

# BRITISH BRYOLOGICAL SOCIETY

PRESIDENT: P.J. WANSTALL Esq.



## BULLETIN

No. 54. July, 1989

*Edited by A.R. Perry*  
*National Museum of Wales,*  
*Cardiff*

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### SUBSCRIPTIONS

The Membership Secretary (Dr S.L. Jury, Plant Science Laboratories, The University, Whiteknights, Reading, Berkshire RG6 2AS, U.K.) would like to hear from any of you who have still not paid your 1989 subscription. Please do so, otherwise we incur a considerable unnecessary expense and hasten a subscription rise from the current £10.

## REPORTS OF OFFICERS FOR 1988

### a) GENERAL SECRETARY'S REPORT

It is sad to have to report the recent deaths of three notable members of the Society, whose combined membership exceeded 100 years. Obituaries will appear in Journal of Bryology in due course. Mrs Jean Fitzgerald will be remembered with affection by those who regularly attended meetings in the 1950's and 1960's as an ardent hepaticologist who, in collaboration with Bob Fitzgerald, made a major contribution to knowledge of bryophyte distribution, particularly in County Tyrone (Trans. BBS 3, 1960) and other parts of Ireland. Mrs Trudy Side was well known for her work on the bryoflora of Kent, and for the kind guidance that she invariably offered to beginners in her role as General Referee. Dr Akira Noguchi was noted for his floristic and taxonomic studies on Japanese mosses. He had recently prepared a Japanese moss flora, written in English which, when publication is complete, will be of inestimable value to Japanese and western students alike.

On a happier note, it is a pleasure to congratulate Harold Whitehouse on his election as an Honorary Member of the Society at the AGM in September 1988. Harold is well known for his use of culture techniques to elucidate taxonomic problems in mosses, particularly in species with rhizoidal gemmae, and for his enthusiasm and effectiveness as a field bryologist who has detected a number of species new to the British flora. He is equally distinguished for his work in fungal genetics.

Membership of the Society continues to remain at a high level, as indicated in the Membership Secretary's Report. The Treasurer's Report notes that our finances are in a healthy state and that subscriptions for 1989 remain at the level set in 1981. The Reports of other Officers indicate continuing activity in a variety of areas. As regards meetings, a notable feature in 1988 was an International Symposium on Bryophyte Ecology held in Edinburgh from 19 - 22 July, with sessions devoted to Production and Decomposition, Interactions between Bryophytes and Other Organisms, Population Biology, and Bryophytes in Man-Modified Ecosystems. The meeting was a great success, thanks to the excellent local arrangements made by Philip Lightowlers, and the Proceedings will be published in Botanical Journal of the Linnean Society towards the end of 1989. Joint meetings with the International Association of Bryologists on Experimental Bryology, and the Biology of Sphagnum, are being planned for Exeter in 1991. Work is proceeding smoothly on compilation of the Mapping Scheme data, and it is planned that the first volume of the Bryophyte Atlas, dealing with hepatics, will go to press during 1989. The first of a proposed series of Techniques Handbooks, prepared by Martha Newton on Cytological Methods, has now been completed and should be published before the end of the year. Considerable interest has now been generated in the formation of a Tropical Bryology Group within the Society; it is envisaged that there will be a distinctly tropical flavour at a forthcoming Paper-Reading Meeting, and a tropical field meeting would be a possibility well worth exploring.

Finally it is a pleasure to thank all my colleagues on BBS Council for their consistently strong support during the seven rewarding years during which I acted as General Secretary to the Society, and to wish my successor, Martha Newton, all the very best for an equally enjoyable period in office.

R.E. Longton  
February, 1989

b) TREASURER'S REPORT

The preliminary figures for the year (including Blackwell's bill, but prior to preparing the figures for audit) are as follows:

Profit/Loss

	1986	1987	1988	1989
Income	£23,633	£20,623	£19,635	-
Expenditure	16,152	17,529	24,299	-
Profit	£ 7,481	£ 3,094	-(£ 4,664)	*1

\*1 The 1989 figure will be based on budget estimates (see budget statement from new Hon. Treasurer).

Assets

	1986	1987	1988
Current account	£2,797	£ 1,743	£ 1,005
Deposit account	2,168	1,243	782
Nat. Sav. Bank	29,119	32,185	35,196
Girobank		13	109
	£34,084	£35,184	£37,092

The overspend for the year was rather less than expected, but still significant, although our reserves have risen due to last year's excess of income over expenditure. The expectation is that overspends will continue, and the impact of this will be considered by the new Hon. Treasurer. The overspend was predicted as £5588 (about £900 more than the actual), but several payments were smaller than expected, including the one to Blackwell's, and others were postponed.

Wallace Memorial Fund

Brought forward amount	£725.00
1988 donations	522.42
Interest to 31. 12. 1988	124.65

Carried forward amount £1,372.07

The donations included £393.62 from the AGM book sale.

All the responsibilities of the Hon. Treasurer were taken over by Phil Stanley in January 1989, apart from completion of the accounts for 1988, so this report contains no comment or prognostications. I will miss my involvement with the affairs of the BBS, but I thank Council, and other Society members for all the help they have given me over the last six years.

B.J. O'Shea  
June, 1989

c) BIBLIOGRAPHER'S REPORT

As usual, two lists of recent bryological literature have been produced in the course of the year, one for each issue of the Journal.

It is remarkable how consistent the annual quantity of references which refer to the bryophytes is. The total runs at about 1000 each year, though as usual, many of these papers are not exclusively bryological in their subject matter. It is clearly a healthy sign when non-bryologists use plants of a kind which, to many eyes, may be rather insignificant in their research.

Nevertheless, it is more than ever essential that the quantity of pure bryological research is maintained to provide a basis for broader studies.

G.C.S. Clarke

d) BULLETIN EDITOR'S REPORT

Two Bulletins were again prepared and published during the year, both of them rather later than intended. The reasons for lateness are usually commonplace, for example late submission of articles or staff illness. But Bulletin 52 was held up because the Printer unexpectedly went away for a fortnight's holiday a few days after receiving the typescript. Deadlines for the Bulletins are 1 June and 1 December.

During the year a different printer was employed, in order to cut down on printing costs. I had used D. Brown & Sons of Bridgend for over 10 years, and found them most obliging. Our new printer is J. & P. Davison, Pontypridd.

A.R. Perry  
March, 1989

e) CONSERVATION OFFICER'S REPORT

1. The Conservation Committee was re-established with terms-of-reference approved by Council and published on p.26 of Bulletin 52.
2. R.C. Stern acts as Chairman of the Committee, with the first members being P.J. Wanstall and P.H. Pitkin; subsequently D.G. Long joined the Committee and also N. Hodgetts, following his appointment as the NCC's Lower Plant Specialist.
3. Three meetings of the Committee were held with certain co-opted members present at one of the meetings. Business was also conducted by correspondence and 'phone' discussions between members on various issues.
4. R.C. Stern has been active on the CABS (Conservation Association of Botanical Societies) Committee and was elected Chairman in October. This Committee meets monthly, normally in London, but on one occasion met in Alice Holt Forest in order to view the moss trail established there by the Forestry Commission.
5. CABS is administering the project on Conservation Requirements of Threatened Lower Plants (normally referred to as the Red Data Book Project), funded by NCC. R.C. Stern sits on the Steering Group for this project which started in July and initially concentrated on lichens, although preparatory work by the Project Officer (Nick Stewart) was carried out for bryophytes.
6. CABS is also producing, in conjunction with BSBI, a Code of Conduct which

will incorporate references to Conservation of Lower Plants, especially bryophytes, based on submissions by R.C. Stern on behalf of BBS.

7. The Committee welcomed the NCC appointment of Nick Hodgetts; the BBS had pressed NCC strongly to make such an appointment.

8. The Committee produced a list of desirable projects for which sponsorship/funding is required. This was submitted via CABS to the Steering Committee of the new Plants Trust which is being set up and which it is hoped will provide such sponsorship/funding.

9. The Committee and Conservation Officer also dealt with a number of specific issues raised by BBS members as well as outsiders.

10. Although the main work was concerned with Great Britain, Mr D. Synnott in Ireland has been kept informed of developments.

R.C. Stern  
March, 1989

f) CURATOR'S REPORT

Voucher specimens incorporated during the year were 234 mosses and 87 hepatics. There were 11 loans, of 115 specimens. Again I thank my colleague, Miss Ellen Roberts, for dealing with all loans and incorporation of specimens.

I have now completed the word-processing of the vice-comital holdings of hepatics in BBSUK, and a typed list is available from me on receipt of a stamped (14p) self-addressed label. The list is already proving a useful time-saver for answering queries arising as a result of the present work on the Atlas of the Bryophytes of the British Isles. It is hoped that a print-out of the moss holdings will be available eventually.

A.R. Perry  
March, 1989

g) REPORT OF JOURNAL OF BRYOLOGY EDITOR

There have been considerable problems with the production of Journal of Bryology during 1988. This started in January with the transfer by Blackwell's of sub-editing the Journal from Oxford to Edinburgh. Despite promises to the contrary this caused a 4 months delay in publication of 15(1) and a 2 months delay in 15(2). The situation was further exacerbated by the bankruptcy of Adlard's the printers during the summer. The situation now appears to be improving.

Further problems included incompetent touching up of maps and figures by Adlard's and blurred print in some copies of 15(1). I have been assured that such things will not happen again.

Publication of parts 2 and 4 of each volume has been re-scheduled so that the parts appear in December of the year on the cover and not the following year as usually happens now.

The flow of papers, especially from abroad, continues unabated and some excellent examples have resulted from efforts of members of the Editorial Board to attract contributions.

I am most grateful to George Bloom, Brian O'Shea and Philip Stanley for help with proof-reading. I should also like to thank the secretarial staff of the

School of Plant Biology, Bangor, before they vanish into the amorphous School of Biological Sciences, for dealing with volumes of correspondence, retyping papers etc., assistance that has proved invaluable over the last 10 years.

A.J.E. Smith  
February, 1989

h) LIBRARIAN'S REPORT

Sales:	J. Bryology (parts)	42
	TBBS (parts)	39
	Distribution of Bryophytes	25
	Census Catalogues (old)	4
	Mosses of Europe & Azores	4
	Hepatics of Europe & Azores	4
	BBS Bulletins	37
	Library Catalogues	7
	Moss Wall charts	7
	x20 lenses	33
	Stainless-steel forceps	12
	BBS ties	4
Loans:	35mm slide loans	2
	Micrometer slide loan	1

As usual there have been half a dozen or so requests for xerox copies of reprints held in the library during the year. A copy of the 'Biology of Polar Bryophytes & Lichens' by R.E. Longton, pp.391, 1988, C.U.P. has been presented to the library by the author.

Kenneth J. Adams

i) MAPPING SECRETARY'S REPORT

The preparation of an Atlas of British and Irish bryophytes is proceeding to schedule at the Biological Records Centre and the liverwort maps are at an advanced stage of production. Harley Books will publish the Atlas in 3 volumes at, it is hoped, a price of approximately £20 per volume over a three year period.

The deadline for final additional records has now passed. A check is being made for missing vice-county records of all species for which there are no field or other records in the BBS data from the vice-counties concerned. This is being very efficiently done by Marcus Yeo.

A.J.E. Smith  
February, 1989

j) MEETINGS SECRETARY'S REPORT

The unstinted efforts of local secretaries and organizers ensured that this year's programme of meetings was outstandingly rich and varied. Not only did we have field meetings in Cirencester (Miss K.A. Hearn) and at Beauuly, Inverness (Dr P.J. Lightowlers & Mr D.G. Long), an autumn meeting in Liverpool (Dr J.R. Edmondson & Mr M.J. Wigginton) and a remarkably ambitious bryophyte workshop in Bristol (Dr D.H. Brown, Mr B.J. O'Shea, Dr J.W. Bates & Dr P.E. Stanley), but we also had an unprecedented opportunity in Edinburgh (Dr R.E. Longton, Dr Lightowlers & Mr Long) to discuss ecological matters in an

international context. It is equally pleasing to report that other people are already at work to secure success for next year's meetings.

