

BRITISH LICHEN SOCIETY

BULLETIN

25 p

December 1972

No. 31

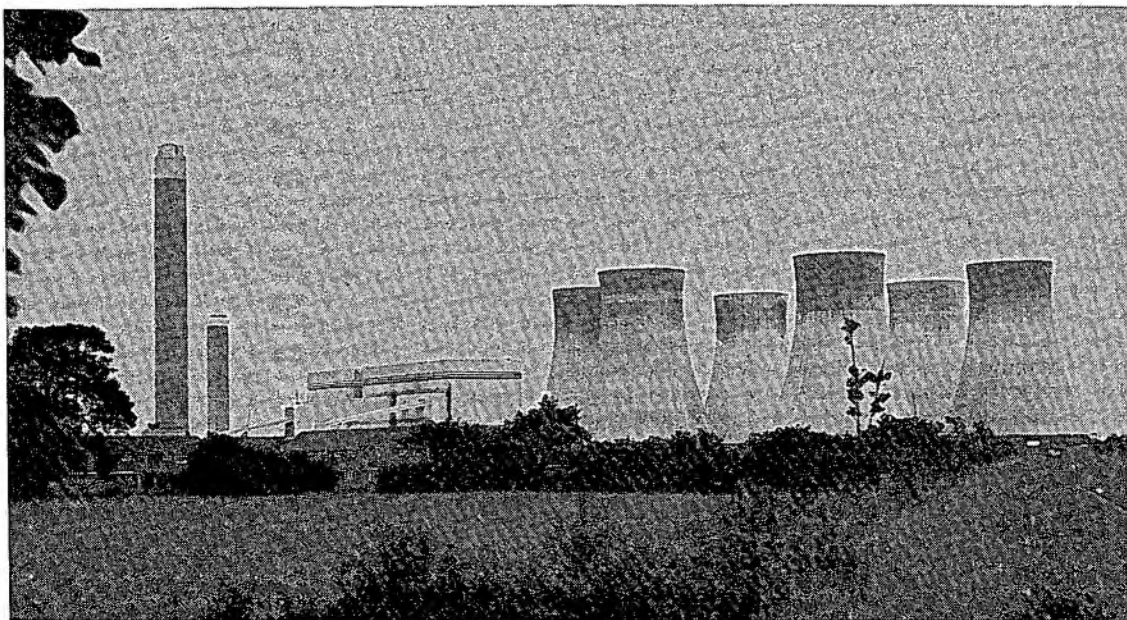
President: D. C. Smith, M.A., D.Phil.

Sulphur dioxide emissions reach highest level ever

On the 20 July 1972 the Government gave ministerial planning consent for the construction of four new major power-stations in Britain: Drax II, near Selby, Yorkshire (coal-fired), Killingholme, near Immingham, Lincolnshire (oil-fired), Littlebrook D, near Dartford, Kent (oil-fired) and Sizewell B, near Aldeburgh, Suffolk (nuclear). Consent for a proposed nuclear power-station at Connah's Quay, near Flint, was refused. On 8 August it was reported that a large oil-fired power-station was to be built at Boddam, near Peterhead, Aberdeenshire. The verdict on the proposed Millbrook station near Plymouth, opposed by the Society, has not yet been announced. Four of the new stations will be situated near existing works. The station at Killingholme will be amongst the highest capacities in Britain, producing 4,000 megawatts.

The rapid construction of new power-stations in Britain, of much larger capacities than the older stations, is viewed with increasing apprehension by those concerned with the environment. All new coal and oil-fired stations

Drax I power-station, near Selby, Yorkshire. This coal-fired power-station is designed to produce 3,960 megawatts, the largest capacity of any generating station at present under construction in the United Kingdom. The chimney on the left rises to 255 m (850 ft) and is the tallest in Europe. Britain's tall chimneys are partially blamed in Scandinavia for the doubling of the acidity of their rainfall during the past decade. Photograph: J. R. Laundon 1972.



are provided with tall chimneys which carry sulphur dioxide pollution high into the air. The Central Electricity Generating Board contends that in this way the pollution is discharged in a manner which contributes little to the concentration at ground-level, and indeed their staff have been active in publishing articles to put this view across. However the gases from these tall chimneys obviously contribute to the background pollution, and it is this background pollution which has such a devastating effect on lichen epiphytes right across the North European Plain, so that some countries (e.g. Denmark, The Netherlands) are now completely devoid of any entirely natural epiphytic vegetation (i.e. communities unaffected by air pollution).

Work at Warren Spring Laboratory, Stevenage, shows that the total emissions of sulphur dioxide in the United Kingdom have now reached their highest level ever: six million tonnes were emitted in 1971. Thus the widely expressed views of the past few years that the emission level would now decline have proved to be erroneous. Sulphur dioxide emissions from both industrial and domestic premises in Britain have gradually declined over the years since 1950, whilst the emissions from electricity generating stations have nearly trebled between 1950 and 1970. In fact, the laboratory reports "the large increase in total emissions of sulphur dioxide is due, solely, in fact, to emissions from electricity generating stations." It is only because this additional pollution is emitted from tall chimneys that the average ground-level concentrations continue to fall. Each year the Central Electricity Generating Board is adding an average of more than 2,500 megawatts to their generating capacity, and over 50 per cent. more output is now available than in 1963.

Work on background pollution is now being carried out at Warren Spring Laboratory, partly under an O.E.C.D. (Organisation for Economic Co-operation & Development) project. The conventional methods of measuring sulphur dioxide have proved inaccurate for low concentrations, and therefore methods are being deployed under this project which overcome this difficulty. Nine sites within the British Isles are being used to monitor background pollution. Aircraft sampling of pollutants is also being carried out to determine the drift of sulphur dioxide over the North Sea. Directional samplers used on land in Ireland have demonstrated that westerly winds from the Atlantic are carrying no sulphur dioxide across from North America, but samplers deployed in Norfolk show that sulphur dioxide comes across the North Sea from the Continent when the wind is in the east. Background measurements have now been made for three years, and there has been so far no significant overall change in the background level of sulphur dioxide within the United Kingdom. This work is continuing and it is hoped that some of the early results might be published next year.

The only power-stations where sulphur dioxide has been removed from the chimney gases over many years are at Battersea and Bankside in London, and at Battersea this process has been discontinued. At Bankside the flue gases are washed with water from the Thames, and over ninety per cent. of the sulphur dioxide is removed. Other processes have been tried out at Fulham in London and at North Wilford in Nottingham. The time is now due for further concerted work on the difficult problem of the removal of sulphur dioxide from flue gases, as well as on the building of desulphurisation plants for oil, in which sulphur could be removed before the oil was used in power-stations. Nuclear stations produce no sulphur dioxide pollution, but because of site and safety difficulties they appear unlikely to be built in sufficient quantity to provide an immediate answer to air pollution problems. It is only when sulphur dioxide is removed from the flue gases of most large power-stations that a significant decline in sulphur dioxide emissions will be achieved.

Mapping and conservation meeting, 5 January 1973

A joint meeting of members, interested in mapping and/or conservation to discuss common problems and policy has been suggested for the afternoon of Friday 5 January 1973 at 14.00 in the Board Room, British Museum (Natural History), Cromwell Road, London SW7 5BD. Members wishing to attend this meeting must return the form at the end of this Bulletin to Dr. Seaward, who will inform them if there is sufficient support for the meeting to take place.

Nominations for Officers and Council

Nominations for Officers for 1973 and Council Members for 1973 - 74 should be sent to the Secretary before 23 December 1972 on the enclosed form. No person shall be nominated without their consent. Mr R. H. Bailey, Mr B. J. Coppins and Mr J. F. Farrar retire from the Council and are not eligible for re-election.

