

BRITISH LICHEN SOCIETY

BULLETIN

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December 1975

No. 37

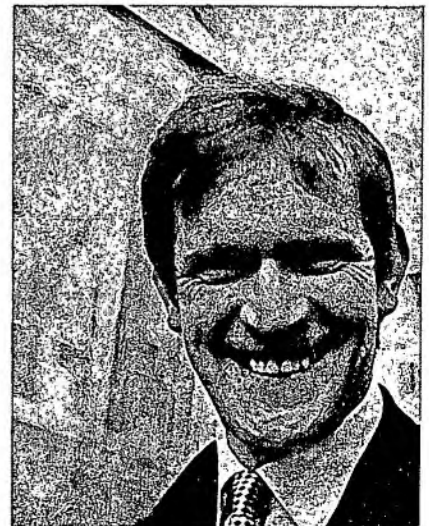
President: D. H. Brown, B.Sc., Ph.D.

Same fungus forms different lichens

A paper entitled "lichen chimeras" appears in the recently published Report on the British Museum (Natural History) 1972 - 1974 (1975) (available from the museum for £2.50). Although the name of the author is not stated, the paper was written by Mr P. W. James. The article gives an account of the remarkable original work which Mr James has carried out on lichen morphotypes, or "chimeras" as they are also called. He has now discovered "several united pairs of lichens containing two different algae but the same fungus ... each member of the pair was known previously as an entirely distinct species. This has proved of great importance in studies of lichen morphogenesis ... Furthermore, the certain knowledge that the same fungus can occur in association with two different alga in lichens of very different life form has fundamental implications for the classification of the group." A photograph and drawing of one of the morphotypes illustrates the remarkable different life forms involved, for they show the leafy thallus of the lichen fungus containing green algae (referable to Sticta filix) growing out from a shrubby and coralloid Dendroscocaulon sp., in which the same lichen fungus is associated with blue-green algal cells. Altogether 12 different morphotypes have been found so far, involving the genera Dendroscocaulon, Lobaria, Peltigera and Sticta. In addition there are suspected morphotypes in Pannaria, Pseudocyphellaria and Psoroma. "In each case, however, the fungus involved is only known to form sexual reproductive bodies when growing in association with the green alga; when growing with the blue-green alga, whether as part of a chimera or independently, it never reproduces in this way." A British example is Sticta dufourii, which is the blue-green algal phase of S. canariensis. Prior to Mr James's studies, it was generally believed that every lichen species contained a different fungus species; the proof that this is not so is surely one of the most profound discoveries since De Bary showed in 1866 that algae were present in lichens.

The work on these morphotypes has also had an important bearing on lichen chemistry. Mr James remarks that "from a study of chimeras it has been possible to show that certain substances ... are manufactured by the fungus alone whereas other substances are only realized in the presence of the alga. Differences in the lichen substances present in the two phases of a chimera show that the alga present influences which of these chemical substances is formed."

Mr James's article concludes by indicating that the work on morphotypes shows "that the algal partner in lichens has an important and hitherto unexpected role in controlling the growth form of the fungus partner." He also points out that the International Code of Botanical Nomenclature will need modification in order to accommodate this new information.



Peter James

10.00 Annual General Meeting.

11.00 Exhibition Meeting.

12.00 Lunch. Members are kindly requested to make their own arrangements. The restaurants Barino (4 Harrington Road), Daquise (20 Thurloe Street) and Piccola Venezia (39 Thurloe Place) are recommended; they are listed in order of ascending prices.

14.00 Lecture; P.W.JAMES: Lichens of acid bark.

14.45 Lecture; F.ROSE: The status of the corticolous Xanthorion in Europe.

15.30 Tea interval. (Tea and biscuits 10p)

16.00 Lecture; J.SKINNER: Lichen communities on dolerite in northern England.

Spring field meeting at Gregynog, Powys, 1976

The spring field meeting will be centered on Gregynog, Powys, from Wednesday evening 7 April 1976 to Wednesday morning 14 April, under the leadership of Mr R. O. Millar, Institute of Terrestrial Ecology, Penrhos Road, Bangor, Gwynedd LL57 2LQ (telephone: 0248 (Bangor) 4001), who is also local secretary.

