. It is unlikely that the relatively large ascospores of many lichens would require a carbohydrate stimulus to overcome a microbial mycostasis, but what about pycnospores or other microconidia? We know that lichen algae do release sugars into the thallus, but do they do it when free-living on a non-sterile, very low-nutrient substrate? Anyway, the commonest lichen algae (e.g. Trebouxia spp.) are scarcely known free. Foiled again! But what about the Cyanophyta? Do they rely as much on soredia etc., as do the Chlorophyta for getting around with a fungus?

But I am dodging the question of how the lichens managed to grab me as well as the algae. First of all you can blame my old Prof., Sir John Farmer, in his youth one of T.H. Huxley's demonstrators at the Royal College of Science, and also a well-known alpinist. He dragged us Honours students up to Snowdon for our ecology week - just before Finals, too (a good idea - prevented overswotting and breakdowns, etc.). On Snowdon it was quite hard not to notice some lichens, if only Rhizocarpon geographicum, and also that what looked like bare rock was often lichen-covered. Later I took students there myself, and it all ended up with me as the forest botanist at Bangor.

Then in 1936 there was an arctic expedition to Spitsbergen, or Svalbard, as we arctic snobs call it to show we've been there! Mind you, this wasn't exactly an affair for intrepid arctic explorers; more of a mopping up operation. The fashionable shape for intrepid arctic explorers is sub-spheroidal, with a blubberoid pericortex, while mine is more queriform, as is proper for investigating soils. In fact, I spent a month at Cape Napier, in the Inner Fjord zone, mapping and plotting the vegetation for comparison with earlier and later studies. The only new thing that came out of it was the frequency-transect, a primitive way of graphically presenting vegetation changes along a line, mostly of course higher plants with some mosses and Cyanophyceae. The dry stony areas were covered with lichen crusts, variously labelled L1, L2, Lb, but so depauperate that I.M.Lamb at the B.M. (N.H.) could name very few of them. The dominant crustose species was Lecanora epibryon - an alpine rarity in Britain. Basal squamules of Cladonia pyxidata were recognisable in L1, Caloplaca bracteata occurred in one transect, and that was about all that could be named (J. Ecol. 27:126-48, 1939).

Not very exciting as regards the lichens; but at Magdalena Bay in the north west corner of West Spitsbergen, where the good old Gulf Stream still exerts its influence, it was a very different matter I

have a vivid memory of monstrous great knee-high Cladonias (Cladinas, by hindsight) of heaven-knows-what age, though they may have grown a bit in my mind in half a century. How incredibly prehistoric it all must seem now! Probably by now all the lichens are recorded, mapped, and with little tags on them.

Finally, it is high time that I let out the real story of how I got involved in the BLS. Believe it or not, it was all to do with fluoridation - or flouridation as the local press usually prints it, under the impression, no doubt, that it must be flour they put in the water as it is described as a nutrient. Personally I have always thought that wilful pollution of the public water supply with a prophylactic against childlollipopitis verges upon the bonko-cretinoid, but, on being assured that the medical profession was 100 per cent for it, I started a correspondence in the BMJ in 1955 which ran for about 18 months, and showed that it wasn't.

One day I got a note from the BMJ in Tavistock House inviting me to call in for a talk. It was signed Douglas Swinscow. I did that, and we soon got off fluoridation onto natural history and then the virtues of North Wales as an area for lichens. "Why", sez he, "do you mycologists neglect them so?" "Because", sez I, "we've already got enough fungi to drive us crackers!" "Then", sez he, "there ought to be a separate society for lichens." "Yes!" sez I. "Then why don't you start one?" sez he. "Because" sez I, "though I find them fascinating I can't tell t'other from which, especially with Lorrain Smith's book. Anyway, I'm hired to teach botany. All proper voluntary societies are founded by amateurs (i.e. people paid to do something else). So you do it!" Which is just what he did three years later, and look what has happened to lichenology since. Anyway, that's how I like to remember it.

Geoffrey Dobbs.

NEGLECTED HABITATS: RIVER SHINGLE

Shingle islands, lateral shoals and slip-off slopes beside inland rivers represent a habitat that has been largely ignored by lichenologists. This note describes the lichen flora of a shingle island (attached to the mainland throughout much of its length except when the river is in spate) in the river Tummel, Perthshire. It is a Scottish Wildlife Trust nature reserve, and part of the Shingle Islands SSSI. The island is largely wooded with birch, pine, alder, willow and scattered hawthorn and oak. An investigation of their epiphytes revealed little of interest. Of considerably greater lichenological interest are the areas of shingle in the northern part. Few examples of such inland (freshwater) shingle carrying noteworthy assemblages of lichens are known in the British Isles, though fine maritime examples occur along the east coast at sites such as Coul Links, Culbin Forest, Cuthill Links, Kinnaber Links, and Holy Island in Northumberland.

On Ballinluig Island one can see a transition from lichen-free, unstable shingle on the shore, through more or less stable shingle colonized by several pioneer crustose saxicolous lichens, to stable shingle (mostly under small birch and pine) with numerous crustose lichens, together with many macrolichens on the pebbles and associated sandy soil, moss and plant debris. The species recorded in these shingle communities total 24 crustose lichens and 27 macrolichens: total 53. They include: Acarospora smaragdula, Buellia aethalea, Catillaria atomarioides, Lecidea erratica, L.plana, Placopsis gelida, Rhizocarpon concentricum, Porpidia tuberculosa, Trapelia obtegens, T.placodioides, Coelocaulon aculeatum, C. muricatum, Parmelia incurva, Pseudevernia furfuracea, Stereocaulon glareosum, S. pileatum, Cladonia (many spp.) and Peltigera (many spp.). Of the above species, only Stereocaulon glareosum can be considered a genuine national rarity (just a few localities in Scotland). This is the first record of