In my eight years as Meetings Secretary, it has been a privilege to be entrusted with the planning of the programme that serves to bind the Society together. In that time, the well established annual pattern of four meetings in different parts of the British Isles has continued to be offered, but additional attempts in 1982 to encourage members to meet each other locally can only be said to have failed. It seems likely that those members, who join the BBS with the intention of attending meetings, do so expecting more interaction than is possible in the very small groups that are all that might be mustered in many parts of Britain. Elsewhere, where numbers are greater, there are already active groups of bryologists. It has, however, been possible to consolidate the practice, introduced by my predecessor, of holding occasional international symposia; the usefulness of the one sponsored jointly with the British Ecological Society in 1988 was clearly apparent. Other international gatherings have included, by invitation, a special BBS meeting at Burlington House in 1987 to celebrate the bicentenary of the Linnean Society, in which venture we were generously supported by the trustees of the Tansley Fund of the New Phytologist Trust. Our own diamond jubilee meeting in 1983 was also, of course, a truly international occasion. It followed a taxonomic training course, earlier that year, which had been arranged in collaboration with the Systematics Association to mark our jubilee in a way that would allow BBS members and others to benefit alike from some of the Society's expertise. It was with the same intention that a day of tuition for beginners preceded the spring meeting of 1986. The idea of Mr R. Stevenson, it was immensely successful and similar sessions will, it is hoped, become a regular feature of what is already a varied and, on the whole, well attended programme of field meetings. It has included an overseas excursion in 1985 to the Bavarian Alps, and another, to the Algarve, is planned for next year.

This level of activity could be maintained only by the willingness of many members over the years to spend a great deal of time and thought on the organization of meetings. The Society owes them its gratitude and I, too, am deeply indebted to them, for they have made my job easier. I have been greatly assisted by fellow officers and by my predecessor, Prof. J.G. Duckett. I am also extremely grateful to Mr A.D. Banwell for the thoroughness of his legal advice about the BBS provisional safety code I had drafted and which was brought into use in 1984. Dr Lightowlers, the new Meetings Secretary, has already shown his skill in arranging excellent meetings for the BBS and I wish him well in continuing to do so.

M.E. Newton  
December, 1988

#### k) MEMBERSHIP SECRETARY'S REPORT

There were 532 members for 1988 including 13 Honorary members, 13 Family members and 26 new members. There were 11 people who resigned or died and there are still 23 members who have not paid-up and do not answer my reminders! Sadly, these 23 members will have now to be removed from our files as defaulters, unless we hear from them shortly.

A membership list is available for BBS members only for £2 post paid from the membership secretary, Dr S.L. Jury, Department of Botany, Plant Science Laboratories, University of Reading, Whiteknights, Reading, Berkshire, RG6 2AS. Cheques should be made payable to the University of Reading.

S.L. Jury  
March, 1989

1) PUBLICITY OFFICER'S REPORT

Now that the major project of the Travelling Exhibition is completed, and all other proposed projects have been pursued and mostly rejected, this year's report would consist of a few minor items that ended rather doubtfully on my desk because they didn't fit very well anywhere else.

The Publicity Officer has thus submitted a short document to Council. This both discusses the original concept of the 5½ year old post which was created "to encourage greater public awareness of bryophytes, and to a lesser extent to publicise (and recruit for) the society", and also considers all proposals and achievements in that time.

In summary, it is suggested that Council should reconsider the original brief for the Publicity Officer, and indeed the way in which the Society wishes to present itself.

S.R. Edwards  
April, 1989

m) READING CIRCLE REPORT

There have been some changes in the membership of the reading circle during the year, and the number of subscribers now stands at 30, with five members outside the United Kingdom. Contents lists for thirteen issues of the five journals were circulated to members, a total of 445 pages. In addition 32 articles were supplied to 14 members.

Financial statement

Income		
Members' credit at 1.1.88		£111.42
Income (cheques and cash)		£ 80.00
Total		£191.42
Expenditure		
Photocopies supplied		£ 49.93
Postage		£ 26.72
Administration (postage, copies)		8.86
Total		£ 85.51
Excess of income over expenditure		£105.91
Less members' credit at 31. 12. 88		£103.73
Balance of income over expenditure		£ 2.18

M.A.S. Burton  
March, 1989

n) REPORT OF RECORDER FOR HEPATICS

During 1988 the number of vouchers received by the Recorder increased significantly over the past few years, indicating a welcome increase in the level of Hepatic recording. In contrast to 1987 most of the records in 1988 did not result from Society Meetings. The total number of new records accepted was 106, the first time we have topped the '100 mark' since 1982. Six deletions were also made to the Census lists.

Important new discoveries in 1988 included several important extensions of range in 'well-worked' counties in southern England, Adelanthus decipiens new



to SW England, Harpalejeunea ovata in the New Forest, and Cephaloziella calyculata in Somerset; in Wales and Scotland further extensions of range were noted for Scapania lingulata; the BBS summer meeting resulted in discovery of several rare oceanic species in Easternness, including Bazzania pearsonii and Mastigophora woodsii; probably the most important discovery made was that of Leiocolea rutheana new to Ireland in one of the fragile and threatened fens of Co. Mayo.

Some comments on labelling are still needed: most contributors now include grid references, but few give altitudes; current work on the BBS Bryophyte Atlas has demonstrated our ignorance of the altitudinal limits of many species, and regional variations in this. Altitudes should be given whenever possible.

A few perianths and gemmiferous shoots, if present, should be put in a mini-packet, and especially capsules/spores of Fossombronina. Too often badly collected specimens growing on soil reach the Recorder as a pile of dust in the bottom of a packet (e.g. Riccia); some of these plants should be placed in a mini-packet. In Lophozia, Lejeunea, Nardia, and Scapania specimens should be sent as fresh as possible or should include notes on number, shape, structure, and distribution of oil bodies. Vouchers of most members of Cephalozia, Cephaloziella, Jungermannia and Kurzia cannot be accepted without gametangia.

D.G. Long  
January, 1989

#### o) REPORT OF THE RECORDER FOR MOSSES

Although there are slightly fewer new records than for 1987, the numbers are not greatly augmented, as they were that year, by records from the Summer Meeting. In real terms therefore the figures represent a further increase in the level of recording. A more detailed analysis is given below.

	New records Collected 1987-8	New records Collected pre-1987	Deletions
England	83	3	-
Wales	30	4	-
Scotland	64	4	5
Ireland	8	17	29
Totals	185	28	34

These figures do not include the revision of Andreaea by Barbara Murray (J. Bryol. 15: 17-82). The large number of Irish deletions is due to the labours in DBN of Donal Synnott who has corrected many determinations on which Census Catalogue entries are likely to have been based. Members may be able to reinstate some of these entries.

Notable among the year's records have been Tetraplodon angustatus and Trichostomopsis umbrosa new to Ireland, Seligeria diversifolia, Fissidens rivularis and Aloina brevirostris new to Scotland, and Leptobarbula berica and Bryum muehlenbeckii new to Wales. Also of special note are the two new stations in Scotland for Sphagnum majus, indicating that we may have overlooked this species in Britain, the discovery of Scopelophila cataractae in north Wales, and the new localities for Dicranodontium subporodictyon, Fissidens monguillonii and Anomodon longifolius.

A small but significant number of packets do not bear grid references, which greatly increases the effort required to map the records. There are also

continuing problems in interpreting hand-written place names on packets when these are not printed clearly. Ideally they should be written in block capitals or typed.

I would like to thank once again David Long, Mark Hill, Harold Whitehouse and Martin Corley for assistance, especially with equivocal specimens. Roy Perry has always responded promptly to requests for comparative material.

T. Blockeel  
February, 1989

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#### THE BBS QUESTIONNAIRE

Members may recollect that a questionnaire was sent out some five years ago. Unfortunately those replies have laid fallow since then but earlier this year they were made available to me and I have now had an opportunity to put them into a computer database and make various analyses. I felt the results, albeit belated, would be of interest to members.

The questionnaire was structured to elicit the interests, needs and wants of members. It also sought details of age, employment and bryological interests. From the membership list I have also extracted the year when the respondent joined the Society.

The questionnaire was sent out in 1984 and some 205 members completed it. This represents about 40% of the membership, a rather good response I felt.

The average age of respondents (in 1985) was 46.3 years and the average number of years membership was 14.1 years. As regards distribution of age, only 1% was less than 21 years, 10% less than 31 years whilst nearly 14% were over 60 years old. About a quarter had been in the Society for less than 6 years, 24% for 11 - 20 years and more than 8% over 30 years.

Only two respondents described themselves as full time bryologists in a UK University tenured position whilst there were nine from outside UK. Full time bryologists, but not University, numbered 5 for UK and 15 outside UK.

As regards substantial interest in various bryological subjects:- distribution (72%), taxonomy (53%) and ecology (65%), whilst pollution was 15% (one wonders what the level of interest would be today in pollution). Topics of physiology (8%), morphogenesis (8%), cytology/genetics (7%) and ultrastructure (4%) were of considerably less interest it would seem.

The services that the Society provides were also surveyed. The values given below the percentage indicating great interest whilst the number in parenthesis is for those showing some interest. The Journal and Bulletin were both very well received (each about 73% (22%) a total of about 95% positive interest). Some 40% (34%) were in considerable need as far as assistance with identification whilst 33% (42%) were interested in field meetings. Paper Reading meetings were of interest to 18% (38%) and the value for Taxonomic Workshops was 25% (37%). The percentages for the Reading Circle were 8% (21%) and Herbarium activities were 16% (38%). VC Recording 25% (34%) and the Mapping Scheme 35% (33%) were rather popular.

The percentage of respondents from UK was 64%, Eire 2%, Europe 11%, Americas 12%, Scandinavia 8%, the balance being from Africa, Asia and Australasia.

PHILIP E. STANLEY

## MINUTES OF THE ANNUAL GENERAL MEETING, LIVERPOOL, 1988

Minutes of the Annual General Meeting held at the Liverpool Museum at 4.30 pm on 17 September, 1988.

PRESENT: Mr P.J. Wanstall (President, in the chair) and 41 other members,

(1) Apologies for Absence: apologies were received from Dr K.J. Adams, Mr G. Bloom, Dr S.W. Greene, Miss J. Ide, Dr S.L. Jury, Mrs J.A. Paton and Mr T. Pynner.

The President opened the meeting by paying tribute to the effective and enthusiastic Presidency of his predecessor, Mr George Bloom. These comments were followed by a round of applause.

(2) MINUTES: The minutes of the AGM held at Wye College, Kent in 1987 were approved as published in the Bulletin.

(3) MATTERS ARISING: Wallace Memorial Reserve: Mr Stern reported that negotiations to purchase the Saxonbury Hill site had failed, but that Council had authorized him to attempt to acquire a larger, bryologically richer sandrock site, also in Sussex. It might, however, be necessary to lease the site, rather than purchase it outright, in the first instance. It was envisaged that the Sussex Wildlife Trust would undertake to manage the site if the negotiations were successful. Mr Crundwell asked whether any leasing agreement would contain a firm option to purchase. Mr Stern said that this would be desirable, but that it might not be possible.

(4) OFFICERS' REPORTS for 1987:

TREASURER: Mr O'Shea circulated the accounts for 1987 which indicated that the Society was in a healthy state financially. No increase in subscriptions was necessary for 1989. Mr Perry thanked Mr O'Shea for his efficient treasurership.

BULLETIN EDITOR: Mr Perry regretted the delay in publication of Bulletin 52. This had arisen due in part to late submission of essential copy. He stressed that material must be submitted by December 1 or June 1, and indicated that these deadlines would be publicised and strictly adhered to in future.

MAPPING SECRETARY: In the absence of Dr Smith, Dr Hill reported that work on the preparation of the Atlas was proceeding on schedule.

CONSERVATION OFFICER: Mr Preston congratulated Mr Hodgetts on his appointment as NCC Lower Plants Officer. Mr Stern drew attention to a report on the work of the Conservation Committee that appeared in Bulletin 52.

PUBLICITY OFFICER: Dr Edwards reported that the Travelling Exhibit was complete and on the road. It was now time to revive other publicity initiatives such as notelets and Christmas cards. Suitable designs and other ideas were urgently required from members. Mr Long recommended that brochures and other material publicising the Society should be available at all Society meetings.

There were no comments on the other reports. The reports were accepted.

(5) REPORT FROM COUNCIL: The President announced Council's recommendation that Dr H.L.K. Whitehouse should be made an Honorary Member of the Society in recognition of his long and distinguished service to Bryology and to the BBS.

This was approved unanimously, and Dr Whitehouse expressed his appreciation.

Dr Longton reported that the BBS and the International Association of Bryologists were to hold joint meetings on Experimental Bryology and on the Biology of Sphagnum at Exeter in July 1991, to be preceded by a field excursion to Sphagnum-rich sites in different parts of the country.

It was reported that, in response to a suggestion from Mr A.C. Crundwell, Council had agreed that money should occasionally be made available as a contribution towards the costs of overseas bryologists invited to attend BBS field or paper-reading meetings. Several members expressed approval.

It was reported that Council had endorsed a suggestion from Mr Wanstall that a suitably engraved silver plate should be obtained and affixed to the Presidential gavel outlining its origin. It was suggested that Mr and Mrs Fitzgerald, who had presented the gavel, should be invited to attend the next paper-reading meeting.

