



**BULLETIN  
OF THE  
BRITISH  
BRYOLOGICAL SOCIETY**

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*Edited by M.J.M. Yeo*

**PUBLISHED BY THE BRITISH BRYOLOGICAL SOCIETY  
PETERBOROUGH**

## BRITISH BRYOLOGICAL SOCIETY

The British Bryological Society exists to promote the study of mosses and liverworts. The Society was constituted in its present form in 1923, replacing the Moss Exchange Club founded in 1896.

Two Field Meetings, each usually of a week's duration, are held every year in districts of bryological interest. In addition, two weekend meetings are held in the autumn, one for the Annual General Meeting, the presentation of papers and fieldwork, and the other for practical instruction in the examination and identification of bryophytes.

Members of the Society are entitled to receive the Society's *Journal* and its *Bulletin* free of charge, to borrow books, periodicals and reprints from the Society's library, to consult or borrow specimens from the Society's herbarium, and to consult the Society's panel of referees for assistance in the identification of specimens.

The subscription, due in advance on 1 January each year, is £20.00 for Ordinary members; £10.00 for Senior members, Junior members and Student members; and £1.00 for Family members (who do not receive the *Journal*).

Applications for membership should be addressed to the Membership Secretary, from whom further particulars may be obtained.

### Council for the year 1999

**PRESIDENT:** Dr G.C.S. CLARKE, Department of Exhibitions & Education, The Natural History Museum, Cromwell Road, London, SW7 5BD.

**EX-PRESIDENT:** Mr A.R. PERRY, Department of Biodiversity & Systematic Biology, National Museum & Gallery Cardiff, Cathays Park, Cardiff, CF1 3NP.

**VICE-PRESIDENT:** Mr T.L. BLOCKEEL, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN.

**GENERAL SECRETARY:** Dr M.E. NEWTON, c/o Department of Botany, Liverpool Museum, William Brown Street, Liverpool, L3 8EN. (Envelope to be marked PRIVATE).

**TREASURER:** Mr E.R. HURR, 6 The Woodlands, Chelsfield, Orpington, Kent, BR6 6HL.

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**CURATOR:** Mr A.R. PERRY, Department of Biodiversity & Systematic Biology, National Museum & Gallery Cardiff, Cathays Park, Cardiff, CF1 3NP.

**LIBRARIAN:** Dr K.J. ADAMS, Department of Life Sciences, University of East London, Stratford Campus, Romford Road, London, E15 4LZ.

**MEETINGS SECRETARY:** Mr D. WRENCH, Sefton Coast LIFE Project, Formby Council Offices, Freshfield Road, Formby, L37 3PG.

**MEMBERSHIP SECRETARY:** Mr M.A. WALTON, Ivy House, Wheelock Street, Middlewich, Cheshire, CW10 9AB.

**PUBLICITY OFFICER:** Dr S.R. EDWARDS, The Herbarium, Manchester Museum, University of Manchester, Manchester, M13 9PL.

**READING CIRCLE SECRETARY:** Mr R.J. FISK, 1 Paradise Row, Ringsfield, Beccles, Suffolk, NR34 8LQ.

**RECORDERS:** Mr G.P. ROTHERO, Stronlonag, Glenmassan, By Dunoon, Argyll, PA23 8RA (Mosses); Mr T.H. BLACKSTOCK, Countryside Council for Wales, Plas Penrhos, Ffordd Penrhos, Bangor, Gwynedd, LL57 2LQ (Hepatics).

**RECORDING SECRETARY:** Mr R.D. PORLEY, English Nature, Foxhold House, Crookham Common, Thatcham, Berkshire, RG19 8EL.

**ELECTED MEMBERS:** Dr M.O. HILL, Dr D.T. HOLYOAK, Dr A.E. NEWTON, Mr M. POOL, Dr F.J. RUMSEY.

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The cover illustration is of *Sphagnum denticulatum*, drawn by Dr S.R. Edwards.



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# BRITISH BRYOLOGICAL SOCIETY

## INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 1998

	1998 £	1997 £
INCOME		
Interest	5,763	4,176
Bequests and Donations	None	8,079
Grants	1,100	2,000
Subscriptions	10,795	11,340
Sales of Publications, etc.		
<i>Journal of Bryology</i>	15,807	16,686
Other Publications	118	184
Lenses and Forceps	382	527
Sweatshirts and Ties	None	12
Postcards	None	78
Reading Circle	65	100
Postage and Sundries	61	282
AGM and other Meetings	2,711	614
	<u>36,802</u>	<u>44,078</u>
LESS GENERAL EXPENDITURE		
Printing and distribution		
<i>Journal of Bryology</i>	26,037	21,160
<i>Bulletin</i> and Membership List	1,065	1,808
<i>Census Catalogue</i>	40	None
Purchases for Resale:		
(Publns., Lenses and Forceps)	539	951
Library and Microscope Purchase	26	240
AGM and other Meetings	2,358	1,114
Officers' Expenses	890	518
Reading Circle	70	77
Insurance	282	282
Return of Overpaid Subscriptions	45	110
Bank Charges and Sundries	229	362
Cryptogamic Sanctuary Grant	None	1,000
	<u>31,581</u>	<u>27,622</u>
LESS BEQUEST EXPENDITURE		
Awards	1,270	None
Expenses	None	None
	<u>32,851</u>	<u>27,622</u>
<b>EXCESS OF INCOME OVER EXPENDITURE FOR YEAR</b>	<b><u>£3,951</u></b>	<b><u>£16,456</u></b>
Of which Income less Interest and General Expenditure is	<u>(£542)</u>	<u>£4,201</u>

# BRITISH BRYOLOGICAL SOCIETY

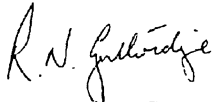
## STATEMENT OF AFFAIRS AS AT 31 DECEMBER 1998

	1998 £	1997 £
<b>GENERAL FUND</b>		
Balance as at 1st January	44,451	38,162
Income less Interest and General Expenditure	(542)	4,201
Interest	2,767	2,088
	<u>46,676</u>	<u>44,451</u>
<b>BEQUEST AND DONATION FUND</b>		
Balance as at 1st January	49,053	38,887
Bequests and Donations during the Year	None	8,079
Interest	2,996	2,087
Less: Expenditure during the Year	(1,270)	-
	<u>50,779</u>	<u>49,053</u>
	<u><b>97,455</b></u>	<u><b>93,504</b></u>
<b>REPRESENTED BY</b>		
Cash at National Westminster Bank	6,631	11,545
Girobank	1,133	1,066
National Savings Investment Account	48,371	40,603
National Savings Treasurers Account	51,879	45,264
	<u>108,014</u>	<u>98,478</u>
Less Current Liabilities		
Publication Cost of <i>J. Bryol.</i> (net)	10,416	4,902
Cheques not yet presented	143	72
	<u>10,559</u>	<u>4,974</u>
<b>NET ASSETS</b>	<u><b>£97,455</b></u>	<u><b>£93,504</b></u>

E.R. HURR  
Treasurer



I have examined the above accounts and, based on my examination, no matter has come to my attention which gives me reasonable cause to believe that in any material respect accounting records have not been kept in accordance with Section 41 of the Charities Act 1993, or that the accounts presented do not accord with those records or comply with the accounting requirements of the Charities Act 1993. No matter has come to my attention in connection with my examination to which, in my opinion, attention should be drawn to enable a proper understanding of the accounts.



R.N. GUTTERIDGE, F.C.A.

21 April 1999

## ARTICLES FOR *BULLETIN* 74

Items for inclusion in the February 2000 issue of the *Bulletin* should be sent to me at the address below by **10 December 1999**. Wherever possible, material should be provided as word-processing files, either on disk or by e-mail.

Marcus Yeo, Joint Nature Conservation Committee, Monkstone House, City Road, Peterborough, PE1 1JY; e-mail: yeo\_m@jncc.gov.uk.

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## MEMBERSHIP DETAILS: E-MAIL ADDRESSES

The directory of members' e-mail addresses is now up and running on the Society's website (<http://www.rbge.org.uk/bbs/>) and includes the addresses of those members who have given permission for their inclusion. If you would like your e-mail address to be added, please e-mail Mike Walton, Membership Secretary, at [walton@ivyhouse.u-net.com](mailto:walton@ivyhouse.u-net.com).

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## REPORTS OF OFFICERS FOR 1998

### a) GENERAL SECRETARY'S REPORT

This has been a year of achievement, as just reward for the sustained efforts of Council, but it was also one which identified a pressing need for critical reappraisal of the Society's ethos, policy and practices. Indeed, I believe that delay in this matter can only be detrimental to the Society's ability to serve future generations of bryologists as well as it has succeeded to date. The complexity of BBS business is now such that individual issues ought not to be conducted on an *ad hoc* basis.

Before going into detail, however, it is a pleasure to report that three new Honorary Members were elected at the AGM in recognition of their contributions to bryology. Dr Lewis E. Anderson, Dr Howard A. Crum and Dr Francis Rose are all to be congratulated on their appointment.

There have been much less happy events, too, for we have lost several members through death, as reported in *Bulletin* 71 and 72. They will be missed as friends and colleagues whose interests spanned much of the broad spectrum of interests that is a feature and, indeed, an overwhelming strength of the BBS.

Catering for that great diversity of members' interests is the challenge it has always been, and it continues to hinge on core services: meetings, publication, recording, the provision of library, refereeing and herbarium facilities, and involvement in conservation issues. All of these have coalesced during 1998 in the publication of a new *Census Catalogue*. Indeed, publication has dominated the year's activities. Quite apart from the serial production of the *Journal of Bryology*

and the *Bulletin*, the centenary symposium volume, *Bryology for the Twenty-first Century*, has also been published this year.

These events, welcomed though they were, inevitably carried serious financial implications for the Society, the *Journal* alone having cost the Society some £18.80 per individual member in 1998. Costs of this magnitude could not have continued indefinitely, nor could requests for editorial support be entertained without drastic change to our methods of publication. A new contract offered by W.S. Maney & Son Ltd appears to have resolved these problems for at least the next three years. It has been agreed, and will be signed in the new year.

By means of this contract, Council, with the help of our publisher, has secured at least the short-term future of the *Journal*. It is an arrangement which a) makes financial provision for editorial support; b) allows for publication of four issues annually to a maximum of 320 pages in a new format, equivalent, it is understood, to an increase of about 80 pages in the old format; and c) sets a cap on BBS expenditure over the next three years. Total cost to the Society will not exceed £14.74 per ordinary member, provided that Council is extremely disciplined in its future attitude to publishing the *Journal*, and provided also that membership figures hold firm. Whether costs fall below that level or, indeed, below the £8.65 and £5.85 of 1997 and 1996, respectively, is dependent on factors outside the Society's control.

Other weighty business which continues to demand attention includes the matter of missing stocks of the *Journal of Bryology* and its predecessor, *Transactions of the British Bryological Society*. Pursuit of the Society's claim against Blackwell Science Ltd has consumed an enormous amount of time and effort, but details have now been put to Counsel in order to ascertain the strength, in law, of the Society's case.

Alongside these major undertakings of Council, normal business continues apace. It is work which depends on an interchange of ideas between Officers and the membership as a whole, enabling new achievements to be built on earlier success, but also ensuring that effort matches demand.

M.E. Newton, January 1999

## **b) TREASURER'S REPORT**

**Notes on the Accounts for 1998** (see pp. 2-3 of this *Bulletin*)

1. The Society's affairs still appear healthy overall, though income without interest fell short of general expenditure by £424. General Fund Interest income at £2,767 enabled the Fund to stay in the black for the year. However, it should be remembered that this was a period of high interest rates which are already falling sharply.
2. Expenditure was dominated by the deficit on *Journal of Bryology* publication of £10,414. This was due partly to the long bryological monograph on geographical relationships already agreed by Council and supported by a transfer of £1,100 from the Bequest and Donation Fund. The botanical biography of Professor Paul Richards also contributed to an excess of 144 pages over the normal allowance. A further factor was a charge of

£1,340 for authors' corrections; this factor will not occur in future under the new publishing contract which has been negotiated.

3. Two publication costs (the centenary volume *Bryology for the Twenty-first Century* and the new *Check-list and Census Catalogue of British and Irish Bryophytes*) had been anticipated during 1998 but invoices were delayed until early in 1999 and do not appear in these accounts. Net contribution to publication cost for the centenary volume is £3,297, offset by the generous grant of £2,000 from the New Phytologist Trust (1997 accounts). Further sales can be expected and will result in royalties to the Society. The *Check-list* printing cost is £4,250, again offset by a New Phytologist grant of £1,000 and by a matching contribution of £1,000 from the Bequest and Donation Fund (increased from £500). Initial sales are going well at £7.50 plus p&p.
4. An apparent surplus of income over expenditure for the AGM and meetings heading will be noticed. This does not indicate a profit on meetings, simply that an accommodation booking advance for the AGM of £360 was paid in 1997.
5. Standing order errors continued in 1998 and further corrections were made.
6. During 1998, awards from the B&D Fund totalling £1,000 were agreed and committed. Of this, only £170 was paid, together with the £1,100 support to the biogeographical paper referred to in para 2. The total committed but not paid up to the end of the year amounted to £1,500.
7. At 1 January 1998 the accumulated and uncommitted B&D Fund interest available for awards (additionally to the interest on the anonymous special donation) amounted to £3,356 and this figure should replace the £3,647 quoted in para 12 of my 1997 report. The corresponding amount at 31 December 1998 was £4,984.
8. The special donation of £5,000 made in February 1995 had with accumulated interest reached just over £6,000 by the end of 1998. In accordance with the wishes of the donor, this £6,000 has subsequently been deposited with the publisher of the new Hepatic Flora, together with an award of £3,000 from the B&D Fund and a grant of £1,000 promised from the New Phytologist. This support has allowed the selling price of the new flora to be brought within reach of most bryologists.
9. A breakdown of Officers' Expenses is shown below.

#### **Officers' Expenses Breakdown**

(JWB) Journal Editor	£250
(MEN) General Secretary & Associate Journal Editor	£167
(RCS) Conservation Officer	£212
(ERH) Treasurer and SE Group Secretary	£60
(MAW) Membership Secretary	£201



*Note: Expenses of meetings, Reading Circle, Bulletin and Census Catalogue are included in the appropriate item of the main account.*

Roy Hurr, March 1999

#### **c) BIBLIOGRAPHER'S REPORT**

Recent Bryological Literature 89 and 90 have appeared in the *Journal of Bryology*; number 91 is in press and number 92 is in preparation. I am grateful to all those who have sent me references or reprints for inclusion in these lists. Special thanks are owed to the staff of the Botany Library at the Natural History Museum, London, for their co-operation and assistance. I much appreciate receiving details of papers and books that I may have overlooked.

L.T. Ellis, January 1999

#### **d) BULLETIN EDITOR'S REPORT**

During the year because of illness I had to take 'early retirement' from the Editorship of the *Bulletin*. Marcus Yeo had earlier agreed to be nominated as Bulletin Editor and to take up duties as from 1 January 1999, but my precipitous decision caused him a good deal of trouble since it was then left to him to produce a summer 1998 *Bulletin*. This he did with consummate skill and I thank him for pulling out all the stops and producing an excellent issue. I also warmly thank Mike Walton for producing a newsletter in spring when the Easter *Bulletin* failed to materialise.

Since 1973 when I became General Secretary and took over as editor of the *Bulletin* I have found the job a very worthwhile challenge and thank members for their continued support. I now wish my successor, Marcus, all success/strength and trust he will get the encouragement that I enjoyed.

A.R. Perry, March 1999

#### **Supplementary note from the Assistant Bulletin Editor for 1998**

During 1998 a single issue of the *Bulletin* (number 71) was published in August, and this contained only a relatively small amount of material. Publication of many articles was unavoidably postponed until 1999. I am very grateful to those members of the Society who offered help and encouragement during the preparation of *Bulletin* 71, and I would especially like to thank Roy Hurr, Martha Newton, David Stevens and Mike Walton.

Marcus Yeo, March 1999

#### **e) CONSERVATION OFFICER'S REPORT**

1. There has been further involvement of the BBS and some of the members in the preparation and implementation of the Biodiversity Action Plans, including Species Action Plans (SAPs) and Habitat Action Plans (HAPs). Examples of SAPs where work has been carried out or is ongoing are *Petalophyllum ralfsii*, *Orthodontium gracile*,

*Marsupella profunda*, *Lejeunea mandonii*, *Weissia multicapsularis* and *Hamatocaulis vernicosus*.

2. There has been real progress on the Bryophyte Red Data Book. At a meeting of the BBS Conservation Committee in Peterborough in April, threat categories (Critically Endangered, Endangered, Vulnerable etc.) were agreed for many of the species. Committee members and other BBS members subsequently gave further comments to Nick Hodgetts who is finalising the work for the JNCC. A problem has arisen with the threat categories, however, and this may cause a further delay to publication.
3. The Government confirmed the inclusion in Schedule 8 of the Wildlife and Countryside Act 1981 of the four mosses which had been proposed: *Anomodon longifolius*, *Bryum neodamense*, *Desmatodon cernuus* (now *Tortula cernua*) and *Hygrohypnum polare*. The Government conservation agencies are reviewing the criteria for Schedule 8 and its effectiveness for conservation.
4. The Government is also reviewing the operation of species protection legislation, particularly with regard to SSSIs, and has published consultation papers. The document produced by the Scottish Office threatens denotification of many SSSIs in Scotland, which could be a serious danger to important bryophyte species and habitats. A strong response has been sent from the BBS.
5. The proposals for *ex situ* conservation of bryophytes have been further discussed, and it now seems likely that the Royal Botanic Gardens, Kew will undertake the work at Wakehurst Place with financial support from English Nature and advice from the BBS.
6. RCS attended the meeting of Plantlife Link in September. The BBS Conservation Committee met in Loughborough in September, as well as in Peterborough in April.

R.C. Stern, March 1999

## f) CURATOR'S REPORT

There were nine loans of 60 mosses and eight liverworts. Eighty-seven moss vouchers were incorporated.