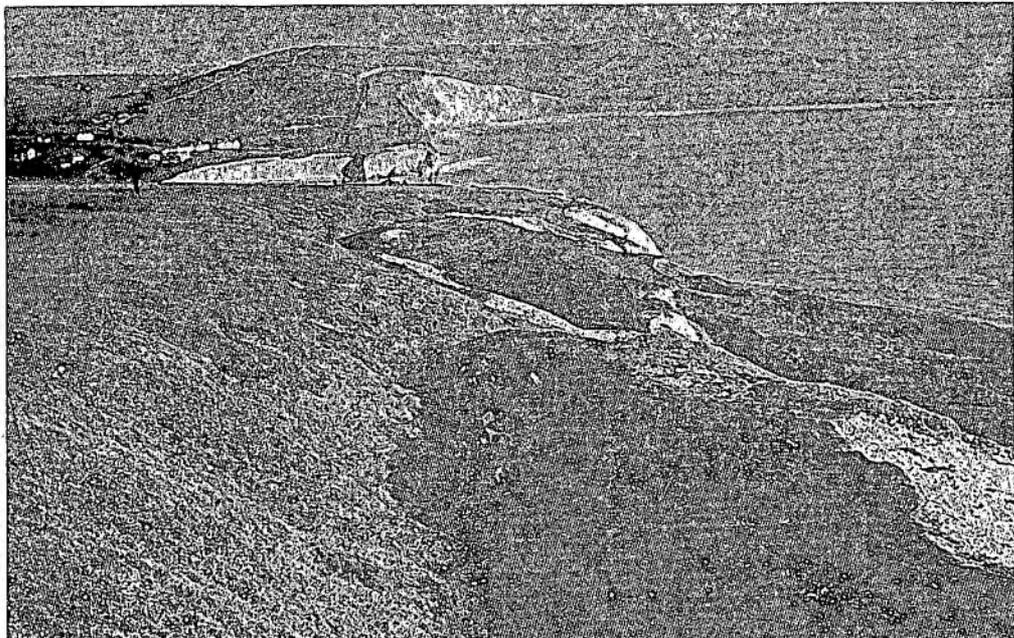
Catillaria atomarioides for Scotland, but this species, which is one of the dominants here, has probably been much overlooked. It is easily passed over as a diminutive form of C.chalybeia or as Lecidea erratica. Published information regarding Catillaria atomarioides is scant as regards habitat details, though it is recorded on river-side shingle in Scandinavia. Although 14 species of Cladonia are present, they are never dominant and do not form large cushions or swards as some of them do at coastal sites. The low cover by Cladonia is compensated for by the five Peltigera species which are all present in abundance together with their parasites. To date Ballinluig seems to be the best known Scottish example of an inland shingle site by a river. Nationally, some of the heavy metal rich river shingle in Northumberland and mid-Wales must run it close.

Brian Coppins.

INCREASE IN THE POPULATION OF FULGENSIA FULGENS ON
THE ISLE OF WIGHT

Fulgensia fulgens was first recorded from the Isle of Wight around the turn of the last century. W. Borrer and R.D. Turner collected material from here which was used to illustrate Sowerby's English Botany (1806). The locality was given as Freshwater Bay but there were no further island records until 1976 when Oliver Gilbert located it, in abundance, as a component of a rich terricolous community halfway up Tennyson Down above Freshwater Bay. The site is heavily stressed ancient chalk grassland close to the cliff-edge, estimated by Gilbert (1978) to occupy some 0.2 ha.

(Lichenologist 10:33-45). The Down is National Trust property and visited by many holidaymakers and residents throughout the year. Although the Fulgensia site is away from the main footpath, it is nevertheless trampled by many visitors and this probably contributes towards maintaining the habitat.



Freshwater Down with the Fulgensia site in the foreground

On a visit early in 1988, I noticed that the extent of the Fulgensia was much greater than had been the case a few years previous. It now extends both east and west from the main site along the cliff-edge and occupies an estimated 0.8 ha. It has spread into thin, open grassland where it grows on moss cushions. In these areas, the thalli produce schizidia abundantly but do not appear to be fertile. The new areas have a much impoverished terricolous lichen flora compared with the main site.

Where visitor pressure is concentrated, such as in the vicinity of a seat erected on the Down below the main site, the thin vegetation cover has become broken. Mosses have invaded on which young Fulgensia thalli are growing. Thus it would appear that Fulgensia is behaving as an opportunist species in this situation. It may well be that the observed increase in Fulgensia has been in part due to the dispersal of lichen fragments by increased foot traffic.

(Sandy O'Dare has observed that the Brean Down population is starting to spread in exactly the same way. Ed.)

Colin Pope

ANCIENT TREES AND THE GREAT STORM

My own observations entirely confirm those of Francis Rose (Bulletin 63). Contrary to much popular assertion, there can be no doubt that ancient trees withstood the storm of 16 October 1987 better than any other age-class. To add some examples: Pett's Wood, Chislehurst: the ancient boundary oaks stand, except where knocked over by other trees falling on them. Most of the other big (but not ancient) trees are uprooted.

Merstham-Hatch Park, Kent: the ancient hornbeams have withstood not only the storm itself but also many big hybrid poplars, planted between, collapsing on top of them. The few hornbeams uprooted are still alive. Staverton Park, Suffolk: the park, famous for its 4000 medieval pollard oaks, was right in the middle of the most devastating part of all the storm. For two miles around in all directions it is surrounded by Forestry Commission plantations of Corsican pine, which were levelled: nearly every tree - and they were big pines - was either snapped off or uprooted, except those at the edge. The medieval oaks and giant hollies are rather knocked about, but no serious harm has been done. Sotterley Park: there has been a lot of bough-breakage, but most of the ancient trees survive.

Many single ancient trees withstood the storm: for example, the Culford Oak and Haughley Oak (Suffolk) and the Alice-Holt Oak (Hants), though in areas of severe damage, did not lose a twig. Ancient woods in general suffered uprooting of coppice stools and bough-breaking of timber trees, but very few trees were actually killed by the storm. Irreversible harm has been done almost exclusively by well-meaning but ill-informed efforts at clearing up and replanting. The spectacular effects of the storm were chiefly on planted trees, especially young trees which had recently reached full size.

In general, lichens are no exception to the conclusion that the storm was good for wildlife. I much regret that conservation bodies did so little to point out its positive aspects; or to make use of the opportunities which it offered.

Oliver Rackham

FURTHER RECOLONISATION OF CHESHIRE BY EPIPHYTIC LICHENS

Since Usnea subfloridana first reappeared in Cheshire, in 1977, a great deal of recolonisation has taken place. Sulphur dioxide levels across the county now coincide with zones 6-7 on the scale of Hawksworth & Rose. These zones have become almost meaningless for the time being while lichen populations readjust to the more favourable atmosphere. Indeed it seems more appropriate to talk of recolonisation gradients rather than pollution gradients, for colonists seem to be sweeping in from the south-west.

In north-eastern parts of the county, many crack willows now support some or all of Parmelia sulcata.

P.glabratula, P.subaurifera, Hypogymnia physodes, H.tubulosa, Evernia prunastri, Ramalina farinacea and Usnea subfloridana. Parmelia subrudecta and P.revoluta have appeared in several sites, well-grown sorediate thalli of the latter up to 15cm across being found in 1989 within 15km of Manchester Town Hall at Hazel Grove. Both P.subrudecta and P.revoluta may dominate individual branches of willows in the centre of Cheshire.