(6) ELECTION OF OFFICERS: It was reported that Council had nominated Dr M.E. Newton to succeed Dr Longton as General Secretary, Mr P. Stanley to succeed Mr O'Shea as Treasurer, and Dr P. J. Lightowlers to succeed Dr Newton as Meetings Secretary. In the absence of other nominations they were declared elected. The President warmly thanked the retiring officers for their services.

(7) ELECTION OF ELECTED MEMBERS OF COUNCIL: It was reported that Council had nominated Mrs J.A. Paton, Dr D.H. Brown and Mr M.V. Fletcher to serve two-year terms from 1 January 1989. In the absence of other nominations they were declared elected.

(8) DATE AND PLACE OF NEXT AGM: Dr Newton confirmed that the next AGM would be held at Lincoln on 16 September 1989.

(9) OTHER FUTURE MEETINGS: Dr Newton confirmed that meetings up to Spring 1989 would be announced in the Bulletin.

Summer 1989 - Aberystwyth 26 July to 2 August, with Mr Alan Orange as local secretary.

Autumn 1989 - Lincoln 17-18 September, with Dr M.R.D. Seaward as local secretary. Dr Seaward had suggested "Bryology and bryologists in lowland Britain" as a theme for the paper-reading sessions. Several members recommended that only part of the programme should be devoted to a single theme.

Workshop 1989 and Spring 1990 - not yet arranged. Several members suggested that the Workshop should be designed to stimulate beginners.

Summer 1990 - Dr Newton reported that a meeting in Ireland was being planned. Dr D.M. Synnott had recommended Northern Ireland, which he considered could provide a safe venue provided that the organizer had sufficient local knowledge. The possibility of one week in Antrim or Down plus one week in Donegal would be explored. No member expressed serious concern about safety during a possible meeting in Northern Ireland.

(10) ANY OTHER BUSINESS: In response to an enquiry from Professor Richards, Mr Wanstall confirmed that Mr Stanley was proceeding with work on an index to the Society's publications.

The meeting adjourned at 5.45 pm.

## ELECTION OF OFFICERS AND ELECTED MEMBERS OF COUNCIL

Dr M.O. Hill, currently Vice-President, will succeed Mr P.J. Wanstall as President of the BBS on 1 January 1990 for a term of two years. The terms of all other officers except Dr M.E. Newton (General Secretary), Dr P.E. Stanley (Treasurer) and Dr P.J. Lightowlers (Meetings Secretary) expire at the end of 1989 and members are invited to submit nominations. Present officers are eligible for re-election, although Dr G.C.S. Clarke (Bibliographer) and Dr S.L. Jury (Membership Secretary) wish to resign. To assist in finding successors, they have kindly drawn up descriptions of the duties of their relative posts. They are available on request from the General Secretary. The three Elected Members of Council who retire at the end of 1989, Dr C.J. Miles, Dr P.H. Pitkin and Mrs V. Williams, are not eligible for re-election until two years have elapsed, and nominations for their replacement are invited. Nominations for officers and elected members should be sent to the General Secretary, Dr M.E. Newton, Department of Cell & Structural Biology, Williamson Building, University of Manchester, Manchester, M13 9PL, to arrive no later than 26 August 1989. They must not be made without the consent of the person it is wished to nominate. If elections are needed, they will be held at the AGM at the Old Bishop's Palace, Lincoln, on 23 September 1989.

## PROPOSED CHANGE OF RULES: TENURE OF BBS OFFICERS

The experience of other societies shows that it is healthy to ensure a steady turnover of Officers. In this way, younger members can be brought in where possible. Older members are likely to be stimulated by changing jobs. With a very small society, such as the BBS before 1950, such a turnover would be almost impossible to achieve. However, the BBS is now relatively large and could benefit from the following proposal, which has been discussed and approved by Council. As a proposed change of rules, it needs to be ratified by the AGM.

**Resolution** That, with the exception of the Curator and Librarian, Officers of the BBS shall have a normal limit of tenure of 10 years. Officers who have served for 10 years or more can be re-elected, but only if proposed from the Chair and seconded by the Vice-President or an ex-President. For the purposes of this resolution, officers already serving in 1989 shall be deemed to begin their period of office on 1 January 1990. Thus the rule will have no effect until the year 2000.

### Notes

- i. By deferring the effect of the resolution till 2000, all existing Officers are assured of a further 10 years in office under the existing rules.
- ii. The requirement for a proposal from the Chair and that the Officer shall be seconded by a Vice-President or ex-President is appropriate because the President already has a strictly limited term of office. Such a proposal cannot therefore be interpreted as a desire to entrench some 'old guard' in office.
- iii. If the Society shrinks so as to make this proposal inconvenient, then this will soon become obvious. This rule can then be eliminated.

M.O. Hill  
25 April, 1989

## FUTURE MEETINGS OF THE SOCIETY

Members are reminded to read the BBS Safety Code, published in Bulletin 43 and available from local secretaries for inspection during BBS meetings.

A point of general interest is that British Rail have withdrawn their conference fares scheme. Members travelling by rail should contact their local BR information office for details of the cheapest way of travelling to meetings by rail.

### ANNUAL GENERAL MEETING AND PAPER-READING MEETING, 1989, Lincoln, 23-24 September.

Local Secretary: Dr Mark Seaward, Dept. of Environmental Science, University of Bradford, Bradford BD7 1DP.

This year's meeting will be held in Edward King House, in a picturesque setting close to Lincoln Cathedral and the medieval ruins of the Bishop's Palace. Lectures and accommodation are both held within the building, and car parking will be available.

Full details of the accommodation and programme can be obtained from the local secretary. Completed booking forms are required no later than 14 August.

This year's programme will include a special session on 'Bryology and Bryologists in lowland England', and there will be a variety of talks on other subjects. Speakers who have kindly agreed to contribute so far include:

Dr Jessica Beaver (DSIR, Auckland, New Zealand): Bryology in New Zealand.

Dr Rod Seppelt (Antarctic Division, Tasmania): Taxonomy and biology of some continental Antarctic moss species.

Dr Mark Seaward (Bradford University): Lincolnshire bryology and bryologists.

The ANNUAL GENERAL MEETING will be held at 4.30 pm. on Saturday 23 September, 1989, at the Old Bishops' Palace, Lincoln, following the paper readings.

## ANNUAL GENERAL MEETING, LINCOLN, 1989

### A G E N D A

1. Apologies for absence
2. Minutes of the last AGM, Liverpool, 1988 (see pp.11 - 12 of this Bulletin)
3. Matters arising
4. Officers' reports for 1988 (see pp. 2-10 of this Bulletin)
  - a) General Secretary
  - b) Treasurer
  - c) Bibliographer
  - d) Bulletin Editor
  - e) Conservation Officer
  - f) Curator
  - g) Journal Editor
  - h) Librarian
  - i) Mapping Secretary
  - j) Meetings Secretary
  - k) Membership Secretary
  - l) Publicity Officer
  - m) Reading Circle Secretary
  - n) Recorder for Hepatics
  - o) Recorder for Mosses

5. Report from Council
6. Tenure of officers (see p.13 of this Bulletin)
7. Election of officers (see p.13 of this Bulletin)
  - a) Vice-President
  - b) Bibliographer
  - c) Membership Secretary
  - d) Other officers
8. Election of elected members of Council (see p.13 of this Bulletin)
9. Membership subscriptions and mode of payment
10. Place and date of next Annual General Meeting
11. Other future meetings, including policy on timing of field meetings
12. Any other business

As usual, on the Saturday evening there will be a conversazione during which members are invited to display posters and demonstrations of their recent work or interests. Offers of displays will be welcomed by Dr Seaward. Participants are also requested to bring with them any surplus bryological literature which they may wish to sell or auction. A field excursion to several localities has been arranged for Sunday 24 September, led by Dr Seaward. Full details are available from him.

#### WORKSHOP MEETING, 1989, London, 24-26 November.

Local Secretary: Jennifer Ide, 42 Crown Woods Way, Eltham, London SE29 2NN.

The workshop will be held at Roehampton Institute (Whitelands College) in south-west London and is aimed at introducing beginners to the structural range of bryophytes and techniques for their examination and identification.

It is anticipated that bryophytes will be collected at a local site (within five minutes walk of the college) which exhibits a surprisingly diverse flora for suburban London. All major groups are represented. However, participants are encouraged to bring their own material, especially specimens which they have difficulty in identifying. An introductory session will be given on Friday evening for anyone wanting an introduction to bryophytes in the ecosystem and their life cycle.

Members and non-members are both welcome but preference will be given to the former if numbers become excessive. Accommodation will be in local hotels and guest houses.

For further information please contact Jennifer Ide before 31 October if possible.

#### SPRING FIELD MEETING, 1990, Lancaster, 4-11 April.

Local Secretary: Mr Martin Wigginton, Nature Conservancy Council, 70 Castlegate, Grantham, Lincolnshire.

The wide range of habitats in West Lancashire and adjacent areas is reflected in its rich bryological flora, nearly 600 species having been recorded in recent years. However documentation of the flora is still patchy. Participants can help remedy this and expect to see woodland, limestone scars and upland moors and valleys in abundance.

Full details of the programme and local accommodation will be available from Mr Wigginton nearer the time of the meeting. Further particulars will also appear in the next issue of the Bulletin.

SUMMER FIELD MEETING, 1990, Ulster: Antrim, Derry and Donegal, August.

Local Secretary and organisers: Dr Keith Lewis, Biomedical Library, Queen's University, Belfast City Hospital, Lisburn Road, Belfast, BT9 7AB. Paul Hackney and Richard Weyl.

The 1990 Irish meeting will concentrate on the province of Ulster, beginning by spending the first few days in the Cushendall/Cushendun area in the heart of the glens, then moving to the Castlerock/Limavady area in County Derry for the remainder of the first week. It is proposed to visit the Garron Plateau, Glen Arriff, Magilligans strand and several other interesting and under-recorded sites.

For the second week the meeting will move to north Donegal, where the headquarters will be Dunfanaghy. The areas to be visited include Glenveigh, the mountains of Errigal and Muckish, the Derryveigh Mountains and a range of coastal habitats.

ANNUAL GENERAL MEETING AND PAPER READING MEETING, 1990, Cambridge, late September.

Local Secretary: Dr Philip Stanley, 48 Glisson Road, Cambridge CB1 2HF. Tel. (0223) 460885.

A special meeting in honour of Professor Paul Richards and Dr Eustace Jones. Further details will appear in a later Bulletin.

WORKSHOP MEETING, 1990, Manchester

Local Secretary: Mr Sean Edwards, Manchester Museum, The University, Manchester M13 9PL.

The subject of this workshop will be photography of bryophytes, and Sean Edwards and other members will be demonstrating their considerable expertise.

FURTHER MEETINGS. Your views and suggestions for future meetings are always welcomed by the Meetings Secretary. Looking ahead, we have to organise meetings for 1991. Following previous patterns, our summer meeting would be in Scotland, and the Shetlands, the Hebrides or Dumfries and Galloway have all been suggested. The venue of the spring meeting is still undecided, as are the workshop and paper reading meetings.

Don't delay! Phone me or write with your ideas:

Philip Lightowlers, British Antarctic Survey, Madingley Road, Cambridge CB3 0ET. Tel. 0223 61188 ext. 407/405

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DR STANLEY W. GREENE

It is with much regret that we announce the death, on 14 June, 1989, of Dr S.W. Greene, at his home in Bilthoven.





## CONGRESS OF EAST ASIATIC BRYOLOGY

August 12-19, 1990 Helsinki, Finland

The congress will feature:

- (i) Review lectures of East Asiatic bryology
- (ii) Several sessions containing contributed papers dealing with systematics, ecology, morphology and biogeography of East Asiatic bryophytes
- (iii) Poster sessions

The symposium speakers have been chosen to provide stimulating discussions on systematics in the region of East Asia where they live and/or conduct their research. The symposium will also explore relationships between Asiatic and other floras.

A circular outlining the conference topics, registration information, the procedure for contributing a paper, and conference excursions details will be sent upon request. Those needing a formal letter of invitation should write to: Timo Koponen, Department of Botany, University of Helsinki, Unioninkatu 44, SF-00170 Helsinki, Finland.

## Endangered Bryophytes in Europe – Causes and Conservation

**Uppsala, Sweden 24-28 September 1990**

The Swedish Committee for the Conservation of Endangered Bryophytes invites to an international symposium on **Endangered Bryophytes in Europe – Causes and Conservation** to be held at the Swedish University of Agricultural Sciences in Uppsala 24 – 28 September 1990.