Gregynog (grid ref. SO,084975), a residential educational centre of the University of Wales, is a large country house some 10 km (six miles) north of Newtown in Powys set in wooded parkland with an estate of 750 acres. Gregynog will be the headquarters accommodation and it is here that members should meet in the car park at 9.30 on Thursday 8 April. Members must book their own accommodation and return the form at the end of this Bulletin to Mr Millar; anyone with difficulties should ask Mr Millar for his help. Please arrive in time for dinner at 19.00 on Wednesday 7 April.

As accommodation at Gregynog for the Society is limited to 20, members are strongly advised to book as early as possible. The rooms are large and well-appointed, mostly single but with some containing two to four beds. No fully equipped laboratories are available, but suitable converted outbuildings will be used instead; where possible members should bring their own microscopes, glassware and chemicals. When booking members might request the following leaflets:

1. Gregynog and how to get there.
2. A Short History of Gregynog.
3. Nature Trail Leaflet.

The nearest railway station is at Newtown. Members travelling by the 11.40 from London (Euston), after a change at Wolverhampton, arrive at Newtown at 15.29. These times should be confirmed near the date of the meeting. Members arriving by train and giving Mr Millar adequate notice will be met at Newtown Station. Ample open-air car parking facilities are available in the grounds near Gregynog Hall.

Accommodation and 1975 charges are as follows; packed lunches will be required each day.

The Warden, Gregynog, Newtown, Powys, SY16 3PW (telephone: Gregynog (068 687) 224/225).

£5.60 per day, including packed lunch. Headquarters.

Bear Hotel, Broad Street, Newtown, Powys SY16 2LU (telephone: Newtown 26977). £4.50 bed & breakfast; dinner £2.20; sandwiches 18p. SIX MILES FROM HEADQUARTERS.

Anyone seeking alternative accommodation should apply to the Mid Wales Tourism Council, Owain Glyndwr Institute, Machyneth, Powys (telephone: Machynlleth 2401).

Sheets 124, 125, 135, 136 and 137 of the 1:50,000 Ordnance Survey maps will be required for the forays. The old one inch sheets 116, 117, 127, 128 and 129 may be used as alternatives.

Wales is rich in lichens and a visit to Gregynog is a cultural experience not to be missed. It was first mentioned in a poem some 800 years ago and was the home of the celebrated Gregynog Press, one of the great private presses of the world in the 1920s and 1930s.

Day excursion to Kent May 1976

The thirteenth annual day excursion with the Kent Field Club led by Mr F. H. Brightman and Mr J. R. Laundon will be held on Sunday 2 May 1976. All groups of plants will be studied on walls in Faversham, Kent. Meet at Faversham Station at 11.00. Bring packed lunch. Train leaves Victoria, London, at 9.40 arriving at Faversham at 10.49; train times should be checked near the date of the meeting.

Churchyard excursion July 1976

A day excursion with the Kent Field Club led by Mr F. H. Brightman, Mr J. R. Laundon and Mr K. C. Side will be held on Sunday 4 July 1976 to study the natural history of the churchyards in the Medway towns of Kent. Meet at Strood Station at 10.45. Bring packed lunch. Train leaves Charing Cross, London, at 9.36 arriving at Strood at 10.32; train times should be checked near the date of the meeting.

Summer field meeting in Spain, 1976

The summer field meeting will be held in north-east Spain under the leadership of Dr X. Llimona, Departamento de Botánica, Facultad de Ciencias, Universidad de Barcelona, Barcelona, Spain, from Thursday morning 2 September 1976 until Saturday evening 11 September 1976. The first part of the meeting will be centred on Sitges, a small artistic town by the sea, 42 km south of Barcelona, to which it is connected by a frequent train service at approximately 45 minute intervals; the Sitges Park Hotel (bed & meals about £6 a day) will be the headquarters and members should meet outside this hotel at 09.30 hours on Thursday 2 September.