A second gradient is that from willows onto other tree species. Members of the community listed for willows above are increasingly appearing on the bases of field trees, especially sycamore, ash and beech. In the south-west Evernia now occurs as well-grown thalli up to three metres or more up the trunks of exposed trees; smooth-barked young ash in particular often support Lecanora chlorotera and occasionally Lecidella elaeochroma; and twigs of clipped

hawthorn hedges are well worth examining. Xanthoria polycarpa and Lecanora chlarotera are both common on a hedge near Church Minshull where a young Physcia aipolia is growing. X. candelaria, common on field trees in south-west Cheshire, is now starting to appear in the eastern hills.

P.aipolia was first recorded for Cheshire from willows by the River Bollin at Prestbury Sewage Works in 1986. I and later B.W.Fox and O.L.Gilbert had examined these trees earlier in the 1980s without finding P.aipolia, Lecanora chlarotera or Parmelia caperata, which now shares a branch with P.revoluta and a lobe or two of what looks like P.perlata. All these would seem to be new arrivals. I first encountered P.caperata in the county at Rostherne Mere N.N.R. in 1987, since when it has leapt into view on lignum by the Dee at Eaton Park; on ash at South Heath, Nantwich; on willow at Kettleshulme and Marple in the Pennine foothills and at Little Moreton Hall; and on a stump of beech in Dunham Park (Greater Manchester).

A small Parmelia photographed on willow by the River Dane near Radnor Bridge in 1984 has grown sufficiently to be determined as P.perlata. In addition to the tiny fragment at Prestbury, I know of several small plants on willows in Hazel Grove.

Oak bark seems to have been so leached or contaminated by acidic pollutants that it has shared very little to date in this resurgence. The few lowland sites where oaks support any lichens of note may all be refugia. At Huxley, a sheltered old tree by the River Gowy has Pertusaria amara and Evernia, the latter propagating itself nicely. The richest site yet found, Cholmondeley Castle gardens, also has some of the biggest old trees. Here oak supports Lecanactis abietina, Chrysothrix candelaris, Opegrapha atra, Cyphelium inquinans and other species. Only on young oaks in Tatton

Park, planted around 1970, have I encountered the Parmelia/Usnea pioneers typical of willows. Perhaps these young trees escaped the severest pollution that spoiled older trees as lichen habitats.

The remarkable spread of these lichens is not without setbacks. Small Usnea thalli have appeared in several dozen sites now, on various tree species and on fence-posts and railings, some of these in exposed windswept sites. Many seem to grow only a few millimetres before disappearing. Whether this is due to periodic episodes of higher pollution or to physical removal by birds or invertebrates, remains a mystery. Platismatia glauca seems to have declined from its prevalence on willows in the early 1980s, perhaps ousted by more vigorous Parmelia species.

Jonathan Guest

TWO ETHNOGRAPHIC LICHEN GARMENTS

Maritime Peoples of the Arctic and Northwest Coast, a permanent exhibit of ethnographic garments, which opened in 1982 at the Field Museum of Natural History, Chicago, included two items of particular interest to lichenologists, a lichen vest and a lichen cape (Fig. 1). Avoidance of damage to the clothing was the main concern of the seven year preparation for the exhibition. For instance, the lichen vest "showed a female bustline from previous exhibit on a mannequin" and had to be humidified for return to its original shape. Display forms used in the renovation were, consequently, handless, headless and footless, and were constructed using chemically inert materials. Clothing in the exhibition as a whole utilised goat hair, cedarbark, bird, fish, panther, seal and ermine, as well as lichen, materials which drape and handle very differently from commercial cloth. A core of $\frac{1}{2}$ inch foam board was used for a lightweight mount for the lichen vest which needed

overall padded support. The lichen cape was mounted on a wooden-dowel A-frame, its well preserved leather ties holding it closed. The very considerable care taken in mounting these two lichen garments may well ensure their lasting as long as carefully preserved herbarium specimens.



Figure 1 - The Lichen vest (left) and lichen cape (right) on exhibit. Copyright McNeil, K.C. et.al.

Acknowledgement

I am indebted to the authors of the paper listed below, and to the editor of the Curator for kind permission to summarise and to quote from the same paper. Copyright: The American Museum of Natural History.

Reference

McNeil, K.C., Johnson, J.G., Joyce, D.J. & Blazina-Joyce, R. (1986) Mounting ethnographic garments. Curator 29: 279-294.

A. Henderson

NCC LOWER PLANT SPECIALIST

My recent appointment as Lower Plant Specialist with NCC is, I think, indicative that lower plants (I would prefer "cryptogams") are gaining a higher profile in nature conservation. The post covers bryophytes, lichens, fungi and non-marine algae. I am principally a bryologist, but am trying hard with the lichens. I can at any rate relate to lichenologists and work for the conservation of lichens without knowing all the rarities.

One of my main tasks is to produce criteria for the selection of the best sites for cryptogams, with a view to their notification as SSSIs. At the moment the official criteria for lower plant site selection are very sketchy, but lichens have fared better than most groups, with woodlands and heathlands (including some dune, machair, grassland and mine-waste sites) having been covered very well by two BLS reports. These reports graded sites from 1 to 7 according to lichenological importance and, as a rule of thumb, grades 1 to 4 are regarded as SSSI standard, though grades 4 and 5 are rather plastic in practice. A further report on coastal sites is envisaged.

There is a feeling that lichens are best covered by a community

based approach rather than a species orientated one, so rigid site selection criteria based strictly on 10km distributional data for species may not be so appropriate as for vascular plants and bryophytes. Rather, an updated version of the methods used in the above reports will be employed. Meanwhile, I am finding out which sites that are currently known to be important for lichens are not covered by the SSSI system.

My remit also covers advising NCC Regional staff about the conservation of cryptogams, and liaising with the various national societies, including the BLS. I am also in close contact with Nick Stewart of the Conservation Association of Botanical Societies (CABS) who is working on the cryptogamic Red Data Book. Identification of research needs is an important part of the job, and I envisage future projects on, among other things, the effect of heathland management on lichens, a lowland rock outcrop/churchyard survey and transplant experiments on certain endangered species. I look forward to a constructive and friendly relationship with the BLS!

Nick Hodgetts

AGONY COLUMN

Dear Aunty,

I have recently been involved in a game called nomenclatural chess but I can't understand any of the rules. Help!!

Caloplaca heppiana

Dear Heppy,

Poor child, you have my full sympathy; this particularly nasty form of abuse is on the increase. I suspect that a minor misdemeanour,

committed many years ago, has come to light and this is what you have been punished for. Many people believe there should be a law to prevent this kind of thing happening. I can put your mind to rest on the other point that has been worrying you, illegitimacy is not involved.