Four topics are planned:

1. Status and distribution of endangered bryophytes.
2. Population biology and population genetics of rare and decreasing bryophytes.
3. Bryophytes in a changing environment – invasion and extinction.
4. Conservation and measures for the future.

The program will also include two field excursions.

**Preliminary applications and offers of posters and contributed papers** should be sent to the address below **not later than the 15 th of December 1989**. If you require a formal letter of invitation or want further information please contact the organizers.

**Address:** Symposium on Endangered Bryophytes, c/o Tomas Hallingbäck, Swedish University of Agricultural Sciences, Dept. of Ecology and Environmental Research, P.O. Box 7072, S-750 07 Uppsala, Sweden

B.B.S. LIBRARY SALES AND SERVICE 1989

FOR LOAN:

Members wishing to borrow books or papers are advised to consider whether a xerox copy of the appropriate pages would suffice instead of the original in those cases where copyright has expired. Charge 10p per exposure. Limit 50.

(a) Approximately 250 bryological books, journals and several thousand off-prints of individual papers. A catalogue of the books and Journals is available from the librarian, price £1.00.

(b) Transparency collection, list available (S.A.E.). 630 slides in the collection. Loan charge (to cover breakage of mounts) 50p plus return postage. Only 50 slides may be borrowed at a time to minimise possible loss or damage.

(c) Microscope stage-micrometer slide for calibration of eyepiece graticules. 10 m divisions. Loan deposit £15.

FOR SALE:

British Bryological Society Bulletins: Back numbers from No: 23 @ £1.00 each.

Transactions of the British Bryological Society/Journal of Bryology:

Vol. 1	parts 1-5 (£2.40 each)	£12
Vol. 2	parts 1-4 (£3.00 each)	£12
Vols.3 & 4	parts 1-5 (£2.40 each)	£12 per vol.
Vol. 5	parts 1-4 (£3.00 each)	£12
Vol. 6	parts 1-2 (£6.00 each)	£12 - ends the series of Transactions.
Vols.7-9	parts 1-4 ((£5.00 each)	£20 per vol.- renamed <u>J.of Bryology</u> .
Vol. 10	parts 1-4 (£8.00 each)	£32
Vol. 11	parts 1-4 (£10.00 each)	£40
Vol. 12	parts 1-4 (£11.50 each)	£46
Vol. 13	parts 1-4 (£15.50 each)	£62
Vol. 14	parts 1-4 (£18.00 each)	£72
Vol. 15	parts 1-2 (£20.25 each)	£40.50

Census Catalogues:

Duncan, J.B.	Census Catalogue of British Mosses, 2nd edition	1926	(20p)
Sherrin, W.R.	Census Catalogue of British Sphagna	1946	(20p)
Paton, J.A.	Census Catalogue of British Hepatics, 4th edition	1966	(20p)
Warburg, E.F.	Census Catalogue of British Mosses, 3rd edition	1963	(20p)
Corley, M.F.V.	Distribution of Bryophytes in the British Isles	1981	
& Hill, M.O.	(A Census Catalogue of their Occurrence in Vice-Counties)		
	Price incl. P & P Non-members (£6), Trade (£4), Members (£5.00)		

Other Items:

Longton, R.E. & Perry, A.R.	Proceedings of Jubilee Meeting, 1983. 1985	(£6.00)
Corley et al.	Mosses of Europe and the Azores. An Annotated List of Species with Synonyms. Price including P & P.	1981 (£2.50)
Grolle, R.	Hepatics of Europe and the Azores. An Annotated List of Species with Synonyms. Price including P & P.	1983 (£2.50)
Pearman, M.A.	A Short German-English Bryological Glossary.	1979 ( 50p)
Evans, D.E. & Perry, A.R.	Moss Wall Chart. Price including P & P.	1987 (£2.80)
Newton, M.E. et al.	Bryology: modern research and the ways forward.	1988 (£5.50)

BBS Tie, Claret with BBS logo	(£4.95)
Swift x20 Handlens and Leather Case	(£9.00)
Idealteck No. 3 Stainless Steel Forceps	(£4.50)

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PLEASE DO NOT INCLUDE CASH WITH U.K. ORDERS. CUSTOMERS WILL BE INVOICED FOR THE CORRECT AMOUNT INCLUDING P & P. (POSTAGE & PACKING EXTRA UNLESS STATED). ADDRESS LABELS LEGIBLY PRINTED APPRECIATED.

All the above items are available from the BBS Librarian:

Kenneth J. Adams, 63 Wroths Path, Baldwins Hill, Loughton, Essex, IG10 1SH

## CRYPTOGAMIC SURVEY OF METALLIFEROUS SITES

I am hoping to initiate a survey of bryophytes and lichens at metalliferous sites in Great Britain. These places, particularly mine-waste sites, are commonly regarded as eyesores, and are therefore under considerable pressure from landscaping schemes, golf course construction, etc. While this is not always a cause for concern, a significant number of these sites support a very interesting and specialised cryptogamic community. Unfortunately we have little or no data for many sites, so it is essential to remedy this by survey work.

As a starting point for the proposed survey it would be useful to have an idea of existing data, and I would be very grateful for any information members may have on the bryophytes of metalliferous sites. If anyone would like to help by doing new surveys I would be pleased to hear from them. Please write to Nick Hodgetts, Nature Conservancy Council, Northminster House, Peterborough PE1 1UA.

## NCC LOWER PLANT SPECIALIST

Lower plants are at last getting the attention they deserve. By appointing a Lower Plant Specialist, the Nature Conservancy Council has acknowledged that cryptogams are as worthy of conservation as birds or orchids.

The post covers bryophytes, lichens, fungi and non-marine algae. Work on the conservation of bryophytes has lagged behind that of vascular plants, and perhaps even of lichens, but I think that we now have an opportunity to catch up. After all, the British bryophyte flora is internationally important in a way that the vascular plant flora, by and large, is not.

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 Sites of Special Scientific Interest. At the moment the official criteria for lower plant site selection are very sketchy, and badly in need of improvement. To attempt this for bryophytes, I am using a modified version of the criteria devised for the Bryophyte Site Register (Newton, 1985). This grades sites according to total number of species present, number of rare species, size of the site, history of recording and degree of protection. Distribution maps from the Biological Records Centre are being used to determine rarity of species, and the final scoring system will take local, national and international rarity into account. Oceanicity may also be considered, so that Britain's very important Atlantic sites, without parallel elsewhere in Europe, are not under-represented in 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 BBS. 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 another part of the job, and I envisage future projects on, among other things, snowpatch bryophytes, metallophyte sites and transplant experiments on certain endangered species. A number of things seem to be coming together - the NCC lower plant post, the BBS Conservation Committee initiatives, European initiatives, the forthcoming Atlas, etc - and I think the time is right to put bryophyte conservation on the map.

Nick Hodgetts, CSD, Lower Plant Specialist, 17 March, 1989.

Newton, A.E. (1985). Bryophyte Site Register for Cambridgeshire. NCC Project. Huntingdon: Institute of Terrestrial Ecology. (Unpublished).

# NEW VICE-COUNTY RECORDS AND AMENDMENTS TO THE CENSUS CATALOGUES

All undated records are based on specimens collected in 1988; for specimens collected in earlier years the year of collection is given before the collector's name. Where the specimen bears a collector's number, this is given after the collector's name. All specimens are deposited in BBSUK, except where otherwise indicated. Numbers and nomenclature follow Corley & Hill (1981), Distribution of bryophytes in the British Isles: a census catalogue of their occurrence in vice-counties.

## HEPATICA

D.G. LONG

- 1.2 Anthoceros punctatus, on damp track in wooded valley, 60m, west bank of Moniak Glen S of Kirkhill (96), Long 15181.
- 12.1 Riccia cavernosa, Barry Sands (90) in (), 1884, W. Smith and 1890, E.M. Holmes (E).
- 12.8 R. warnstorffii, delete C, the record (Trans. BBS 2: 471, 1954) refers to R. crozalsii, comm. Crundwell.
- 12.9 R. crozalsii, delete H27, specimens from Achill Island, 1987, collected and cultivated by J.A. Paton (see Bull. BBS 52:30, 1988), have proved not to be this species, comm. Paton.
- 12.12 R. sorocarpa, on thin patches of soil overlying roadside rocks, Strond, Leverburgh, South Harris (110), Corley.
- 13.1 Metzgeria fruticulosa, on Elder bush on NE-facing hillside, Bredon Hill, near Elmley Castle, SW of Eversham (37), Blockeel 17/397.
- 14.1 Apometzgeria pubescens, crevice in limestone blocks on W-facing sea cliff, 150m, Largybaan cliffs, Mull of Kintyre (101), Rothero 88/054.
- 17.3 Riccardia incurvata, on wet peaty soil at edge of flush, Poll an Oir, Borve, Berneray, Harris (110), Corley.
- 18.2 Pellia neesiana, amongst grass in marshy clearing, Hainault Forest (18), Pyner; on wet shale bank by moorland stream, Black Brook, Gradbach, 8km W of Longnor (39), Blockeel 17/388.
- 22.1 Fossombronina foveolata, moist loamy sand by side of ditch, c8m, Sugar Fen, Pott Row, King's Lynn (28), Stevenson.
- 22.5a F. pusilla a. var. pusilla, on damp track in wooded valley, 60m, west bank of Moniak Glen S of Kirkhill (96), Long 15182.
- 22.6 F. wondraczekii, side of recently cut ditch by path into wood, Gamlingay Great Heath Wood (29), Hodgetts 1357; also found by P.E. Jackson.
- 23.1 Petalophyllum ralfsii, damp hollow on sandy flats, W of Doon Hill near Ballyconneely (H16), Long 14882.
- 26.4 Barbilophozia atlantica, among grass and Calluna on vegetated shaley bank by moorland stream, Black Brook, Gradbach, 8km W of Longnor (39), Blockeel 17/390; bare ground in old limestone quarry, among rocks, Sculliongour limestone quarry, Lennoxton (86), 1987, Hodgetts 842; base of birch tree with B. floerkei etc. in grazed open woodland, base of Dun Hill, NE side, Overtoun (99), 1987, Hodgetts 798.
- 26.8 B. barbata, on sandy soil, heathland, Risby Warren (54), Wigginton.
- 27.1 Anastrepta orcadensis, steep north-facing grassy hillside, above Llyfnant Valley (46), 1983, Jury & Rumsey J2195-b.
- 28.1 Lophozia ventricosa a. var. ventricosa, heathy sandstone bank, valley N of Mavis Enderby (54), 1987, Hodgetts 699; rocky, peaty hillside, 195m, Whiteadder valley, Edin's Hall Broch (81), Long 14858; on rocky bank by burn, 300m, Faseny Bridge, Lammermuir Hills (82), Long 15098; on N-facing slope of coal bing, 270m, East Benhar, Polkemmet Moor (84), Long 15085; in mossy turf on bank of mountain stream, 560m, valley S of summit of Ben Hope (108), Long & Rothero, Long 15136; with other