Annual General, Lecture and Exhibition Meeting, 6 January 1973

The Annual General Meeting will be held at 10.00 on Saturday 6 January 1973 in the Department of Botany, Imperial College, Beit Hall, Prince Consort Road (north side), South Kensington, London SW7, by kind invitation of Professor A. J. Rutter, head of the Department. The nearest Underground station is South Kensington, and Exhibition Road connects this station with Prince Consort Road. The Department is immediately to the south of the Albert Hall. It is hoped that all members will endeavour to attend.

Agenda

1. Apologies for absence.
2. Minutes of the last Annual General Meeting.
3. Matters arising.
4. Reports of the officers.
5. Place and dates of autumn meeting, 1973.
6. Place and dates of annual general, spring and summer meetings, 1974.
7. Election of auditor.
8. Election of three members of Council.
9. Election of officers.
10. Any other business.

J. R. LAUNDON
Honorary Secretary

Following the Annual General Meeting there will be the exhibition meeting from 11.00 until 12.00. Members are asked to make a special effort to contribute exhibits of lichenological interest. Demonstrations should include a title and name of exhibitor.

The lecture meeting will continue in the afternoon in the same building. The lectures will deal with lichenological investigations in exotic countries, including the showing of colour transparencies, and they should therefore be of wide appeal. The full programme is as follows:

- 10.00 Annual General Meeting.
- 11.00 Exhibition Meeting.
- 12.00 Lunch. Members are kindly requested to make their own arrangements. The restaurants Daquise, Thurlow Street, and The Hayloft, Harrington Road, both near South Kensington Station, are recommended.
- 14.00 Lecture; T. D. V. SWINSCOW: Lichens in tropical Africa - systematics and ethics.
- 14.30 Lecture; D. JACKSON HILL: (To be announced)
- 15.00 Tea interval.
- 15.30 Lecture; PAULINE B. TOPHAM: Lichen habitats near Mestersirg, north-east Greenland.
- 16.00 Lecture; A. PENTECOST: The lichen vegetation of Ruwenzori.

Spring field meeting at Cardigan, 1973

The spring field meeting will be centred on Cardigan, Wales, from Wednesday evening 18 April 1973 to Wednesday morning 25 April, under the leadership of Dr F. Rose. The Angel Hotel, Cardigan (Telephone: Cardigan 2561) (10 rooms; bed & breakfast £1.70; dinner £1.00) will be the headquarters accommodation and members should meet outside the hotel at 9.30 on Thursday 19 April. The local secretary, Mr S. N. Tallowin, The Moat, Llandyry, Kidwelly, Carmarthenshire, will supply details of suitable guest house accommodation on request, and will also try to arrange transport from Carmarthen station for those without cars if notified well in advance. There is a twice daily bus from the railhead at Carmarthen to Cardigan. Members must book their own accommodation and return the enclosed form to Mr Tallowin. Packed lunches will be required each day.

Summer field meeting in Kintyre, 1973

The summer field meeting will be in Kintyre, Scotland, under the leadership of Mr P. W. James, with Dr Pauline B. Topham as local secretary. The first part will be centred on Lochgilphead, Argyllshire, from Saturday evening 28 July 1973 until Saturday morning 4 August. Early booking is essential. The Stag Hotel will be the headquarters and members should meet outside here at 10.00 on Sunday 29 July. Members must book their own accommodation and return the attached form to Dr Topham. Packed lunches will be required each day. There is a Western S.M.T. bus service from Blythswood Street, Glasgow, at present at 15.30 arriving at Lochgilphead at 18.49. At present a train leaves Euston, London, at 8.00 arriving Glasgow at 14.45. Members who might have difficulty with travelling arrangements, and persons willing to take members from Glasgow in their cars, are kindly asked to inform Dr Topham, 27 Oxford Street, Dundee (Telephone: Dundee 68543). Accommodation at Lochgilphead is given below, but prices may be higher than those indicated and members should check when they book.

- Argyll Hotel, (telephone: Lochgilphead 203). 5 single, 5 double. Bed & breakfast £1.63 - £1.87. Full board £15.50 - £17.50 per week. AA (one star).
- Stag Hotel (headquarters) (telephone: 515). 5 single, 20 double. Dinner, bed & breakfast £18.50. Full board £22.50. AA (two star).
- Victoria Hotel (telephone: 338). 2 single, 8 double. Bed & breakfast £1.50 - £1.75. Full board £16 - £18. AA (one star).
- Mrs Ferguson, 23 Lochnell Street (telephone: 311). 1 double, 1 double with single. Bed & breakfast £1.13.
- Mrs McQuatter, Victoria Buildings, Union Street. 3 double. Bed & breakfast £1.05.
- Mrs Mitchell, Fernlea (telephone: 528). 3 double. Bed & breakfast £1.22.
- Mrs Smith, 4 Rowan Park. 1 double. Light supper, bed & breakfast £1.25.

From Saturday evening 4 August 1973 until Wednesday morning 8 August, Campbeltown, Argyllshire, will be the centre. The Argyll Arms Hotel will be the headquarters and members should meet outside here at 10.00 on Sunday morning, 5 August. A selection of accommodation at Campbeltown is as follows:

- Ardshiel Hotel (telephone: Campbeltown 2133). 4 single, 10 double. Bed & breakfast from £1.90. Full board from £17.25 per week.
- Argyll Arms Hotel (headquarters) (telephone: 2408). 5 single, 43 double. Bed & breakfast £2.25; dinner from £1.25. Full board £16.80 - £18.90 per week.
- White Hart Hotel (telephone: 2440). 10 single, 11 double. Bed & breakfast from £1.50; full board from £19.95 per week.
- Mrs Haddow, 62 Longrow (telephone: 2361). 1 single, 2 double. Bed & breakfast £1.25.
- Mrs MacLachlan, Craigdhu Mansions, New Quay Street (telephone: 2693). 2 double. Bed, breakfast and evening meal £1.37.
- Westbank, Dell Road (telephone: 2452). 7 double. Bed & breakfast from £1.37.

For the return journey the bus leaves Campbeltown at 10.00 arriving Tarbert at 11.30. The bus leaves Tarbert at 12.05 arriving Glasgow at 15.50. BEA flight leaves Campbeltown at 10.55 arriving Glasgow 12.05. At present trains leave Glasgow at 13.40 and 16.00 to arrive in London the same day; members travelling by bus to Glasgow would require an overnight journey or stop.

The area has many interesting archaeological sites, gardens, castles, etc., as well as golf, fishing and pony-trekking, which might interest members' families.

Field courses 1973

DEVONSHIRE. Slapton Ley Field Centre, Slapton, Kingsbridge, TQ7 2QP. 1 - 8 August.
Lichens. D. L. Hawksworth.

PEMBROKESHIRE. Dale Fort Field Centre, Dale, Haverfordwest. 8 - 15 August.

The lichens of the Dale peninsular and offshore islands. B. W. Ferry.

PEMBROKESHIRE. Orielson Field Centre, Pembroke. 15 - 22 August. Lichens.

P. W. James.

The centres will supply further details and information regarding bursaries and grants available for those who attend.

Society holds meeting with Central Unit on Environmental Pollution

Four representatives of the Council of the British Lichen Society had an amiable hour-long meeting with Dr Martin Holgate, director of the Central Unit on Environmental Pollution, at the Department of the Environment, Marsham Street, London SW1, on 21 April 1972. The Society was represented by Dr Hawksworth, Mr James, Mr Laundon and Dr Rose. A report on the effects of air pollution on the British lichen flora was submitted by the Society, and the representatives expressed their concern verbally at the meeting. Dr Holgate and his colleagues said that they appreciated the position and the views of the Society would be given careful consideration.