Auntie Nora

Dear Auntie Nora,

It seems that every time I talk to a fellow lichenologist these days I discovered rumours of some proposed nomenclature change. If it's not Lecidea being further decimated it's some familiar species being split - Buellia punctata appears to be the latest subject of gossip. Far be it for me to question of these changes; what concerns me is the haphazard way I find out about them. Wouldn't it be possible to have a regular feature in the Bulletin detailing recent changes with a brief explanation as to why they were necessary?

Yours sincerely,

Alan Fryday

Dear Alan,

Yours is one of many letters I have received on this topic. Although a few name changes could be avoided by making full use of the provisions provided by the International Code of Botanical Nomenclature, most are unfortunately unavoidable. In many ways, these changes reflect the rapid advances currently underway in lichenological research, and a move away from the thoroughly artificial classifications 'set in stone' by William Nylander and Alexander Zahlbruckner.

Your idea of a regular feature in the Bulletin is an excellent one, and the editor agrees. I believe he has found someone (one of the culprits) to prepare the feature, which will start following the publication of the new Flora, in which many of the recent changes will be made clear.

Yours,

Auntie Nora (Syn. Aunt Nora, non Uncle Norman)

TWO NEW BOOKS ON POLAR CRYPTOGRAMS

Cambridge University Press have recently published two new books on polar cryptogams. This note is not a review, it is merely intended to bring them to the attention of Bulletin readers.

Biology of Polar Bryophytes and Lichens by R.E. Longton 1988 (£55 pp.391). This book comprehensively reviews the biology of bryophytes and lichens in the polar tundra. Adaptions to the severe environment in terms of growth form, physiology and reproduction are investigated, most points being backed up by numerous graphs and tables. The two groups are in the main treated separately, for example, an outline classification of vegetation in the cold and frigid arctic contains 29 subformations; 6 composed of lichens, 19 of bryophytes, 2 of algae and 2 of angiosperms. Whether the groups keep as apart as this or if it is an artifact resulting from specialisation among scientists is not clear. The book is not about floristics, for example you will not find much detail on the spectacular flora of bird perching sites in polar regions; it covers instead broad topics such as pattern, process, physiology, nutrient cycling and energy flow.

The second book Microbial Ecosystems of Antarctic by W.F.Vincent (£37.50 pp.304), provides an account of the full range of environments in the continent and of the microbial communities that live

within them. Lichens occurring on the surface of rocks are not considered, but it does cover the cryptoendolithic lichens which live beneath the surface of coarse grained sandstone rocks. The other saxicolous habitat considered is vertical cracks in marble which are heavily colonised by free living micro-algae which I suppose just might be the precursors of lichens.

FLORA ABBEY GROVENSIS

I came to live at Abbey Grove Cattery in March 1988. This animal boarding house, situated at Hockley, South Essex (51/850939, VC 18) is in a rural situation, but close to densely urbanized areas. Over the last year I have had ample opportunity to study the lichens within the grounds of the Cattery which extends over one acre.

In all, I found some 64 lichen taxa growing on a variety of substrates. Many of these, especially on lignum and trees, are small young thalli which have recently colonized, being typical of the marked increase of lichens in South Essex generally. The single richest substrate is lignum with 33 lichen species present. Among the most interesting of these are Bacidia caligans, B. chlorotricula, Lecanora saligna, L.stenotropa, L.symmicta, Lecidea fuscoatra and Thelocarpon laureri. Another noteworthy substrate consists of a pile of siliceous roofing tiles on the ground; lichen species present here include Bacidia arnoldiana (fertile), B.caligans, B.egenula, B.saxenii, Micarea denigrata, M.lithinella and Trapelia placodioides. Among the 21 species present on trees are Bacidia arnoldiana, Candelariella reflexa, Evernia prunastri (small young thalli), Lecania cyrtella, Ramalina farinacea (small young thalli) and Xanthoria polycarpa. One particularly interesting record is Bacidia arnoldiana on soil (5 small thalli with pycnidia, directly on soil over an uprooted stump - but not on the stump itself). Bacidia arnoldiana is one of the major success stories of South Essex.

The substrates present are as follows:-

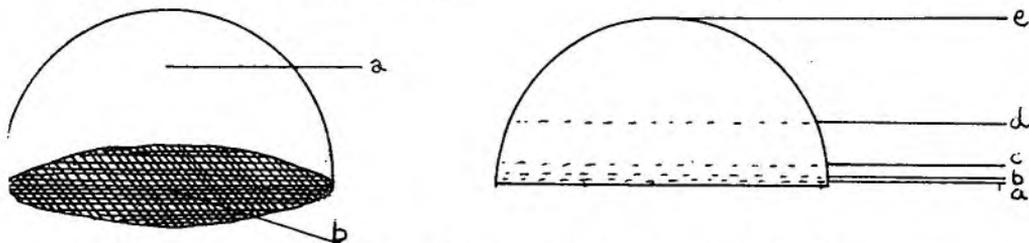
1. Lignum - mostly wooden kennels.(33 species).
2. Trees - Crataegus, Fraxinus, Quercus, Salix,
Sambucus.(21 spp).
3. Wooden rails (corticate).(9 spp).
4. Concrete - paths, posts, walls and blocks on ground.
(23 spp).
5. Corrugated asbestos-cement roofs.(24 spp).
6. Red asbestos-cement roofing tiles.(13 spp).
7. Roofing felt.(13 spp).
8. Red siliceous roofing tiles on ground. (9 spp).
9. Soil over uprooted stump. (1 spp).

Dr B.J. Coppins is thanked for determining critical material.

Peter Earland-Bennett

APPROACHES TO LICHEN AESTHETICS 3

The analytic approaches to lichen structure made so far in this series (Bulletins 60 and 61) have indicated the aesthetic importance of lichen modes of spatial occupation. We shall now begin a more systematic analysis of lichen structural diversity and the variety of aesthetic effects arising from it. For the present, our examination will be limited to individual thalli. Lichens in number, in community, and in their environmental context will be a later concern of this series.



On left View of a) the hemispheric domain with b) the planar, circular base. On right Cross-section through figure 1, showing upper levels of intrusion into the Hemispheric domain by different lichen types, a) thin crustose, b) thick crustose/placodioid, c) foliose, d) subfruticose, and e) fruticose.