- hepatatics in tuft of Campylopus brevipilus on moorland, Borve Hill, Berneray, Harris (110), Corley. b. var. silvicola, on hummock in blanket bog, 260m, Balerno Common (83), Long 15172; on wet peat in mire, 145m, Monadh Mor near Tore, Black Isle (106), Long 15194; in flush at edge of boggy valley floor, 80m, River Mudale near Altnaharra (108), Long 15116; on peaty bank by forestry road, 180m, Glenmalur Valley E of Lugnaquilla (H20), Long 14907.
- 28.4 L. sudetica, with Hypnum cupressiforme on stone wall, Glen Fruin (99), J.A.B. Smith, comm. A.C. Smith.
- 28.6 L. excisa a. var. excisa, amongst bryophytes on stone wall, Glen Fruin (99), J.A.B. Smith, comm. A.C. Smith.
- 28.10 L. bicrenata, unstable mineral soil on S-facing slope of ravine, 10m, S of Meall nam Muc, E of Arinagour, Coll (103), Rothero 88/191.
- 28.12 L. obtusa, with Bryum weigelii and Pohlia wahlenbergii in spring at 895m, Garbh Choire, Glenshee (92), 1987, Birse 87037.
- 29.1 Leiocolea turbinata, damp hollow on sandy slope by sea, N side of Omev Island (H16), Long 14868.
- 29.3 L. heterocolpos, among Anoetangium aestivum in shaded base-rich crevice in gorge, S side of Afon Conwy, c 5km SW of Ysbyty Ifan (50), Yeo.
- 29.4 L. alpestris, on Magnesian limestone boulders on N-facing wooded bank, Pleasley Vale near Mansfield (56), Blockeel 17/041.
- 29.6 L. gillmanii, in flush on slope of basic ravine, 280m, Allt na Caorach, Glen Glass (106), Long 15215.
- 29.7 L. rutheana, amongst Ctenidium molluscum, Campylium stellatum in a Schoenus-dominated rich flush, c200 ft, 1/2 mile SW of Brackloon Lough (H27), 1987, Lockhart; new to Ireland.
- 32.2 Sphenolobus hellerianus, on algal covering on damp shaded vertical rock, 10m, South Mealdarroch NNR, Tarbert, Kintyre (101), Rothero.
- 33.1 Eremonotus myriocarpus, N-facing rocks in gully with Anoetangium warburgii etc., Coire Cann, Glen Luss (99), 1987, Hodgetts 925.
- 34.1 Anastrophyllum saxicola, delete 88, the voucher specimen, on boulder, 1800 ft, Craig an Lochan, 1900, S.M. Macvicar (E) is Scapania calcicola, det. Long; 1200 ft, Carn Dearg, Aviemore (95) in (), 1898, Macvicar (E), conf. Long.
- 35.3 Tritomaria quinqueidentata, among Pleurozium beneath Calluna in moorland, N side of Moel Famau (51), Yeo.
- 38.2 Jungermannia atrovirens, on Magnesian Limestone boulder on N-facing wooded bank, Pleasley Vale near Mansfield (56), Blockeel 17/043.
- 38.3 J. pumila, on damp, partly buried boulders of Malmstone (Upper Greensand) rock, Long Copse, Selborne (12), Rose.
- 38.9 J. gracillima, on moist sand, old carstone quarry, 35m, Roydon Common, King's Lynn (28), Stevenson.
- 38.11 J. hyalina, wet peaty soil at edge of flush, Poll an Oir, Borve, Berneray, Harris (110), Corley.
- 38.13 J. obovata, with J. pumila on damp rocks near river in woodland, Cwm Clydach (41), Orange 6692.
- 38.14 J. subelliptica, on moist base-rich rock in ravine, c 600m alt., Skew Gill below Great End, Scafell Range (70), Blockeel 17/360; on rocks by stream, Rose Cleuch, River South Esk above Gladhouse (83), 1974, Chamberlain (E), conf. Paton.
- 39.3 Nardia geoscyphus, sandy seepage ground in disused sand-pit, Coney Garth, Haxey (54), Wigginton.
- 40.1 Marsupella emarginata b var. aquatica, stone in streamlet, wood above Dalnahaitnach SW of Carrbridge (95), 1978, Paton 7046; c var. pearsonii, stone in streamlet, N slope of Plynlimon Fawr (46), 1972, Paton 7052; sloping rock in flush N-facing slope, Coire Dubh, Torridon Forest (105), 1979, Paton 6103.
- 40.6 M. boeckii, sheltered vertical rock, N corrie, Lochnagar (92), 1968, Paton 7015.
- 40.10 M. brevissima, exposed stony ridge, 775m, above An Garbh Choire, Ben

- Hope (108), Long & Rothero, Long 15140.
- 41.1 Gymnomitrium concinnum, delete 65, the specimen from Holwick Scar, Teesdale, June 1843, R. Spruce (E) is G. obtusum, det. Long.
- 41.2 G. obtusum, vertical rock face above Llyn Llygad, Pumlumon Fawr (46), Yeo.
- 43.1 Southbya tophacea, on limy mortar of damp shady wall in old conifer plantation, 160m, Baravore, Glenmalur Valley E of Lugnaquilla (H20), Long 14903.
- 46.4 Plagiocchia britannica, limestone rock outcrop on wooded slope above river, Alyn valley, S of Cilcain, c.5km W of Mold (51), Yeo; stony bank in ravine woodland, Shielhill Glen, Renfrew (76), Hodgetts 1239; on shady dry-stone wall, 45m, Bernice, Loch Eck (98), Long & Rothero, Long 15439.
- 46.9 P. corniculata, delete 88, the specimen from Loch Tay woods, July 1889, W. Smith (E) is P. punctata, det. Long.
- 49.2 Chiloscyphus pallescens, on clay soil on woodland floor on Magnesian Limestone, Dyscarr Wood, Langold, north of Worksop (56), Blockeel 17/006.
- 50.1 Geocalyx graveolens, damp hollows on steep heathery slope by sea, Plock of Kyle (105), Long et al. 15324.
- 51.2 Harpanthus scutatus, delete 89, the voucher specimen from Glas Maol, Glen Beag, June 1930, H.H. Knight, D.A. Jones and J.B. Duncan (E), is H. flotovianus, det. Long.
- 54.1 Diplophyllum albicans, amongst mosses by side of small stream, c50m, Great Heath Wood, Gamlingay (29), Stevenson.
- 55.2 Scapania calcicola, on thin basic soil on ledge in deep-cut ravine, 250m, Allt nan Caorach, W of Evanton (106), Rothero 88/140.
- 55.4 S. scandica, on soil on vegetated shaley bank by moorland stream, Black Brook, Gradbach, 8km W of Longnor (39), Blockeel 17/389; thin soil on old Calluna stem in moorland, N side of Moel Famau (51), Yeo; on stones on wall on summit of Roineabhal, South Harris (110), Corley; on tree trunk on N-facing rocky slope, 450m, below Arts Lough, Glenmalur Valley E of Lugnaquilla (H20), Long 14915.
- 55.6 S. lingulata, soil bank among rock outcrops above sea, Port Dinllaen, near Morfa Nefyn (49), Yeo; on peaty ledge on basic schist cliffs, 350m, SW cliffs of Ben Hope (108), Long & Rothero, Long 15119.
- 55.9 S. umbrosa, decorticated tree stump in gorge, S side of Afon Conwy c 5km SW of Ysbyty Ifan (50), Yeo.
- 55.14 S. compacta, on peaty soil among gritstone scree on moorland slope, 320m, Cranberry Clough, Upper Derwent Valley (63), Blockeel 17/465.
- 55.20 S. aspera, on limestone outcrop/boulder on Corylus-dominated woodland, Clorhane, between Clonmacnoise and Shannonbridge (H18), 1986, Kelly.
- 56.1 Adelanthus decipiens, on the side of a large granite block in oakwoods, growing with Scapania gracilis, Isoetecium myosuroides and Dicranum scoparium, Dewerstone Woods, SW Dartmoor (3), Ratcliffe & Ratcliffe; steep north-facing grassy hillside, above Llyfnant Valley (46), 1983, Jury & Rumsey J2195-a.
- 57.2 Odontoschisma denudatum, on decaying log by stream in woodland, Cwm Clydach (41), Orange 6691.
- 57.3 O. elongatum, mixed with Saccogyna viticulosa, Trawmore Sand SE of Keel, Achill Island, (H27), 1987, van Melick 871327 (herb. van Melick).
- 58.1 Cephalozia elachista in wet acidic mire among Cephalozia bicuspidata and C. connivens, Oak mere (58), Wigginton.
- 58.3 C. rubella, on peat under old Calluna, 300m, Stanton Moor, Darley Dale (57), Blockeel 17/486; amongst Aulacomnium palustre, Pitmaduthy Moss, Tainfield, S of Tain (106), Paton 7077; on peaty bank among rocks, Bretasker, near Toe Head, South Harris (110), Corley.
- 58.12 C. calyculata, on soil overlying carboniferous limestone, in turf, associated with Weissia sp. on W-facing slope at 150m, Burrington Coombe (6), Porley.

- 59.4 Cephalozia loitlesbergeri, among Sphagnum in raised bog near head of Alwen Reservoir, Mynydd Hiraethog (50), Yeo; among Sphagnum tenellum on damp heath, between Brynrefail and Llanallgo, (52), Yeo; new to Wales; amongst Sphagnum, Monadh Mor, Black Isle (106), Paton 7078.
- 59.7 C. macrostachya a. var. macrostachya, on raised bog with Sphagnum spp. and Mylia anomala, Blairbeich Bog (99), 1987, Hodgetts 868.
- 59.8 C. catenulata, soil among N-facing rocks above sea, Graig Wen, between Cemaes and Amlwch (52), Yeo.
- 61.2 Cladopodiella fluitans, creeping amongst Sphagnum recurvum in bog, Douglas Muir (99), 1987, Hodgetts 755.
- 63.1 Hygrobiella laxifolia, damp rock above river, below Rhaeadry Bedd, NE of Aled Isaf Reservoir (50), Yeo.
- 64.1 Anthelia julacea, damp rock face beside stream in gorge, Uwch-y-coed, W of Dylife (47), Yeo.
- 66.3 Kurzia sylvatica, soil among Calluna on steep N-facing slope, Tarren Bwlch-gwyn, W of Dylife (47), Yeo.
- 68.1 Bazzania trilobata, on log in damp woodland, 70m, lower Black Rock Gorge above Evanton (106), Long 15277.
- 68.3 B. pearsonii, on N-facing rocky slope by loch, 67m, Loch Beag, Sgurr na Lapaich, upper Glen Strathfarrar (96), Long 15246.
- 69.1 Calypogeia neesiana, on friable sandy soil under overhang on wooded slope, near to Schistostega, Agden Dyke, Bradfield (63), Blockeel 17/021.
- 69.2 C. integristipula, moist vertical rock face, Coille an Ath, Glen Strathfarrar (96), Paton 7079.
- 69.7 C. suecica, rotting log in ravine, Allt Uchd Rodha, Glen Strathfarrar (96), Paton 7080.
- 69.8 C. arguta, on soil with Cephalozia bicuspidata, Great Heath Wood, Gamlingay (29), Jackson.
- 72.2 Ptilidium pulcherrimum, on branch of Elder in wooded valley near Lower Wych (58), Fisk; on live Salix, carr-land by warping drain, Thorne Moors (63), Wall.
- 73.1 Mastigophora woodsii, on N-facing rocky slope by loch, 670m, Loch Beag, Sgurr na Lapaich, upper Glen Strathfarrar (96), Long 15240.
- 75.4 Radula aquilegia, on damp shady rocks on wooded river bank, 110m, ravine at Cannich, Strathglass (96), Long 14998.
- 78.3 Frullania microphylla, on rock by loch shore, Torrinch, Loch Lomond (99), Hodgetts 1176.
- 81.1 Harpalejeunea ovata, on old mossy Fagus bole, N of glade, Stricknag Wood, New Forest (11), 1978, Rose.
- 83.2 Lejeunea lamacerina, shady rock face by river, 110m, S side of ravine at Cannich (96), Long & Rothero, Long 15315.
- 83.3 L. patens, on rock in north-facing grassland, Whinnerston, Kilbarchan (76), Hodgetts 1236; damp shady rock face in ravine, 220m, Allt Uchd Rodha, Glen Strathfarrar (96), Long 15056.
- 85.2 Cololejeunea rosettiana, on Apometzgeria pubescens on shaded Magnesian limestone on N-facing wooded bank, Pleasley Vale near Mansfield (56), Blockeel 17/046.
- 86.1 Aphanolejeunea microscopica, on damp shady rock face on wooded river bank, 110m, ravine at Cannich, Strathglass (96), Long 15000.

#### Contributors of records, 1988

E.L. Birse, T.L. Blockeel, D.F. Chamberlain, M.F.V. Corley, A.C. Crundwell, R.J. Fisk, N.G. Hodgetts, P.E. Jackson, S.L. Jury, D.L. Kelly, N. Lockhart, D.G. Long, A. Orange, J.A. Paton, T. Pyner, D.A. Ratcliffe, M.J. Ratcliffe, F. Rose, G.P. Rothero, F.J. Rumsey, A.C. Smith, J.A.B. Smith, C.R. Stevenson, H. van Melick, C. Wall, M.J. Wigginton, M.M. Yeo.