Meeting with Nature Conservancy

Five representatives of the Lichen Site Committee of the Society had a two hour meeting with Dr Derek Ratcliffe at the Nature Conservancy in London, on 10 October 1972. The Committee was represented by Dr Hawksworth, Mr Haynes, Mr James, Mr Laundon and Dr Rose. The revised list of designated lichen sites was fully discussed, and the Conservancy requested that a resolution should be forwarded to them, together with a financial forecast for future needs for research. The representatives agreed to these suggestions.

Treasurer's change of address

The Treasurer, Mr S. A. Manning, has changed his address to 10 Alliance Court, Hills Road, Cambridge CB1 4XE.

As reported in Bulletin 30, subscriptions go up on 1 January 1973 to £3 to ordinary members and £2 for junior members. Family membership is unchanged.

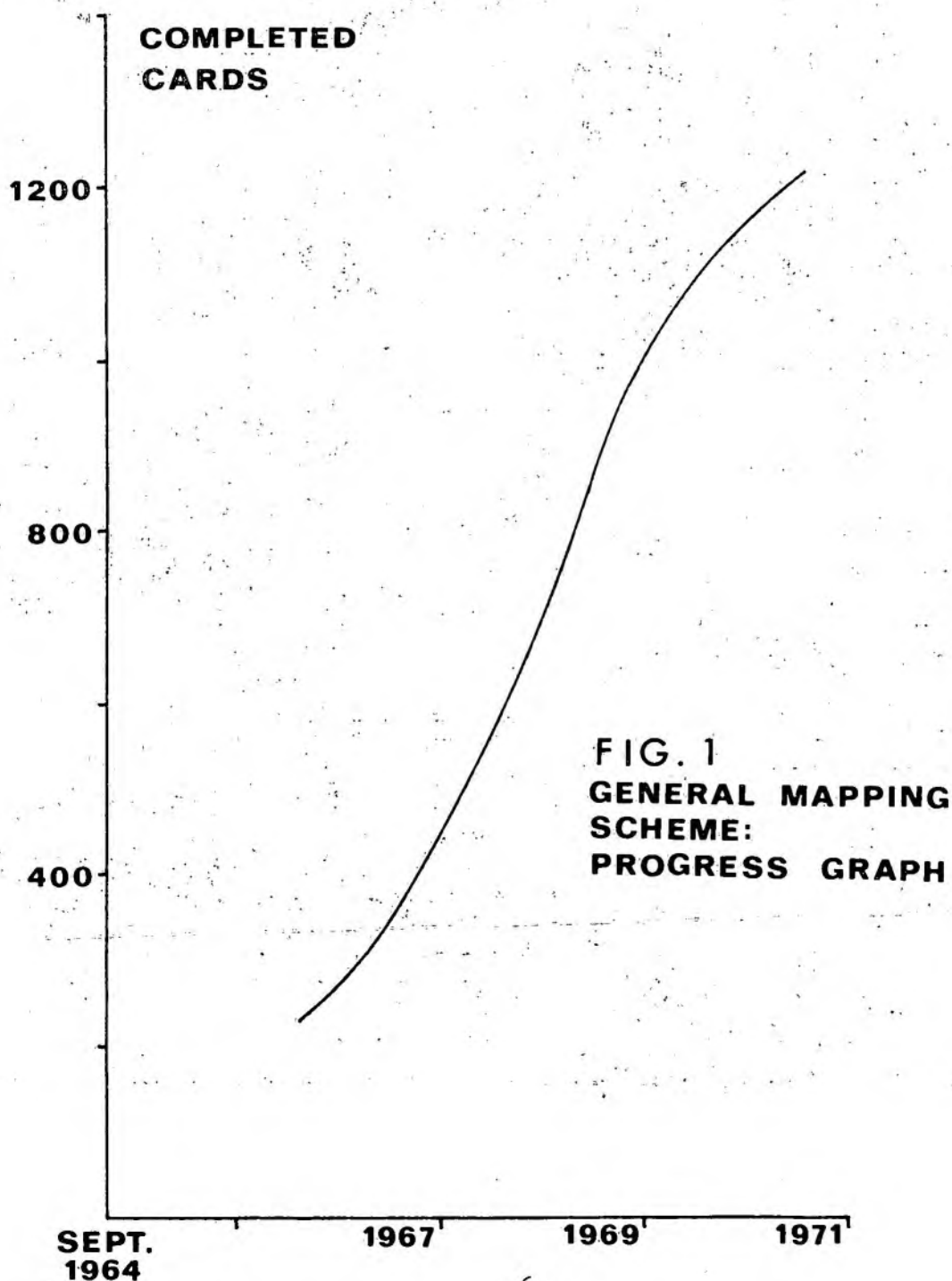
Paraphenylenediamine

Supplies of p-phenylenediamine (Pd) are available from the Secretary, Mr J. R. Laundon, Department of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD (telephone: 01-589 6323 ext. 552) for collection by hand. A 25 g bottle costs 50 p. It is regretted that it cannot be supplied by post. See Bulletin 26: 5 (1970) for the hazards of this chemical.

Distribution maps scheme

The S trend of the progress graph (Fig. 1) is characteristic of a steady return of completed cards and the consolidation of under worked squares which have previously been classed as "completed". The distribution map (Fig. 2) indicates the squares for which general mapping cards have been compiled. Although at first glance there does not appear to be a significant increase in the number of squares covered since the map compiled in December 1969 (see Bulletin 26: 4 (1970)), there have been better returns from the Midlands and north of England. A more detailed map of the number of species recorded per 10 km grid square will be appearing later. At present there are over 1300 squares covered.