An obvious feature of lichen diversity is the range of thalline morphology from crustose to fruticose. These two growth forms with their intermediates (placodioid, foliose and subfruticose) present a wide array of thalline forms. Observing this range of forms, we can stipulate two ideal extremes, one at either end of the range. We can visualise (figure 1) the crustose thallus tending towards the imaginary limit of a circular plane, and the fruticose thallus tending towards an intricately branched matrix spreading through a hemispherical domain (cf Bulletin 60 p. 5, Note). On a cross-section through this hemisphere (figure 1) we can represent in simplified form the degree of ascending occupation of the hemispheric domain typical of the lichen types listed in the following hierarchy, ordered by level of intrusion into the hemispheric space.

- a) thin crustose (or leprose)
- b) thick crustose/placodioid
- c) foliose
- d) subfruticose
- e) fruticose (reaching the upper boundary of the hemispheric domain)

Even the thinnest of crustose lichens is more than two-dimensional, but intrusion into the three-dimensional domain on the part of such a plant is plainly minimal, whereas that on the part of the most intricately branched fruticose forms is maximal. A hierarchy of lichen spatial occupation in no way implies an aesthetic value-judgement, but is a recognition that the thalline morphology of a lichen is a decisive constituent in its particular aesthetic impact. Indeed, we could compare a crustose thallus to a painted canvas, a foliose plant to a moulded relief, a subfruticose plant to an in-depth collage, and a fruticose plant to a sculpture proper. We note, too, the interfluidity of these basic lichen types, which we shall examine when we come to a more detailed analysis of thalline structural elements.

A. Henderson

NEW, RARE AND INTERESTING BRITISH LICHEN RECORDS

(Please submit entries to Frank Brightman, South London Botanical Institute, 323 Norwood Road, London, SE24 9AQ in the approved form).

Cavernularia hulteni: locally abundant on Betula in wood south-west of Loch na Broon, Raasay, VC 104, GR 18/575463, and at South Fearn, Raasay, GR 18/586354, with good mature apothecia. (1987).

F. Rose

Coniocybe furfuracea: on the boles of hornbeam in ditches at the edge of two woods, Billericay, Essex, VC 18, GR 51/691956, 696968 (1983)

P. Earland-Bennett

Gyalidia diaphana: on submerged boulders in a melt-water stream, Choire Garbh, Cairngorms, VC 89 (East Perth), GR 27/941980 (1984). Identified by re-examination of "the circular dark brown colonies of a pycnidiate crustose lichen" reported in the Lichenologist 17, p. 59 (1985). R. Monro is thanked for providing critically determined material for comparison; this is the second British record.

O.L. Gilbert

Lecanora campestris ssp. dolomitica: on dust-enriched bark of sycamore, Hardybarn, Derbyshire, VC 57, GR 33/09-74- (1989). First corticolous record; fertile. Det. O.L. Gilbert.

J. Guest

Leptogium cretaceum: on mossy soil over concrete, growing with Collema crispum, Canvey Island, Essex, VC 18, GR 51/772824 (1984).

P. Earland-Bennett

Thelocarpon intermediellum: on rotting wood in deep shade in a wood, Billericay, Essex, VCX 18, GR 51/704943 (1986).

P. Earland-Bennett

Thelocarpon superellum: on peat, Island of Canna, Inner Hebrides, VC 103, GR 18/279050, (1988). Second British record, appearing as numerous minute lime-green dots on a peat face halfway up a small cliff by the pier (the first record was on an alga-covered stone in North Wales).

O.L. Gilbert

Umbilicaria hirsuta: in water seepage tracks on vertical rock face, Glen Esk, Angus, VC 90, GR 37/41-84- (1989). Many thalli present, some 5 cm in diameter; the second Scottish record, substantiating Kery and Claire Dalby's 1983 Glen Isla record. Det. Pauline Topham, conf. Brian Coppins. R. Monro and C.J.B. Hitch.

Verrucaria simplex: urban wasteland, on bricks amongst vegetation, Sheffield (1988) and Manchester (1989), also on an asbestos fragment in grassland, Manchester (1989). Det. P. McCarthy.

O.L. Gilbert

SECRETARY'S REPORT FOR 1988

The Flora, thanks to the guidance of the Flora Committee and hard work of William Purvis, is on schedule; the Conservation Committee, now that they are firmly re-established, have met regularly, thanks to the co-ordination of the Conservation Officers and Chairman, and the library and mapping scheme have increased their holdings and records steadily. A contractual letter from the University of Bradford has helped formalise arrangements over the storage of the Society's data on the main-frame computer at Bradford, and Dr. Seaward is thanked for his tireless efforts in this area and for building up a data-base of historical and current information on distribution and mapping which is the envy of many a larger biological Society.

Two major field meetings were held. The first in Ilfracombe led by Prof Hawksworth and sponsored jointly by the Systematics Association and the B.L.S., was attended by 30 participants. The autumn meeting in the Howgill Fells was led by Dr Gilbert and attended by 18 people. The Gower meeting had to be cancelled: Dr Rose led a one day meeting in the New Forest instead. The B.L.S. was also invited to attend a week's field meeting in Rome, though only a small British contingent was able to participate. We are greatly indebted to Dr Hitch who compiles the Field

Meetings broadsheet and keeps us informed of lichenological activities, meetings, courses and workshops both nationally and internationally. The Society's year commenced, as usual, with meetings on the first weekend in January, all held in the rooms of the Royal Entomological Society of London. The well attended booksale, buffet and conversazione was convivial and enjoyable, raising £130 for the Society and the spirits of those present. On Saturday 9 January the Annual General Meeting was attended by 53 people and saw Dr Gilbert return as Bulletin editor and Dr Dalby and Mr Jarman elected as Conservation Officers with Mr Brightman as chairman of the Conservation Committee. Dr Brown was elected co-Senior Editor with Prof. Hawksworth and Dr Coppins was elected President for two years with Prof. Richardson as Vice-president. Following recommendation by Council, Mr Laundon and Mr Brightman were made Honorary Members. The meeting was followed by the traditional slide show and exhibitions. 78 people attended the afternoon lecture meeting where six speakers talked on differing aspects of "Our Changing Lichen Flora". Four issues of The Lichenologist were published, two issues of the Bulletin were produced and a membership list, and the run-on of the Botanical Journal of the Linnean Society 96 : 1 - 95 entitled "Horizons in Lichenology" appeared in January. Council met in March, September and January. Membership has remained stable with 548 members at present - 46 new members joined the Society in 1988.