MUSCI

T.L. BLOCKEEL

- 1.6 Sphagnum teres, boggy field on Mynydd Eglwysilan, just S of Cilfynydd (41), 1975, B. Scotter (NMW), comm. Perry.
- 1.8 S. girgensohnii, sward on bank near river, Owencashla, Glenteenassig (H1), 1955, A.P. Fanning, ex DBN, comm. Synnott.
- 1.10A S. skyense Flatberg, 104 (Flatberg, 1988).
- 1.11 S. warnstorffii, wet bank in ravine, Allt Nan Cadrach (106), Hodgetts 1265.
- 1.13 S. fuscum, large hummocks in extensive bog on margin of lochan, S of Lochan a' Chlaidheimh, Rannoch (98), Rothero 88/141.
- 1.17 S. compactum, several small patches among other Sphagna, wet peaty area of heathland track, junction of Pebble Gravel and Claygate Beds, Sunshine Plain South, Epping Forest (18), Adams; hummocks in shallow bog, Swanholme, Lincoln (53), 1987, Hodgetts 690.
- 1.18 S. platyphyllum, rich sloping fen, Sgurr a' Mhadaidh Ruaidh, Trotternish, Skye (104), 1987, Flatberg, comm. Hill; muddy, base-rich 'small sedge' flush, nr S end of Lough Coomeathcun, NE of Waterville (H1), Yeo.
- 1.19 S. auriculatum b var. inundatum, in shallow bog, Swanholme, Lincoln (53), 1987, Hodgetts 692.
- 1.20 S. subsecundum, in sedge-dominated meadow, Clonmacnoise Callows (H18), 1986, Lockhart.
- 1.22 S. cuspidatum, submerged in shallow bog pools, Swanholme, Lincoln (53), 1987, Hodgetts 689.
- 1.23 S. majus, Affric Lodge Woods (96), Frahm, conf. et comm. Hill; poor minerotrophic carpet in blanket bog between Heilam and Achuvoldrach, near A38 (108), Flatberg, comm. Hill.
- 1.27 S. recurvum a var. amblyphyllum, Alder swamp, Buchan Park Country Park, Crawley (13), Stern; boggy woodland, by Foxes Bridge, Forest of Dean (34), Hill; in base-rich basin mire, Shovelboard, Kilmacollm (76), Hodgetts 1221: b var. tenue, amend the record for 43 (Bull. Brit. Bryol. Soc. 52: 33) to read "Juncus acutiflorus flush", wrongly reported as "Juncus subnodulosus flush".
- 1.29 S. riparium, in carr, among S. palustre, at NW of Malham Tarn (64), Newton.
- 2 Andreaea, the British and Irish species have been revised by Murray (1988). The list of accepted taxa is as follows:
  - 2.1 Andreaea alpina, add 74, delete 41, 45, 67, 79, H28, H37, H40 (Murray, 1988).
  - 2.2 A. rupestris a var. rupestris, the revised distribution is: 1, 3, 4, 40-42, 44-46, 48-50, 59, 60, 62, 64-70, 72, 73, 75, 78-99, 104-106, 108-112, H3, 4, 6, 8, 13, 16, 20, 21, 27, 29-31, 34-40 (Murray, 1988) - place the entries for 1, 59 and 62, for which there are no recent records, in (), and add: in small quantity on millstone grit boulder in block scree, Nether Tor, Grindsbrook, Edale (57), Blockeel 17/456; b var. papillosa (Lindb.) Podp., (A. obovata var. papillosa), the revised distribution is: 48, 49, 70 (Murray, 1988).
  - 2.3 A. alpestris (Thed.) Schimp., (A. rupestris var. alpestris), the revised distribution is: 90, 92, 94, 96, 97, 106 (Murray, 1988) - the record from 49 is excluded as equivocal, and that from 104 as being of doubtful provenance.
  - 2.3A A. mutabilis Hook. f. & Wils., 49, 60, 65, 68-70, 72, 73, 77, 85, 87, 88, 90, 92, 94, 96-98, 103, 105, 106 (Murray, 1988).
  - 2.3B A. sinuosa B. Murr., 92, 94, 97, 105, 106 (Murray, 1988).
  - 2.4 A. rothii a ssp. rothii, the revised distribution is: 1-3, 40, 41, 45, 49, 60, 63-65, 69, 71, 73, 79, 82, 87, 88, 90, 94, 96, 98, 105, 106, H1,



- 2, 5, 8, 12, 13, 16, 20, 21, 27, 30, 35, 36, 38 (Murray, 1988); b ssp. falcata (Schimp.) Lindb., 1-5, 34-37, 41-50, 52, 57, 58, 60, 62-73, 78, 80, 82, 83, 86-92, 94-100, 102-108, 110-112, H1-3, 5, 6, 10, 16, 20, 21, 25-31, 33, 35, 38, 39 (Murray, 1988) - place the entry for 37, for which there is no recent record, in ().
- 2/4A A. frigida Hueb. (A. rothii ssp. frigida), the revised distribution is 65, 70, 92, 94 (Murray, 1988) - place the entry for 65, which is based on a collection made in 1854, in ().
- 2.5 A. crassinervia, delete all entries: the only confirmed record, from 92, is of doubtful provenance (Murray, 1988).
- 2.5A A. megistospora B. Murr. ssp. megistospora, 45, 48, 66, 70, 73, 74, 78, 87, 88, 96-100, 104, 105, 108, 110, H3, 4, 27, 38 (Murray, 1988) - place the entry for 66, which is based on a collection made in 1854, in ().
- 2.5B A. blyttii Schimp., 92, 94, 96, 105, 106 (Murray, 1988) - the records from 110 are excluded as being of doubtful provenance.
- 2.6 A. nivalis, add 88 in () (Murray, 1988) - the record from 49 is excluded as being of doubtful provenance.
- 4.1 Tetradontium brownianum, in small quantity on vertical acid rocks in deep shade, Wimberry Slade Quarries, 2 km. NE of Coleford (34), Townsend 88/24, also found by Hill.
- 5.2 Polytrichum longisetum, disturbed peaty soil in clearing in arboretum, Younger Botanic Garden, near Dunoon (98), Long 15422.
- 5.8 Polytrichum alpestre, forming large hummock in wet hollow in damp heath between Brynrefail and Llanallgo (52), Yeo.
- 8.2 Atrichum tenellum, track on bank above R. Fal, Goss Moor (2), Paton 2657; gravel track near loch, Aigas House, SW of Beaully (96), Paton.
- 8.3 A. undulatum b var. minus, side of path, Saxonbury Wood, near Frant (14), Stern.
- 14.1 Ditrichum cylindricum, sandy soil, near Haxey (54), Wigginton.
- 14.5 D. zonatum a var. zonatum, damp rock face above Llyn Llygad, Pumlumon Fawr (46), Yeo; acid rock crevice above stream, nr top of gully, Tarren Bwlch-Gwyn, W of Dylife (47), Yeo: b var. scabrifolium, damp acid rock face at top of gully, Uwch-y-coed, W of Dylife (47), Yeo; damp sloping rock face in gorge, S side of Afon Conwy, ca 5 km SW of Ysbyty Ifan (50), Yeo.
- 14.7 D. lineare, on sloping stony bank at foot of quarry wall, Lingarabay, Rodel, South Harris (110), Corley.
- 17.1 Brachydontium trichodes, on sandstone in disused quarry, Wimberry Slade, Forest of Dean, nr Coleford (34), Hill.
- 18.3 Seligeria acutifolia, lump of chalk buried in bank beside footpath, Knowle Hill, nr Corfe Castle (9), Yeo & Shea.
- 18.5 S. paucifolia, on lump of limestone in woodland, Workman's Wood near Sheepscombe (33), Long 14942.
- 18.7 S. diversifolia, vertical calcareous rock face in crags, Beinn Riabhach, Glen Nevis (97), 1984, Yeo, new to Scotland.
- 23.3 Rhabdoweisia crenulata, damp rock ledge in gully, Tarren Bwlch-Gwyn, W of Dylife (47), Yeo.
- 24.1 Cynodontium strumiferum, in crevices of dry S facing block scree, SW slope of An Cabar, Ben Wyvis (106), Rothero 88/099.
- 24.3 C. jenneri, walls, Snailsleuch, R. Whiteadder (82 in ()), J.B. Duncan, 1927 ex E, comm. Long.
- 24.7 C. bruntonii, delete H30, specimen from Cuilcagh Mt., Swanlinbar R, 1911, leg. W.N. Tetley (DBN) is Amphidium mougeotii, comm. Synnott.
- 26.1 Dichodontium pellucidum, boulder on shore of L. Kinale (H24), 1980, Synnott, ex DBN.
- 28.5 Dicranella subulata, on earthy bank of forestry track, N side of the Buckstones, Staunton, Forest of Dean (34), Rose & K. Hearn; delete H21, specimen from Howth, leg. D. Orr (DBN) is D. heteromalla, comm. Synnott.
- 28.6 D. rufescens, muddy margin of reservoir, nr Penbol, Llyn Alaw (52), Yeo & Blackstock; delete H32, specimen from Eskmore, 1910, leg. R.W.

- Bingham (DBN) is *Ditrichum heteromallum*, comm. Synnott.
- 28.8 *D. staphylina*, field of oats, north of Essich and south-south-west of Inverness (96), Whitehouse; side of cart track, E of the farmyard, Lambay Island (H21), Synnott; on spongy patches of *Conferva*, Lenaderg (H38), 1909, J.H. Davies, ex DBN, comm. Synnott.
- 29.1 *Dicranoweisia cirrata*, delete H35, specimen from Slieve League, 1902, leg. H.W. Lett (DBN) is a mixture of *Ptychomitrium polyphyllum* and *Ulota phyllantha*, comm. Synnott; delete H37, specimen from Ardmore, 1887, leg. H.W. Lett (DBN) is *Weissia controversa*, comm. Synnott.
- 31.2 *Kiaeria blyttii*, shaded vertical rock face at top of gully, Uwch-y-coed, W of Dylife (47), Yeo.
- 32.1 *Dicranum glaciale*, damp rocky NE-facing slope, top of An Garbh Choire, Ben Hope (108), Long & Rothero, Long 15145.
- 32.9 *D. fuscescens* a var. *fuscescens*, trunk of ash tree by stream in woodland, Monks Wood (31), 1987, Hodgetts 742.
- 32.12 *D. montanum*, trunk of ash tree by Ewingswode Stream, Monks Wood (31), 1987, Hodgetts 686.
- 32.14 *D. tauricum*, epiphytic on willow?, Helhoughton Common, Helhoughton (28), Stevenson; on rock in grotto, Balloch Country Park (99), 1987, Hodgetts 1076.
- 33.1 *Dicranodontium uncinatum*, between Arklow and the Woodinbridge, (H20 in ()), 1867, D. Moore, ex DBN, comm. Synnott.
- 33.3 *D. subporodictyon*, sloping flushed acid rock face on hillside, Glen Shiel (105), Corley.
- 33.4 *D. denudatum* a var. *denudatum*, delete H38, specimen from Holywood Hill, 1903, Leg. J. Hunter (DBN) is *Campylopus paradoxus*, comm. Synnott: b var. *alpinum*, delete H1, specimen from Mt. near Sneem, 1878, leg I. Carroll (DBN) is *Campylopus shawii*, comm. Synnott; delete H16, specimen from Kylemore, Leg. D. Moore (DBN) is *Dicranum scottianum*, comm. Synnott; delete H20, specimen from Powerscourt, 1860, leg. D. Moore (DBN) is *Campylopus paradoxus*, comm. Synnott.
- 37.2A *Fissidens pusillus* a var. *pusillus*, with *Gyroweisia tenuis* on damp step beside church, Dunton (30), 1983, Yeo: b var. *tenuifolius*, shaded face of limestone boulder beside path in wood, Coed Cilygroeslwyd, nr Llanfair Dyffryn Clwyd (50), Yeo & Shea.
- 37.3 *F. incurvus*, on limestone on west-facing hillside west of Partry (H26), 1987, Whitehouse & Rosen, (herb. Rosen).
- 37.6 *F. rivularis*, in wet cave in ravine on basic rocks above sea, Largybaan Cliffs, Mull of Kintyre (101), Rothero 88/056, new to Scotland.
- 37.7 *F. monguillonii*, muddy shore of reservoir, nr Gwredog, Llyn Alaw (52), Yeo & Blackstock.
- 37.8 *F. crassipes*, Sandon Lock, Trent and Mersey Canal (39), Stern.
- 37.14 *F. taxifolius* b ssp. *pallidicaulis*, dripping cliff-face by sea, Lunderston Cliff, nr Inverkip (76), 1987, Hodgetts 1017; rock crevices in woodland, Glen Loin, Arrochar (99), 1987, Hodgetts 933; on dripping rocks in burn, Balnakailly Wood, N Bute (100), Rothero 88/034; on wet rocks by stream, ravine on S side of Ben Gorm, Killary Harbour (H27), 1987, Long 14600.
- 38.1 *Octodiceras fontanum*, submerged on stone embankment of river, east bank of R Ouse, York (62), Blockeel 17/416.
- 40.5 *Tortula virescens*, trunk of *Ginkgo*, Crane Road Bridge, Salisbury (8), Stern; on tree outside inn, Daneway Inn, Daneway, 3 miles W of Cirencester (33), Bloom; on bole of roadside Sycamore, between Calver and Stoney Middleton (57), Blockeel 17/005; on concrete at base of church wall on north side of church, Tickhill, east of Maltby (63), Blockeel 17/009; delete 103, specimen from Pennyghael, S side of Loch Scridain, Isle of Mull, 1968, leg. P.W. James & Ursula Duncan (BBSUK) is *T. laevipila* var. *laevipila* det. Yeo, conf. Blockeel.
- 40.12 *T. latifolia*, on concrete ramp by weir, R. Trent, East Bridgford (56), Blockeel 17/330.