M. R. D. SEAWARD



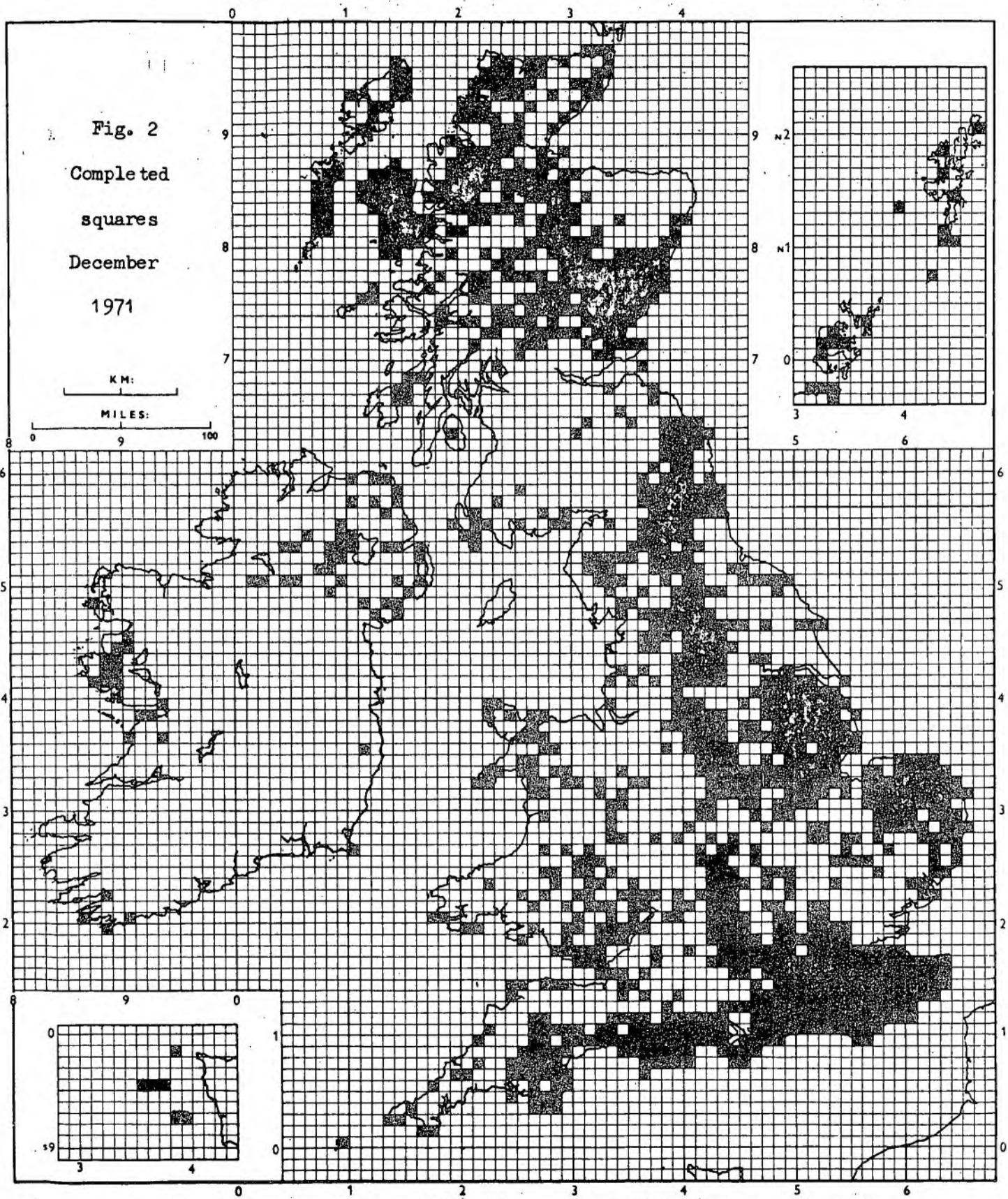


Fig. 3 Vice County Boundaries

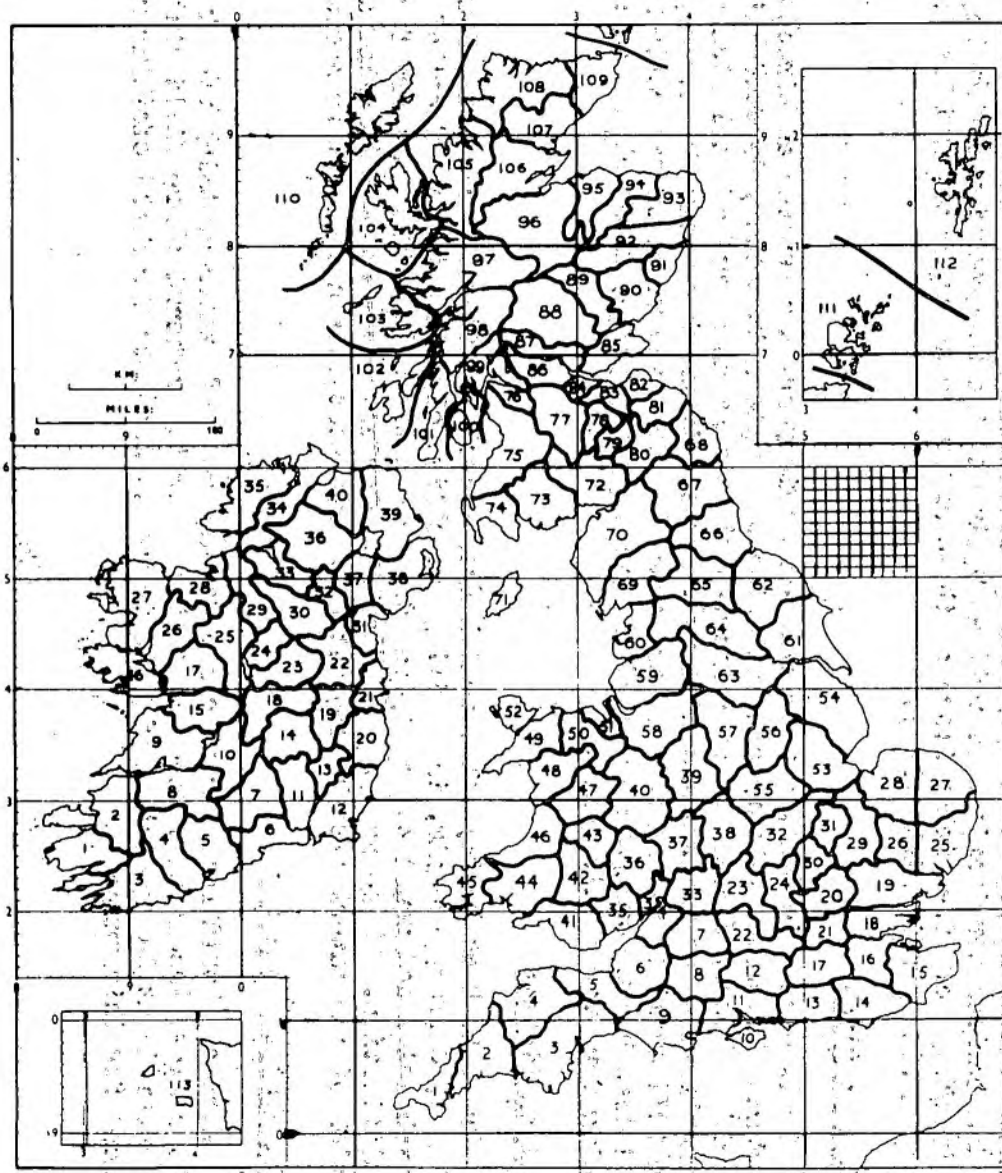
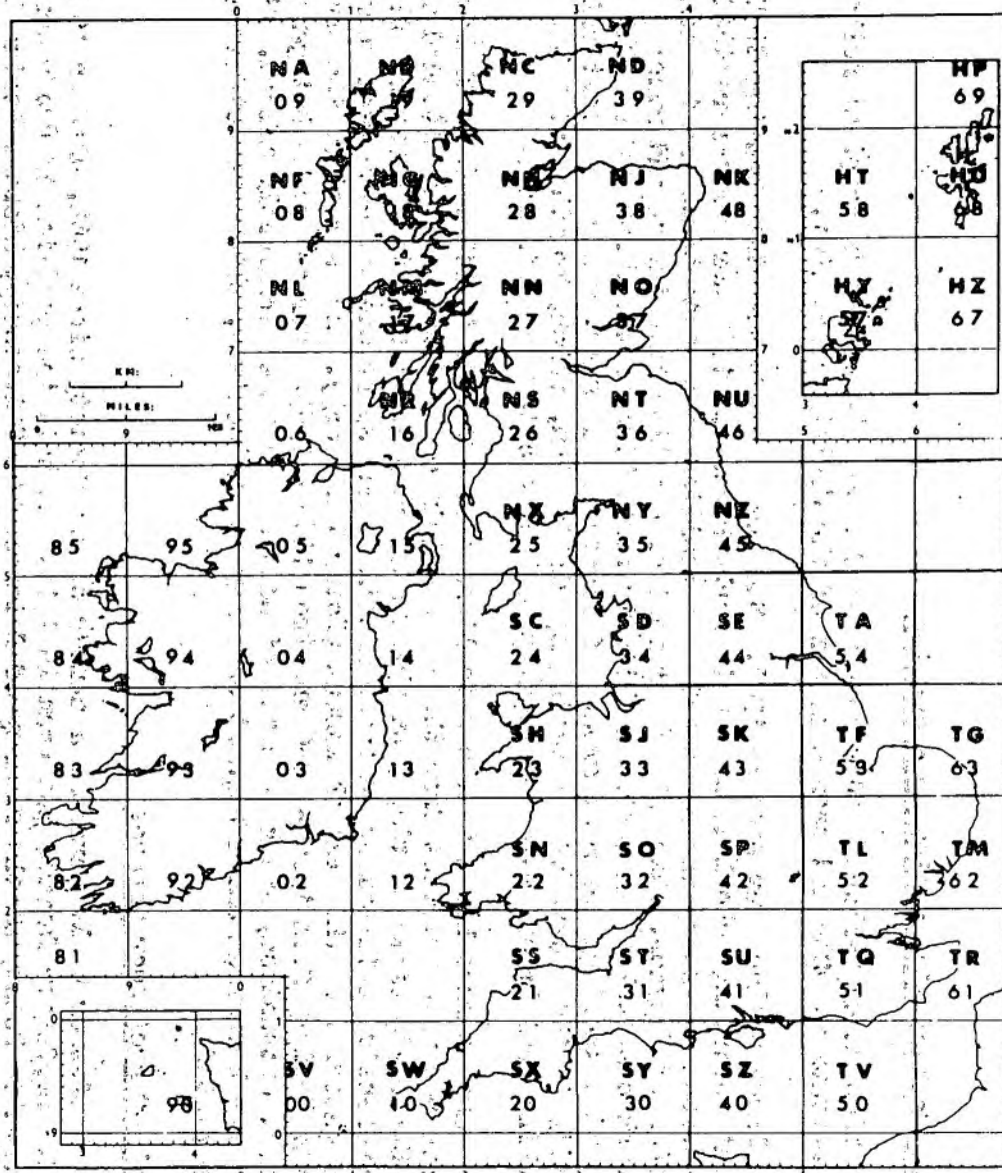