The second part of the meeting will be centred on Figueras, north of Gerona, and near the Costa Brava. There are four flights each week between London and Gerona. The headquarters will be the Hotel Ampurdan, Figueras (bed & meals about £7 a day). Dr Llimona has kindly offered to book accommodation on behalf of members, and therefore this should be indicated on the form at the end of this Bulletin, which must be sent to Dr Llimona by all those taking part. Travel on the field meeting will be by coach and this is expected to cost in the region of £20 per member. Packed lunches will be required each day. Passports are essential and members should take out comprehensive insurance. The provisional programme is as follows:

- September 2 Cervello-Bruguers (S.W. of Barcelona)
- 3 Montserrat (Oligocenic conglomerates)
- 4 Castellfullit de Riubregos - Ponts (gypsicole communities); Peramola (Prepyrenean range)
- 5 Serra de Prades (limestone and granite; Pinus woods)
- 6 Nuria (Axial Pyrenees). Ascension to 2800 m (alpine communities).
Night in Nuria in mountain sanctuary at 2000 m.
- 7 Collada de Toses (1800 m; woods of Pinus uncinata)
- 8 Depart from Sitges. Visit to the Montseny range. Arrive at Figueras.
- 9 Gavarres mounts (Quercus suber woods; granitic and volcanic rocks).
- 10 St Pere de Roda and Cape of Creus (gneiss and metamorphic schists near the sea).
- 11 L'Escala and Medas Islands (calcareous Costa Brava).

Address List

It is expected that a new list of members will be issued next year in the Bulletin. Therefore members are kindly requested to check that the Society has their correct addresses. Any corrections should be sent to the editor of the Bulletin, Mr J. R. Laundon, Department of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD, as soon as possible.

Lichen courses 1976

DEVONSHIRE. Slapton Ley Field Centre, Slapton, Kingsbridge, TQ7 2QP. 25 August - 1 September 1976. Lichens. D. L. Hawksworth.
DYFED. Orierton Field Centre, Pembroke. 21 - 28 July 1976. Lichens. P. W. James.
LONDON. City Literary Centre of Adult Studies, Stukeley Street, London WC2. 27 - 28 March, 3 April, 1976. Lichens. R. H. Bailey.

The wardens at the field centres will supply further details for the Devonshire and Dyfed courses, and information regarding any bursaries and grants which may be available. The London course begins at 14.00 on 27 March with lecture/demonstrations on lichen systematics; field studies will be conducted on 28 March, and 3 April. It will be put aside to enable students to work on the material collected; the fee is £1.00 which should be sent to the principal of the City Literary Centre.

Death of Professor Asahina

Professor Emeritus Dr. Yasuhiko Asahina died on 30 June 1975 aged 94. For most of this year he had been confined to bed at his home in Shinjuku-ku, Tokyo, Japan, suffering from lumbago. He had continued his lichenological studies at the National Science Museum in Tokyo until 1974.

Professor Asahina was born on 16 April 1881 in Tokyo. He published about 300 papers on lichens from 1926 onwards. He was particularly famous for his work on lichen chemistry, his papers on the subject being held in great esteem. He invented not only the colour test with p-phenylenediamine, but also micro crystal tests. He was elected an honorary member of the British Lichen Society on 2 January 1971, as a recognition of his important work. The distinguished contributions to lichenology by Professor Asahina will be sadly missed.

Wild Plants Act becomes law

The title of the Wild Creatures and Wild Plants Protection Bill, discussed in Bulletin 36 (1975), was changed to The Conservation of Wild Creatures and Wild Plants Act 1975. It was granted royal assent on 1 August 1975 and thus became law. It is therefore now illegal for any person to uproot a lichen in Great Britain without the permission of the landowner, his servant or the occupier. It is not an offence to pick a lichen. It is not at present clear as to when collecting lichens involves uprooting or merely picking; perhaps a test prosecution would clarify the position!

Research Fellow appointed to the Mapping Scheme

Mr C. J. B. Hitch has been appointed as Research Fellow in Environmental Science at Bradford University as a result of the NERC grant to the Mapping Scheme (see Bulletin 36: 3 (1975)). Mr Hitch's interest in lichens started in 1964 following encouragement from Mr P. W. James. He graduated from the University of London in 1968 with an Honours Degree in Botany and then went to Dundee, where he studied the effect of water on nitrogenase activity in lichens, obtaining an M.Sc. in 1971. Since that time he has carried out research at Imperial College, London, investigating fixation and translocation of nitrogen in lichens with special reference to Peltigera species, and will present this as a doctoral thesis. His work on the development of the Mapping Scheme commenced in October 1975 at the Postgraduate School of Environmental Science, The University, Bradford, West Yorkshire BD7 1DP (telephone: Bradford 33466 ext. 8538).