The Herbarium (BBSUK) now contains about 31,500 specimens, all from the British Isles (mostly vice-county vouchers but also *ca* 3,000 specimens from the J.H.G. Peterken bequest) and was moved from BM to NMW when S.G. Harrison became its curator in 1970. Until that time its housing had been difficult: E.C. Wallace in his Secretary's Report for 1966 says 'we hope to arrange for the Herbarium to be housed in a more convenient way for consultation in the future'. Having been transported to Cardiff, its new curator applied the loans procedures in operation at NMW, and its curation was put on a more professional level.

Its curation, however, still poses problems. Museums are now unwilling to house semi-permanent/permanent loans and NMW is no exception. A few years ago the BBS would not agree to an indemnification document drawn up for BBSUK by me on behalf of NMW. At the time

BBSUK had had a condition survey done, and it was estimated that about £3,000 needed to be spent on it, for example to replace disintegrating acidic packaging materials; but because it is not owned by NMW, the Museum will not apply its own funds to this. There is also the major problem of the fate of BBSUK should NMW decide it needs the quite considerable space at present occupied by the collection. And what if in future there is no official 'BBS Curator' to look after it?

I put forward the problem to the last meeting of Council and suggested that the BBS donate BBSUK to NMW with the understanding that BBSUK retains its present autonomy (i.e. in space and acronym), that voucher specimens be incorporated annually as before and that loans be conducted as previously, but that it will be owned by NMW. In that way its future is assured and the necessary curatorial work can be done on it. The suggestion met with quiet assent, but it now needs formalisation.

I am happy to retain the official title of 'BBS Curator' for the time being in spite of now being retired, because I will still oversee the workings of BBSUK and attend Council meetings when necessary; but I would like to thank my previous colleague, Miss Kathryn Cliffe, who has in recent years done the donkey work of curation of BBSUK, and will continue to do so in her role as Museum Curator (Cryptogams) at NMW.

A.R.Perry, March 1999

#### **g) JOURNAL EDITOR'S REPORT**

The two parts (1-2) of volume 20 published in 1998 will conclude that volume, as a new publishing agreement was reached at the end of the year that will see volume 21 starting in 1999 in a new format. The two parts totalled 272 pages and included a *Bryological Monograph* on the geographical relationships of British and Irish bryophytes. The range of topics has again been fittingly wide for an international journal, but also included many articles for those interested predominantly in British bryophytes and bryology.

The continuing heavy pressure for space in the journal is shown in the summary statistics for papers received in 1998: 63 papers submitted for publication; 49 papers (78%) accepted; eight papers (13%) rejected or withdrawn; six papers (10%) still under consideration. As in previous years, the rejection rate is not high but that probably reflects the high quality of the majority of submissions as well as a readiness of the editors to improve manuscripts that are wanting linguistically. I am pleased to say that the recently publicised 'macho' attitude that affects the editors of some popular journals has so far been avoided. The number of papers submitted is 34% up on that for 1997, confirming the editor's suspicion that 1998 had been a very busy year, and it probably represents a record for the journal. To ease the pressure caused by large numbers of relatively inefficient short articles describing new discoveries of this or that species in particular countries, a new edited column is being introduced in 1999 to present the information in a more economical format. As usual, I thank the Associate Editors, referees and others whose time, care and expertise are essential ingredients in the continuing success of the *Journal*.

J.W. Bates, 3 March 1999

## **h) LIBRARIAN'S REPORT**

Sales:	<i>J. Bryology</i> (parts)	4
	<i>TBBS</i> (parts)	20
	Distribution of Bryophytes	2
	Census Catalogues (old)	-
	Hepatics of Europe and the Azores	-
	<i>BBS Bulletin</i>	-
	BBS Library Catalogues	-
	Moss Wall Charts	1
	Special Volume: Jubilee	1
	Special Volume: Chromosomes	3
	Special Volume: Tropical Bryophytes	1
	Special Volume: Mosses in English Lit.	2
	Bryology (Linn. Soc.)	-
	Mosses & Liverworts of Woodland	11
	German/English Glossary	-
	x20 lenses	13
	Stainless steel forceps (Patterson)	3
	Stainless steel forceps (Idealtek)	10
	Eyepiece graticules	-
	BBS ties	-
	Car stickers	1
Loans:	35 mm slides	4
	Micrometer slide	-

Sales were well down compared with previous years, partly due to there being only one *Bulletin*, but almost certainly in the main due to the rapid rise in the real cost of living. Special Volume 5 (English Names for British Bryophytes) has been withdrawn pending finding of another publisher.

Ken Adams, March 1999

## **i) MEETING SECRETARY'S REPORT**

1998 was very much a year of mixed fortunes for the Society in terms of its meetings. The spring meeting, which was to have taken place in Basse Normandie (Lower Normandy), France, had to be cancelled because of lack of interest. This was a great pity, as the local secretary had put some effort into organising it. Perhaps it was just a little too close to, but perhaps not as potentially exciting as, Brittany, where the Society held a very successful and well-attended meeting several years ago.

The summer meeting, on the other hand, a week in Islay followed by a week in Jura, was a success, and ably led by Richard Gulliver. The Islay week was attended by 18 members, who managed to see a representative selection of the bryological habitats of the island, including some rare species and some new county records. A particularly large number of tuberous *Bryums* and other 'arable weeds' were recorded from the vice-county for the first time. Jura, as expected, was

not as bryologically rich as Islay, and the reduced contingent of members probably reflected these expectations. However, the week was enjoyed by all who did attend and many interesting bryophytes were seen, including *Plagiochila atlantica* new to the vice-county. Thanks are due not only to the local secretary but also to Mark Pool and David Holyoak for respectively writing up the accounts of the Islay week and the Jura week in the *Bulletin*.

The AGM and paper-reading meeting took place in the East Midlands, at the University of Loughborough, where the Society was treated to a really good and wide-ranging selection of talks from the speakers and a pleasant day out in the Charnwood Forest area. Thanks to Dennis Ballard, the local secretary, for organising the meeting so well. The workshop meeting, which was to have been a beginners' session in the New Forest, unfortunately had to be cancelled because of lack of interest, like the spring meeting.

The attendance figures for this year's meetings are as follows:

	1997	1998
Spring meeting	ca 31	(cancelled)
Summer meeting, week 1	8 (Italian Alps)	18 (Islay)
Summer meeting, week 2	13 (Malton)	10 (Jura)
AGM weekend	ca 40	46
Workshop	9	(cancelled)
<b>TOTAL</b>	<b>ca 101</b>	<b>ca 74</b>

The picture for the year is obviously a slightly worrying one, with meetings having to be cancelled, the first time I can remember this happening. I can only hope that this trend (if it is a trend) is reversed in future. However, a more conventional spring meeting in 1999 will provide a more realistic attendance figure.

As I now pass the baton to Dan Wrench, I would like to take this opportunity to thank all members of the Society for making my time as Meetings Secretary so enjoyable and easy. This post in the Society relies heavily on delegating responsibility to local secretaries, and members have been magnificent in the way they have responded over the years. Having said that, there is still a vast untapped resource of potential local secretaries 'out there', so if you want to help the Society, why not get in touch with Dan to volunteer to organise a meeting on your patch? There's no need to wait to be asked! I hope he continues to receive the support that I have been given during my time as Meetings Secretary, and I wish him all the best.

Nick Hodgetts, March 1999

## j) MEMBERSHIP SECRETARY'S REPORT

In this, my first report, I wish to record my thanks to my predecessor, Tony Smith, for the work that he put into computerising the records and into registering the Society with the Data Protection Registrar, both of which made the task of taking over from him a painless exercise. I also wish to record my thanks to him for cheerfully putting up with my 'pestering' at the

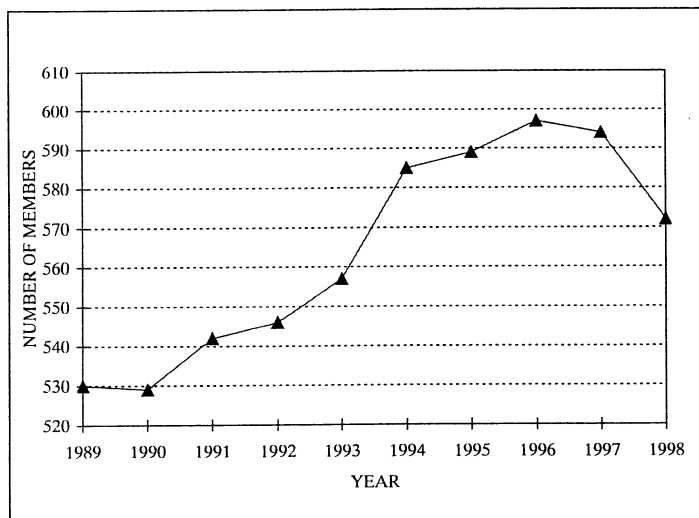
beginning of 1998 while I got to grips with the task. Thanks are also due to Diana Horton for her work in collecting the subscriptions of the North American members, and to the other officers for their help and encouragement.

Unfortunately, as the accompanying table (which gives the total paid-up membership at the end of 1998) shows, the membership has continued to fall since the last report, but the net reduction of 22 members is accounted for in part by a reduction in the number of renewals of family members and, sadly, by a much higher than normal number of members who died during the year.

On a brighter note, the number of new UK members held up and there was a pleasing increase in the number of new overseas members. Looking ahead, 42 new members have already joined in 1999 (13 of them student members - which, hopefully, bodes well for the future).

In 1998, thanks to the work of Brian O'Shea, new members who have access to the internet were able to join by using the application forms on the Society's web site, and 11 did so (with 20 more having done so for 1999 already). The site helps the Society to maintain a high profile both within the UK and, more particularly, internationally (particularly among 'non-professional' bryologists) and will, hopefully, be a source for increasing numbers of new members who might not otherwise have joined. Information posted on 'bryonet', another medium for information exchange on the internet, has also resulted in one more member joining in 1999. Also, for the first time, a directory of members' e-mail addresses has been set up on the BBS web site for members who wish to make their e-mail addresses available.

I look forward to 1999 producing an upsurge in membership numbers.



**CHANGES IN BBS MEMBERSHIP: 1989-1998**

		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>New members</b>											
	UK	20	20	19	26	24	27	27	24	13	14
	Overseas	7	8	9	4	11	18	9	16	7	18
<b>TOTAL GAINED</b>		<b>27</b>	<b>28</b>	<b>28</b>	<b>30</b>	<b>35</b>	<b>45</b>	<b>36</b>	<b>40</b>	<b>20</b>	<b>32</b>
<b>Members lost by:</b>											
	Death	8	5	3	4	2	2	4	5	3	12
	Resignation	11	9	11	9	3	4	14	11	7	18
	Other	10	15	9	13	19	11	14	15	17	24
<b>TOTAL LOSSES</b>		<b>29</b>	<b>29</b>	<b>23</b>	<b>26</b>	<b>24</b>	<b>17</b>	<b>32</b>	<b>31</b>	<b>27</b>	<b>54</b>
Total overseas members		207	199	190	186	187	202	209	215	226	224
Total UK members		323	330	352	360	370	383	380	382	368	348
<b>NET TOTAL</b>		<b>530</b>	<b>529</b>	<b>542</b>	<b>546</b>	<b>557</b>	<b>585</b>	<b>589</b>	<b>597</b>	<b>594</b>	<b>572</b>
Comprising:											
	Honorary	14	13	12	11	11	11	10	11	10	10
	Ordinary & Junior	502	503	512	513	524	545	549	559	557	544
	Family	14	13	18	22	22	29	29	27	25	18
Turnover ratio x100		11	11	9	10	11	11	12	12	8	15

Mike Walton, March 1999

#### k) PUBLICITY OFFICER'S REPORT

Very little has happened on the BBS publicity front during 1998. This is partly because no new projects have been initiated since the travelling exhibition, the sweatshirts, the postcards, and the common names project, and partly because of the much increased work pressure on myself owing to the total decanting of my department this last year as a result of the Capital Development Project of The Manchester Museum.

Sales of sweatshirts and postcards have virtually ceased. Only the very small-sized sweatshirts are left, for which there appears to be no market left. The postcards could probably be revitalised after the recent year's hiatus - the gap may well have proved useful since sales were dropping rapidly anyway as the market had become saturated. Advertisements in the *Bulletin* had also lapsed, in part due to production problems there.

The English Names volume (BBS Special Volume no 5) has also ceased production after 46 copies. The reasons for this were quite specific and were laid out in my report 'English Names for British Bryophytes: Report to Council on in-house publication, 17 September 1998', and I regard the matter as closed unless the BBS wishes to resurrect it. However, I do feel that at least

the issue should be discussed in open forum, such as at the spring 1999 Council and/or the next AGM.

My term as Publicity Officer is drawing to an end, and I feel that the next year or so will be sufficiently occupied with the Museum's Capital Development Project, so that I shall not be able to do the BBS office justice. I strongly recommend that my replacement be expedited.

Sean Edwards, 24 March 1999

#### **I) READING CIRCLE SECRETARY'S REPORT**

Membership has remained at 34, gains and losses again cancelling each other out. The *Bryologist* and *Journal of the Hattori Botanical Laboratory* are being received regularly. *Evansia* is received with the *Bryologist* and their contents distributed together, though it has aroused little interest. It contains an ongoing series of papers by Bruce Allen on the mosses of Maine. These are likely to be put together and published as a Flora of Maine Mosses in the near future. Contents of 16 issues of five journals were distributed, and requests were received from 12 members for photocopies of a total of 51 papers comprising 665 pages. It was pointed out to me by one careful reader of the *Bulletin* that there were three typing errors in my last report. The opening balance should have read £168.59, postage £40.58 and the new balance £197.89; my apologies to any other member who was also confused.

#### **Financial statement**

##### **Income:**

Opening balance	£197.89
Credit (cheques received, etc.)	£69.56
Balance of written off accounts	£0.12
Total	<u>£267.57</u>

##### **Expenditure:**

Photocopying	£38.62
Postage	£47.08
Total	<u>£85.70</u>

Balance of members' accounts	<u>£181.87</u>
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Richard Fisk, 11 January 1999

#### **m) REPORT OF THE RECORDER FOR HEPATICS**

The 64 new liverwort records registered in 1998 represent an increase of some 30% over last year's total. Both the Jura-Islay (VC 102) and Loughborough (VC 55) meetings in 1998 yielded a good crop of new vice-county records (14 for VC 102 and three for VC 55). There appears to have been very little bryological recording activity in Ireland, with only a single new vice-county record for a liverwort in 1998.



	New records collected 1997-98	New records collected pre-1997	Deletions
England	26	1	1
Wales	8	-	-
Scotland	26	2	-
Ireland	1	-	-
<b>Total</b>	<b>61</b>	<b>3</b>	<b>1</b>

Among the outstanding finds compiled in 1998 were *Plagiochila norvegica*, new to Britain and Ireland, *Leiocolea ruheana* var. *ruheana*, new to Scotland, and a second English record for *Leiocolea gillmanii*. In south-west Britain, local range extensions were recorded for several uncommon taxa, including *Colura calyptrifolia*, *Fossombronia caespitiformis*, *Lophocolea bispinosa* and *Marsupella profunda*. In Wales, there was a rare inland find of *Fossombronia husnotii* and further records of *Barbilophozia kunzeana*, *Scapania gymnostomophila* and *Scapania paludicola*, the latter again recorded on vegetation surveys of damp pastures. Another notable find in Scotland was *Anastrophyllum donnianum*, new to Skye. A species which appears to be on the move is *Lophocolea semiteres*, with new records from East Anglia and Stirlingshire.

There have thus been some interesting new discoveries to report from my first year as Hepatic Recorder, and I gratefully acknowledge the help I have received from Jean Paton and my immediate predecessor David Long over determinations of difficult material and other recording matters. Thanks are also due to staff at the National Museum of Wales for loan of specimens from BBSUK.

T.H. Blackstock, March 1999

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

The excellent new *Census Catalogue* was published at the end of 1998 and it is to be hoped that it will provide a stimulus, particularly to the re-finding of numerous old records which now appear in brackets. The number of new and updated records in 1998 is almost double that of 1997 when recording seemed at a new low point. The much improved figures are largely due to a very productive field meeting in VC 102 and to work on a bryophyte flora of the Lothians.

	New records collected 1997-98	New records collected pre- 1997	Updated records	Deletions
England	44	3	12	1
Wales	4	1	0	2
Scotland	70	21	15	0
Ireland	10	0	0	0
<b>Total</b>	<b>128</b>	<b>25</b>	<b>27</b>	<b>3</b>

There are a number of new records that are worthy of mention but pride of place must go to the discovery in Ireland of *Paludella squarrosa*, a species thought to be lost from the British Isles. Also new to Ireland are *Schistidium agassizii* and *Racomitrium macounii* ssp. *alpinum*. The summer meeting produced *Bryum marratii* and *Aongstroemia longipes* on Islay. Elsewhere in Scotland, a large extension of range north to the Assynt limestone for *Hypnum bambergeri* and a new site for *Cynodontium polycarpon* in Aberdeen are worthy of note. In England and Wales *Aloina brevirostris* from Redcar in Yorkshire, *Scopelophila cataractae* in East Cornwall and *Dicranum flagellare* from Merthyr in Glamorgan are excellent additions; the account of *Schistidium flaccidum* in Wales has already appeared in the *Journal of Bryology*. Also of interest are the three records of *Platygyrium repens*, further indication of the consolidation of this species in Britain.

Gordon Rothero, February 1999

#### **o) RECORDING SECRETARY'S REPORT**

In 1998 I received 115 recording cards and 47 pink cards (all deposited with BRC), slightly down on previous years. However, the recording network is healthy, with just 21 vice-counties unallocated in England, Wales and Scotland at the end of 1998. Encouragingly, since *Bulletin 72* was published, another vice-county has been adopted, leaving 20 vacant. Ireland, however, remains poorly covered, with only five vice-counties allocated out of a total of 40.

A seemingly intractable issue has engaged much of my time in 1998, that of data exchange and our relationship with BRC. Progress is slow but we are working towards a Memorandum of Agreement. This will hopefully 'formalise' our relationship with BRC and set a framework through which the expectations of both parties can be achieved. In the meantime it is important that we as a Society maintain and indeed increase our fieldwork and recording efforts all of which are so vital to the conservation and understanding of our rich bryophyte flora.