Fig. 4

Conversion from letters to numbers of 100 Km. squares of the Nat. Grid.



Nancy Wallace dies following operation

Miss Nancy Wallace died suddenly on 2 June 1972 whilst in hospital following an eye operation. She had been a member of the Society since 1961.

Nancy Wallace was born in 1907. She spent most of her life running St Wystan's private boarding school at Repton in Derbyshire. In 1966 her partner retired and the school was sold, and she obtained a position in a state school in the London Borough of Croydon, where she spent most of her time building up and running the Borough's school field centre at Pilgrim Fort, high on the North Downs. She had a very wide knowledge of most groups of plants and animals, a rare and most valuable quality in these days of increasing specialisation, which, together with her teaching abilities, made her ideally suited to a task of this kind.

Nancy turned her attentions to lichens rather late in life. Nevertheless they became her main interest from the day she joined the Society. She attended most of the Society's field meetings, on which she was a great help to beginners. She made comprehensive collections on these meetings, and spent one day each week working on this material at the British Museum (Natural History). She served on the Council of the Society from 1965 - 1966 and from 1968 - 1969. Her outspoken but generous nature, enthusiasm, and keen sense of humour will make her greatly missed. She has left her herbarium and a bequest of money to the Society, which are both greatly appreciated.

Death of Professor Tavares

Professor C. N. Tavares, a member of the Society since 1962, died on 16 May 1972. Professor Tavares was born in 1914. He held the position of Professor of Systematic Botany at the Faculty of Science, The University, Lisboa, Portugal. He was the leading authority on Lusitanian lichens, and contributed many valuable detailed taxonomic papers of very high quality dealing with the lichens of Portugal and its African territories, as well as Spain and the Macaronesian archipelagos. His knowledge of the lichen flora of these areas was unsurpassed, and his death leaves a wide gap in lichenology.

Dr Lamb retires

Dr I. Mackenzie Lamb, who is sixty-one this year, has retired as Director of the Farlow Reference Library and Herbarium of Cryptogamic Botany, Harvard University, Cambridge, Mass., U.S.A. Dr Lamb started his career as a professional lichenologist at the British Museum (Natural History), London, in which capacity he was employed from 1934 until 1946. He expects to spend the first two years of his retirement completing his monographic study of the genus Stereocaulon, on which he has been working for over twenty years.

Fungi on lichens

Dr D. L. Hawksworth, Commonwealth Mycological Institute, Ferry Lane, Kew, Richmond, Surrey, TW9 3AF, is studying the obligately lichenicolous fungi of the British Isles and would be very pleased to receive specimens from members for identification. Where possible sufficient material should be sent to allow a portion of the material to be kept at Kew. The host lichen need not be named.

Field clothing and tax

Members should remember to claim for the cost of their clothing worn in the field against income tax, when completing their tax returns, where field studies are carried out in connection with their work. Receipts for field clothing should be kept for this purpose.

Elm epiphytes in danger

Dutch elm disease, caused by the fungus Ceratocystis ulmi being transmitted by bark beetles of the genus Scolytus, is now affecting so many elm (Ulmus) trees in England that the lichen communities which occur on their bark are themselves placed in danger. Elm trees are the chief habitat of the widespread lichen federation Buellion canescens, described by Barkman in 1958, a nitrophilous community of rough bark; in addition there are individual species of lichens (e.g. Caloplaca luteoalba) which show a preference for elm.

Although Dutch elm disease was first recorded in Britain in 1927, it is only in recent years that a virulent strain has spread. According to R. C. Welch of the Nature Conservancy, writing in the 24th Annual Report of the Huntingdonshire Fauna & Flora Society (1972), over 2 million of Lowland Britain's estimated 18 million elms had been affected with disease by August 1971. The disease was worst in the southern counties, with 12 per cent. of trees in Kent having been killed, compared with under 1 per cent. in some east Midland counties. Further severe attacks have occurred in 1972 and at least 400,000 elms have been felled; in some London boroughs no groups of elms can now be found which do not contain diseased trees. The disease is readily recognised in summer by the presence of some dying branches, on which all the leaves are brown and dead. As felling of affected trees is the usual policy for attempting to stop the spread of the fungus, many areas are already becoming barren, unattractive and uninteresting. It appears that the elm is in danger of becoming rare in parts of England. Members are therefore urged to take the opportunity to study and report on the communities which occur on elm bark before it is too late.

Clean air research packs using lichenology

A Clean Air Research Pack was produced by Things of Science (Cambridge) Ltd., Advisory Centre for Education, 32 Trumpington Street, Cambridge, England, to enable children to investigate air pollution during the summer. It was hoped that 10,000 children would take part in the inquiry which was organised in association with The Sunday Times.

The pack was designed not only to teach children the facts regarding air pollution, but to enable them to carry out three investigations of pollution. One was to take the pH of rain-water and bark, and litmus was provided for this purpose. The other two investigations involve the use of lichens as indicators: "doomwatch dials scattered over our cities and villages" as The Sunday Times described them. The first of these was to record the lichen vegetation (corresponding to five zones of decreasing pollution) on trees of which the pH was tested, and the second was to map seven lichen zones on a map chart.

The pack was very well produced and was sold for 97 p post free from the Advisory Centre for Education. Six packs were 380 p and additional packs 55 p each. The results of the survey have been analysed by the Nature Conservancy at Monks Wood, in conjunction with Dr O. L. Gilbert, and will be published in The Sunday Times. Dr Gilbert hopes to provide a report for a later number of the Bulletin.

Bristol lichen records required

Dr D. H. Brown, Department of Botany, The University, Woodland Road, Bristol BS8 1UG, would appreciate receiving records as soon as possible of lichens, of work carried out, and of literature references for a contribution which is being compiled for the Bristol Flora. The area is bounded approximately by the River Severn, Berkeley (Gloucestershire), Bath and Shepton Mallet (Somerset).

Control of lichens

Lichens have been featured in two recent publications on plant diseases (New South Wales Dept. Agric. Biol. Chem. Res. Inst., Plant Disease Bull. 135, ed. 2, 1971; U.S. Dept. Agric., Cooperative Extension Service, Plant Diseases E.M. 3421, revised ed., 1971). The American bulletin points out that "they do not directly injure the plant on which they grow. Heavy growth, however, may have a 'suffocating' effect and can reduce the sunlight reaching the leaves. Some people like the hitch-hiking plants as they add a bit of colour to shrubbery and trees during the winter. At times, however, their growth becomes objectional or unsightly, and it is desirable to control it."