Bulletins by air mail

Members living outside Europe may receive the Bulletin by air mail if they are willing to pay the extra costs involved. The costs for the two numbers for 1976 will be £1.00 which should be sent to the editor, Mr J. R. Laundon, British Museum (Natural History), Cromwell Road, London SW7 5BD, U.K., payable to the Society. Members not taking advantage of this offer will continue to be sent the Bulletin by surface mail free of charge.

Preservation of old trees

The Society's Conservation Committee wish to stress the value of the preservation of old trees as important habitats for lichens. In most woodlands the richest lichen flora is generally found on the oldest trees, and it is essential that these are preserved if the woodland is to maintain its lichenological value. For example, in the New Forest, Hampshire, the climax community "Lobarion is generally best developed on older trees" (Rose & James in Lichenologist 6: 57, (1974)), and the "Schismatomma decolorans - Lecanactis premea - Opegrapha lyncea community" is confined entirely to "very old Quercus of between 200 and 400 years of age." In some woodlands old pollarded trees are also often of great interest, both historically and lichenologically, and they should therefore be retained wherever possible. The oldest trees in parkland, fields and meadows, and in hedgerows are usually the richest in lichens, and they should therefore not be felled. Even dead decorticated boles have a special lichen flora and should be retained unless they constitute a hazard to living trees through the spread of disease, etc.

It is noteworthy that although old trees are still comparatively well represented in many British woodlands, this has apparently not always been the case. Dr O. Rackham, in the book on The British Oak (1974), edited by M. G. Morris and F. H. Perring, shows, from his studies of timbers used in medieval buildings, that old oak trees necessary for making long massive supports were frequently unobtainable, as for the octagon at Ely Cathedral (one of the finest works of medieval carpentry) where the carpenters had to alter the design as a consequence. Dr Rackham points out that "medieval oaks were usually felled at between 25 and 70 years of age ... The evidence shows that we cannot expect historical continuity of old oaks in woodland (except perhaps in the boundary pollards round wood margins)." The scarcity of old woodland trees in late medieval times must have had a significant effect on the British lichen flora, but as there are no lichen records for this period, these effects will unfortunately always remain a matter of conjecture.

Books on lichens - 5

A facsimile reprint of the classic work Lichenographia Universalis by E. Acharius (1810) is to be published by The Richmond Publishing Co. Ltd., Orchard Road, Richmond, Surrey TW9 4PD (telephone 01-876 1091), in April 1976. It will contain a new introduction by Mr O. Vitikainen of the University of Helsinki. The edition will be limited to 175 copies and the price is £27.50 until 29 February 1976, then £36.50. Early orders are advised to avoid disappointment.

Reprints of Dr M. R. D. Seaward's comprehensive "lichen flora of the West Yorkshire conurbation", published in Proc. Leeds phil. lit. Soc., Scient. Sect. 10: 141 - 208 (1975), are available from the Secretary, Leeds Philosophical and Literary Society, Central Museum, Calverley Street, Leeds 1, for £2.40 or \$6.00 post free. Persons ordering copies should state if they are members of the Society.

Culture of lichen soredia

Cheryl A. Wilkins and Dr D. I. Morgan-Huws of the Department of Biological Sciences, Portsmouth Polytechnic, King Henry I Street, Portsmouth, Hampshire PO1 2DY, have been studying the germination and development of soredia under controlled conditions, with a view to eventual experimental work on factors affecting their germination and growth under field conditions. A brief report of the early findings has been prepared and is available to anyone interested or involved in this field.

Second International Mycological Congress 1977

The Second International Mycological Congress will be held at the University of South Florida, Tampa, Florida, U.S.A. from 27 August to 3 September 1977. Copies of the First Circular are available from the Society's Secretary, Mr J. R. Laundon, on request.

The preservation of our countryside

Jacques-Yves Cousteau has stated that 40 per cent of the world's sea life has disappeared because of man's carelessness with pollution. Sir Fraser Darling remarked in his Reith lectures that the last of the world's vast green wildernesses, in Brazil, which makes a vital contribution to the world's supply of oxygen, is now subject to wholesale exploitation which could result in making our air unbreathable by the year 2000.