Ron Porley, March 1999

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### **REPORTS OF LOCAL MEETINGS**

#### **SOUTH-EAST GROUP**

##### **Combwell Wood complex (VC 16), 18 October 1998**

The visit, led by Professor Jeff Duckett, was made by kind permission of Woodland Investment Management Limited and through the good offices of English Nature. Combwell is a mixed deciduous ancient woodland on clay soil with oak, ash, sweet chestnut, alder and hazel. It had not been surveyed for many years, and one of the objects was to re-find *Atrichum angustatum*, an old record of Dr Francis Rose. In this we were unsuccessful, but *A. tenellum* was found fruiting on recently disturbed clay soil on one of the rides. A total of 55 moss and 16 liverwort taxa were found, including *Weissia squarrosa*, *Hyocomium armoricum* (rare in Kent), *Pohlia lescuriana* and *Leucobryum juniperoideum* (growing in plenty with *L. glaucum* but easily distinguished).

Management advice for the woods would be to open up the rides to at least 15 m (currently they are somewhat overgrown – hence possibly the loss of *A. angustatum*), and to disturb the soil of the rides by occasionally taking a vehicle up them.

ROY HURR

#### **Stonewall Park, nr Chiddingstone Hoath (VC 16), 26 November 1998**

Stonewall Park is a private estate and the group was grateful to Mr and Mrs Fleming for their kindness in allowing us to survey their garden. The soils are generally acid but become more base-rich in the narrow flood plain of a deep gill. There are two large ornamental lakes in the valley bottom and at the lowest end a large area of semi-natural broadleaved woodland with ash, alder, hazel and some oak standards. North-facing acid sandstone rocks derived from the Ardingley sands are exposed, and garden walls, gravel drives, unimproved acid lawns and sandy woodbanks give a variety of habitats.

Sixty-eight bryophyte species were recorded. Those of interest included *Cephalozia lunulifolia* growing with *Calypogeia* sp. on the sandstone rocks, *Microlejeunea ulicina* and *Radula complanata* on young ash, *Dicranum montanum* on alder coppice poles, and *Ulota bruchii* on hazel. *Fossombronina pusilla* was abundant along the damp edge of the drive; *Fissidens adianthoides* (infrequently recorded in the vice-county) was found on the ground in the woodland, and *Pleuroidium subulatum* on bare ground at the edge of the lake (unlike the commoner *P. acuminatum*, this has been recorded in only 10 tetrads in Kent).

Interesting lichens found were abundant *Thelotrema lepadinum* on a variety of tress, *Pachyphiale carneola* on field maple in the valley, and the county rarity *Cladonia caespiticia* with other *Cladonias* amongst the *Polytrichum juniperinum* and *Dicranum scoparium* on the well-lit sandy woodland banks.

The unimproved mossy lawn was illuminated with large colonies of waxcap fungi including *Hygrocybe calytraeformis*, *H. punicea* and *H. coccinea* happily growing amongst *Rhytidiadelphus squarrosus*, *Pleurozium schreberi* and *Polytrichum juniperinum*.

Six species from the new Index of Ecological Continuity (Dr Francis Rose) were present.

JOYCE PITT

#### **Sevenoaks Wildfowl Reserve (VC 16), 13 March 1999**

The Reserve, which was formerly worked for gravel and sand, consists of three habitats: a) sparsely vegetated sand of pH 5 (Folkestone Beds, part of the Lower Greensand Formation); b) wet woodland areas of willow, alder and birch, with elder in the drier parts; c) concrete structures built by the former extraction company.

Of particular note was *Fossombronina incurva* (found by Jan Hendey), a new record for VC 16. In a boggy area, our finds included *Sphagnum capillifolium*, *S. fimbriatum* and *S. palustre*, along

with *Aulacomnium palustre*. Typical of the mosses on sand were *Polytrichum formosum*, *P. juniperinum*, *P. piliferum*, *Brachythecium albicans*, *Hypnum jutlandicum* and *Pleurozium schreberi*. *Orthotrichum affine*, *O. diaphanum*, *O. lyellii* and *Cryphaea heteromalla* were epiphytic on elder. A concrete wall had good specimens of *Schistidium apocarpum* and *Orthotrichum anomalum*.

A very enjoyable day! Eleven of us found 54 mosses and 12 liverworts, adding considerably to the Reserve's records.

GRAHAM HEMINGTON

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## FUTURE MEETINGS OF THE SOCIETY

Members are reminded to read the BBS Safety Code, which is published in *Bulletin* 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

### SUMMER FIELD MEETING 1999, Waterford and Wexford, Ireland, 7-21 August

Local secretary: Dr Grace O'Donovan, Department of Environmental Resource Management, Agriculture Building, University College Dublin, Belfield, Dublin 4, Ireland; e-mail: godonov@ollamh.ucd.ie.

The Society has not visited Ireland for some years, and this promises to be a memorable and important meeting, concentrating on under-explored but potentially rich parts of the country. The headquarters hotel for the first week of the meeting will be Lawlor's Hotel, T.F. Meagher Street, Dungarvan, County Waterford; tel: 00353 58 41056/41122 (B&B £39). The second week will be based at the Old Rectory Hotel, Rosbercon, New Ross, Wexford; tel: 00353 51 421719. Further details are available from the local secretary. During the two weeks it is intended to investigate a range of local habitats, including woodlands, uplands, sand dunes and old mine workings.

### ANNUAL GENERAL MEETING AND SYMPOSIUM MEETING 1999, University of Manchester, 10-12 September

Local secretary: Dr Sean Edwards, The Herbarium, Manchester Museum, The University, Manchester, M13 9PL; tel: 0161 2752671; e-mail: sean.edwards@man.ac.uk.

The AGM and paper-reading meeting will take place at the University of Manchester, with a Sunday excursion into the limestone dales of the Peak District.

Speakers will be:

- Mr Tom Blockeel (Sheffield) – 'Notes from a tourist in Mediterranean lands'.

- Dr Angela Newton (Natural History Museum, London) – ‘Bryophytes in amber from the Dominican Republic’.
- Mr Nick Hodgetts (Joint Nature Conservation Committee, Peterborough) – Title to be confirmed.
- Dr Chris Preston (Institute of Terrestrial Ecology, Monks Wood) – Title to be confirmed.
- Dr Elizabeth Smith (University of Northumbria, Newcastle) – ‘The role of the photosynthetic carbon-concentrating mechanisms in bryophytes’.
- Dr Jonathan Sleath (Kingstone, Herefordshire) – ‘Some observations on the bryophytes of the Marsyandi Valley, central Nepal’.
- Prof. Jeff Duckett, Dr R. Ligrone & Dr K.S. Renzaglia – ‘Water and food conduction – cornerstones in land plant phylogeny’.

The ANNUAL GENERAL MEETING will be held at 4.30 p.m. on Saturday 11 September 1999, at Hulme Hall, University of Manchester.

#### AGENDA

1. Apologies for absence.
2. Minutes of the last AGM, Loughborough, 1998 (see pp. 20-23 of this *Bulletin*).
3. Matters arising.
4. Reports of Officers for 1998 (see pp. 4-16 of this *Bulletin*).
5. Report from Council.
6. Proposal to waive election of Publicity Officer (see p. 24 of this *Bulletin*).
7. Election of Officers (see p. 24 of this *Bulletin*).
  - a) Vice-President.
  - b) General Secretary.
  - c) Treasurer.
  - d) Bibliographer.
  - e) Conservation Officer.
  - f) Curator.
  - g) Librarian.
  - h) Recording Secretary.
8. Election of Elected Members of Council (see p. 24 of this *Bulletin*).
9. Place and date of the next Annual General Meeting.
10. Other future meetings.
11. Any other business.

#### **BRYOLOGICAL WORKSHOP 1999, Liverpool Museum, 23-24 October**

This workshop has been cancelled due to building work at the Liverpool Museum.

#### **SPRING FIELD MEETING 2000, Bude, North Cornwall, 12-19 April**

Local secretaries: Mrs Jean Paton, Fair Rising, Wagg Lane, Probus, Truro, Cornwall, TR2 2JU; tel: 01726 882164 (for accommodation and transport). Dr David Holyoak, 8 Edward Street, Tuckingmill, Camborne, Cornwall, TR14 8PA; tel: 01209 716042 (for field excursions).

Headquarters: Burn Court Hotel (2-star standard), 12 Burn View, Bude, EX23 8DB; tel. & fax 01288 352872. Tariff: dinner, bed and breakfast £20 per day. This is a special price for members of the BBS. If as many members as possible can arrange to stay at the HQ then we shall have the Burn Court Hotel to ourselves. Participants should make their own booking arrangements in good time, making sure to mention the British Bryological Society when doing so. There are plenty of single rooms and Mr Harwood is prepared to book double rooms as singles at no extra cost. It would be appreciated, however, if some members would consider sharing a twin-bedded room. Many of the rooms are en suite. There is a variety of menus to choose from on all days of the week. Details of alternative accommodation for those not wishing to stay at the HQ can be obtained from the local secretary.

There is no longer a railway service to Bude but there are bus services between Exeter and Bude (two hours) and between Okehampton and Bude (one hour). Further details will be available from the local secretary, but it is hoped that members who can travel to Cornwall by car will be able to offer lifts to those who are unable to do so.

Little bryological work has been carried out in North Cornwall since the 1960s and it has not been visited previously by the BBS. There are many interesting coastal sites, valley woodlands nearby, and Rough Tor on Bodmin Moor. Bryophytes recorded in the area include *Acaulon muticum*, *Bryum donianum*, *Campylopus pilifer*, *Coscinodon cribrosus*, *Douinia ovata*, *Fossombronina angulosa*, *F. husnotii*, *Fissidens celticus*, *Microbryum davallianum*, *Polytrichum alpinum*, *Tortula viridifolia* and *Weissia perssonii*.

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## MINUTES OF THE ANNUAL GENERAL MEETING, LOUGHBOROUGH, 1998

Minutes of the Annual General Meeting held in the University of Loughborough at 4.30 p.m. on Saturday 19 September 1998.

**PRESENT:** Dr G.C.S. Clarke (President, in the chair) and 43 other members.

1. **APOLOGIES FOR ABSENCE:** Apologies had been received from Dr J.W. Bates, Mr G. Bloom, Dr M.A.S. Burton, Dr S.R. Edwards, Mr L.T. Ellis, Mr & Mrs H. Matcham, Mr A.V. Smith and Dr E.V. Watson.
2. **MINUTES OF THE MEETING ON 13 SEPTEMBER 1997:** These were approved and signed as a correct record.
3. **MATTERS ARISING:** There was considered to be nothing requiring attention.
4. **REPORTS OF OFFICERS FOR 1997:** With the exception of those of the Bulletin Editor and Curator, by whom verbal reports were made, all had been circulated prior to the meeting, in *Bulletin* 71, and gave rise to the following comments.

- a) **General Secretary:** Dr M.E. Newton wished to correct the published account of her report, a word having been omitted from the final sentence, which ought to have read, ‘....will be built upon by the continued co-operation of BBS members in the future’.
- d) **Bulletin Editor:** Mr A.R. Perry said that because of personal problems during 1998, he had been unable to prepare a report of his having produced the usual two issues during 1997. At the last minute, Mr M.M. Yeo had relieved him of the job of publishing a *Bulletin* this year, and had produced a marvellous effort without assistance. Mr Perry said he was very grateful to him. Dr Clarke expressed gratitude on behalf of the Society for the very great help that Mr Yeo had given in this way. It was seconded by Mrs J.A. Paton and warmly approved.
- f) **Curator:** Mr Perry reported that the herbarium continued to be used, though not heavily. Members who did take out loans were generally pleased with the service.
- h) **Librarian:** Dr K.J. Adams reported that it had been intended to advertise loan details relating to the two Chinese microscopes referred to in his report. A flier had been prepared, but it had not been possible to circulate it this year. It would go out with the next *Bulletin*, along with insurance details. Mr D.G. Long enquired whether a BBS library catalogue could be made available for inclusion in the web site. Dr Adams said that there was a catalogue of most items, but that it was not quite up to date.
- i) **Meetings Secretary:** In connection with this report, Dr J.D. Sleath asked members to let him know as soon as possible whether they intended to attend the spring meeting of 1999 in Abergavenny. He would put out a sheet for members to add their names during this evening’s *Conversazione*.
- j) **Membership Secretary:** As an addendum to this report, Mr M.A. Walton said that membership figures so far this year were about 30 down on figures for 1997. He intended to ask Mr A.V. Smith whether the loss related to fully paid-up members.
- n) **Recorder for Mosses:** Mr G.P. Rothero apologised for the fact that the table of figures presented in his report would not show an exact correlation with his list of new vice-county records. This was because of ongoing work by Mr T.L. Blockeel at the time his report was prepared. Mr Rothero wished to express his thanks to Mr Blockeel for the immense amount of work he had put into checking records for the new *Census Catalogue*, and this was readily endorsed by the meeting.

Dr Clarke expressed his thanks, on behalf of the Society, for the work that all Officers did.

## 5. REPORT FROM COUNCIL:

- a) **E.W. Jones Bequest:** Dr Clarke reported that Council had now been able to make arrangements which it believed would best reflect the wishes of Dr Jones, who had left his bryological library to the Society, with the exception of those volumes relating to African bryophytes. He wanted those volumes which were not required by the BBS library to be made available to active bryologists in a way which would mirror his own beginning in acquiring books cheaply from older members. Dr Adams had catalogued the books. Those for disposal were being identified, and Council had made arrangements for them to be reasonably cheaply priced. They

would be advertised to members. The names of members interested in buying would be drawn from a hat, thus obviating the need for an auction, which Dr Jones wished to avoid, and also making the sale fairer than dispersal on a first-come first-served basis. Mr A.C. Crundwell suggested that preference might be given to younger members, perhaps under the age of 30, but Dr Newton said that Dr Jones' letter of intent had spoken, not of young members, but of those who were bryologically active.

- b) **Publication of *Journal of Bryology*:** Dr Clarke reported that Council had authorised the Publications Committee to renegotiate our contract with W.S. Maney & Son Ltd. The intention was to secure the financial background of the *Journal*; to produce it efficiently; and to provide assistance to the Editor. It was therefore hoped that a system could be established that would provide Maney's with an incentive to take a very active interest in maximising institutional subscribers, which were crucial to the financial success of the *Journal*. It was intended to complete negotiations in time for the first issue of 1999 to be prepared under the new arrangements.
  - c) **Stocks of BBS Journals:** Dr Clarke reported that Council was currently investigating the legal position in connection with stocks supplied by Blackwell's. A substantial amount of money was potentially involved, and Council was adopting a cautious approach.
  - d) ***Ex situ* Conservation of Bryophytes:** Mr R.D. Porley briefly summarised moves to set up a means of benefiting conservation using *ex situ* culture techniques. They had been agreed by English Nature and Kew, and it was hoped that other countryside agencies would also become involved. Council had agreed to endorse the initiative.
6. **ELECTION OF OFFICERS:** Dr Newton reported that two Officers, Mr A.R. Perry (Bulletin Editor) and Mr N.G. Hodgetts (Meetings Secretary) wished to retire from office at the end of 1998. Mr M.M. Yeo and Mr D. Wrench had accepted Council's nomination to stand for election as, respectively, Bulletin Editor and Meetings Secretary. Four other Officers, whose terms of office expired at the end of 1998, were eligible for re-election, and had also accepted Council's nomination. These were Dr M.E. Newton (General Secretary, 1 year), Dr J.W. Bates (Journal Editor, 2 years), Mr R.J. Fisk (Reading Circle Secretary, 2 years) and Mr G.P. Rothero (Recorder for Mosses, 2 years). All vacancies had, as usual, been advertised, but no other nomination had been received. They were therefore declared elected.
- Dr Clarke, on behalf of all members, expressed immense gratitude to Mr Perry for his very great contribution in taking the *Bulletin* from a duplicated sheet to its present very much appreciated booklet format. He was also thanked for his co-operation in ensuring its smooth succession to Mr Yeo. Dr Clarke, as well, extended the Society's thanks to Mr Hodgetts for his work in maintaining an excellent programme of meetings, which formed the core of our activity.
7. **ELECTION OF ELECTED MEMBERS:** Dr Newton reported that the terms of office of Dr J.R. Edmondson, Dr T.A. Hedderson and Dr J.D. Sleath would expire at the end of 1998. Dr A.E. Newton, Mr M. Pool and Dr F.J. Rumsey had been pleased to accept Council's nomination to stand for election in this capacity. These vacancies had been



advertised, but no other nomination had been received. All were therefore declared elected.

8. **PLACE AND DATE OF THE NEXT ANNUAL GENERAL MEETING:** Mr Hodgetts reported that this would be held at the University of Manchester on 11 September 1999. In response to a query from Mrs J.A. Paton and Dr R.A. Finch as to why it was so early, Mr Hodgetts said that it was to coincide with university vacations, which Dr Newton said were now related to a system of semesters at Manchester.
9. **OTHER FUTURE MEETINGS:** Details of these were provided by Mr Hodgetts, and were as advertised in *Bulletin 71* up to and including the spring meeting of 1999 in Abergavenny, arranged by Dr J.D. Sleath. Thereafter, there were plans for a summer meeting in Waterford and Wexford from 7-21 August 1999, organised by Dr G. O'Donovan. It would be followed later in the year by a workshop meeting arranged by Dr J.R. Edmondson at Liverpool Museum, and by the spring meeting of the year 2000 in Bude, where Mrs J.A. Paton and Dr D.T. Holyoak had offered to make arrangements. In this context, Mrs Paton suggested that it might be a good idea to hold the summer meeting of that year rather earlier than usual.  
Mr Hodgetts said he had very much enjoyed his work as Meetings Secretary, and he thanked everyone who had helped him over the years. He hoped that his successor, Mr Wrench, would be given as much support in his work as he himself had received.
10. **ANY OTHER BUSINESS:**
  - a) **Wallace Memorial Reserve:** Dr Clarke told members that Mr A.C. Crundwell was continuing to keep an eye on developments at this site on behalf of the BBS. His most recent report to Council identified many different interests within the reserve, and highlighted those which were bryological. Mr M.A. Walton enquired whether it was possible for members to hear the entertaining verse which adorned the report, and which members of Council had heard the previous evening. Mr Crundwell kindly obliged, to the amusement of those present.
  - b) **Honorary Membership:** Following deliberations of the Honorary Membership Committee and of Council, it was proposed that three Honorary Members be elected. These were Dr L.E. Anderson, Dr H.A. Crum and Dr F. Rose. The endorsement which Dr Clarke sought for this proposal was readily granted.
  - c) **Greetings to Mr A. Eddy:** It was agreed that everyone's good wishes would be sent to Mr Eddy, and that Dr A.E. Newton would make arrangements for a card to be signed during the *Conversazione*.  
Dr Clarke spoke for all in thanking Mr D.W. Ballard for coping so well with the demands made on a local secretary, and this was met by spontaneous applause.