For lichens on trees spraying with (a) tribasic copper sulphate (four teaspoonfuls per one gallon of water), (b) lime sulphur (six gallons per 100 gallons of water), (c) copper oxychloride, or (d) Bordeaux mixture (four lb copper sulphate, four lb quick-lime, per 50 gallons of water) is advised. A 'spreader-sticker' should be added to the tribasic copper sulphate. The treatments should be carried out during the dormant period and the sprays prevented from coming into contact with evergreen plants. For lichens on buildings a fine spray of either (a) power kerosene, or (b) diesel distillate, is recommended, as copper sprays may leave stains. In both cases the lichens may cling for some time but can be readily removed with a stiff brush.

It is hoped that in the interests of conservation such practices do not become widely adopted in the British Isles.

D. L. HAWKSWORTH

Funds for botanical meetings

The botany subcommittee of the British National Committee for Biology which is responsible for the administration of the International Botanical Congress (Edinburgh) Fund, agreed at its last meeting that the first priority in its use should be the next International Botanical Congress to be held in Leningrad in 1975, but that some funds should be used in the meantime to assist young botanists to attend meetings in the intervening years if suitable applications were received. The closing date for the receipt of applications for 1973 is 31 March 1973. Application for the relevant form should be made to the Executive Secretary of the Royal Society at 6 Carlton House Terrace, London SW1.

Warburg memorial fund

The Warburg Memorial Fund is administered by a joint committee of officers of the Botanical Society of the British Isles and the British Bryological Society. It is intended that a travelling scholarship be awarded every second year to a botanist under the age of 21 for field-work in the British Isles or elsewhere. The Fund's rules require that the committee should approve the applicant's project before making an award, and requests the successful applicant to submit a report on the work carried out.

Very few applications have recently been received by the committee, and it is hoped that by 1974 (when the next award can be made), more young botanists will apply for help with their field-work. Applications should be sent to the Secretary of the British Bryological Society, Dr D. H. Dalby, Department of Botany, Imperial College, Prince Consort Road, London SW7.

An award of £75 was made this year to Miss R. Kidman-Cox, of Bristol University, as a contribution towards her expenses in collecting plants in Sabah.

Botanical research fund

The Botanical Research Fund is a small private trust fund founded in July 1913. Its purpose is to encourage research in botany in all its branches and to assist research workers, especially women who may not be eligible for grants from public or university funds.

Short term grants of the order of £50 or £100 are given in aid of maintenance or research expenses. The grants may be renewed in special circumstances, but assistance over lengthy periods is not contemplated.

Applications may be submitted at any time and no special form is needed. Applicants should normally be graduates and may be of any nationality, but consideration will be given to applications from non-graduates provided they are supported by a graduate who is known personally to the applicant and is qualified to express an opinion about the status and value of the work to be undertaken. Further details may be obtained from the Secretary, Dr M.A.P. Madge, 6 Rosamond Court, Burton Bradstock, Bridport, Dorset.

New Members

The following new members joined the Society between April and October 1972..

F.M. = family member.

- Armitage, B. J., Department of Biology, VPI & SU, BLACKSBURG, Virginia 24061, U.S.A.
Bedford, J. J., 26 Buxton Drive, NEW MALDEN, Surrey.
Bostom, A. G., 250-17 Rushmore Terrace, LITTLE NECK, New York 11362, U.S.A.
Brown, G. F., F.L.S., Ladywood, Park Road, WEST HAGLEY, Worcestershire.
Csizmarik, J. I. G., Sheko, Whitechurch Road, DUBLIN 14, Irish Republic.
Davis, Mrs M., Black Fox Cottage, Ripsley, LIPHOOK, Hampshire. (F.M.)
Davis, R., Black Fox Cottage, Ripsley, LIPHOOK, Hampshire.
Frearson, Mrs E., Rydal, Old Derby Road, ASHBOURNE, Derbyshire.
Gordy, Mrs V. R., P.O. Box 824, LA MARQUE, Texas 77568, U.S.A.
Iqbal, S. H., Department of Botany, New University Campus, LAHORE, Pakistan.
King, Miss L., Balls Park College of Education, HERTFORD.
Lane, A. M., 35 Albacore Crescent, Lewisham, LONDON SE13.
Maclean, H. G., 22 Kinellan Drive, STRATHPEFFER, Ross-shire.
Nourish, R., 56 Barff Road, Weaste, SALFORD 5, Lancashire.
Perry, Mrs A. R., c/o Department of Botany, National Museum of Wales, CARDIFF. (F.M.)
Pierce, D. A., P.O. Box 391, Middle Tennessee State University, MURFREESBORO, Tennessee 371030, U.S.A.
Plastow, S. R., 63 Cromwell Road, Wimbledon, LONDON SW19.
Pointing, Miss C. M., Balls Park College of Education, HERTFORD.
Ramkaer, K., Institut for Sporeplanter, Øster Farimagsgade 2D, 1353 KØBENHAVN K, Danmark.
Robare, R. D., Star Rt. Box III, OAKRIDGE, Oregon 97463, U.S.A.
Stevens, G., 22 Cavendish Close, DOVERIDGE, Derbyshire.
Thomas, E., Box 5496 LIMBE, University of Malawi, Malawi.
Uitzinger, Miss E., Waalbandijk 38, OPIJNEN (Betuwe), Netherlands.
Warland, A.L., The School House, Churchill, OXFORD, OX7 6NJ.
Warland, Mrs M. R., The School House, Churchill, OXFORD, OX7 6NJ. (F.M.)
Wilkie, I., 12 Stuart Street, MILLPORT, Isle of Cumbrae, Buteshire.
Woods, F. R., 20 Burley Close, Norbury, LONDON SW16 4QQ.
Yardley, C., Crown Woods School, Riefeld Road, LONDON SE9.

Farm Nature Reserves in Wales

In an effort to preserve items of interest on farm land, the Carmarthen Branch of the West Wales Naturalists' Trust is enlisting the help of farmers and owners to designate their land as Farm Nature Reserves. These Reserves would not be open to the public, but only to those asking permission. Many farmers are unaware of the scientific interest on their land until it is pointed out to them. Information on this scheme is available from S.N. Tallwin, The Moat, Llandyry, Kidwelly, Carmarthenshire.

Symposium on Britain's changing flora and fauna

The Systematics Association is holding a symposium on the changing flora and fauna of Britain at the University of Leicester from Wednesday 11 April to Friday 13 April 1973. Specialists in all major groups of plants and animals will give accounts of changes which have occurred in the British Isles since about 1800. Speakers already arranged include C. Booth, A. S. Cooke, G. B. Corbet, K. F. Corbett, E. A. G. Duffey, J. Flegg, D. L. Hawksworth, J. Heath, E. W. Jones, T. T. Macan, J. A. Marshall, K. Mellanby, F. H. Perring, I. Presst, D. A. Reid, F. Rose, K. G. V. Smith, B. A. Whitton and K. Williamson. This should prove a most important meeting, and will enable an assessment to be made of the various factors which have led to the changes described for the groups of organisms. The meeting and resultant publication should therefore appeal to a wide spectrum of taxonomists, ecologists and other naturalists. Accommodation will be in one of the University Halls of Residence and the registration fees (excluding accommodation) will be £2.00 for members of the Systematics Association, £1.00 for students and £4.00 for others. Dr D. L. Hawksworth is scientific organiser for the meeting. The full programme is available from Dr P. Parker, Botanical Laboratories, The University, University Road, Leicester LE1 7RH.

Lichen souvenirs

Many shops in Scotland are now selling souvenir paper-weights which consist of various objects enclosed in hemispherical moulds of clear Perspex. The subjects chosen for encasement have a Scottish flavour and include sprigs of heather, thistle heads, grouse feathers and fruticose lichens. Evidently the restriction of fruticose lichens has now become so pronounced because of air pollution that they are now considered by the natives to be a Scottish speciality, on a par with the haggis and the bagpipes: something seen only on holiday in the Highlands.