- 41.1 Aloina brevirostris, on soil on ledge of cutting on site of old quarry on Magnesian Limestone, Well, north of West Tanfield (65), Blockeel 17/402; on mound of shale agglomerate on bing, Drumshoreland Muir near Broxburn (84), Long 15071, new to Scotland.
- 41.2 A rigida, on soil on ledge of cutting on site of old quarry on Magnesian Limestone, Well, north of West Tanfield (65), Blockeel 17/403; crumbling bank on low limestone outcrop in old quarry, Kiln Wood Quarry near Crichton (83), Long 14843.
- 45.2 Pottia starkeana c ssp. conica, churchyard, on chalky boulder clay, Great Canfield (19), Pyner.
- 45.5 P. crinita, mud flats between inner and outer dunes, Gibraltar Point (54), Lammiman.
- 46.2 Phascum curvicolle, limestone soil, Cefn Yr Ogof, nr Llanddulas (50), Yeo & G. Battershall.
- 48.1 Hyophila stanfordensis, the revised distribution is: 1, 29, 33-37, 40, 42, 43, 47, 50, 58, 62-64, 82, 83, H21 (Whitehouse & Newton, 1988).
- 48.2 Tortula brevis Whitehouse & Newton, 17-22, 24, 68, 78-81 (Whitehouse & Newton, 1988).
- 48A/1 Scopelophila cataractae, seepage area on disused lead mine, Cors Lleferin, S of Abersoch, Lleyn Peninsula (49), Rumsey & A.D. Headley.
- 49.3 Barbula hornschurchiana, delete H21, the record (Killiney 1855, leg D. Orr) is suspect and no specimen exists in DBN, comm. Synnott; delete H39, specimens from Carrickfergus, leg. H.W. Lett, D. Orr & S.A. Stewart (DBN) are Barbula cf. trifaria, comm. Synnott.
- 49.5 B. acuta, in thin turf on limestone, Churston Cove, Brixham (3), 1986, Pool.
- 49.10 B. spadicea, delete H20, specimen from Powerscourt, 1848, leg. D. Moore (DBN) is Barbula rigidula, comm. Synnott; delete H30, specimen from Killykeen, 1911, leg. H.W.Lett (DBN) is Barbula recurvirostris, comm. Synnott
- 49.15 B. nicholsonii, on old gravel path with a dense cover of mosses, churchyard, Great Canfield (19), Pyner; top of concrete embankment by lock at weir, R. Trent, Gunthorpe, nr East Bridgford (56), Blockeel 17/332.
- 49.16 B. trifaria, delete H6, specimen from Tramore, 1902, leg. H.W. Lett (DBN) is Barbula tophacea, comm. Synnott; delete H12, specimen from The Rocks, Wexford, 1950, leg. A.L.K. King (DBN) is Barbula cf. fallax, comm. Synnott; delete H18, specimen from Geashill, 1907, leg. H.W. Lett (DBN) is a mixture of Barbula rigidula and B. recurvirostris, comm. Synnott.
- 49.19 B. vinealis, limestone bluff, Fore (H23), 1979, Synnott, ex DBN.
- 50.1 Gymnostomum calcareum, on Magnesian Limestone boulders on N-facing wooded bank, Pleasley Vale, nr Mansfield (56), Blockeel 17/048.
- 50.2 G. aeruginosum, in loose tufts on L. Neagh shore at Ardmore Glebe (H37), 1885, H.W. Lett, ex DBN, comm. Synnott.
- 51A.1 Leptobarbula berica, stone conduit at base of north wall 1.5 m from west end of Burton Bradstock church (9), Whitehouse; on limestone stone on + unshaded, recently constructed track in woodland, woods by R. Wye, near Wynd Cliff, St Arvans (35), Orange 6677, new to Wales; at ground level at base of cathedral walls, north side of York Minster, York (62), Blockeel 17/415.
- 52.1 Anoetangium aestivum, on wet weakly base-rich rock on N-facing stream bank in moorland clough, Alport Dale, Hope Forest (57), Blockeel 17/381.
- 54.6 Weissia microstoma a var. microstoma, scattered patches on clayey ditchbanks, Prittlewell, near Warners Park (18), Pyner.
- 55.1 Oxystegus sinuosus, limestone outcrop, Castle Roche (H31), 1968, Synnott, ex DBN.
- 55.3 O. hibernicus, on damp shady rocks on wooded river bank, ravine at Cannich, Strathglass (96), Long 14997.
- 57.3 Tortella flavovirens a var. flavovirens, on sandy soil behind dunes, St.

- Osyth beach (19), 1987, Pyner.
- 57.8 T. nitida, rock crevice in south-facing sea cliff, cliffs east of Carsaig Pier, Mull (103), Hodgetts 1342.
- 59.1 Trichostomopsis umbrosa, near base of left-hand door-post at bottom of steps to basement, north side of Evershot church (9), Whitehouse; brickwork of railway bridge, Santonhouse Farm, near Santon Downham (28), Stern; at base of gritstone wall by derelict building at edge of limestone woodland, Hinkley Wood, near Ilam Hall, lower Manifold Valley (39), Blockeel 17/428; damp, shaded wall of church, Leaton, NW of Shrewsbury (40), Yeo; at base of sandstone wall, Speke Hall, near Liverpool (59), Blockeel 17/410; on garden path, Howth (H21), D.W. Robinson, comm. Synnott, new to Ireland.
- 60.2 Leptodontium gemmascens, delete 90, specimens from Denmill/Denhead of Gray, Liff, leg. J. Fergusson and later collectors (**E**, **BBSUK**) are L. flexifolium.
- 60.3 L. recurvifolium, damp base-rich ground at foot of seeping rock face, Cwm Dyli, Snowdon (49), Yeo.
- 61.1 Cinclidotus fontinaloides, on concrete by weir, R. Trent, East Bridgford (56), Blockeel 17/331.
- 64.3 Grimmia laevigata, on sarsen stones, Parkfarm Down, Lambourn (22), Bowen, comm. Bates.
- 64.6 G. donniana, a var. donniana, in dry block scree, Coire na Eola, Beinn Bhan, Applecross (105), Long 15366.
- 64.8 G. affinis, on exposed sloping basic rock near sea, dune system N of Sorisdale, Coll (103), Rothero 88/196.
- 64.11 G. atrata, hard acidic rock outcrop in gorge, Uwch-y-coed, W of Dylife (47), Yeo.
- 65.1 Dryptodon patens, delete H31, specimen from Golden River, Carlingford Mt., 1899, leg. H.W. Lett (**DBN**) is Racomitrium heterostichum, comm. Synnott; delete H33, specimen from Castlecaldwell, 1905, leg. H.W. Lett (**DBN**) is Cinclidotus fontinaloides, comm. Synnott.
- 66.2 Racomitrium aciculare, at bottom of Wortham church wall, 3.5 km from Diss (25), Smith.
- 66.5 R. heterostichum, on sandstone rock in small valley N of Mavis, Enderby (54), 1987, Hodgetts 700.
- 66.10 R. ericoides, on slope on old coal bing, Fairniehill near Philipstoun (84), Long 15091; sandy ground by river, Black Water Valley, NW of Brora (107), Stern.
- 66.11 R. elongatum, grassy bank in gorge, Rhaeadr y Bedd, NE of Aled Isaf Reservoir (50), Yeo; on open, stony ground at roadside on edge of moorland between Chatto and Tow Ford (80), Cocking.
- 70.1 Discelium nudum, mud on farm track, track to Garrion Gill, Overtown (77), 1987, Hodgetts 932; on clayey banks and knolls by loch, Midross (99), 1987, Hodgetts 881.
- 71.5 Funaria fascicularis, delete H31, specimen from Carlingford, leg. H.W. Lett & C. Waddell (**DBN**) is F. obtusa, comm. Synnott.
- 75.2 Ephemerum sessile, muddy margin of reservoir, nr Gwredog, S side of Llyn Alaw (52), Yeo & Blackstock.
- 75.5 E. serratum a var. serratum, on barish clay soil at side of ride, mixed forestry plantation, Coed Cadwgan, ca.8 km NE of Cardiff (41), Perry 5552 (**NMW**): c var minutissimum, on soil on bank of ditch, Poll an Oir, Borve, Berneray, Harris (110), Corley.
- 78.1 Tetraplodon angustatus, on dung amongst Sphagnum magellanicum on raised bog, Clara Bog Nature Reserve (H18), Lockhart, new to Ireland.
- 83.1 Orthodontium lineare, base of tree in mixed woodland, S bank of R. Glass above Evanton (106), Long 14969.
- 85.1 Pohlia elongata a ssp. elongata var. elongata, on wet ledge on streamside cliff in moorland clough, Grindsbrook, Edale (57), Blockeel 17/449.
- 85.5 P. obtusifolia, in large area of bog/flush on edge of summit plateau,

- summit of Geall Charn, Alder Forest (97), 1985, Rothero 85/025.
- 85.6 P. drummondii, gritty soil on track, on west bank near head of Fernilee Reservoir, Goyt Valley (58), Blockeel 17/407.
- 85.9 P. bulbifera, semi-bare ground by lake, head of Wast Water, Wasdale Head (70), Blockeel 17/357.
- 85.11 P. camptotrachela, muddy margin of reservoir, nr Penbol, Llyn Alaw (52), Blackstock & Yeo; moist track, Fannyfield, S edge of Clach Liath Forest, W of Evanton (106), Paton.
- 85.12 P. muijldermansii var. pseudomuijldermansii, crest of vertical bank beside track in oakwood, NE of Cabilla Manor, Warleggan (2), Paton; on bare friable soil on bank at foot of ravine, Piers Gill, Lingmell (70), Blockeel 17/358; muddy ground by stream in ravine, Stuckgowan ravine, Tarbet (99), 1987, Hodgetts 918.
- 85.15 P. lescuriana, on bank of ditch, with Pseudephemerum nitidum, Great Heath Wood, Gamlingay (29), Hill et al.; field of barley, Struy (96), Whitehouse.
- 88.1 Anomobryum filiforme b var. concinnum, among Amphidium mougeotii and Trichostomum brachydontium, damp slightly base-rich rock, Carreg y Fran, 3 km E of Blaenau Ffestiniog (48), Yeo; among Tortella tortuosa, on base-rich boulder in block scree, below Twll Du, Cwm Idwal (49), Yeo & Shea; shaded bank, beside Allt M'Or, Kishorn (105), Paton.
- 89.1 Bryum marratii, delete 81, specimen from Dowlaw Dean, leg. D.G. Long, 1974 (BBSUK) is sterile and has bulbils and is probably not this species; in sandy dune slack, dunes E of Torrisdale, Bettyhill (108), Rothero 88/082.
- 89.19 B. donianum, lane bank near Kymin, east of Monmouth (35), Stern, first found by E.W. Jones.
- 89.20 B. capillare b var. rufifolium, rock in coastal dingle, Calligarry Dingle, Ardvassar, Sleat Peninsula, Skye (104), 1985, Hodgetts 610.
- 89.21 B. elegans, basic rocks on mountainside, Ben Vane (99), 1987, Hodgetts 921.
- 89.22 B. stirtonii, spring at 880 m, Garbh Choire, Glen Shee (92), 1987, Birse 87057 p.p.
- 89.23 B. flaccidum, branch of old elder beside footpath, nr Cadole, 3 km W of Mold (51), Yeo & Shea.
- 89.27 B. pallescens, base of damp brick wall, Beth Wines Farm, Fishbourne, nr Chichester (13), Matcham.
- 89.29 B. neodamense, marshy shore of Lough Neagh, Carter's Bay (H37 in ()), 1886, C.H. Waddell, ex DBN, comm. Synnott.
- 89.33 B. muehlenbeckii, boulder in river, below Rhaeadr Ogwen, Nant Ffroncon (49), Yeo & A. Outen, new to Wales.
- 89.36 B. dixonii, on basic schistose soil in gully on cliffs, SW cliffs of Ben Hope (108), Long & Rothero, Long 15124.
- 89.38 B. gemmiferum, compacted sandy hillocks in calcareous flushed area in sand hills, S of Gwbert-on-Sea (46), 1973, Perry (NMW); on mound of shale agglomerate on bing, Drumshoreland Muir near Broxburn (84), Long 15072
- 89.40 B. dunense, disused limestone quarry, nr Ledbury (36), Boyce; on sandy soil, Raueby Warren, nr Sleaford (53), Jackson; damp shady soil on bank by sea, Clach Mhallaichte, Cromarty, Black Isle (106), Long 15030.
- 89.42 B. radiculosum, on mound of shale agglomerate on bing, Drumshoreland Muir near Broxburn (84), Long 15074.
- 89.43 B. ruderae, path down to Loch Ness from lay-by on A82 road near Balchraggan (96), Whitehouse.
- 89.44 B. violaceum, field of barley, near river Teviot near Ormiston Mains south of Roxburgh (80), Whitehouse; on spongy patches of Conferva, Lenaderg (H38), 1909, J.H. Davies, ex DBN, comm. Synnott.
- 89.45 B. klinggraeffii, field of wheat, north of Kelso (80), Whitehouse; field of barley, Struy (96), Whitehouse.
- 89.46 B. sauteri, field of barley on clay soil, north-east of Beaully (96),