There being no other business, the meeting adjourned at 5.04 p.m.

M.E. Newton, General Secretary, September 1998

## ELECTION OF OFFICERS AND ELECTED MEMBERS OF COUNCIL

Mr T.L. Blockeel (Vice-President) will become President in 2000. The terms of eight other officers, the General Secretary, Treasurer, Bibliographer, Conservation Officer, Curator, Librarian, Publicity Officer and Recording Secretary, expire at the end of 1999. The present incumbents of only four of these posts, the Treasurer, Curator, Librarian and Recording Secretary, are eligible for re-election, but Mr E.R. Hurr (Treasurer) and Mr A.R. Perry (Curator) wish to retire at the end of the year. The other four are not eligible for re-election in their present capacity unless nominated from the chair and seconded by the Vice-President or an ex-President. Furthermore, Council recommends that no appointment of Publicity Officer be made for 2000-2001. Two Elected Members of Council will retire at the end of 1999, and neither Dr M.O. Hill nor Dr D.T. Holyoak is eligible for re-election in this capacity until two years have elapsed. There is also a third vacancy for Elected Membership caused by the appointment of Mr D. Wrench as Meetings Secretary. Members are invited to submit nominations for Officers and Elected Members, sending them, in an envelope marked PRIVATE, to the General Secretary of the BBS, Dr M.E. Newton, c/o Botany Department, Liverpool Museum, William Brown Street, Liverpool, L3 8EN, to arrive no later than 14 August 1999. A nomination must not be made without the consent of the person whom it is wished to nominate. If elections are needed, they will be held at the AGM in Manchester, on 11 September 1999.

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### **WORK ON BRYOPHYTES BY PLANTLIFE, 1997-1998: *LEJEUNEA MANDONII* AND *PETALOPHYLLUM RALFSII***

DAVID HOLYOAK

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Plantlife, the charity dedicated to conserving wild plants, gained its 10,000th member in 1997 and its 19th nature reserve during 1998. Although much the youngest of the membership-based societies concerned with British plants, Plantlife has within comparatively few years become the largest of them, and has established a reputation for vigorous campaigning for plant conservation. Besides work to increase public awareness of habitat losses and the need for more effective legislation, and acquisition of reserves, Plantlife has also concentrated attention on the practical conservation needs of several threatened flowering-plant species, among them Starfruit *Damasonium alisma*, Shore Dock *Rumex rupestris* and Chamomile *Chamaemelum nobile*, through its 'Back from the Brink' project.

Over the past three years the 'Back from the Brink' work on flowering plants has been extended to cover two liverworts, a fungus and a 'fern-ally', and it is expected that more cryptogams will be taken on in future. A substantial part of this work in England is being undertaken collaboratively with the Government's conservation agency English Nature and is jointly funded by them through their Species Recovery Programme. This includes work on the two liverworts *Lejeunea mandonii* (Atlantic Lejeunea) and *Petalophyllum ralfsii* (Petalwort), both of which are

priority species within the UK Biodiversity Action Plan. It has been my good fortune to work as Project Officer for Plantlife on these two liverworts through 1997 and 1998. I have received a great deal of assistance, guidance and encouragement in this work from BBS members. This brief note is intended to summarise results achieved so far with these two species and to mention future plans. The full (annual) reports on each species are being sent to those members most involved and copies of all reports will be given to the BBS library.

It was clear from the outset that work on *Lejeunea mandonii* in England would have a different character from that on *Petalophyllum*, since in 1996 *L. mandonii* was known only by a total of about six patches growing at four locations on the Lizard peninsula of Cornwall. The immediate need was to seek out all of its populations, before assessing its habitat preferences and any management requirements. Searches for new localities proved rather disheartening initially, with none found in the first 11 full days of work, but the 12th and 13th day each produced a new site. After about 20 days of searching spread over two years all substantial serpentine outcrops inland have been visited and 54 patches of *L. mandonii* are now known from six locations. Nevertheless, the total extent of all of these patches is only about 0.7 m<sup>2</sup> and most of them are on private land that currently receives no statutory protection.

A good deal has been learnt about habitats in which *L. mandonii* does not occur; these include exposed coastal rocks, inundation zones of streams, heavily shaded rocks and those affected by heathland fires. On the other hand, virtually all patches that have been located are epiphytic on low mosses growing on overhanging or overhung serpentine in sheltered, humid places that are partly shaded. None has been found on tree trunks despite old Cornish records on ash bark, and at another locality it has apparently disappeared from rocks near a busy road. Several of the populations need to be protected from fires set during conservation management of adjoining heathland. However, the main threat is from increased shading as planted conifers and deciduous saplings mature at the best site. Steps are being taken to ensure that conifers are selectively cleared there in order to both maintain existing habitat for the *L. mandonii* and to expose potential habitat that is too heavily shaded at present. These and other measures intended to benefit *L. mandonii* have been incorporated into the draft of an 'Expanded Species Action Plan' that is being circulated to bryologists, conservation organisations and agencies and the relevant land-owners.

The work on *Petalophyllum ralfsii* is also intended to cover all populations in England, but not those in Northern Ireland, Scotland or Wales which are the subject of separate efforts by each of the appropriate conservation agencies. *Petalophyllum* was known to have widely scattered populations in England in the vice-counties of North Northumberland, South Lancashire, South Devon and West Cornwall, with a 1957 record from West Norfolk, records from North Devon until 1971, but only much older records from North-east Yorkshire (1901) and North Somerset (1913). During 1997 and 1998 all of these sites have been revisited. *Petalophyllum* could not be refound in North-east Yorkshire or North Somerset, where suitable habitats now appear to be absent, but small populations were relocated in all of the other vice-counties listed and a small 'new' population was found at Dawlish Warren in South Devon (during the BBS 1997 spring meeting based at Torquay).

Studies on *Petalophyllum* in cultivation have disclosed that most individual thalli arise as underground branches from existing plants, so that counts of thalli do not correspond to counts

of genetically distinct individuals. Also, studies on Cornish field plots visited monthly over two years have revealed that a very variable proportion of thalli is visible on the ground surface at any one time, often 0% in summer when the ground is dry, and up to 80% in winter when the water-table is high, but never all of them. Male thalli are often smaller than female thalli, and tend to appear earlier in the autumn and disappear earlier each spring. Counts of thalli are therefore of rather uncertain biological significance, as they can only provide a rough measure of the size of populations of *Petalophyllum*; undertaking counts is also extremely time-consuming.

Data currently available suggest that the largest English populations are a) in West Cornwall (estimates totalling at least 10,600 thalli at two groups of sites); b) on the Sefton Coast, Merseyside, South Lancashire (estimates by Dan Wrench total 7,887 thalli); and c) at Branton Burrows in North Devon (2,432 thalli). Other populations are much smaller, totalling 228+ thalli for incomplete surveys in Northumberland, 84 at the Norfolk site and 79 at Dawlish Warren in South Devon. Correspondents suggest that the largest English populations are matched at several Welsh sites (Alan Hale *pers comm*) and by the only Scottish population (Gordon Rothero *pers comm*), while other recent surveys have discovered it at nine 'new' sites in the Republic of Ireland and confirmed its survival at eight or more 'old' sites there (Neil Lockhart *pers comm*).

Losses of *Petalophyllum* from historically known sites in England all appear to have been caused by large-scale destruction of habitat, resulting from drainage, canalisation of rivers, building developments and creation of golf courses. There is no realistic prospect of reintroducing the species to any of these sites. A large decrease at Branton Burrows has resulted from growth of taller vegetation in dune-slacks, associated with falling water-tables and decline in rabbit populations (due to spread of viral haemorrhagic disease to populations already affected by myxomatosis). However, at Upton Towans and Gear Sands in West Cornwall *Petalophyllum* appears to be increasing as pressure on footpath edges from dog-walkers and other pedestrians intensifies, giving more of the short, patchy vegetation and damp compressed soil it prefers. Nevertheless, in Cornwall as elsewhere its future is probably very much dependent on continued intensive grazing by large populations of rabbits on the dunes, and this cannot be taken for granted with the risk of viral haemorrhagic disease spreading and depleting rabbit populations, as has happened at Branton Burrows. An 'Expanded Species Action Plan' is being drafted to set out plans and actions needed to protect *Petalophyllum*, and this will be circulated during 1999.

For more information on Plantlife and 'Back from the Brink', please contact Plantlife at 21 Elizabeth Street, London SW1W 9RP, or telephone 0171 808 0100.

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## SOME INTERESTING MOSSES FROM ANDORRA

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The Pyrenean principality of Andorra is the largest of the 'small states' of Europe, about 180 square miles in extent, and consists mostly of high mountains and steep-sided valleys which make

botanising quite strenuous. The geology is predominantly acid with much granite, but a fair amount of limestone is scattered about - from, for example, the well-known and impressive mountain Casamanya to small basic outcrops which turn up in many places. The altitude range within the country is from *ca* 900 to 2900 metres; there is thus no really low ground, the lowest point being 68% of the height of the greatest altitude found in the British Isles. The pine and birch forests contrast greatly with the spruce forests of the central European Alps, and the summer climate is much drier, although there are heavy rainfalls in the spring and autumn, and winter snowfall is heavy and lies late in the highlands. Andorra appears to be only recently awaking to the possibilities of summer tourism, and chairlifts which operate in the summer are few in number. Even the gondolbahn at Arinsal was not working in late July on my visit.

My wife and I took a two-centre package to the principality in 1998, based on Soldeu (15-21 July) and Arinsal (22-28 July). The climbing at the latter is more severe, at least for the elderly, such as ourselves. Being a 'family' holiday, mossing was not intensive, but produced some species of interest.

The mosses recorded for the principality were listed by Casas Sicart (1986), who lists 127 mosses, 11 sphagna and 48 hepatics. As he points out, this certainly underestimates the number present, and many more bryologists must have visited the country than have put their finds on record, which is unfortunate. Casas makes reference to an important collection by R. Cros which was being studied at the time of writing his paper. However, I have found no evidence that the results of this study have been published, nor has a letter to Dr Casas produced this information. Similarly, no other contribution published on the bryophytes of Andorra was traced as having appeared since that of Casas. Thus his contribution has been used as the chief source as to what has been recorded from Andorra, though some additions were found in Greven (1995).

By and large, the records given below are of species recorded as new for Andorra (furnished with an asterisk) or with only one previous record - though species with only one previous record but clearly frequent in the country by my own observation (e.g. *Dicranella heteromalla*, *Schistidium apocarpum*) are omitted. Species frequent in Europe generally but previously unrecorded are included in the list since gaps in distribution may be as important as occurrences. The sequence of the list is that of Corley *et al.* (1981), with the amendments and additions of Corley & Crundwell (1991), and certain other more recent amendments, e.g. the re-establishment of *Grimmia muehlenbeckii* as a good species by Smith (1992) and Greven (1995).

*Sphagnum girgensohnii* Russ. Arinsal, shady banks by small waterfall on the Riu Arinsal, *ca* 1 km above the avalanche wall, *ca* 1620 m, T.98/141.

*Andreaea rupestris* Hedw. On shaded rocks by the Riu Arinsal, *ca* 0.5 km above the avalanche wall, *ca* 1560 m, T.98/135.

*Paraleucobryum enerve* (Thed.) Loeske. El Tarter, track between the end of the first chairlift and Cap dels Clots, on granite outcrop by track, 2250 m, T.98/71.

\**Campylopus atrovirens* De Not. Crevices in gently sloping slabby rock by the trail GR11 from above Arinsal to Pla de l'Estanty, *ca* 1760 m, T.98/165.

\**Cynodontium fallax* Limpr. C.fr. A little on a granite rock in block scree along the Capercaillie Trail, between El Tarter and Canillo, *ca* 1640 m, T.98/98.

I have noted no previous record from the Pyrenean area - the species has been recorded from Scandinavia, Central Europe, the Urals and Altai and easternmost Russia.

- Rhabdoweisia fugax* (Hedw.) Bruch, Schimp. & W. Gümbel. *C.fr.* Rock wall of a cavern-like overhang near the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/128.
- \**Ditrichum heteromallum* (Hedw.) E.G. Britt. On banks by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1850 m, T.98/166.
- \**Ditrichum gracile* (Mitt.) Kuntze (*D. crispatisimum* (C.M.) Par.). On rocks by the Capercaillie Trail, between El Tarter and Canillo, ca 1680 m, T.98/94.  
The Andorran record of *D. flexicaule* (Schwaegr.) Hampe given by Casas (1986), from Coma de Séturia, may well belong here.
- \**Encalypta rhamnoides* Schwaegr. *C.fr.* El Tarter, Cap dels Clots, ca 2 km S of the end of the first chairlift, on small crags (calcareous at least in part) on the SE slopes of Pic d'Encampadana, ca 2360 m, T.98/77.
- \**Encalypta ciliata* Hedw. *C.fr.* Under the same overhang as *Rhabdoweisia fugax* (see above), T.98/126.
- \**Tortula laevipila* (Brid.) Schwaegr. Two or three stems with *Leptodon smithii*, on *Buxus* just outside Ordino on the trail to La Massana via La Gonarda, ca 1430 m, T.98/174.
- \**Tortula papillosa* Wils. Isolated stems in a tuft of *Orthotrichum obtusifolium* Brid., on a tree by the Cami de les Gravades, on the W side of the hill Bony de les Planes, just out of La Massana, ca 1275 m, T.98/154.
- \**Tortula euryphylla* Zand. (*Desmatodon latifolius* (Hedw.) Brid.) *C.fr.* Val d'Incles, near Soldeu, on a bank by the upper (woodland) track to Soldeu, ca 1900 m, T.98/85.
- \**Pterygoneurum ovatum* (Hedw.) Dix. *C.fr.* El Tarter, Cap dels Clots, details as for *Encalypta rhamnoides* (see above).  
Very dried-up and hoary in appearance, so that in the field it was taken for an unfamiliar *Grimmia*. Dr Rosa M. Ros, to whom I sent the specimen in view of recent work by herself and colleagues (Guerra, Cano & Ros, 1995) informs me that in spite of the extreme altitude - it occurred within inches of *Stegonia latifolia* - the gathering is not referable to the f. *incanum* (Nees & Hornsch.) C. Jens.
- \**Stegonia latifolia* (Schwaegr.) Vent. ex Broth. A small patch with *Pterygoneurum ovatum* (see above), T.98/76.
- \**Didymodon spadiceus* (Mitt.) Limpr. Arinsal, on slabby basic rocks covered with fine silty soil by a stream below the forest immediately above and W of the town, ca 1680 m, T.98/118.
- \**Bryoerythrophyllum recurvirostre* (Hedw.) Chen. On a dry bank by the trail from Ordino to La Massana near La Gonarda, ca 1430 m, T.98/177.
- \**Weissia controversa* Hedw. var. *wimmeriana* (Sendtn.) Blockeel & A.J.E. Smith. On small dry crags overlooking the Soldeu/Pas de la Casa road just E of the track from the Els Espiolets terminus of the chairlift from El Tarter, ca 2250 m, T.98/90.
- \**Tortella nitida* (Lindb.) Broth. On dry rock by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/139.
- \**Coscinodon cribrosus* (Hedw.) Spruce. In quantity on dry rocks near a cascade in the upper part of the Val d'Incles, near Soldeu, NW of the church, ca 1900 m, T.98/81.
- \**Schistidium rivulare* (Brid.) Podp. On rocks in the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/136.
- \**Schistidium confertum* (Funck) Bruch & Schimp. *C.fr.* El Tarter, Cap dels Clots, on flat rocks at the exact summit of the col, ca 2390 m, T.98/75; at locality as for *Weissia controversa* var. *wimmeriana* (see above), T.98/92; in tight small tufts on a granite rock by the Capercaillie Trail, between El Tarter and Soldeu, ca 1640 m, T.98/104; on rock in slight

shade by the long track on the S side of the Pic de les Angles, ca 1.5 km E of La Massana, ca 1470 m, T.98/114; at locality as for *Tortella nitida* (see above), T.98/140; in rock crevices under pines on the ridge by the ascent from the end of the chairlift to the summit, Tossal Momo, above Pal, ca 2000 m, T.98/146.

\**Schistidium crassipilum* Blom. C.fr. Arinsal, rocks of the wall of an arable field just out of the town, ca 1680 m, T.98/115.

\**Schistidium singarense* (Schiffn.) Laz. C.fr. On rock by the Capercaillie Trail between El Tarter and Canillo, much nearer the latter, ca 1640 m, T.98/113.

The distribution maps given for the above three species in Blom (1996) show them marked for the region of the Pyrenees at or adjacent to Andorra, but no records are given for the principality.

\**Grimmia laevigata* (Brid.) Brid. On rock in full exposure to sun by the long track on the S side of the Pic de les Angles, ca 1.5 km E of La Massana, ca 1470 m, T.98/149.

\**Grimmia montana* Bruch & Schimp. C.fr. On a granite rock by the Capercaillie Trail between El Tarter and Canillo, near the latter, ca 1640 m, T.98/106; on rocks and on stony ground under pines along the ridge by the ascent from the end of the chairlift to the summit of Tossal Momo, above Pal, ca 2000 m, T.98/143, det. H.C. Greven.