It is with regret that I mention the death of two members. Mrs.A.G.(Trudy) Side died on September 20 and I have subsequently heard by telephone from her executors that the Society is to be a joint beneficiary, though no details are yet available. Also our Treasurer, Noel Tallwin died suddenly (obituaries appear elsewhere in the Bulletin). I am particularly grateful to Frank Dobson who has been prepared to take on the role of Treasurer in addition to being Assistant Treasurer and all his business, home and authorship responsibilities. Thanks must also be recorded to Dr Swinscow and

Mr Samuel Tallwin who arranged for the Treasurer's file to be sent to the new Acting Treasurer so that no embarrassing gap emerged in the Society's financial activities.

Finally, I should like to thank Frank Brightman for actively representing the Society on the Conservation Association of Botanical Societies, Prof. Brian Fox for arranging and manning a lichenological exhibition in Stockport, Frank Dobson for attending a seminar on the Charitable Status of Learned Societies, and all the officers, editors, referees, field meeting leaders and members of the Flora and Conservation Committees for their work throughout the year.

Tim Moxham

NEW SUBSCRIPTION RATE FOR 1990

Council recommended and the members at the 1989 Annual General Meeting voted in favour of increasing the annual subscription rate from £15 per year to £20 from 1 January 1990. The last increase was on 1 January 1986 from £12.50 to the current rate of £15 and it is hoped, as in the past, to maintain the new rate for several years. It will give the Society greater flexibility with its increasing expenditure - particularly regarding publications which are the major cost to the Society. A new standing order form for direct payment from your bank will be sent out with the Winter 1989 Bulletin. No action is required from you yet.

SPECIAL GENERAL MEETING

Following the decision at the Annual General Meeting to increase the subscription rate to £20 from 1 January 1990, Council has subsequently put forward a further proposal to be discussed at this Special General Meeting. Apart from the obvious advantage of a slightly reduced subscription, the proposal would also mean that

overseas members only pay one commission charge instead of several, and for the Treasurer there is the benefit of a reduced administrative load

For 1990 - 1994 - £90.00 subscription for 5 years.

For 1990 - 1992 - £57.50 subscription for 3 years.

Overseas subscription to increase to \$40.

Mr Jeremy M. Gray nominated as Assistant Treasurer.

The Meeting to discuss these issues will take place during the Symposium on Tropical Lichenology, just before the Sherry reception which is being sponsored by the British Lichen Society, at 18.00 on Monday 4 September 1989 in the Flett Theatre, The Geological Museum, Cromwell Road, London SW7 5BD.

A.G.M. 1990 - DATE FOR YOUR DIARY

The 1990 Annual General Meeting will take place at the British Museum (Natural History) on Saturday 6 January 1990. During the afternoon staff from the Lichen Section will organise an Open Day and put on a demonstration with talks on items of lichenological interest, not usually seen by visitors to the Botany Dept. Brian Coppins and Francis Rose will give lectures on the lichen flora of our native pinewoods and the New Index of Ecological Continuity respectively during the following lecture meeting.

There will also be a booksale on Friday 5 January at 18.00 in the Meeting Room of the Royal Entomological Society of London, 41 Queen's Gate, London, SW7 5HU.

WANTED. A lichenologist in Japan has for some time been trying to complete his set of the Journal. If a member has a spare copy of Vol.2 or Vol.15(pt.2) could they please contact Mr J.M.Gray, Myrtle Cottage, Church Lane, Kingston St. Mary, Taunton, Somerset TA2 8HR who will act as broker.

NEW MEMBERS

The following members joined the Society between November 1988 and February 1989 inclusive. Please inform the Acting Assistant Treasurer, Mr Jeremy M. Gray, Myrtle Cottage, Church Lane, Kingston St Mary, Taunton, Somerset, TA2 8MR of any change of address so that the mailing list can be kept up-to-date, and you will continue to receive all Society mail uninterrupted.
(J.M. = Junior Associate Member)

- Ms Antonella BARTOLI, c/o Orto Botanico, Universita la Sapienza, Largo Christina di Svenzia 24, 00165 Roma, ITALY
Mr Stephen P. CHAMBERS, 41, Ridgemere Road, PENSBY, Wirral, Merseyside, L61 8RN.
Mr A. (Tony) R. CHURCH, Youth Hostel, Lochranza, ARRAN, KA27 8HL
Dr Valerie C. COOPER, 7, Manor Farm Road, TREDINGTON, Warwickshire, CV36 4NZ.
Prof. Fred J.A. DANIELS, Westfalische Wilhelms-Universitat, Botanisches Institute & Botanischer Garten, Schlossgarten 3, D-4400 Munster, WEST GERMANY.
Ms Ingrid EDGINTON, H.P.S.E., Wall Hall, Aldenham, WATFORD, Herts., WD2 8AT. (J.M.)
Mr Perotti ENRICO, Croix de Rives 5, 1028 Preverenges, SWITZERLAND.
Miss Rachel FERRIS, Watersmeet, Chaffcombe, CHARD, Somerset, TA20 4AP.
Mrs. Cornelia K. GEHRMANN, Westkampstrasse 9, 2900 Oldenburg, WEST GERMANY.
Mrs Catherine GILL, Drakemyre Croft, Cairnorrie, METHLICK, Aberdeenshire, AB4 0JN.
Ms Olga HILMO, Frode Rinnasv. 31, 7035 Trondheim, NORWAY.
Dr Christopher W. JACKSON, Biology Dept., Building 44, Southampton University, SOUTHAMPTON, Hants, SO9 5NH
Mr Herbert KIRSCH, Waldschloss Strasse 42, D-8773 Frammersbach, WEST GERMANY.
Ms Estrella LEGAZ GONZALEZ, Dept. of Plant Physiology, Faculty of Biology, Complutense University, 28040 Madrid, SPAIN.
Mr S.A. MANNING, 9 Eversley Court, Prince of Wales Road, CROMER, Norfolk, NR27 9HR.
Miss Pamela K. MEEK, 12, Woodhall Close, UXBRIDGE, Middlesex UB8 1PY. (J.M.)
Ms Jane PICKERING, Dept. of Botany, British Museum (Natural History), Cromwell Road, LONDON, SW7 5BD.
Mr Christian PRINTZEN, Verdinger Strasse 15, D-5000 Koln 60, WEST GERMANY.
Mr Neil A. SANDERSON, 52, Cygnus Gardens, Dibden, HYTHE, Hampshire SO4 5UH.
Mr Peter SCHOLZ, Martin-Luther-Universitat, WB Geobotanik und Botan. Garten, Neuwerk 21, Halle, DDR-4020 EAST GERMANY.
Mrs Sheila STREET, 18, Oaklands Close, Halvergate, NORWICH, Norfolk, NR13 3P.
Mr Rikard SUNDIN, Skarpovagen 49, c/o Norberg, S-132 32 Saltsjo-Boo, SWEDEN.
Prof Carlos VINCENTE CORDOBA, Dept. of Plant Physiology, Faculty of Biology, Complutense University, 28040 Madrid, SPAIN.