Soil to be fertile must contain at least eight per cent organic matter. Because of the use of artificial fertilisers the percentage is as low as three in parts of Warwickshire and Wales, equivalent to "desert" conditions. The excessive use of these fertilisers is causing other problems, as evidenced in Lincolnshire where drinking water polluted with agricultural fertilisers was believed to have caused brain damage in newly-born babies.

In England it is claimed that an area the size of Somerset goes under concrete and tarmac every 12 years, and there does not appear to be any recession to this encroachment on our countryside.

By Act of Parliament it has been possible to protect certain special areas in the country in making them national or local nature reserves. The Royal Society for the Protection of Birds and many natural history societies have provided protection by obtaining control of areas of land by purchase or lease, but the untold wealth of plant, animal, bird and insect life of the countryside remains in the care of farmers and owners of land. The realisation of this fact, and that all forms of life, including man, depend for their very existence on the conservation of plant life, led to the formation of the Farm Nature Reserve scheme.

National and local nature reserves are merely scratching at the surface of the problem, and to be effective they have to be carefully and intelligently managed, which in terms of time and money can be very costly. On the other hand it has been found that farmers generally are very interested in what is found on their land and will help in conservation if it does not interfere too expensively with their farming operations. To help farmers in this respect naturalists examine the land every year with the two-fold purpose of keeping owners informed, year by year, of the more important plants and wildlife in his charge, and enlisting his aid to preserve as much of that life, as possible, in its own natural habitat.

Farmers have responded to the Farm Nature Reserve scheme in no uncertain manner with only one "I'll think it over" out of 41 approached. In Carmarthenshire alone there are now 4,600 acres of land with valuable habitats being cared for, and more important, being managed "free of charge". The extension of the scheme could be a major contribution in an effort to preserve what is left of our countryside and it only needs one or two, or at most three, naturalists to give a little of their spare time to visit farms with likely habitats and to give the scheme a "try" in their own county.

Farmers and landowners are now coming forward and asking for a survey to be made of their land. To date the scheme has given access to unrecorded areas with the result that new records have been sent to the Biological Recording Centre at Monks' Wood. Furthermore, many rare and local plants, insects, birds and mammals are now at last being given protection.

S. N. TALLOWIN

New Members

The following new members joined the Society between June and October 1975:

Mrs M. T. Dobson, 3 Vineyard Row, Hampton Wick, KINGSTON UPON THAMES, Surrey KT1 4EG
Miss J. B. Fildes, 5 Jaquet's Court, Mount Mascal, North Gray Road, BEXLEY, Kent DA5 3NF
Mr S. G. Moody, Department of Entomology, British Museum (Natural History),
Cromwell Road, LONDON SW7 5BD
Mr F. W. Newton, 60 Lincoln Road, STEVENAGE, Hertfordshire
Dr A. P. Preston, 29 Eardley Road, SEVENOAKS, Kent TN13 1XX
Miss G. Ritschel, Botanisches Institut II, Mittlerer Dallenbergweg 64, 8700 WURZBURG,
Germany
Miss J. B. Ryan, Balls Park College, HERTFORD SG13 8QF
Mr D. C. J. Wessels, Department of Botany, University of Pretoria, PRETORIA 0002,
South Africa
Mr T. S. Worthington, 3 The Moorings, Strand-on-the-Green, LONDON W4 3PG

Lichen colonisation aids planning application

"A Wellow farmer will use a unique building material to overcome a council's planning objections - cow dung. Wansdyke planners told Mr R. Horler that they had deferred his application to convert an outbuilding at Weavers Farm because the asbestos roof was not suitable. However, Mr Horler created a bit of a stink and told the council's north-east planning sub-committee that he would prefer to stick to the asbestos. He said he proposed treating the asbestos with a cow dung solution to dull the surface and encourage lichen growth. Coun Harry Pryor said, "This is the quickest way of getting it to blend with the surrounding countryside." Committee chairman Coun Tony Jordan quipped, "I only hope it's a light-weight cow." Mr Horler's application to extend existing farm buildings to form three garages was approved."

Somerset Guardian/Standard (25 July 1975)
(From Mrs M. HICKMOTT)

Lichens in guns

"In countries where orchards abound, a very fine moss, of a greenish grey colour, is found adhering to the apple-trees, which is extremely proper for wadding, and which even possesses the extraordinary quality, of making the barrel less greasy and foul than paper, which always contains a certain quantity of oil." (p.190)

ANON. (ascribed to ACTON, JOHN.) 1789.
An Essay on Shooting. Grueber & McAllister,
Dublin.