\**Grimmia alpestris* (F. Web. & D. Mohr) Schleich. ex Hornsch. C.fr. El Tarter, track between the end of the first chairlift and Cap dels Clots, in small quantity on granite outcrop by the track, 2250 m, T.98/74; on small dry crags overlooking the Soldeu/Pas de la Casa road just E of the track S from the Els Espiolets terminus of the chairlift from El Tarter, ca 2250 m, T.98/89, det. H.C. Greven.

*Grimmia caespiticia* (Brid.) Jr. El Tarter, track between the end of the first chairlift and Cap dels Clots, on small granite outcrop area at ca 2000 m, T.98/67.

E.F. Warburg collected this species in shaly rock crevices, Port d'Envalira on 8 August 1959, and subsequently distributed it through the BBS exchange. I have one of the packets in my herbarium.

\**Grimmia ovalis* (Hedw.) Lindb. On dry rocks above the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/129.

*Grimmia atrata* Miel. ex Hoppe & Hornsch. This was recorded by Greven (1995) as collected by A. Sotiaux at the Torrent Ribsal, Arinsal. The lower, more accessible part of this cascade was at the time of our visit being 'tidied up' with concrete, presumably with some kind of development in mind. I found it about 1 km from this fall, on a damp rock by the trail GR11 from Arinsal to Pla de l'Estany, ca 1750 m, T.98/163.

\**Grimmia elatior* Bruch ex Bals.-Criv. & De Not. Capercaillie Trail between El Tarter and Canillo, on a rock in block scree nearer to El Tarter, T.98/97.

The Capercaillie Trail was rich in *Grimmia* species. Apart from the two noted above, three others not listed for Andorra by Casas (1986) were found. These were, however, noted from the principality by Greven (1995), the number of localities cited by him (though not from the Trail) being given in brackets: *Grimmia funalis* (Schwaegr.) B.S.G. (3); *G. muehlenbeckii* Schimp. (2); *G. decipiens* (Schultz) Lindb. ex C. Harm. (1).

One of my two gatherings of *G. muehlenbeckii* (T.98/108) attracted immediate attention by its small fruit - as significantly smaller compared with *G. trichophylla* as fruit of *Racomitrium sudeticum* is compared with that of *R. heterostichum*.

\**Racomitrium sudeticum* (Funck) Bruch & Schimp. C.fr. El Tarter, track between the end of the first chairlift and Cap dels Clots, on granite outcrop by the track, 2250 m, T.98/72.

- \**Racomitrium elongatum* Frisvoll. On rock by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1650 m, T.98/158.
- \**Ptychomitrium polyphyllum* (Sw.) Bruch & Schimp. *C.fr.* In small quantity on one dry granite rock by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/137.
- Blindia acuta* (Hedw.) Bruch, Schimp. & W. Gümbel. Val d'Incles, near Soldeu, on a granite boulder with no irrigation or proximity to water, along the upper (forest) track to Soldeu, ca 1950 m, T.98/88.
- \**Mielichhoferia mielichhoferiana* (Funck) Loeske. On a boulder by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1750 m, T.98/162.  
Not on the same rock as the other 'copper-indicator' moss, *Grimmia atrata*, but no more than ca 30 m distant from it.
- \**Pohlia elongata* Hedw. var. *elongata*. As for the last species and very close to it. Not yet fruiting, but with paroecious gametoeccia and the areolation of this species.
- \**Pohlia andalusica* (Hoehn.) Broth. Val d'Incles, near Soldeu, on damp sandy soil along the lower part of the upper (forest) trail to Soldeu, ca 1840 m, T.98/87.
- \**Anomobryum julaceum* (P. Gaertn., B. Mey. & Scherb.) Schimp. On a rock by a small waterfall in the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/157.
- Bryum schleicheri* Lam. & DC \*var. *latifolium* (Schwaegr.) Schp. Val d'Incles, near Soldeu, growing with *Calliergon stramineum* and *Sedum villosum* in a flush by the track on the E side of the Riu d'Incles not far from the church, ca 1840 m, T.98/83.
- \**Bryum subelegans* Kindb. (*B. flaccidum* Brid.). On the sides of the same overhang as *Rhabdoweisia fugax* and *Encalypta ciliata* (see above), T.98/125.
- \**Bryum caespiticium* Hedw. *C.fr.* Arinsal, in crevices of rocks forming wall of arable field just out of the town, ca 1680 m, T.98/119.
- \**Mnium stellare* Hedw. On a dry bank by the trail from Ordino to La Massana near La Gonarda, ca 1430 m, T.98/178.
- \**Amphidium mougeotii* (Bruch & Schimp.) Schimp. On the side of the same overhang as *Rhabdoweisia fugax* (see above), ca 1560 m, T.98/127; also seen on wet rocks by a nearby small waterfall.
- \**Orthotrichum striatum* Hedw. *C.fr.* On bark of *Pinus nigra* by the Capercaillie Trail between El Tarter and Canillo, much nearer the latter, with *O. affine* and *O. pallens*, ca 1640 m, T.98/110; on *Betula* by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/121.
- \**Orthotrichum speciosum* Nees. *C.fr.* With the above by the Capercaillie Trail, T.98/109; with the above by the Riu Arinsal, T.98/122.
- Orthotrichum rupestre* Schleich. ex Schwaegr. *C.fr.* Dry rocks by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, T.98/131.
- \**Orthotrichum obtusifolium* Brid. On a tree by the Cami de les Gravades, on the W side of the hill Bony de les Planes, just out of La Massana, ca 1275 m, T.98/153.
- \**Orthotrichum anomalum* Hedw. *C.fr.* Abundant and the only species of the genus present on a large tree of *Fraxinus excelsior* near the Miniatures Museum, Ordino, 1300 m, T.98/173; seen but not collected on walls at the beginning of the Val d'Incles, near Soldeu.
- \**Orthotrichum alpestre* Hornsch. ex Bruch, Schimp. & W. Gümbel. *C.fr.* With *Orthotrichum obtusifolium* (see above), T.98/155. Not seen in its more normal saxicolous habitat.



- \**Orthotrichum pallens* Brid. *C.fr.* Along the Capercaillie Trail with *O. striatum* (see above), T.98/112; in mats of *Pseudoleskeella nervosa*, on *Betula* by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/124; in quantity on *Fraxinus excelsior* in a side street, La Massana, ca 1240 m, T.98/156; on *Buxus* by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1740 m, T.98/169; on *Buxus* just out of Ordino on the trail to La Massana via La Gonarda, ca 1430 m, T.98/170; on *Buxus* by the Cami de les Gravades, on the E side of the hill Bony de les Planes, just out of La Massana, ca 1285 m, T.98/171.
- \**Ulotia crispa* (Hedw.) Brid. A single non-fruiting tuft on *Betula* by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/79. Although not fruiting, very compact and probably this species rather than *U. bruchii* Hornsch. ex Brid., which is stated by Husnot (1884-90) to be very rare in the Pyrenees, and is not listed for this catchment area by Casas (1986).
- Hedwigia ciliata* (Hedw.) P. Beauv. \*var. *leucophaea* Bruch, Schimp. & W. Gümbel. El Tarter, track between the end of the first chairlift and Cap dels Clots, on small granite outcrop, ca 2000 m, T.98/66; on small dry crags overlooking the Soldeu/Pas de la Casa road just E of the track S from the Els Espiolets terminus of the chairlift from El Tarter, ca 2250 m, T.98/91; a little on dry granite rock by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/134; on dry stony ground by the long track along the S side of the Pic de les Angleves, ca 1.5 km E of La Massana, ca 1440 m, T.98/151.
- \**Leptodon smithii* (Hedw.) Mohr. On *Buxus* just outside Ordino on the trail to La Massana via La Gonarda, ca 1430 m, T.98/174.
- \**Neckera complanata* (Hedw.) Hüben. With *Leptodon smithii* (see above), T.98/175.
- \**Pseudoleskeella nervosa* (Brid.) Nyholm. On *Betula* by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/123.
- \**Pseudoleskeella catenulata* (Schrad.) Kindb. On basic rock by the Capercaillie Trail between El Tarter and Canillo, ca 1620 m, T.98/96; Arinsal, on rocks by a lane near the children's playground, just above the town, ca 1680 m, T.98/117.
- Thuidium delicatulum* (Hedw.) Mitt. On a grassy bank by the start of the long track on the S side of the Pic de les Angleves, ca 1.5 km E of La Massana, ca 1420 m, T.98/147.
- Campylium chrysophyllum* (Brid.) J. Lange. On a rock, apparently basic, by the Capercaillie Trail between El Tarter and Canillo, nearer the latter, ca 1640 m, T.98/100.
- \**Hygrohypnum duriusculum* (De Not.) Jamieson. *C.fr.* Val d'Incles, near Soldeu, submerged or irrigated on rocks in a cascade in the upper part of the valley, NW of the church, ca 1900 m, T.98/82.
- \**Homalothecium lutescens* (Hedw.) Robinson. *C.fr.* On a grassy bank at the start of the long track on the S side of the Pic de les Angleves, ca 1.5 km E of La Massana, ca 1420 m, T.98/148.
- \**Brachythecium reflexum* (Starke) Bruch, Schimp. & W. Gümbel. El Tarter, track between the end of the first chairlift and Cap dels Clots, at roots of tree by the main track, ca 2000 m, *c.fr.*, T.98/70; dry sloping rocks on a bank by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, *c.fr.*, T.98/130; on the base of a pine by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1700 m, T.98/159.
- Brachythecium velutinum* (Hedw.) Bruch, Schimp. & W. Gümbel var. *velutinum*. *C.fr.* On a shaded bank by the Riu Arinsal, ca 0.5 km above the avalanche wall, ca 1560 m, T.98/133.

*Brachythecium velutinum* \*var. *venustum* (De Not.) Arcang. C.fr. On the ground in pine woods near the start of the chairlift, Tossal Momo, above Pal, ca 1520 m.

This moss is the only occasion on which I have personally diverged from Corley *et al.* (1981). It is there given specific rank as *B. olympicum* Jur., but I have been able to find no constant character but the smooth seta to separate it from *B. velutinum*, and prefer to regard it as a variety. It is recorded from the Pyrenees by Husnot (1884-90) under the name *B. salicinum* Bry. Eur., with *B. olympicum* and *B. venustum* De Not. in synonymy.

\**Brachythecium plumosum* (Hedw.) Bruch, Schimp. & W. Gümbel. On wetted rocks by the Riu Arinsal, ca 0.5 km above the avalanche wall, Arinsal, ca 1560 m, T.98/138.

\**Eurhynchium pulchellum* (Hedw.) Jenn. On an apparently basic rock by the Capercaillie Trail between El Tarter and Canillo, ca 1640 m, T.98/102.

\**Hypnum lacunosum* (Brid.) Hoffm. var. *lacunosum*. On a flat boulder by the trail GR11 from above Arinsal to Pla de l'Estany, ca 1750 m, T.98/168.

I have followed Smith (1995) in giving this moss specific rank.

*Rhytidium rugosum* (Hedw.) Kindb. In dry grassland by the long track on the S side of the Pic de les Angleves, ca 1.5 km E of La Massana, ca 1430 m, T.98/150.

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## RECORDING MATTERS - ERRATUM

The address of Howard Matcham, the vice-county recorder for VC 13 and 14, was incorrectly given in Recording Matters 16 (*Bulletin* 72: 84). The correct address is 21 Temple Bar, Strettington, nr Chichester, PO18 0LB.

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### Census Catalogues

Duncan, JB. 1926. <i>Census Catalogue of British Mosses</i> , 2nd edition.	20p
Sherrin, WR. 1946. <i>Census Catalogue of British Sphagna</i> .	20p
Warburg, EF. 1963. <i>Census Catalogue of British Mosses</i> , 3rd edition.	20p
Paton, JA. 1966. <i>Census Catalogue of British Hepatics</i> , 4th edition.	20p
Corley MFV, Hill, MO. 1981. <i>Distribution of bryophytes in the British Isles: a census catalogue of their occurrence in vice-counties</i>	Price incl. p&p: members £5.00, non-members £6.00, trade £4.00
Blockeel TL, Long DG. 1998. <i>A check-list and census catalogue of British and Irish bryophytes</i> .	£7.50

### Other items

Adams, KJ. <i>Microscope techniques for the bryologist. Part 1. A Beginner's Guide</i> .	Price incl. p&p: £1.00
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Newton, ME <i>et al.</i> , eds. 1988. <i>Bryology: modern research and the ways forward</i> .	£5.50
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*Ken Adams, BBS librarian; tel (direct line/ansa): 0181 849 3620; e-mail: K.J.Adams@uel.ac.uk.*

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## POHLIA ANNOTINA AS A COPPER MOSS

The North Face of Chatsworth House in Derbyshire is a sheer wall of impenetrable Millstone Grit, built so well that a penknife cannot be inserted between the stone blocks. But there is one exception; some 60 cm from the ground is a small ledge, 10 cm deep, like an exterior skirting board. Pinned to this ledge is a copper-sheathed cable that carries electricity to the floodlights on the West Front. Growing on and around this substantial copper cable with great vigour, and extending over a distance of 15 m or more is a sward of *Pohlia annotina* (conf. T. Blockeel). Where a trickle of water drains the ledge and runs to the ground the *Pohlia* follows it closely and forms a small delta on the paving stones. Everywhere the moss is smothered by a mass of propagules - the well-known 'empty gloves'. There are no other mosses either on the ledge or on the paving stones below.

I would be most interested to hear from other readers who have noticed such a marked copper-loving tendency in this species.

*M.A. Pearman, 2 Ironstone Cottages, Middle Handley, Derbyshire, S21 5RN.*

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## MORE USES FOR MOSS

Every book about bryophytes seems to include a section, however brief, on 'Uses of Moss'. However, after discussing the use of *Sphagnum* as a wound dressing and nappy liner, and referring, rather briefly, to the use of *Polytrichum* in brush making, the whole thing tends to peter out. I was therefore surprised to come across a new use for mosses, not in a bryology book, but in the *Rough Guide to Moscow*. One of the main roads in central Moscow, which runs parallel to the Kremlin Gardens, separating them from the Lenin Library and the Arbat district, is *Mokhovaya ulitsa* or Moss Street. So named, apparently, because this is where moss (*mokh*) was formerly sold. The moss was sold as a caulking material, for filling in chinks in wooden buildings, a use which is pretty well documented. However, it was also sold to put between the panes of glass in double-glazed windows, to absorb condensation.

Perhaps there is room here for the Society to make an approach to one of the major double-glazing firms, and offer them our expertise? If anybody has a photograph of such a window, complete with mossy contents, then I am sure that many of us would be interested to see it.

Robin Stevenson, 111 Wootton Road, Kings Lynn, Norfolk, PE30 4DJ.

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

All undated records are based on specimens collected in 1998; 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 Blockeel & Long (1998), *A Check-list and Census Catalogue of British and Irish Bryophytes*.

### HEPATICAEE

T.H. BLACKSTOCK

- 10.4 *Calypogeia neesiana*, peaty bank, ca 350 m alt., Bentley Moss, Haslingden, SD72 (59), Lowell 2279.
- 10.6 *Calypogeia sphagnicola*, on *Sphagnum capillifolium* and *S. magellanicum*, Duich Moss, S of Bowmore, Islay, NR35 (102), Paton 8052.
- 12.4 *Cephalozia macrostachya* a var. *macrostachya*, on *Leucobryum* in wet heath, E of the head of Loch Tarbert, Ruantallain Estate, Jura, NR68 (102), Paton 8053; b var. *spiniflora*, wet heath, N of Bun-an-Uillt, E of Loch Gruinart, Islay, NR26 (102), Paton 8054.
- 12.6 *Cephalozia lunulifolia*, on bark of ancient oak trunks in humid ravine, S of Forest Enterprise visitor centre, Llwyn-on, SO01 (42), Woods.
- 12.8 *Cephalozia loitlesbergeri*, in hummocks of *Sphagnum fuscum* in valley mire, head of tributary of Abhainn a'Chnocain, Elphin, Assynt, NC20 (108), Rothero 98016.