Lichenologist 20(3) was published on 20 July 1988 and 20(4) on 11 October 1988 and 21(1) on 30 January 1989. An index to vols 11 - 20 was included in part 4.

ALLEN, A. & HILTON, B. 1988. Distribution and zonation of maritime lichens in Sark. Rep. Soc. guernés. 22: 234 - 257. [Detailed ecological study of both zonation and species.]

ATSATT, P. R. 1988. Are vascular plants "inside-out" lichens? Ecology, Brooklyn 69: 17 - 23. ["This essay considers the possibility that vascular plants originated from an algal-fungal mutualism."]

CHRISTIANSEN, M. S. & ROUX, C. 1988. Typification de Verrucaria viridula (Schröd.) Ach. Bull. Soc. linn. Provence 39: 107 - 127. [Many British records of Verrucaria viridula refer to V. macrostoma Dufour ex DC. and reports of V. viridula forma tectorum are V. macrostoma f. furfuracea B. de Lesd.]

COPPINS, B. J. 1988. Micarea pseudomarginata: a new saxicolous lichen from the British Isles. Notes R. bot. Gdn Edinb. 45: 397 - 400. [Micarea pseudomarginata Coppins sp. nov. from four localities in highland Britain.]

COPPINS, B. J. 1988. Notes on the genus Arthopyrenia in the British Isles. Lichenologist 20: 305 - 325. [Revised delimitation of Arthopyrenia. The species A. carneobrunnea Coppins sp. nov., A. fraxini Massal., A. ranunculospora Coppins & P. James sp. nov., A. salicis Massal., A. subcerasi (Vainio) Zahlbr., and A. viridescens Coppins sp. nov. are new to the British Isles.]

COPPINS, B. J. 1988. Skyttea refractiva, a new lichenicolous discomycete. Notes R. bot. Gdn Edinb. 45: 171 - 173. [Account of Skyttea refractiva Coppins sp. nov. on Bacidia sabuletorum and Toninia lobulata from Britain and Luxembourg.]

CULBERSON, C. F., CULBERSON, W. L. & JOHNSON, A. 1988. Gene flow in lichens. Am. J. Bot. 75: 1135 - 1139. [Culture experiments with separate Cladonia chlorophaea chemotypes resulted in the production of hybrid chemotypes. "When growing near merochlorophaea, grayi yielded some sporelings with the merochlorophaea chemistry." It is implied that a conidium from one chemotype fertilised the trichogyne of another. Interbreeding populations were demonstrated.]

FERRY, B. W. & PICKERING, M. 1989. Studies on the Cladonia chlorophaea complex at Dungeness, England. Lichenologist 21: 67 - 77. [Ecological preferences of the species and chemotypes on coastal shingle.]

GALLOWAY, D. J. 1988. Erik Acharius and his influence on English lichenology. Bull. Br. Mus. nat. Hist. (Bot.) 18: 149 - 194. [Includes extensive extracts from letters of Acharius, Smith, Swartz, and Turner. List of lichens in Acharius herbarium at BM.]

GILBERT, O. L., COPPINS, B. J. & FOX, B. W. 1988. The lichen flora of Ben Lawers. Lichenologist 20: 201 - 243. [Description of the lichen vegetation. Bacidia carnealbida ["carneopallida"] (Müll.Arg.) Coppins comb. nov., Caloplaca ammiospila (Wahlenb. ex Ach.) H. Olivier, C. approximata (Lyngé) Magnusson, Catapyrenium daedaleum (Krempelh.) Clauz. & C. Roux nom. illeg., Ionaspis cyanocarpa (Anzi) Th.Fr., Micarea crassipes (Th.Fr.) Coppins, Ochrolechia inaequatula (Nyl.) Zahlbr., Omphalina pararustica Cléménçon, Phaeophyscia endococcina (Körber) Moberg, Protothelenella leucothelia (Nyl.) Mayrhofer & Poelt, and Pyrenopsis multispora Coppins sp. nov. are new to Britain. Bacidia tetramera (de Not.) Coppins (B. obscurata) and Kiliasia scotinodes (Nyl.) Coppins are new combinations. See correction in Lichenologist 21: 99 (1989).]

HAWKSWORTH, D. L. 1989. Notes on aquatic species of Verrucaria in the British Isles. Lichenologist 21: 23 - 28. [Notes on the status of several species.]

LAMBLEY, P. W. 1988. The lichen flora of Norfolk. Trans. Norfolk Norwich Nat. Soc. 28: 13 - 32. [General descriptive account.]

LAUNDON, J. R. 1989. The species of Leproloma - the name for the Lepraria membranacea group. Lichenologist 21: 1 - 22. [Leproloma angardianum (Øvstedal) Laundon comb. nov., L. diffusum Laundon sp. nov., L. diffusum var. chrysodetoides Laundon var. nov., and L. youauxii (Hue) Laundon comb. nov. are new to Britain.]

MCCARTHY, P. M. 1988. New and interesting species of Verrucaria II. Lichenologist 20: 245 - 251. [Verrucaria granulosaria Clauz. & Zehetl., V. papillosa Ach., and V. simplex McCarthy sp. nov. are new to Britain.]

MCCARTHY, P. M. 1988. The lichens of Inishbofin, Co. Galway. Ir. Nat. J. 22: 403 - 407. [187 taxa are listed.]

REDHEAD, S. A. & KUYPER, T. W. 1988. Phytoconis, the correct generic name for the basidiolichen Botrydina. Mycotaxon 31: 221 - 223. [The generic name Botrydina is replaced by Phytoconis Bory for the lichenised omphaloid agarics, and seven new combinations are made.]

ROSE, F. 1988. Phytogeographical and ecological aspects of Lobarion communities in Europe. Bot. J. Linn. Soc. 96: 69 - 79.

RUOSS, E. 1987. Chemotaxonomische und morphologische Untersuchungen an den Rentierflechten Cladonia arbuscula und C. mitis. Bot. helv. 97: 239 - 263. [Cladonia arbuscula (Wallr.) Flotow is divided into three subspecies: subsp. arbuscula (with psoromic acid), subsp. squarrosa (Wallr.) Ruoss comb. nov. (with fumarprotocetraric acid), and subsp. mitis (Sandst.) Ruoss comb. nov. (with rangiformic acid). Specimens with both mixed and reduced chemistries also occur. Maps 7 and 8 are unfortunately transposed.]