- Whitehouse.
- 89.48 B. microerythrocarpum, on almost pure sand by animal hole on Harford Sands outcrop on top of Cleeve Hill, near Cheltenham (33), Townsend 88/57; on soil of bank of ditch, Poll an Oir, Borve, Berneray, Harris (110), Corley.
- 91.4 Mnium marginatum a var. marginatum, rock crevices, beside Taff Fechan, nr Merthyr Tydfil (41), 1963, A.J.E. Smith (NMW), comm. Perry; on shaded Magnesian Limestone on N-facing wooded bank, Pleasley Vale, nr Mansfield (56), Blockeel 17/039.
- 91.5 M. spinosum, flushed snow-lie area, Garbh Choire, Glen Shee (92), Birse.
- 93.3 Rhizomnium pseudopunctatum, iron-rich flush, Bunsconnive, Connemara (H16), Lockhart.
- 94.2 Plagiomnium affine, marshy calcareous ground at edge of small stream, Chafer Wood, Netherby Dale, Ebberston, nr. Pickering (62), Heffernan et al.; in thin moist turf overlying roadside rocks, Strond, Leverburgh, South Harris (110), Corley.
- 94.4 P. medium, spring at 880 m., Garbh Choire, Glen Shee (92), 1987, Birse 87057 p.p.
- 94.5 P. ellipticum, on base of Thelypteris palustris, Sleaford Ballast Pits (53), Lammiman.
- 94.7 P. rostratum, on soil mound in shady woodland, Courthill House, Loch Kishorn (105), Long 15383.
- 102.2 Bartramia pomiformis, delete H19, specimen from Hill of Castlewarden, 1864, leg. Douglas (DBN) is Philonotis calcarea, comm. Synnott.
- 105.3 Philonotis arnellii, on soil on shady bank in woodland, Toscaig Pier, Applecross (105), Long 15373.
- 109.1 Zygodon viridissimus b var. stirtonii, on a broad rain-track overflow from a hollow rain-collecting boss in a complex knarled root buttress on a very large old beech, Gt Monk Wood, Epping Forest (18), 1986, Adams; on shaded Magnesian Limestone on N-facing wooded bank, Pleasley Vale, nr. Mansfield (56), Blockeel 17/044; on roadside wall, Courthill House, Loch Kishorn (105), Long 15384.
- 109.2 Z. baumgartneri, on rocks on wooded river bank, Shin Falls, Achany Glen, near Lairg (107), Long 15106.
- 109.3 Z. conoideus, on Elder bush on NE-facing hillside, Bredon Hill, Elmley Castle, SW of Evesham (37), Blockeel 17/398; on shaded trunk of Sambucus nigra near edge of Abies plantation, Cwm Ystwyth, near Dologau (46), Orange 7336; on elder tree in hedgerow, Blakeshay Meadow, Charnwood (55), Ballard.
- 110.16 Orthotrichum tenellum, on elder, Oxwich Bay, Gower (41), 1985, Blockeel.
- 111.3 Ulotia crispa a var. crispa, on bole of Ash tree in mixed deciduous woodland, Old Park Wood, Osbaldeston, nr. Blackburn (59), Blockeel 17/488; b var. norvegica, on trunk of Ash tree, Chafer Wood, Netherby Dale, Ebberston, nr. Pickering (62), Blockeel et al. 17/327; near base of inclined trunk of Salix sp. in wet carr woodland, SE edge of Thorne Moors, Thorne (63), Wall et al.
- 111.6 U. phyllantha, on elder near Eight-rides, Savernake Forest, near Marlborough (7), Stern; in small quantity on stem of shrub in limestone woodland, Via Gellia, near Matlock Bath (57), Blockeel 17/420.
- 113.1 Fontinalis antipyretica c var. gigantea, submerged, Loch Eddy, SW of Innerleithen (78), Robertson, comm. Long.
- 113.2 F. squamosa a var. squamosa, on rocks, submerged at margin of river, shaded, Cwm Clydach (41), Orange 6699.
- 115.1 Cryphaea heteromalla, on old elder with Orthotrichum affine, Monks Wood (31), 1987, Hodgetts 682; branch of old elder beside footpath, nr Cadole, 3 km W. of Mold (51), Yeo & Shea.
- 130.1 Habrodon perpusillus, Sycamore trunk, in parkland, Rosdhu Park (99), Hodgetts 1218.
- 136.1 Anomodon longifolius, on vertical face of shaded limestone, north side of a gorge of the river Tees, Barnard Castle (66), Wigginton.

- 137.3 Thuidium delicatulum, sedge-dominated meadow, Clonmacnoise Callows (H18), 1986, Lockhart.
- 139.2 Cratoneuron commutatum a var. commutatum, in calcareous flush, Commons, Duleek (H22), 1966, Synnott, ex DBN; delete H37, specimen from Camlough Mt., 1898, leg. H.W. Lett (DBN) is Ctenidium molluscum, comm. Synnott.
- 140.3 Campylium polygamum, delete H16, specimen from Connemara, 1872, leg. D. Moore (DBN) is Campylium chrysophyllum, comm. Synnott.
- 141.1 Amblystegium serpens b var. salinum, sandy soil over upper sea-shore rocks, NW side of Longis Bay, Alderney (C), Bates & D.H. Brown.
- 141.3 A. tenax, delete H28, specimen from Collooney, 1904, leg. D. McArdle (DBN) is a mixture of Hygrohypnum luridum and Cratoneuron filicinum, comm. Synnott; delete H37, specimen from Ardmore Glebe, 1885, leg. H.W. Lett (DBN) is Cratoneuron filicinum, comm. Synnott.
- 141.5 A. humile, on tree root of island in R. Thames about 1/4 mile north of Sandford Lock, about 2 1/2 miles south of Oxford (23), Bloom.
- 141.8 A. compactum, on sandy ledge of limestone craig E of Lochan Taynish, Taynish NNR, Tayvallich, Knapdale (101), Rothero 88/041.
- 142.1 Platydictya confervoides, on vertical face of dry limestone scar, gorge of river Tees, Barnard Castle (66), Wigginton.
- 143.1 Drepanocladus aduncus, delete H16, specimen from Leenane, 1901, leg. H.W. Lett (DBN) is Cratoneuron commutatum, comm. Synnott.
- 143.2 D. sendtneri, delete H28, specimen from near Ben Bulbin, 1913, leg. W. Porter (DBN) is D. cf. revolvens, comm. Synnott; delete H40, specimen from Magilligan, 1904, leg. H.W. Lett & C. Waddell (DBN) is D. cf. revolvens, comm. Synnott.
- 143.3 D. lycopodioides, shore of Lough Neagh, Raughlan Island (H37 in ()), 1888, H.W. Lett, ex DBN, comm. Synnott.
- 143.4 D. fluitans a var. fluitans, in pond in rough pasture, near Undercraig, Langbank (76), Hodgetts 188: b var. falcatus, in small bog by water-filled gravel pits, Swanholme, Lincoln (53), 1987, Hodgetts 761; on wet peat in deep Sphagnum mire, Pitmaduthy Moss near Tainfield, S of Tain (106), Long 15281.
- 143.5 D. exannulatus a var. exannulatus, in shallow bog with Sphagnum spp., Swanholme, Lincoln (53), 1987, Hodgetts 695.
- 143.8 D. uncinatus, delete H2, specimen from Torc Waterfall, 1899, Leg. H.W. Lett (DBN) is Ctenidium molluscum, comm. Synnott.
- 146.3 Calliergon cordifolium, in seasonally flooded meadows, Clonmacnoise Callows (H18), 1986, Lockhart.
- 147.3 Isoetecium holtii, on sides of grit boulders in bed of stream, Bar Brook, Baslow (57), Blockeel 17/017; on boulder in river, lower Black Rock Gorge, above Evanton (106), Long 15273.
- 147.4 I. striatulum, with Cirriphyllum crassinervium on limestone wall, west shore of Lough Carra (H26), 1970, Synnott, ex DBN.
- 148.1 Scorpiurium circinatum, limestone boulders, shore of Lough Ree, Inchenagh (H24), 1981, Synnott, ex DBN.
- 149.3 Homalothecium nitens, iron-rich flush, Bunsannive, Connemara (H16), Lockhart.
- 150.2 Brachythecium glareosum, on mossy calcareous sandstone rock face by river, lower Black Rock gorge, above Evanton (106), Long 15269.
- 150.4 B. salebrosum, on rotting log in Oak/Ash copse, Warmington (32), Wigginton.
- 150.5 B. mildeanum, track in Breckland, near Icklingham, NW of Bury St. Edmunds (26), Hill & R. Porley; creeping up old hollies in bog, Ardmore Glebe (H37 in ()), 1885, H.W. Lett, ex DBN, comm. Synnott.
- 155.4 Eurhynchium pumilum, top of roadside wall, in shade, Mt. Druid Ho., Ballanagare (H25), 1982, Synnott, ex DBN.
- 155.6 E. swartzii a var. swartzii, delete H36, specimen from Tyrone, 1912, leg. W. Porter (DBN) is Isoetecium myosuroides, comm. Synnott.
- 156.1 Rhynchostegiella tenella a var. tenella, on roadside wall, Courthill House, Loch Kishorn (105), Long 15385.

- 159.4 Plagiothecium ruthei, wet ground on bank in mixed deciduous woodland, Old Park Wood, Osbaldeston, nr. Blackburn (59), Blockeel 17/492.
- 159.6 P. laetum, large patch at base of oak standard in old coppice on clay-with-flints, west side of Bottom Copse, East Garston (22), Bates; conglomerate rocks in wood, by Buck Stone, nr. Staunton (34), Hill & J.D. Sleath, also found by Townsend.
- 164.2 Sematophyllum micans, sloping rock surface in ravine, Falls of Falloch (87), Hodgetts 1233.
- 166.1 Platygyrium repens, fallen branch by forest trail, Mailscot Wood, Wye Valley, N of Staunton (34), Perry 5281.
- 167.1 Homomallium incurvatum, delete 75, specimen from near Lendalfot, leg J.R. Lee, 1949 (E. ex Herb. J.B. Duncan) is Hypnum cupressiforme var. resupinatum, det. Long, conf. Blockeel; delete 84, specimen from Dalmeny, 1898, leg. W. Evans (E.), is Hypnum cupressiforme var. resupinatum, det. Hill, 1977, comm. Long.
- 168.4 Hypnum mammillatum, branch of poplar in wooded valley, nr Lower Wych (58), Fisk; on inclined trunk of Ash tree in mixed deciduous woodland, Old Park Wood, Osbaldeston, nr Blackburn (59), Blockeel 17/489.
- 168.6 H. imponens, among Sphagnum and Scirpus caespitosus in rather scrappy boggy ground, nr. head of Alwen Reservoir, Mynydd Hiraethog (50), Yeo.
- 175.3 Hylocomium umbratum, bank in wooded gorge, Afon Ceirw, nr. Pont y Glyn-diffwys, W of Dinmael (50), Yeo.

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#### Contributors of records, 1988

K.J. Adams, D.W. Ballard, J.W. Bates, E.L. Birse, T. Blackstock, T.L. Blockeel, G. Bloom, H.J.M. Bowen, D. Boyce, Mrs K.M. Cocking, M.F.V. Corley, R.J. Fisk, K.I. Flatberg, J.-P. Frahm, G. Heffernan, M.O. Hill, N.G. Hodgetts, P.E. Jackson, F.R. Lammiman, N. Lockhart, D.G. Long, H.W. Matcham, M.E. Newton, A. Orange, Mrs J.A. Paton, A.R. Perry, M. Pool, T. Pyner, Ms R. Robertson, D.W. Robinson, F. Rose, E.J. Rosen, G.P. Rothero, F.J. Rumsey, S. Shea, A.C. Smith, R.C. Stern, C.R. Stevenson, D.M. Synnott, C.C. Townsend, C. Wall, H.L.K. Whitehouse, M.J. Wigginton, M. Yeo.




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Edited by

A.R. Perry, Department of Botany, National Museum of Wales, Cardiff CF1 3NP, U.K.