- 14.2 *Cladopodiella francisci*, steep bank, S side of the Corran River, Jura Estate, Jura, NR57 (102), Paton 8055.
- 18.4 *Cephaloziella hampeana*, clay soil, coal mine SE of Moira, W of Ashby de la Zouch, SK31 (55), Paton 8065.
- 21.2 *Barbilophozia kunzeana*, with *Scapania paludicola* and other bryophytes in damp *Molinia* pasture, 190-200 m alt., Nant y Twyn marsh, N of Caerphilly, ST19 (35), Sutton & Mockridge.
- 21.4 *Barbilophozia atlantica*, rocks in field, W of Charnwood Lodge, Charnwood Forest, SK41 (55), Hill; on exposed rocks, open slope by reservoir, ca 200 m alt., SW end of Torduff Reservoir, Torphin, NT26 (83), Long 27785; on thin soil on top of heathery outcrop, Loch nan Cadman, Ballygrant, Islay, NR46 (102), Blockeel 27/197.
- 21.6 *Barbilophozia hatcheri*, bank beside stream and track, Harley Dingle, SO16 (43), Lawley.
- 23.11 *Lophozia incisa*, dry, peaty bank of drain, Easter Inch Moss, Seafield, NS96 (84), Chamberlain.
- 23.13 *Lophozia bicrenata*, steep bank, S side of the Corran River, Jura Estate, Jura, NR57 (102), Paton 8056.
- 24.1 *Leiocolea rutheana* a var. *rutheana*, basic mire, 260 m alt., S side of Ale Water below dam, Ale Moor Loch, NT41 (79), Corner, conf. Long, new to Scotland.
- 24.2 *Leiocolea gillmanii*, on base-rich flushed turf ledge, ca 370 m alt., Cotterdale, Upper Wensleydale, SD89 (65), Blockeel 27/147.
- 24.5 *Leiocolea alpestris*, flushed rocks among calcareous boulders, Kirkton Glen, NN52 (87), Hodgetts 3298.
- 28.2 *Anastrophyllum hellerianum*, with *Nowellia* on horizontal, partly dead *Quercus* trunk, in moist wooded ravine on left bank of stream just above waterfall, Afon Sychryd, Pont Nedd Fechan, SN90 (41), Woods; amongst algae on steep rock face in rocky birch woodland, 100 m alt., An Cionhleum, S side of Loch Assynt, NC22 (108), Rothero 98026.
- 28.4 *Anastrophyllum donnianum*, on steep, rocky NE-facing slope, 640 m alt., Beinn Dearg Mheadhonach, Skye, NG52 (104), Averis (E).
- 29.1 *Tritomaria exsectiformis*, on remains of old wall covered with turf, below castle, Crichton Glen SSSI (83), 1996, Chamberlain (E).
- 32.3 *Jungermannia pumila*, wet shaded rock by stream in wooded ravine, Thursden Brook, Burnley, SD83 (59), 1997, Lowell 2224.
- 33.3 *Nardia geoscyphus*, peaty soil on mildly base-rich rock, near Port Alsaig, W of Kintra, NR34 (102), Paton 8058.
- 34.6 *Marsupella profunda*, with *Marsupella sprucei*, unshaded, on near-horizontal surface of granitic boulder at base of bank near quarry, S of Treviscoe, SW95 (2), Holyoak 98-71.
- 34.13 *Marsupella alpina*, vertical dripping rock face near mountain summit, An Casteal, NN31 (87), Hodgetts 3283.
- 37.3 *Diplophyllum obtusifolium*, bank at side of forestry road, Cefn Vron Hill, SO18 (40), Lawley.
- 38.2 *Scapania gymnostomophila*, as scattered stems among other bryophytes in base-rich rock crevice, Cwm Glas Bach, Snowdon, SH65 (49), 1997, Yeo & Fryday.
- 38.5 *Scapania scandica*, on sandstone boulder under trees, Moccas Deer Park, SO34 (36), Sleath; mossy bank amongst *Calluna*, on damp N-facing slope, ca 360 m alt., old bing by Breich Water near Addiewell, NT06 (84), Long 27688.

- 38.14 *Scapania paludicola*, with *Barbilophozia kunzeana* and other bryophytes in damp *Molinia* pasture, Nant y Twyn marsh, N of Caerphilly, ST19 (35), Sutton & Mockridge; in damp *Molinia* pasture, Tynllwyn, SW of Cemmaes, SH80 (47), 1997, Guest.
- 40.2 *Lophocolea bispinosa*, unshaded on near-horizontal, gravelly, china-clay spoil of sparsely vegetated bank above quarry, Melbur, NW of St Austell, SW95 (2), Holyoak 98-64.
- 40.4 *Lophocolea semiteres*, on light sandy soil in *Calluna* heath, edge of track by 70 acre plantation, Bawsey CP, King's Lynn, TF61 (28), Stevenson; on stump in open conifer plantation above FE car park, 20 m alt., by Lochan Maoil Dhuinne, S of Rowardennan, Loch Lomond, NS39 (86), Rothero 98011.
- 46.5 *Plagiochila norvegica*, on flint stone in woodland, near Batcombe, ST60 (9), 1997, Collins, new to the British Isles (Hill *et al.*, 1998).
- 46.6 *Plagiochila atlantica*, on rock in shade of deciduous woodland near coast, above Tramaig Bay, Jura, NR68 (102), Buryová, ex herb. Holyoak 98-329.
- 52.2 *Ptilidium pulcherrimum*, on trunk of small ash, Skellingthorpe Old Wood, near Lincoln, SK97 (53), Lammiman & Rieser.
- 53.1 *Porella platyphylla*, with *Porella cordaeana* on conglomerate outcrop in abandoned stream course, Woodhall Dean, NT67 (82), 1993, Harper, det. Long.
- 53.4 *Porella obtusata*, on unshaded rock in small base-rich tarn, shortly above water level, with *Porella cordaeana* and *Nephroma parile*, 615 m alt., Brown Cove Tarn, Helvellyn, NY31 (69), Orange 12419; on steep side of boulder in unshaded river, 10 m alt., Lackagh River, Glen Lough, 9 km W of Millford, B02 (H35), Orange 11753.
- 53.5 *Porella pinnata*, on inclined surfaces of unshaded granitic boulders in stream, 5 cm below to 20 cm above water level, E of Treen, SW32 (1), Gainey, det. and comm. Holyoak (Holyoak 98-61).
- 54.1 *Frullania tamarisci*, on elder in small woodland, near Chenies, TQ09 (24), 1996, G. Smith, comm. S. O'Leary.
- 59.1 *Microlejeunea ulicina*, trunk of alder(?), ca 350 m alt., Edgworth Moor, Bolton, SD71 (59), Lowell 2629.
- 60.2 *Lejeunea lamacerina*, with *Lophocolea bidentata* on sloping face of boulder in shaded stream gully, Burrow Wood, Charnwood Forest, SK41 (55), Pool.
- 61.1 *Colura calyptrifolia*, on stems of *Ulex europaeus* in open scrub on N-facing bank of old quarry spoil, NE of Warleggan, SX16 (2), Holyoak 98-34.
- 62.3 *Cololejeunea minutissima*, on bark of *Salix cinerea* in scrub on slope near coast, Port Alsaig, W of Kintra, Islay, NR34 (102), Holyoak 98-196A.
- 64.3 *Fossombronia caespitiiformis*, on partly bare soil patches at edges of path on slope, partly shaded, above quarried sea-cliffs of limestone, Petit Tor Point, SX96 (3), Holyoak 98-408, conf. Paton.
- 64.4 *Fossombronia husnotii*, soil-filled crevices on SW-facing acidic shale outcrop, Craig Cwefru, Llanfiangel Brynpabuan, SN95 (42), Woods.
- 64.7 *Fossombronia wondraczekii*, with *Fossombronia pusilla* on bare damp ground in old gateway by track, between Loch Ballygrant and Loch Allan, Islay, NR46 (102), Blockeel 27/200.
- 64.9 *Fossombronia incurva*, on moist bare ground in area of old mine workings, 0.5 km E of Moira, W of Ashby de la Zouch, SK31 (55), Blockeel 27/243; gravelly track, W from the road S of Laggan Bridge, Islay, NR35 (102), Paton 8059.
- 65.1 *Petalophyllum ralfsii*, the voucher for 3 (thin soil over limestone, Walls Hill Down, Torquay, SX96, 1983, M. Pool (BBSUK) is *Fossombronia husnotii*, det. Holyoak, conf.



- Paton; replace by: on damp sand on edge of dune slack, with very low carpet of mosses, herbs and grasses, Dawlish Common, SX97 (3), 1997, Holyoak 97-161, conf. Paton.
- 68.1 *Moerckia hibernica*, in flush, N-facing moorland valley, ca 350 m alt., NW of Scald Law, Pentland Hills, NT16 (83), Long 28034 (E).
- 72.2 *Riccardia chamedryfolia*, flush on sea-cliff slope, W of Kintra, Islay, NR34 (102), Paton 8059.
- 73.2 *Metzgeria temperata*, on willow branch in carr on edge of coastal marshes, Thorpeness, TM45 (25), 1997, Strauss.
- 82.1 *Marchantia polymorpha* b subsp. *ruderalis*, shady cleft in old N-facing wall, ca 275 m alt., Housesteads Roman Fort, Roman Wall, NY76 (67), Long 27975; on plant pots in garden, ca 40 m alt., Jura House Garden, Jura, NR46 (102), Long 27907.
- 84.1 *Riccia cavernosa*, on exposed mud of lake margin, Dudmastton Hall Lake, Quatt, SO78 (40), Woods.
- 84.9 *Riccia glauca*, damp hollow at side of stubble field adjacent to wood, Oulton, TM59 (25), Fisk; soil in vegetable border in garden, ca 12 m alt., Levens Hall, S of Kendal, SD48 (69), Long 27978; mud path and cultivated ground, gardens of Jura House, NR46 (102), Burton.
- 84.10 *Riccia subbifurca*, on thin, partly bare soil over limestone, on W-facing slope near top of sea cliff, SW side of Berry Head, SX95 (3), Holyoak 98-384.
- 86.1 *Phaeoceros laevis*, on edges of cut turf by track, broad-leaved policy woodland, ca 50 m alt., Dunlossit House, Port Askaig, Islay, NR46 (102), Long 27936.

#### Contributors of hepatic records, 1998

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Hill MO, Collins B, Edwards B. 1998. *Plagiochila norvegica* (Hepaticae) in southern England, newly recorded for the British Isles. *Journal of Bryology* 17: 121-126.

### MUSCI

G. P. ROTHERO

- 1.6 *Sphagnum squarrosum*, wet, peaty ground close to ponds, Foulshiels Bing, Stoneyburn, NS96 (84), Chamberlain.
- 1.7 *Sphagnum teres*, in mesotrophic flush, 150 m alt., Meentygrannagh Bog, 2 km S of Altinierin, C00 (H35), Lockhart.
- 1.9 *Sphagnum girgensohnii*, in flush on steep side of clough, 320 m alt., Ratten Clough, Todmorden, SD82 (59), Lowell 2479, conf. Hill.

- 1.10 *Sphagnum russowii*, in recently cleaned marshy area, near Alderfen Broad, TG31 (27), Strauss, conf. Hill; on damp E-facing bank, Turton and Entwistle reservoir, SD71 (59), Smith, conf. Hill.
- 1.11 *Sphagnum quinquefarium*, damp, N-facing slope, mossy bank amongst heather, 160 m alt., old bing by Breich Water near Addiewell, NT06 (84), Long 27683.
- 1.12 *Sphagnum warnstorffii*, in weakly base-rich flush on slope by moorland stream, 280 m alt., Dovestone Clough, Upper Derwent Valley, SK18 (57), Blockeel 21/010.
- 1.20 *Sphagnum subsecundum*, at edge of slightly enriched stony flush, 350 m alt., Abbey Brook, near Berristers Tor, Upper Derwent Valley, SK19 (63), Blockeel 27/034, conf. Hill.
- 1.22 *Sphagnum denticulatum*, wet, peaty ground close to ponds, Foulshiels Bing, Stoneyburn, NS96 (84), Chamberlain.
- 1.24 *Sphagnum platyphyllum*, on flushed slope dominated by *Juncus* and *Sphagnum* on open, flat river bank, 250 m alt., Carrifran Glen, near junction with Priest Gill, Moffatdale, NT11 (72), Long 27805, conf. Hill.
- 1.31 *Sphagnum flexuosum*, in damp *Betula* woodland, 260 m alt., SW corner of Red Moss, Balerno, NT16 (83), Long 27436; in boggy ground between limestone hillocks, 75 m alt., Loch nan Cadhan, Ballygrant, Islay, NR46 (102), Blockeel 27/196, conf. Hill.
- 2.1 *Andreaea alpina*, on unshaded, inclined surface of quartzite on NE-facing slope, 500 m alt., Beinn Chaolais, NE side, Jura, NR47 (102), Holyoak & Buryová 98-308.
- 2.2 *Andreaea rupestris* a var. *rupestris*, on side of boulder, 380 m alt., Beinn Mhearsamail, Jura, NR47 (102), Pool.
- 3.1 *Pogonatum nanum*, on N side of shale bing, near West Calder, NT06 (83), 1976, Chamberlain (E).
- 4.5 *Polytrichum commune* c var. *humile*, delete 83, voucher is var. *commune*, comm. Chamberlain.
- 7.1 *Tetraphis pellucida*, Gight Woods near Methlick, NJ83 (93), 1997, Jackson, det. Blockeel.
- 12.1 *Pleuridium acuminatum*, on open soil patch in semi-improved grassland, Hothorpe Hills, SP68 (32), Wigginton.
- 14.1 *Ditrichum cylindricum*, in turnip field, Ballygrant and in arable field, 3 km NE of Bridgend, both Islay, NR36 (102), Whitehouse.
- 14.5 *Ditrichum plumbicola*, on open, damp, level silty-clay on banks of small stream with run-off from old mine area, Chyverton House, SW75 (1), Holyoak 98-175.
- 14.7 *Ditrichum zonatum* a var. *zonatum*, on low outcrop in open moorland valley, 560 m alt., Carrifran Glen, above Games Gill ravine, Moffatdale, NT11 (72), Long 27821.
- 14.9 *Ditrichum flexicaule*, on rocks on slabby E-facing limestone crag, 420 m alt., Lion's Face, Creag Clunie, Braemar, NO19 (92), Rothero 98130; in crevice of limestone boulder, 320 m alt., Lairig Unapool, Assynt, NC22 (108), Rothero 98201.
- 21.4 *Cynodontium polycarpon*, in crevices in large blocks at base of E-facing crags, 630 m alt., Carn nan Sgliat, Braemar, NO18 (92), Rothero 98118, conf. Crundwell.
- 24.1 *Aongstroemia longipes*, on soil by edge of track in moorland, SW of Laggan Bridge, Islay, NR35 (102), Holyoak 98-204.
- 25.7 *Dicranella staphylina*, in turnip field, Ballygrant and in arable field, 3 km NE of Bridgend, both Islay, NR36 (102), Whitehouse.
- 28.2 *Kiaeria blyttii*, Moorfoot Hills, NT24 (83), 1997, Dixon, det. Long.
- 29.2 *Dicranum bonjeanii*, in damp grassland, Ashton Wold NR, TL08 (32), Wigginton.

- 29.12 *Dicranum tauricum*, on base of old ash tree, 75 m alt., Acre House Farm, Nettlefox, TF19 (54), Rieser; on trunk of large willow, 100 m alt., Withnell Fold local nature reserve, SD62 (59), Lowell.
- 29.13 *Dicranum montanum*, on ash tree, 30 m alt., Muckton Wood near Louth, TF38 (54), Lammiman & Rieser.
- 29.14 *Dicranum flagellare*, on shaded oak log in woodland in narrow valley with *Hypnum jutlandicum*, *Mnium hornum*, *Tetraphis pellucida*, *Lepidozia reptans*, 230 m alt., Cwm Ffrwd, Merthyr Tydfil, SO00 (41), Orange *et al.* 12154.
- 30.3 *Dicranodontium denudatum*, damp, N-facing slope, mossy bank amongst *Calluna*, 160 m alt., old bing by Breich Water near Addiewell, NT06 (84), Long 27691.
- 31.1 *Campylopus subulatus*, on gravelly track on open hillside, 25 m alt., Bunnahabhain, above distillery, Islay, NR47 (102), Long 27938; on gravelly track, Loch Tarbert track, Jura, NR58 (102), Paton 2738.
- 34.4 *Fissidens pusillus*, on stone by small waterfall in open ravine, 288 m alt., Bonaly Burn, below reservoir, Pentland Hills, NT26 (83), 1977, Long 6107 (E); on damp shale in wooded valley, Abercorn, NT07 (84), 1971, Long 1250 (E), conf. Corley.
- 34.6 *Fissidens incurvus*, steep clay bank above stream in woodland, 70 m alt., Merryfield Wood, Balderstone, SD63 (59), Lowell 2505, conf. Smith.
- 34.8 *Fissidens curvovii*, in rock crevice in waterfall in small stream in woodland, 175 m alt., Beeley Brook, Beeley, SK26 (57), 1995, Blockeel & Pearman 24/336.
- 35.1 *Octodicerus fontanum*, on rock shallowly submerged on edge of river shaded by woodland, River Tamar below Clitters Wood, SX47 (2), Holyoak 98-362.
- 36.6 *Encalypta ciliata*, on damp shady rock face in calcareous rocky ravine, 310 m alt., Habbie's Howe ravine, upper waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28025 (E).
- 37.1 *Eucladium verticillatum*, seeps on walls of sea cave at head of rocky inlet, 10 m alt., Foilareal Bay, 7 km S of Timoleague, W43 (H3), Bates 3921.
- 38.1 *Weissia controversa* b var. *crispata*, Arthur's Seat, Edinburgh, NT27 (83 in ()), 1907, W. Evans, conf. Chamberlain.
- 39.1 *Tortella tortuosa*, in open turf on bank in old limestone workings, Barnack 'Hills & Holes', TF00 (32), Wigginton.
- 39.6 *Tortella inclinata*, on low exposed rocks on seashore, 2 m alt., Blackness Castle, NT08 (84), Long 27793.
- 39.8 *Tortella flavovirens* a var. *flavovirens*, on low exposed rocks on seashore, 2 m alt., Blackness Castle, NT08 (84), Long 27795.
- 40.1 *Trichostomum brachydontium*, in open turf on bank in old limestone workings, Barnack 'Hills & Holes', TF00 (32), Wigginton.
- 40.4 *Trichostomum hibernicum*, in bryophyte turf on calcareous rocks close to burn, 200 m alt., burn 1 km NW of Achmore Farm, Assynt, NC22 (108), Rothero 98144.
- 42.1 *Pleurochaete squarrosa*, in crevices of coastal limestone rocks, 5 m alt., Arnside, Blackstone Point, White Creek, and in heathy patches in pockets on limestone pavement, 20 m alt., Arnside, 250 m NW of Creep-I-th-call Bridge, Leighton Beck, Hazelslack, both SD47 (69), Raistrick.
- 46.2 *Bryoerythrophyllum ferruginascens*, on moist soil of unsurfaced track, 10 m alt., New Quay, Gulworthy, SX46 (3), Pool; in mossy crevices of rocks by burn in calcareous rocky ravine, 300 m alt., Habbie's Howe ravine, lower waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28007 (E).