SEAWARD, M. R. D. 1987. Effects of quantitative and qualitative changes in air pollution on the ecological and geographical performance of lichens. In HUTCHINSON, T. C. & MEEMA, K. M. (Editors) Effects of Atmospheric Pollutants on Forests, Wetlands and Agricultural Ecosystems: 439 - 450. Springer, Berlin. [Review and discussion, with British distribution maps.]

TEHLER, A. 1988. Dirina massiliensis f. aponina (Massal.) Tehler, a pycnidial anamorph in the lichen genus Dirina (Roccellaceae). Lichenologist 20: 398 - 399. [This pycnidial form is reported from the British Isles and elsewhere.]

WATSON, M. F., HAWKSWORTH, D. L. & ROSE, . 1988. Lichens on elms in the British Isles and the effect of Dutch Elm Disease on their status. Lichenologist 20: 327 - 352. [Detailed survey, including Ulmus nomenclature, etc. Six lichens are considered to be at risk from the widespread loss of elms.]

WIRTH, V. 1987. Die Flechten Baden-Württembergs. Ulmer, Stuttgart. [Fine colour photographs, distribution maps, and notes on the species occurring in Baden-Württemberg, Germany. Lecidea lapicida var. lactea (Flörke ex Schaerer) V. Wirth, Mycobilimbia berengeriana (Massal.) Hafellner & V. Wirth, M. hypnorum (Libert) Kalb & Hafellner, Trapelia granulosa (Hoffm.) V. Wirth, T. viridescens (Schrader) V. Wirth, T. wallrothii (Flörke ex Sprengel) V. Wirth are new combinations relating to Lecidea s. lat., and Protoparmelia atriseda (Fr.) R. Sant. & V. Wirth relates to Lecanora s. lat. Trapeliopsis is considered to be a synonym of Trapelia.]

WOLSELEY, P. A. & O'DARE, A. M. 1989. Exmoor Woodland Lichens Survey 1987 - 1988. Somerset Trust for Nature Conservation, Bridgwater. [£5.00. Excellent detailed report on the lichen vegetation, well illustrated with maps, tables, figs, and photographs.]

PUBLICATIONS FOR SALE

Orders to Mr J.M. Gray, Myrtle Cottage, Church Lane,
Kingston St Mary, Taunton, Somerset TA2 8HR

Price

Bulletin 32, 39, 41, 44, 46, 48 - 64 £1.50
(£3.00 to non-members)

Literature Guide by Hawksworth (1970) £1.00

Conservation by Gilbert (1975) £1.00

A new guide to microchemical techniques
for the identification of lichen substances
by F.J. White and P.W. James (1985)
(Suppl. to Bulletin 57) £1.50

Check-list of British Lichen-forming,
Lichenicolous and Allied Fungi by Hawksworth,
James and Coppins (1980) £4.00
(£6.00 to non-members)

A key to the Lichen-forming, Parasitic,
Parasymbiotic and Saprophytic Fungi occurring
on Lichens in the British Isles by Hawksworth £3.00
(£5.00 to non-members)

Cheques/PO payable to the British Lichen Society,
Remittance must accompany order (note all items
post free).

Back numbers of the Lichenologist can be obtained from
Academic Press, 24 Oval Road, London NW1 7DX.

Members must state that they belong to the Society
and are therefore entitled to a discount.

Lichen Atlas by M.R.D. Seaward and C.B.J. Hitch (1982)
from The Institute of Terrestrial Ecology, Merlewood Research
Station, Grange-over-Sands, Cumbria. LA11 6JU.

Cost to members £3.85 (post free).

When ordering please state you are a member of the Society.

Cost to non-members £4.50.

MEMBERSHIP AND SUBSCRIPTION RATES
for 1989 ONLY

ORDINARY MEMBERSHIP for individuals (i.e. not available to Institutions) who have signed the Application Form and paid the subscription being entitled to all publications and facilities of the Society £15.00

JUNIOR ASSOCIATE MEMBERSHIP: for persons under 21 or under 25 if receiving full time education being entitled to all publications (except The Lichenologist) and all facilities of the Society £ 5.00

LIFE MEMBERSHIP for persons of 60 years and over and having the same entitlement as ordinary members (10 x subs rate) £150.00

BULLETIN ONLY for non-members and Institutions £ 6.00

LICHENOLOGIST ONLY: Institutions rate. Available from Academic Press £80.00

Cost of back issues to members (less 60%) £32.00

PLEASE NOTE THAT THESE SUBSCRIPTION RATES APPLY FOR 1989 ONLY

Please pay subscriptions to:-

J.M.GRAY, Assistant Treasurer, British Lichen Society,
Myrtle Cottage, Church Lane, Kingston St. Mary, TAUNTON
Somerset TA2 8HR. Phone 0823 45 636

SOCIETY'S GIRO NUMBER IS 24 161 4007

CONTENTS

Lichens and Historic Works of Art	M.R.D. Seaward	1
January Meetings 1989	T. Moxham	7
Noel Tallowin: 1908 - 1988	T.D.V.S.	12
A.G. (Trudy) Side	F.H.B.	14
Lichenologia	Cudbear	15
Country Diary: North-East Yorkshire	A. Fryday	18
Some retrospective waffle	G. Dobbs	21
Neglected habitats	B.J. Coppins	25
Increase in the population of <u>Fulgensia fulgens</u> on the Isle of Wight	C. Pope	26
Ancient trees and the great storm	O. Rackham	28
Further recolonisation of Cheshire by epiphytic lichens	J. Guest	29
Two ethnographic lichen garments	A. Henderson	31
N.C.C. Lower Plant Specialist	N. Hodgetts	33
Agony Column	Nora Lec	34
Two new books on polar cryptogams		36
Flora Abbey Grovensis	P. Earland-Bennett	37
Approaches to lichen aesthetics 3	A. Henderson	38
New, rare and interesting British Lichen records		40
Secretary's Report for 1988	T. Moxham	41
New subscription rate for 1990		43
Special General Meeting		43
A.G.M. 1990 - Diary date		44
New Members		45
Literature pertaining to British lichens	J.R. Laundon	46

BULLETIN 64. Issued by the British Lichen Society,
c/o Department of Botany, British Museum (Natural History),
Cromwell Road, London, SW7 5BD (Telephone 01-589 6323
ext.552). Edited by O.L. Gilbert, Dept. of Landscape
Architecture, The University, Sheffield, S10 2TN who is author
of all unsigned articles, except Lichenologia. The view of
contributors are not necessarily those held by the British
Lichen Society.

Published by Tradeprint-Cromworth, 515 Abbeydale Road,
Sheffield, S7 1FU.

ISSN 0300 - 4562