(The "moss" refers to lichen.)

Literature on lichens - 25

- ANON. 1975. Lichen chimeras. Report on the British Museum (Natural History) 1972-1974: 37 - 43. British Museum (Natural History), London. (Report, by P. W. James, on the discovery of lichen morphotypes in which the same fungus occurs in association with two different algae to produce lichens of very different life form. £2.50.)
- BAILEY, R. H. 1975. Lichens from the Skellig rocks. Ir. Nat. J. 18: 163 - 164.
(10 species from the island of Great Skellig, Co. Kerry. First record of the union Lecanoretum atrae for the British Isles.)
- CATCHESIDE, D. G. 1975. Chemicals, radiations and heredity. Search, Sydney 6: 23 - 28. (Review of plant adaptations to various forms of air pollution.)
- CRITTENDEN, P. D. 1975. Nitrogen fixation by lichens on glacial drift in Iceland. New Phytol. 74: 41 - 49.
- ESSLINGER, T. L. 1973. Chemical and taxonomic studies on some corticolous members of the lichen genus Cetraria in western North America. Mycologia 65: 602 - 613. (Includes key.)

ESSLINGER, T. L. & AHTI, T. 1973. The typification of *Parmelia prolixa* and *Parmelia pulla*. Revta Fac. Cienc. Univ. Lisb. IIc, 17: 721 - 731. (Typification and chemistry; *Parmelia pulla* Ach. becomes the correct name for *P. prolixa*.)

FOLLMANN, G. 1974. Nordhessische Flechtengesellschaften 1. Das Fülgensietum fulgentis Gams. Hessische Floristische Briefe 23: 18 - 25. (Sociology; photographs.)

GARTY, J. & GALUN, M. 1974. Selectivity in lichen-substrate relationships. Flora, Jena 163: 530 - 534 (Relationships between the establishment of desert lichens and the moisture retention capacity of the substrate.)

HALLBAUER, D. K. 1975. The plant origin of the Witwatersrand 'carbon'. Miner. Sci. Engng 7: 111 - 131. (Includes the role of 'lichens' in the concentration of gold.)

HAWKSWORTH, D. L. 1975. Notes on British lichenicolous fungi, I. Kew Bull. 30: 183 - 203. (17 species, 13 of which are new British records. New combinations etc: *Adelococcus nephromatis* (Crouan) D.Hawksw., *Hemigrapha astericus* (Müll.Arg.) R.Sant. ex D.Hawksw., *Niesslia cladonicola* D.Hawksw. & W.Gams sp. nov., *Pleospora leptogiiicola* D.Hawksw. sp. nov., *Stigmidium aggregatum* (Mudd) D.Hawksw., *S. allogenum* (Nyl.) D.Hawksw., *S. dispersum* (Lahn ex Körb.) D.Hawksw., *S. ephebes* (Henss.) D.Hawksw., *S. gyrophorarum* (Arnold) D.Hawksw., *S. microspilum* (Körb.) D.Hawksw., *S. punctillum* (Arnold) D.Hawksw., and *S. superposita* (Nyl.) D.Hawksw. New British records: *Abrothallus lobariellus* (Nyl.) Zopf, *Arthonia epiphyscia* Nyl., *Beloniella nitschkei* (Körb.) Rehm, *Calicium corynellum* Ach. ex Hepp, *Guignardia olivieri* (Vouaux) Sacc., *Leptosphaeria oligospora* (Vain.) Sacc. & D.Sacc., *Muellerella hospitans* Stiz., *Polycoccum dannenbergii* (Stein ex Eitr.) Vezda, *P. galligenum* Vezda, and *Stigmidium peltideae* (Vain.) R.Sant.)

HERTEL, H. 1975. Ein vorläufiger Bestimmungsschlüssel für die kryptothallinen, schwarzfrüchtigen, saxicolen Arten der Sammelgattung Lecidea (Lichenes) in der Holarktis. Decheniana 127: 37 - 78. (Key and nomenclature.)