- 48.1 *Hymenostylium recurvirostrum*, rocks in freshwater streamlet on upper shore, 10 m alt., Simon's Cove, 5.5 km SE of Clonakilty, W43 (H3), Bates 3929.
- 51.1 *Gymnostomum viridulum*, on damp mortar of ruins, Netley Abbey, SU40 (11), Townsend.
- 51.2 *Gymnostomum calcareum*, delete 2, voucher is *Gyroweisia tenuis*, comm. Holyoak.
- 54.4 *Didymodon nicholsonii*, on tarmac and gravel paths in churchyard, 75 m alt., Buckhurst Hill, TQ49 (18), Pyner.
- 54.10 *Didymodon luridus*, on soil at roadside amid exposed coastal pastures, 50 m alt., Ballymacredmond, 8 km SSE of Timoleague, W43 (H3), Bates 3915.
- 54.12 *Didymodon sinuosus*, on retaining wall, Water of Leith, Colinton Dell by Redhall Lade, NT26 (83), Chamberlain.
- 54.17 *Didymodon ferrugineus*, on film of clay on damp concrete wall at old china-clay works, W of Pont's Mill, SX05 (2), 1997, Holyoak 97-445; on low, sloping, limestone rock in grassland, W of Loch Fada, Islay, NR36 (102), Holyoak 98-212.
- 55.1 *Scopelophila cataractae*, on thin soil in crevices of low wall at edge of patch of old mine spoil, NW of Warlaggan, SX16 (2), Holyoak 98-37.
- 58.1 *Aloina brevirostris*, in sand mixed with steel works waste in dune slack, dunes at Coatham, Redcar, NZ52 (62), Holyoak & Blackburn.
- 59.1 *Leptobarbula berica*, on sandy mine spoil on ledge of ruined wall below bank of mine spoil, E of Calstow, SX46 (2), Holyoak 97-391, conf. Whitehouse.
- 60.1 *Tortula subulata* d var. *graeffii*, on dry ledges by burn in calcareous rocky ravine, 300 m alt., Habbie's Howe ravine, lower waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28009.
- 60.15 *Tortula modica*, on soil in calcareous mudstone quarry with *Aloina aloides*, Harley Dingle, SO16 (43), Sleath, det. Chamberlain.
- 60.18 *Tortula acaulon* d var. *papillosa*, on sandy margin of fallow arable field, Tuddenham Gallops, Breckland, TL77 (26), Porley, conf. Blockeel.
- 65.1 *Syntrichia ruralis*, on tarmac on pier, 3 m alt., Craighouse Pier, Jura, NR56 (102), Long 27903.
- 65.4 *Syntrichia intermedia*, on ledges of low limestone outcrop in open grassland, 75 m alt., Loch nan Cadhan, Ballygrant, Islay, NR46 (102), Long & Blockeel 27923.
- 65.9 *Syntrichia latifolia*, on silty stonework by burn, 105 m alt., Lion's Lodge Bridge below Ford, Tyne Water, NT36 (83), 1994, Long 25803 (E).
- 68.3 *Schistidium platyphyllum*, on rocks in flood zone with *Cinclidotus fontinaloides*, Afon Banwy above Llanfair Caereinion (47), Woods, conf. Orange; on rock in outflow of reservoir, 130 m alt., Tockholes, Blackburn, SD62 (59), Lowell; on rock in mountain stream, River South Esk near Hirendeane Castle, Moorfoot Hills, NT25 (83), 1973, Long 2615, conf. Orange.
- 68.4 *Schistidium agassizii*, on rocks in unshaded river with *Racomitrium aciculare*, *Ephebe lanata*, *Dermatocarpon intestiforme*, 25 m alt., Lackagh River, Glen Lough, 9 km W of Millford, B12 (H35), Orange 11740, new to Ireland.
- 68.8 *Schistidium pruinosum*, on dry S-facing rocks in calcareous rocky ravine, 300 m alt., Habbie's Howe ravine, lower waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28002.
- 68.9 *Schistidium strictum*, on damp shady rock face in calcareous rocky ravine, 310 m alt., Habbie's Howe ravine, upper waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28004.

- 69.5 *Grimmia montana*, on rock face, 80 m alt., Agassiz Rock, Blackford Quarry, Edinburgh, NT27 (83), 1978, Long 6540 (E), conf. Greven.
- 69.10 *Grimmia longirostris*, on sunny rocks at top of hill, Creag Bhan, Gigha, Kintyre, NR65 (101), 1996, Hodgetts, conf. Porley.
- 69.11 *Grimmia ovalis*, Arthur's Seat, Edinburgh, NT27 (83 in ()), 1870, Boyd (E).
- 69.14 *Grimmia incurva*, in crevices in large blocks at base of crag, 630 m alt., SE-facing crags on Carn nan Sgliat, Braemar, NO18 (92), Rothero 98117.
- 69.23 *Grimmia decipiens*, on acid east-facing cliff, 343 m alt., Rubers Law, Denholm, Roxburghshire, NT51 (80), Corner, conf. Smith; on boulder in woodland, Murlough Bay, D14 (H39), 1990, Martin.
- 70.1 *Racomitrium ellipticum*, on N-facing vertical rock face, 380 m alt., Beinn Mhearsamail, Jura, NR47 (102), Pool.
- 70.4 *Racomitrium fasciculare*, on N-facing roof tiles with abundant *R. lanuginosum* and *R. heterostichum*, 85 m alt., Stansted Mountfitchet, St John's Church, TL52 (19), Pyner.
- 70.5 *Racomitrium macounii* subsp. *alpinum*, on unshaded rocks by river 0.5 m above present water level with *Racomitrium aciculare*, *Marsupella emarginata*, *Scapania compacta*, 40 m alt., River Duddon near Booth Holme, 4.5 km NW of Broughton, SD19 (69), Orange 12442; unshaded rocks by river with *Racomitrium aciculare*, *Brachythecium plumosum*, *Parmelia conspersa*, 40 m alt., Dromanassig Waterfall, Sheen River SE of Kenmare, V96 (H1), Orange 11904, new to Ireland.
- 70.6 *Racomitrium sudeticum*, on crumbling rocks in N-facing coire, 700 m alt., Polmood Craig, Broadlaw, Tweedsmuir, NT12 (78), 1978, Long 7152 (E); West Lomond Hills (85 in ()), 1904, W. Evans.
- 70.7 *Racomitrium affine*, on sandstone boulder under deciduous trees, Moccas Deer Park, SO34 (36), Sleath; on dry S-facing rocky slope in open valley, 275 m alt., Habbie's Howe ravine, the Pinnacle, Pentland Hills, NT16 (83), Long & Chamberlain 27982; rock in dry scree, 240 m alt., N slopes of Mullach Sgar, Village Bay, Hirta, St Kilda, NF09 (110), 1991, Long 19750 (E).
- 70.8 *Racomitrium heterostichum*, on basaltic rocks, SW end of Dunsyre Hill, NT04 (77), 1975, Long 4480 (E); on rocks by loch, St Mary's Loch, near Cappercleugh, NT22 (79), 1965, Long 96 (E); on dry S-facing rocky slope in open valley, 275 m alt., Habbie's Howe ravine, the Pinnacle, Pentland Hills, NT16 (83), Long & Chamberlain 27985; on wall, Glenrothes, NO20 (85), Caldwell (E), conf. Long.
- 70.12 *Racomitrium elongatum*, on gravel by burn in open valley, 270 m alt., Habbie's Howe ravine, the Pinnacle, Pentland Hills, NT16 (83), Long & Chamberlain 27980.
- 75.9 *Seligeria donniana*, in crevice in mildly base-rich sheltered rock-face, Clogwyn du'r Arddu, Yr Wyddfa, SH65 (49), 1997, Yeo *et al.*
- 83.5 *Ephemerum serratum* a var. *serratum*, on bare earth near stream, 125 m alt., Boothorpe, to NW of former coal mine, SK31 (55), Whitehouse; in grass field, Drumshrieland (84 in ()), 1902, W. Evans (E); b var. *minutissimum*, in stubble field, 25 m alt., Butterwick, SE77 (62), Blackburn.
- 88.1 *Splachnum sphaericum*, on dung, near Inver Cottage, Jura, NR47 (102), Stern.
- 93.1 *Pohlia elongata* a subsp. *elongata* var. *elongata*, on shale by stream with *Diplophyllum albicans*, 320 m alt., Ratten Clough, Todmorden, SD82 (59), Lowell.
- 93.6 *Pohlia drummondii*, on wet soil on stone on bank of stream, 330 m alt., Cotterdale, Upper Wensleydale, SD89 (65), Blockeel 27/136.

- 97.1 *Bryum marratii*, on gritty soil at top edge of salt-marsh with sparse *Juncus gerardii*, E side of Loch Gruinart, Islay, NR37 (102), Holyoak 98-254.
- 97.18 *Bryum intermedium*, on shell sand stripped of turf, Gullane Links (82), 1978, Chamberlain.
- 97.20 *Bryum capillare* b var. *rufifolium*, on limestone wall of church on the S side, Redmile churchyard, SK73 (55), Ballard, conf. Crundwell.
- 97.27 *Bryum pallescens*, on mortared stone wall of farm outbuilding, receiving runoff from roof, 60 m alt., Ballymacredmond, 8 km SSE of Timoleague, W43 (H3), Bates 3913.
- 97.34 *Bryum gemmiferum*, on open damp sand on slope above pond, Braunton Burrows, SS43 (4), 1997, Holyoak 97-399; on damp, thinly vegetated sand on slope at edge of shallow pool in fore-dunes, Saltfleetby and Theddlethorpe Dunes NNR, TF48 (54), Holyoak & Hodgetts 98-122.
- 97.37 *Bryum dunense*, on open ground in *Avenula pratensis* - *Festuca ovina* chalk grassland on N-facing slope, 240 m alt., Bacombe Hill, Chilterns, SP80 (24), Porley, conf. Whitehouse; on sandy shore, Ardfenal, Jura, NR57 (102), Stern.
- 97.40 *Bryum violaceum*, in arable field, 3 km NE of Bridgend, Islay, NR36 (102), Whitehouse.
- 97.42 *Bryum sauteri*, in turnip field, Ballygrant, Islay, NR36 (102), Whitehouse.
- 97.45 *Bryum bornholmense*, on sandy soil in grassland, Icklingham Heath, TL77 (26), 1965, Whitehouse *et al.*; on peaty ground amongst rocks, 10 m alt., Carraig Mhor, Imeravale, Port Ellen, Islay, NR34 (102), Stern.
- 97.46 *Bryum rubens*, on peaty bank by beach, Tarbert, Jura, NR68, Stern; on soil at edge of track in woodland, 80 m alt., Loch Ballygrant, Islay, NR46, Blockeel 27/192; in arable field, 3 km NE of Bridgend, Islay, NR36, Whitehouse, all (102).
- 98.1 *Rhodobryum roseum*, on sandy slope by sea, 5 m alt., Hound Point, Dalmeny Estate, NT17 (84), 1981, Long 10065 (E).
- 99.5 *Mnium marginatum* a var. *marginatum*, on shady rocks in gorge, Boonslie Burn below Boonslie, Lammermuirs, NT67 (82), 1974, Long 4070 (E).
- 102.1 *Plagiomnium cuspidatum*, Gight Woods near Methlick, NJ83 (93), Jackson, det. Blockeel.
- 102.2 *Plagiomnium affine*, around damp margin of swamp in woodland, 40 m alt., Low Park Wood, Sizergh Estate, SD58 (69), Raistrick; Carlowrie near Kirkliston, NT17 (84 in ()), 1898, W. Evans (E).
- 103.1 *Pseudobryum cinclidioides*, flushed margin of loch over calcareous fucoid beds, 160 m alt., SE margin of Loch Awe, Assynt, NC21 (108), Rothero 98022.
- 105.1 *Paludella squarrosa*, scattered amongst *Homalothecium nitens*, *Aulacomnium palustre* and *Sphagnum* spp. with *Leiocolea rutheana* in quaking lawn beside pool system in rich fen, 70 m alt., Bellacorick Bog, Co Mayo, G02 (H27), Lockhart, new to Ireland.
- 109.1 *Plagiopus oederianus*, on rocks in N-facing limestone scree, 420 m alt., Lion's Face, Creag Clunie, Braemar, NO19 (92), Rothero 98126.
- 112.4 *Philonotis caespitosa*, in ground poached by cattle at margin of fen, 220 m alt., Gordonhall Fen, Insh Marshes RSPB Reserve, NH70 (96), Rothero 98153; on thin, compressed soil of stony track at edge of damp pasture, SE of Craighouse, Jura, NR56 (102), Holyoak 98-282.
- 112.7 *Philonotis seriata*, in flushed stony ground in area of late snow-lie, 980 m alt., NE coire of Ben Lawers, NN64 (88), Rothero 98189.
- 112.8 *Philonotis calcarea*, delete 84, voucher wrongly determined, comm. Chamberlain.

- 115.2 *Amphidium mougeotii*, Gight Woods near Methlick, NJ83 (93), 1997, Jackson, det. Blockeel.
- 116.2 *Zygodon rupestris*, on mossy rocks by burn in calcareous rocky ravine, 305 m alt., Habbie's Howe ravine, upper waterfall, Pentland Hills, NT16 (83), Long & Chamberlain 28014 (E); Gight Woods near Methlick, NJ83 (93), Jackson, det. Blockeel.
- 117.5 *Orthotrichum rupestre*, on old tarmac of former airfield, 160 m alt., Winkleigh, SS60 (4), Pool.
- 117.10 *Orthotrichum rivulare*, on wet rocks by river, 30 m alt., River Almond, Grotto Bridge, Craigiehall, NT17 (84), 1977, Long 5528 (E); River Spey, Aviemore, NH81 (96), 1968, Long 412 (E), det. Blockeel.
- 117.12 *Orthotrichum stramineum*, on *Salix* trunk in old *Salix* thicket, 80 m alt., shale bing E of Philipstoun, N side of Union Canal, NT07 (84), Long 27451 (E).
- 117.13 *Orthotrichum tenellum*, on base of trunks of *Populus* trees in grove on damp ground, Holkham Park, TF84 (28), Holyoak 98-119.
- 117.14 *Orthotrichum pallens*, near Calder Bridge, Garstang (60 in ()), 1900, A. Wilson (NMW) & J.A. Wheldon (NMW).
- 117.16 *Orthotrichum diaphanum*, on hawthorn in garden, West End, Burray, Orkney, ND49 (111), 1997, McCance.
- 118.2 *Ulota drummondii*, on branch of rowan, Bowmans Gill ravine, Dundreich Plateau SSSI, NT24 (83), Chamberlain.
- 118.4 *Ulota bruchii*, on *Salix* trunk in old *Salix* thicket, 80 m alt., shale bing E of Philipstoun, N side of Union Canal, NT07 (84), Long 27449.
- 119.2 *Hedwigia stellata*, on basalt boulder in quartzite scree on S-facing slope, Beinn Schiantaidh above Loch an t-Siob, Jura, NR57 (102), Paton.
- 120.1 *Fontinalis antipyretica* b var. *gracilis*, on rock in stream, 320 m alt., Logan Burn above upper waterfall, Pentlands, NT16 (83), 1976, Long 5143 (E).
- 122.1 *Cryphaea heteromalla*, on elder by path in woodland, Burrow Wood, Charnwood Forest, SK41 (55), Newton; on elder by road, near Glencorse reservoir (83), 1993, Saville.
- 127.1 *Leptodon smithii*, on vertical rock of lightly-shaded S-facing serpentine crag, NE of Gwendreath Farm, SW71 (1), 1997, Holyoak 97-408.
- 128.3 *Neckera pumila*, on fallen branch of *Fagus sylvatica*, 70 m alt., Ballygrant woods, Islay, NR46 (102), Pool.
- 130.1 *Thamnobryum alopecurum*, Gight Woods near Methlick, NJ83 (93), Jackson, det. Blockeel.
- 138.1 *Leskea polycarpa*, on *Salix* in carr at margin of fen, 220 m alt., Coull Fen, Insh Marshes RSPB Reserve, NH80 (96), Rothero 98150.
- 139.2 *Pseudoleskeella rupestris*, on rocks at base of N-facing limestone crag, 420 m alt., Lion's Face, Creag Clunie, Braemar, NO19 (92), Rothero 98133.
- 143.3 *Anomodon viticulosus*, on base of beech tree, 40 m alt., Hubbards Hill, Louth, TF38 (54), Lammiman & Rieser.
- 144.1 *Heterocladium heteropterum* a var. *heteropterum*, on sloping rock by small stream, Burrow Wood NR, Charnwood Forest, SK41 (55), Rothero 98164.
- 144.2 *Heterocladium wulfsbergii*, in shaded rock crevice in low coastal cliff, Tarskavaig Bay, Achnacloich, Skye, NG50 (104), 1997, Hodgetts 3253, conf. Crundwell.
- 147.1 *Palustriella commutata* b var. *falcata*, on wet peaty ground close to ponds, Foulshiels Bing, Stoneyburn, NS96 (84), Chamberlain.