The paper-weights are made in Edinburgh, but the source of the lichens (Parmelia caperata, Pseudevernia furfuracea, Usnea spp.) is not revealed.

Love on the tiles

"Lecanora is a man's best friend. Every man should get to know her - Lecanora Muralis. She is petite, pretty, and loves to twine herself around things."
Daily Mirror, 20 July 1972.

None is fun

"None is fun" is the slogan of the newly created National Organisation for Non-parents (NON) in the U.S.A. Members are committed to childlessness as a way of creating "social space." NON has decreed two new holidays: Non-Mothers Day and Non-Fathers Day, and has begun to publish a newsletter "Non-sense".
Council of Europe Newsletter, Nature 72 (8/9): 4 (1972).

Additions to the British Lichen Society Library

The list below is of works received from April to September 1972. Further additions are denoted by an asterisk (*) in the section below headed "Literature on lichens". Reprints may be borrowed by post from the Librarian, Dr D. H. Brown, Department of Botany, The University, Woodland Road, Bristol BS8 1UG.

ADAMS, D. B. & RISSER, P. G. 1971. The effect of host specificity on the interspecific associations of bark lichens. Bryologist 74: 451 - 457.

AHMADJIAN, V. (Ed.) 1972. International Lichenological Newsletter 6 (1)

BROWN, D. H. & SLINGSBY, D. R. 1972. The cellular location of lead and potassium in the lichen Cladonia rangiformis (L.) Hoffm. New Phytol. 71: 297 - 305.

- COMEAU, G. & LEBLANC, F. 1972. Influence du fluor sur le *Funaria hygrometrica* et l'*Hypogymnia physodes*. Can. J. Bot. 50: 847 - 856.
- CULBERSON, C. F. & CULBERSON, W. L. 1971. The chemistry of some species of the lichen genus *Diploschistes*. Mycologia 63: 422 - 426.
- CULBERSON, W. L. 1970 - 1972. Recent literature on lichens. 76 - 80. Bryologist 73: 730 - 734; 74: 64 - 68, 223 - 226, 399 - 404, 523 - 526.
- CULBERSON, W. L. 1971. Against the proposal (311) to retain the name *Usneaceae* Esch. (1824) if these lichen fungi are united with the *Ramalinaceae* Ag. (1821). Taxon 20: 383 - 384.
- DODGE, C. W. 1971. Some lichens of tropical Africa. V. *Lecanoraceae* to *Physciaceae*. Beihefte Nova Hedwigia 38: 1 - 225.
- EGAN, R. S. 1971. Additions to the lichen flora of New Mexico. II. Bryologist 74: 1: 387 - 390.
- GRANGER, J.-M. 1972. Computer mapping as an aid in air-pollution studies. Sarracenia 15: 43 - 83.
- HOFFMAN, G. R. 1969. Steady state expressions for material transfer in two-compartment model ecosystems, and their relevance to nature. Proc. S. D. Acad. Sci. 48: 110 - 118.
- HOFFMAN, G. R. 1970. Spectral properties of selected plant species and some variations accompanying leaf thickness, pigmentation and dehydration. Proc. S. D. Acad. Sci. 49: 60 - 72.
- HOFFMAN, G. R. & GATES, D. M. 1970. An energy budget approach to the study of water loss in cryptogams. Bull. Torrey bot. Club 97: 361 - 366.
- HOFFMAN, G. R. & KAZMIERSKI, R. G. 1969. An ecological study of epiphytic bryophytes and lichens on *Pseudotsuga menziesii* on the Olympic peninsula, Washington. P. A description of the vegetation. Bryologist 72: 1 - 19.
- HUNECK, S. 1972. Die sekundärstoffe einiger Flechten. Phytochem. 11: 1493 - 1495.
- HUNECK, S. 1972. 6 - Hydroxymethyleugenitin, ein neues chromon aus *Roccella fuciformis*. Phytochem. 11: 1489 - 1490.
- HUNECK, S. & SCHREIBER, K. 1972. Wachstumsregulatorische Eigenschaften von Flechten- und Moosinhaltsstoffen. Phytochem. 11: 2429 - 2434.
- HUNECK, S., SCHREIBER, K., SNATZKE, G. & FEHLHABER, H.-W. 1971. Miriquidisaure, ein neues Depsid aus *Lecidea liliastroemii* und *Lecidea leucophaea*. Z. Naturf. 26: 1357 - 1364.
- KUNZE, M. 1972. Emittentenbezogene Flechtenkartierung auf Grund von Frequenzuntersuchungen. Oecologia 9: 123 - 133.
- LANGE, O. L. 1969. Eco-experimental studies of Negev desert lichens. I. Carbon dioxide exchange of *Ramalina maciformis* (Del.) Bory under laboratory conditions. Flora, Jena 58: 324 - 359. (English translation.)
- LANGE, O. L. 1970. Ecophysiological investigations on lichens of the Negev desert. III. Carbon dioxide gas exchange and water metabolism of crustose and foliose lichens in their natural habitat during the dry summer period. Flora, Jena 159: 525 - 538. (English translation.)

- LANGE, O. L. & EVENARI, M. 1971. Ecophysiological investigations on lichens of the Negev desert. IV. Growth measurements with *Caloplaca aurantia* (Pers.) Hellb. Flora, Jena 160: 100 - 104. (English translation.)
- LEBLANC, F. & DE SLOOVER, J. 1972. (French version of article in Can. J. Bot. 48: 1485 - 1496 (1970) from Sarracenia 15.)
- LEBLANC, F., RAO, D. N. & COMEAU, G. 1972. Indices of atmospheric purity and fluoride pollution pattern in Arvida, Quebec. Can. J. Bot. 50: 991 - 998.
- LINDSAY, D. C. 1971. Notes on Antarctic lichens: I. New records for *Buellia* and *Rinodina*. Br. Antarct. Surv. Bull. 24: 11 - 19.
- LINDSAY, D. C. 1971. Notes on Antarctic lichens: II. The genus *Peltigera*. Br. Antarct. Surv. Bull. 24: 115 - 118.
- LINDSAY, D. C. 1971. Notes on Antarctic lichens: III. *Cystocoleus niger* (Huds.) Hariot. Br. Antarct. Surv. Bull. 24: 119 - 120.
- LINDSAY, D. C. 1971. Vegetation of the South Shetland Islands. Br. Antarct. Surv. Bull. 25: 59 - 83.
- LINDSAY, D. C. 1971. Notes on Antarctic lichens: IV. Lichens from Tottanfjella, Dronning Maud Land. Br. Antarct. Surv. Bull. 25: 99 - 100.
- LINDSAY, D. C. 1971. Notes on Antarctic lichens: V. The genus *Ochrolechia* Massal. Br. Antarct. Surv. Bull. 26: 77 - 83.
- LINDSAY, D. C. & BROOK, D. 1971. Lichens from the Theron Mountains. Br. Antarct. Surv. Bull. 25: 95 - 98.
- MILLBANK, J. W. 1972. Nitrogen metabolism of lichens. IV. The nitrogenase activity of the Nostoc phycobiont in *Peltigera canina*. New Phytol. 71: 1 - 10.
- SCHULZE, E. D. & LANGE, O. L. 1968. Measurements of the CO₂-gas-exchange of the lichen *Hypogymnia physodes* at low temperatures in its natural habitat. Flora, Jena 158: 180 - 184. (English translation.)

D. H. BROWN

Literature on lichens

An asterisk (*) denotes that a reprint is available in the Society's library.