HITCH, C. J. B. & MILLBANK, J. W. 1975. Nitrogen metabolism in lichens. VI. The blue-green phycobiont content, heterocyst frequency and nitrogenase activity in Peltigera species. New Phytol. 74: 473 - 476. (the "enzyme is only active in heterocysts.")

KRISTINSSON, H. 1974. The vegetation of Pjorsarver, Central Iceland. I. The lichens. Acta bot. isl. 3: 21 - 35. (106 species; descriptions of communities.)

MAYHEAD, G. J., BROAD, K. & MARSH, P. 1974. Tree-growth on the South Wales Coalfield. Forestry Commission Research and Development Paper 108. (Includes a lichen-based pollution map, and discussion of the use of lichens as indicator species in relation to the growth of various species of conifer.)

O'SULLIVAN, A.M. & MITCHELL, M.E. 1974. An unusual lichen habitat. Ir. Nat. J. 18: 23 - 24. (Lichen colonisation of cedar cladding due to dust deposited daily thereon by "the cleaning women.")

RACKHAM, O. 1975. Hayley Wood. Its History and Ecology. Cambridgeshire & Isle of Ely Naturalists' Trust, Cambridge. (52 lichen species; list and discussion of ecology.)

SEAWARD, M. R. D. 1975. Lichen flora of the West Yorkshire conurbation. Proc. Leeds phil. lit. Soc., Scient. Sect. 10: 141 - 208. (286 taxa; full comprehensive account including historical data.)

TIBELL, L. 1975. The Caliciales of boreal North America. Symb. bot. upsal. 21 (2). (Taxonomic account etc. and ultrastructure of spore ornamentation. *Calicium subquercinum* Asah. is newly reported from the British Isles.)

WAINWRIGHT, S.J. & BECKETT, P.J. 1975. Kinetic studies on the binding of zinc ions by the lichen *Usnea florida* (L.) Web. New Phytol. 75: 91 - 98.

YARRANTON, G. A. 1975. Population growth in *Cladonia stellaris* (Opiz) Pouz. and Vezda. New Phytol. 75: 99 - 110.

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EXPENDITURE & INCOME ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 1974

EXPENDITURE

Academic Press-Lichenologist Bulletin	1480.00
Mapping Scheme-Cancellation of loan	127.62
Revue Bryol. et Lich.	55.00
Subscriptions paid:	22.07
Council for Nature	5.00
Biological Council	2.00
Int.Mycol. Assoc'n	10.00
B.M.S. publications	0.80
Dr U.K.Duncan's book	75.00
Stationery, etc.	38.78
Postages	48.16
Refund (Publications)	2.05
Brown's Typewriting Service	7.26
Sundry small payments	27.93
Adjustment on currency conversion	0.46
The Bryologist	21.87
Excess of Income over Expenditure	332.35

£2256.35

INCOME

Subscriptions	1859.01
Less refunds	25.25
Subscriptions - Canadian	17.27
Reading Circle	7.25
Lichenologist sales	46.00
Duplicated keys	9.40
Check-lists	7.20
Bulletin	6.25
B.M.S. publications	1.19
Donations	51.97
Dr U.K.Duncan's book	88.35
Interest received:	
Westminster Bank Ltd.	83.89
Bank of Montreal	3.60
Central Investment Co.	66.50
Sundry small receipts	33.72

£2256.35

WORLD WILDLIFE FUND

Payments authorised by Council 1973	250.00	Grant received in 1973	500.00
1974	250.00	1974	500.00
Balance in hand	500.00		
	<u>£1000.00</u>		<u>£1000.00</u>

BALANCE SHEET AT 31 DECEMBER 1974

LIABILITIES

Subscriptions received in advance	87.24
Sundry Creditors:	
Academic Press	1480.00
World Wildlife Fund	500.00
General Fund at 31/12/73	390.00
Add excess of Income over expenditure	332.35
	<u>722.35</u>
	<u>£2789.59</u>

ASSETS

Cash at bank:	
Current A/c	279.75
Less unrepresented cheques	119.87
Deposit Account	1883.89
Bank of Montreal	45.82
On Deposit with Central Investment Co.	700.00
National Giro	
	<u>£2789.59</u>

S. N. TALLOWIN, Hon. Treasurer
18 August 1975

Audited and passed
R. T. ASHBY, Hon. Auditor
27 August 1975