- ANON. 1972. Proceedings of the First International Mycological Congress. Trans. Br. mycol. Soc. 58 (2): supplement 1 - 40. (Several references to lichens.)
- BAILEY, R. H. 1971. Some lichens from northern Spain. Revue bryol. lichen. II, 37: 983 - 986. (37 records and discussion of distribution of *Lepraria incana*.)
- BRODO, I. M. 1972. Lichens and cities. In WESTLEY, B. (Ed.) 1972. International Symposium on Identification and Measurements of Environmental Pollutants: 325 - 328. National Research Council, Ottawa. (Review article.)
- BROWN, D. H. & SLINGSBY, D. R. 1972. The cellular location of lead and potassium in the lichen *Cladonia rangiformis* (L.) Hoffm. New Phytol. 71: 297 - 305.
- CAIN, R. F. 1972. Evolution of the fungi. Mycologia 64: 1 - 14. (Includes lichens.)
- CULBERSON, C. F. 1972. High-speed liquid chromatography of lichen extracts. Bryologist 75: 54 - 62. (Description and use of chromatograph.)

- GALUN, M., MARTON, K. & BEHR, L. 1972. A method for the culture of lichen thalli under controlled conditions. Arch. Mikrobiol. 83: 189 - 192.
- GALUN, M., PARAN, N. & BEN-SHAUL, Y. 1971. Electron microscope study of the lichen *Dermatocarpon hepaticum* (Ach.) Th. Fr. Protoplasma 73: 457 - 468. ("Contact between the symbionts" is "to some extent comparable with the relation of obligate parasites and their host.")
- GARRETT, R. M. 1971. The behaviour of lichen ascospores on various surfaces. Revue bryol. lichen. II, 37: 987 - 990.
- GILBERT, J. L. 1972. Kew's lichens. J. Kew Guild 9 (76): 38 - 40. (Chiefly review.)
- HALE, M. E. 1972. Typification of species in the lichen family Thelotremales described by Acharius. Bot. Notiser 125: 186 - 198. (Includes discussion of the history of the collections of Acharius.)
- HARRIS, G. P. 1971. The ecology of corticolous lichens. I (sic). The zonation on oak and birch in south Devon. J. Ecol. 59: 431 - 439. (A clear vertical zonation with height on trees is demonstrated.)
- HARRIS, G. P. 1971. The ecology of corticolous lichens. II. The relationship between physiology and the environment. J. Ecol. 59: 441 - 452. (Investigation of *Hypogymnia physodes*, *Parmelia caperata* and *P. sulcata*.)
- HARRIS, G. P. 1972. The ecology of corticolous lichens. III. A simulation model of productivity as a function of light intensity and water availability. J. Ecol. 60: 19 - 40.
- HAWKSWORTH, D. L. 1972. The natural history of Slapton Ley Nature Reserve IV. Lichens. Fld. Stud. 4: 535 - 578. (Detailed account, including phytosociology. New combinations: *Lecidella elaeochroma* forma *soralifera* (Erichs.) D. Hawksw., *Ramalina curnowii* var. *atlantica* (Culb.) D. Hawksw., *R. siliquosa* var. *crassa* (Del. ex Nyl.) D. Hawksw., *Usnea intexta* var. *constrictula* (Stirt.) D. Hawksw. & Chapman, and *Usnea subfloridana* var. *melanopoda* (Asah.) D. Hawksw. New communities: *Graphinetum platycarpae* var. *graphinetum anguinæ*, *Gyalectinetum carneoluteae*, *Usneetum articulato-floridæ* var. *ceratinae*, *Usneetum subfloridanae*.)
- HAWKSWORTH, D. L., JAMES, P. W. & LAUNDON, J. R. 1972. The nomenclature of *Pilophorus*. Taxon 21: 327 - 329. (*Pilophorus* Th. Fr. is shown to be a valid generic name and "*Pilophoron* (Tuck.) Th. Fr." must be rejected.)
- HILL, D. J. & AHMADJIAN, V. 1972. Relationship between carbohydrate movement and the symbiosis in lichens with green algae. Planta 103: 267 - 277.
- * HOFFMANN, G. R. 1972. Bark samplers for use in air pollution - epiphytic cryptogam studies. Bryologist 74: 490 - 493. (A new bark sampler.)
- * HOFFMANN, G. R. 1972. An ecologic study of epiphytic bryophytes and lichens on *Pseudotsuga menziesii* on the Olympic Peninsula, Washington. II. Diversity of the vegetation. Bryologist 74: 413 - 427. (Use of indexes of diversity.)
- * HUNECK, S. 1971. Chemie und Biosynthese der Flechtenstoffe. Fortschr. Chem. org. Natstoffe 29: 209 - 306. (Review.)
- * HUNECK, S. & FOLIMANN, G. 1972. Mitteilungen über Flechteninhaltsstoffe. LXXXIV. Zur Phytochemie und Chemotaxonomie der Lecanoraceengattung *Haematomma*. J. Hattori bot. Lab. 35: 319 - 324.
- JULICH, W. 1972. Monographie der Athelieae (Corticaceae, Basidiomycetes). Willdenowia, Beihefte 7. (Includes some lichenicolous fungi, including *Athelia arachnoidea* (Berk.) Jülich.)

- * KERSHAW, K. A. 1972. The relationship between the moisture content, and net assimilation rate of lichen thalli and its ecological significance. Can. J. Bot. 50: 543 - 555.
- KRISTINSSON, H. 1972. Additions to the lichen flora of Iceland I. Acta Bot. Islandica 1: 43 - 50. (14 lichens new to Iceland.)
- KRISTINSSON, H. 1972. Studies on lichen colonization in Surtsey 1970. Surtsey Res. Prog. Rep. 6: 77. (Three species - the first lichen records from this new island formed in 1963.)
- LAUNDON, J. R. 1972. The lichens of Wood Walton Fen. Rep. Huntingdon. Fauna Flora Soc. 24: 15 - 19. (General account and list from this nature reserve in Huntingdon & Peterborough; 29 species.)
- LAUNDON, J. R. 1972. Value of fungi as indicators of pollution. Int. J. Envir. Stud. 3: 69 - 72. (Includes lichens; the paper is a review of the First International Mycological Congress.)
- * LEBLANC, F., RAO, D. N. & COMEAU, G. 1972. The epiphytic vegetation of *Populus balsamifera* and its significance as an air pollution indicator in Sudbury, Ontario. Can. J. Bot. 50: 519 - 528. (The "index of atmospheric purity" is used.)
- LLOYD, A. O. 1972. An approach to the testing of lichen inhibitors. Biodeterior. Materials 2: 185 - 191. (Account of study of lichens as spoilage organisms on stone-work, etc.)
- MARTIN, W. & CHILD, J. 1972. Lichens of New Zealand. Reed, Wellington.
- MOORE, P. D. 1971. Computer analysis of sand dune vegetation in Norfolk, England, and its implications for conservation. Vegetatio 23: 323 - 338. (Includes lichen heath communities, especially in relation to public pressure.)
- * NORDIN, I. 1972. Caloplaca, sect. Gasparria in Nordeuropa. Taxonomiska och Ekologiska Studier. Skriv, Uppsala. (Important account of the lobed species of Caloplaca, with full taxonomic revision and selection of types. Caloplaca saxicola (Hoffm.) Nordin is shown to be the correct name for C. murorum.)
- OSTHAGEN, H. 1972. The chemical strains in *Cladonia luteoalba* Wils. et Wheld. and their distribution. Norw. J. Bot. 19: 37 - 41. (Three strains; maps.)
- POELT, J. 1972. Die taxonomische Behandlung von Artenpaaren bei den Flechten. Bot. Notiser 125: 77 - 81. (Taxonomy of species pairs, especially Cetrelia.)
- REHM, A. 1971. A chemical study of *Sphaerophorus globosus* and *S. fragilis*. Bryologist 74: 199 - 202. (The chemical races differ in geographical distribution.)

BULLETIN 31. Issued by the British Lichen Society, c/o Department of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD. Edited by J. R. Laundon. Duplicated by Brown's Typewriting Service Ltd., Fulleage Works, Helena Street, Burnley, Lancashire. December 1972.