- 153.1 *Amblystegium serpens* b var. *salinum*, in sandy turf on chalk cliff-top with *Bryoerythrophyllum recurvirostrum*, Birling Gap, East Dean, TV59 (14), Porley.
- 153.4 *Amblystegium varium*, the voucher for 1 (cliffs near Pendeen Watch, Lands End, 1962, Paton) is *Cratoneuron filicinum*, comm. Holyoak; replace with: on boulder in fast-flowing stream in deciduous woodland, Gwendreath, Lizard, SW71 (1), 1994, Holyoak 94-406, conf. Smith; on wet basalt crag in cave above sea, 10 m alt., Lunga, Treshnish Isles, NM24 (103), Rothero 98037, det. Blockeel.
- 156.2 *Warnstorfia exannulata*, in pool with *Sphagnum*, Nettlebed Common, SU78 (23), O'Leary & Bates; in drainage ditch, Dunbar Common, NT67 (82), 1978, Chamberlain (E); Isle of May, Firth of Forth, NT69 (85 in ()), 1905, W. Evans (E), conf. Blockeel.
- 157.1 *Drepanocladus polygamus*, damp chalk by side of pool on floor of old quarry with *Drepanocladus cossonii*, *Amblystegium serpens* etc., 8 m alt., chalk pit, Wells-next-sea, TF94 (28), Stevenson; wet, peaty ground close to ponds, Foulshiels Bing, Stoneyburn, NS96 (84), Chamberlain; in damp, sandy ground by stream on sand dunes, 5 m alt., Corran Ban, Ardnave Point, Islay, NR27 (102), Long 27968.
- 157.3 *Drepanocladus sendtneri*, in pond on sand dunes, Aberlady Bay, NT48, 1971 (82), Chamberlain.
- 157.6 *Drepanocladus cossonii*, in basic flush on vally side, River South Esk S of Hirendean Castle, Moorfoot Hills, NT24 (83), 1974, Long (E).
- 158.1 *Hamatocaulis vernicosus*, near Kildonan, Arran, NS02 (100 in ()), 1947, Appleyard, NMW, conf. Blockeel.
- 159.1 *Tomenthypnum nitens*, in seasonally inundated area of dune slack fen, 5 m alt., Morrich More, fen SE of control tower, NH88 (106), Rothero 98047; in calcareous flush with *Sphagnum warnstorffii*, *S. teres* and *Calliargon stramineum*, 150 m alt., Meentygrannagh Bog, 2 km S of Altinierin, C00 (H35), Lockhart.
- 164.1 *Calliargon stramineum*, in calcareous flush with *Sphagnum warnstorffii* and *Tomenthypnum nitens*, 150 m alt., Meentygrannagh Bog, 2 km S of Altinierin, C00 (H35), Lockhart.
- 169.3 *Brachythecium glareosum*, on thin soil over limestone on bank beside track, W of Lochan Fada, Islay, NR46 (102), Holyoak 98-213.
- 180.3 *Plagiothecium denticulatum* b var. *obtusifolium*, on rock ledges of side gully in steep rocky valley, 485 m alt., Carrifran Glen, Games Gill ravine, Moffatdale, NT11 (72), Long 27817.
- 180.4 *Plagiothecium ruthei*, at margin of fen N of railway, 220 m alt., Balavil Fen, Insh Marshes RSPB Reserve, NH80 (96), Rothero 98183.
- 180.9 *Plagiothecium cavifolium*, on north-facing bank of organically rich sandy soil with *Dicranella heteromalla*, *Mnium hornum*, 76 m alt., Great Wood, Fellbrigg, near Cromer, TG14 (27), Stevenson & Strauss, conf. Blockeel.
- 180.11 *Plagiothecium nemorale*, on fallen log, Gight Woods near Methlick, NJ83 (93), 1997, Jackson, det. Blockeel.
- 181.2 *Isopterygiopsis pulchella*, with other bryophytes in deep crevice on coastal crag, 15 m alt., Rubh' a'Mhail, Islay, NR47 (102), Blockeel 27/203.
- 183.2 *Herzogiella seligeri*, on an oak bole in damp woodland, 105 m alt., Old Pastures near Yardley Hastings, SP85 (32), Higgs, conf. Hill; on very rotten birch and pine stumps, Friskney Decoy Wood, Lincolnshire, TF45 (54), Hodgetts.
- 188.1 *Platygyrium repens*, on sloping mature willow trunk in carr, Thorpeness, North Warren NR, TM45 (25), Strauss; on fallen hornbeam in mixed deciduous woodland, 41 m alt.,



- Little Wood, Shotesham, TM29 (27), Fisk; on ash tree, 30 m alt., Muckton Wood near Louth, TF38 (54), Lammiman & Rieser.
- 190.4 *Hypnum lacunosum* b var. *tectorum*, among limestone rocks on crag, 275 m alt., Cheedale, SK17 (57), Blockeel 27/121; on outcrop of Yoredale rocks on bank of stream, Cotterdale, Upper Wensleydale, SD89 (65), Blockeel 27/139; about limestone outcrops in pasture, 135 m alt., Mullach Dubh, Islay, NR36 (102), Blockeel 27/183; on ledges of low limestone outcrop in open grassland, 80 m alt., Loch nan Cadhan, Ballygrant, Islay, NR46 (102), Long & Blockeel 27919.
- 190.6 *Hypnum andoi*, on trunk of *Alnus*, wooded margin of flood plain, 225 m alt., between Gamescleuch and Annelshope, Ettrick Valley, NT21 (79), Long & Coppins 27713.
- 190.10 *Hypnum bambergeri*, on ledge of W-facing limestone crag in nick by burn, 180 m alt., above Stronechrubie House, Inchnadamph, Assynt, NC21 (108), Rothero 98143.
- 192.1 *Ctenidium molluscum* d var. *robustum*, on flushed, N-facing slab on Torridonian sandstone crag, 650 m alt., Sgurr a'Ghaorachain, crags above Coire nan Arr, Applecross, NG74 (105), Rothero 98063.

#### Contributors of moss records in 1998

J. Appleyard, D.W. Ballard, J.W. Bates, J.M. Blackburn, T.L. Blockeel, B. Buryová, H.L. Caldwell, D.F. Chamberlain, B.J. Coppins, R.W.M. Corner, C. Dixon, R.J. Fisk, A.L. Fryday, F.A. Higgs, M.O. Hill, N.G. Hodgetts, D.T. Holyoak, J. Jackson, F.R. Lammiman, N. Lockhart, D.G. Long, J. Lowell, P. Martin, R. McCance, M.E. Newton, S.V. O'Leary, A. Orange, J.A. Paton, M.A. Pearman, M. Pool, R.D. Porley, C.D. Preston, T. Pyner, K. Raistrick, C. Rieser, G.P. Rothero, R. Saville, J.D. Sleath, A.V. Smith, R.C. Stern, C.R. Stevenson, D.R. Strauss, C.C. Townsend, A. Turner, H.L.K. Whitehouse, M.J. Wigginton, R.G. Woods, M.J.M. Yeo.

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### THE BRYOPHYTE COLLECTIONS OF THE LINNEAN SOCIETY'S J.E. SMITH HERBARIUM

The herbarium of Sir James Edward Smith (1759-1828) is one of the largest surviving private collections of 18th and early 19th century plant specimens in England. Long housed in the Linnean Society of London, it has understandably been somewhat overshadowed by the Linnaean herbarium, which is stored alongside it. Like the Linnaean herbarium, it is rich in type specimens and has world-wide geographical scope.

A project has recently been launched by the Linnean Society of London to document the Smithian herbarium on a computerised database and to conserve and photograph the specimens. The work is being carried out under contract at Liverpool Museum. As the data entry phase for the bryophyte section of the herbarium has now been completed, it is possible to present some summary data on the bryophyte collection and its composition.

The collection comprises 1,634 specimens of mosses and liverworts. There are 52 named collectors (including co-collectors) represented on the labels of 354 specimens (see Table 1). The remaining 1,280 specimens do not have a named collector on the label, but in most cases the

donor's name is given, or can be deduced, and in many instances this will also prove to be the collector. Of the specimens whose collectors are not recorded, 58 donors are recorded on the database (see Table 2 for a list of major donors). The collection history has also been recorded, where apparent; this reveals, for example, that Philibert Commerson's collections passed through the hands of André Thouin and Carl Linnaeus fil. before coming into the possession of Sir James Edward Smith.

**Table 1. Names of collectors (with number of specimens)**

Acharius, Erik (1)	Hutchins, Ellen (3)
Bellardi, Carlo Antonio Lodovico (1)	Lightfoot, Rev. John (1)
Bethernod (1)	Lyell, Sir Charles (2)
Borone, Francisco (2)	Mackay, James Townsend (1)
Borrer, William (1)	Newberg, William (1)
Brunton, William (1)	Ramm, ? de (1)
Buchanan-Hamilton, Francis (3)	Reynier, Louis (9)
Chaix, Abbé Dominique (2)	Ruiz Lopez, Hipolito & Pavon, Joseph (1)
Commerson, Philibert (5)	Schrader, Heinrich Adolph (1)
Crowe, James (1)	Schwaegrichen, Christian Friedrich (2)
Cullum, Sir John (1)	Scott, Robert (13)
Davall, Edmund (12)	Smith, Alexander (1)
Davies, Rev. Hugh (2)	Smith, Sir James Edward (16)
Dickson, James (22)	Stokes, Dr Whitley (6)
Don, George (snr) (1)	Swartz, Olof (10)
DuCros, François-Barthélemy (54)	Taylor, Thomas (1)
Ehrhart, Friedrich (126)	Thiery de Menonville, Nicholas Joseph (4)
Favrod, Daniel-Moise (10)	Turner, Dawson (1)
Griffith, John Wynne (1)	Wahlenberg, Göran (3)
Haller, Albrecht von (jnr) (1)	Wallich, Nathaniel (3)
Hedwig, Johann (1)	Weber, Georg Heinrich & Mohr (1)
Hedwig, Romanus Adolf (1)	Willdenow, Karl Ludwig (1)
Hemsted, Rev. John (1)	Winch, Nathaniel John (1)
Humboldt, F.H. Alexander von (19)	Younge, William (1)
Hume, Lady Amelia (1)	

All the bryophyte specimens are mounted on conventional herbarium sheets; often several gatherings occupy the same sheet. The appointment of a paper conservator from June 1999 will enable the specimens to be cleaned and repackaged before being returned to the Linnean Society. In the longer term, our aim is to make the database publicly available on the web. Recent experiments with scanning images of the specimens suggest that even in the case of bryophytes, useful information can in some cases be gleaned from enlargements of the images.

At this stage, the type status of the specimens has not been studied in detail, but it is likely that the herbarium will prove to contain a number of bryophyte types. Most specimens are labelled with collection localities (in some cases rather vaguely); about a fifth of the specimens are unlocalised. Some of the potentially most interesting material is poorly localised; one might mention for example the collections of Baron von Humboldt from South America. The scientific

names on the specimens may however contain clues to their sources.

**Table 2. List of major donors (of 10 or more specimens) and geographical origin**

Bryant, Rev. Henry (Norfolk)	Linnaeus, C. (fil.) (Lapland)
Buchanan-Hamilton, Francis (Scotland, Nepal)	Menzies, Archibald (South Africa, New Zealand, North America)
Crowe, James (Norfolk)	Muhlenberg, Rev. Gotthilf (Pennsylvania)
Davall, Edmund (Switzerland, Sweden)	Schrader, Heinrich (Germany, Austria)
Davies, Rev. Hugh (N Wales)	Swartz, Olov (West Indies, Sweden)
Dickson, James (Scotland, London)	Teesdale, Robert (Yorkshire, Derbyshire)
Don, George (snr) (Scotland)	Torrey, John (New York)
Griffith, John Wynne (N Wales)	Turner, Dawson (E Anglia, Wales, Ireland)
Hooker, Sir William (S America, Nepal)	

An analysis of the taxonomic coverage of the collection is complicated by the fact that almost none of the specimens has been redetermined with a modern scientific name. With this proviso, it is possible to summarise the content under 'Linnaean' generic headings (see Table 3).

**Table 3. Generic coverage of the Smithian herbarium (with number of specimens)**

<i>Andreaea</i> (6)	<i>Grimmia</i> (98)	<i>Polytrichum</i> (81)
<i>Anthoceros</i> (6)	<i>Gymnostomum</i> (65)	<i>Riccia</i> (13)
<i>Bartramia</i> (44)	<i>Hookeria</i> (20)	<i>Sphagnum</i> (20)
<i>Bryum</i> (135)	<i>Hypnum</i> (397)	<i>Splachnum</i> (38)
<i>Buxbaumia</i> (5)	<i>Jungermannia</i> (192)	<i>Targionia</i> (2)
<i>Dicranum</i> (172)	<i>Lyellia</i> (1)	<i>Tetraphis</i> (1)
<i>Encalypta</i> (11)	<i>Mnium</i> (10)	<i>Tortula</i> (59)
<i>Fabronia</i> (4)	<i>Neckera</i> (47)	<i>Trichostomum</i> (69)
<i>Fontinalis</i> (12)	<i>Orthotrichum</i> (43)	
<i>Funaria</i> (9)	<i>Phascum</i> (38)	

There is also a small amount of bryophyte material in the Liverpool Museum's J.E. Smith herbarium, which in the main consists of duplicates of specimens in the main Smithian herbarium at the Linnean Society of London. It is possible for visitors to the Liverpool Museum's herbarium to have access to these specimens at the time of writing, but a major lottery-funded scheme to rehouse the Botany collections will disrupt access from late 1999 for several months.

For further information on the Smithian herbarium, see the article by William T. Stearn in *Botanical Journal of the Linnean Society* **96**: 199-216, 1988.

*John Edmondson and Claire Smith, Botany Department, National Museums & Galleries on Merseyside, Liverpool Museum, William Brown Street, Liverpool L3 8EN.*

## BRYOLOGICAL SOCIETIES AND WORKING GROUPS

NAME	MEMBERSHIP FEE	CONTACT PERSON	PUBLICATIONS
<b>American Bryological and Lichenological Society</b> ( <a href="http://ucjeps.herb.berkeley.edu/bryolab/ABLS.html">http://ucjeps.herb.berkeley.edu/bryolab/ABLS.html</a> )	\$10, \$5 students, \$30 The Bryologist, \$5 Evansia.	Robert Thomas, Department of Biology, Bates College, Lewiston, ME 04240, USA (e-mail: <a href="mailto:rthomas@abacus.bates.edu">rthomas@abacus.bates.edu</a> ).	The Bryologist, Evansia
<b>Asian Bryological and Lichenological Club</b>		Dr Ming-Jou Lai, PO Box 19-004, Taipei, Taiwan 24199, Taiwan.	Acta Bryologica Sinica
<b>Australasian Bryological Working Group</b>	None, but donations to cover cost and postage	P.J. Dalton, Plant Science Department, University of Tasmania, GPO Box 252C, Hobart, Tasmania 7001, Australia (e-mail: <a href="mailto:P.J.Dalton@plant.utas.edu.au">P.J.Dalton@plant.utas.edu.au</a> ).	Australasian Bryological Newsletter
<b>Austrian Bryological Working Group (Bryologischer Arbeitskreis für Österreich)</b> ( <a href="http://www.pph.univie.ac.at/bryo/bryoak.html">http://www.pph.univie.ac.at/bryo/bryoak.html</a> )		Dr Harald Zechmeister, PO Box 285, 1090 Vienna, Althanstr. 14, Austria (e-mail: <a href="mailto:HaraldZechmeister@univie.ac.at">HaraldZechmeister@univie.ac.at</a> ).	Bryologisches Mitteilungsblatt
<b>British Bryological Society</b> ( <a href="http://www.rbge.org.uk/bbs/bbs.htm">http://www.rbge.org.uk/bbs/bbs.htm</a> )	£20.00 ordinary members, £1.00 family members, £10.00 senior, junior and student members.	Mr M.A. Walton, Ivy House, Wheelock Street, Middlewich, Cheshire, CW10 9AB, UK (e-mail: <a href="mailto:walton@ivyhouse.u-net.com">walton@ivyhouse.u-net.com</a> ).	Bulletin of the British Bryological Society, Journal of Bryology
<b>British Bryological Society Tropical Bryology Group</b> ( <a href="http://www.rbge.org.uk/bbs/bbs.htm">http://www.rbge.org.uk/bbs/bbs.htm</a> )	None, but you must be a member of the British Bryological Society	Brian O'Shea, 141 Fawnbrake Avenue, London, SE24 0BG, Great Britain (e-mail: <a href="mailto:brian@oshea.demon.co.uk">brian@oshea.demon.co.uk</a> ).	TBG Newsletters
<b>Bryological and Lichenological Section of the Czech Botanical Society</b>	40,- Czech crowns, 20,- Czech crowns members of the Czech Botanical Society	Hana Franklová, National Museum, Department of Botany, CZ-25243 Pruhonice, Czech Republic.	Bryonora
<b>Bryological Society of Japan</b>	3000 Yen	Dr Satoshi Imura, National Institute for Polar Research, 8-10 Kaga 1-chome, Itabashi-ku, Tokyo 173, Japan (e-mail: <a href="mailto:imura@nipr.ac.jp">imura@nipr.ac.jp</a> ).	Proceedings of the Bryological Society of Japan

NAME	MEMBERSHIP FEE	CONTACT PERSON	PUBLICATIONS
<b>Bryological Society of Ukraine</b>		Dr Orest T. Demkiv, Department of Ecomorphogenesis, Institute of Ecology of the Carpathians, Academie of Science of Ukraine, Stefanik St. 11, 290 000 Lviv, Ukraine.	
<b>Bryologische - Lichenologische Arbeitsgemeinschaft für Mitteleuropa</b> ( <a href="http://www.uni-hohenheim.de/~schwarzu/blam/index.html">http://www.uni-hohenheim.de/~schwarzu/blam/index.html</a> )	60,- DM	Volker John, Pfalzmuseum für Naturkunde, Hermann-Schäfer- Straße 17, D-67098 Bad Dürkheim, Germany (e-mail: 106370.1063@compuserve. com).	Herzogia
<b>Bryologische en Lichenologische Werkgroep</b> ( <a href="http://start.at/mossen">http://start.at/mossen</a> )		See Dutch Bryological and Lichenological Society	
<b>Bryology Work Group of the Italian Botanical Society</b>		Prof. C. Cortini Pedotti & Dr. M. Aleffi, Department of Botany and Ecology Camerino University.	
<b>Central and East European Bryological Working Group</b>		Dr T. Pócs, Department of Botany, Eszterhazy Teachers' College, pf. 43, H-3301 Eger, Hungary (e-mail: colura@gemini.ektf.hu).	Proceedings of meetings
<b>Dutch Bryological and Lichenological Society</b> ( <a href="http://start.at/mossen">http://start.at/mossen</a> )		Bart F. van Tooren, Venuslaan 2, NL-3721 VG Bilthoven, The Netherlands (e-mail: tooren.leeuwen@hetnet.nl).	Lindbergia (jointly with NBS) , Buxbaumiella
<b>Finska Bryologiska Sällskap, Finnish Bryological Society</b>	50 FIM (without Bryobrothera)	Viiivi Virtanen, Kasvitiiteen laitos, PL 47 (Hämeentie 153), 00014 Helsingin yliopisto, Finland (e-mail: viiivi.virtanen@helsinki.fi).	Bryobrothera (special prices for members)
<b>IAB Committee for Tropical Bryology</b>		Benito Ching Tan, Botany/School of Biological Sciences, National University of Singapore, Singapore 119260, Singapore (e-mail: sbsbct@nus.edu.sg).	None

NAME	MEMBERSHIP FEE	CONTACT PERSON	PUBLICATIONS
<b>Indian Bryological Society</b>		Dr S. C. Srivastava, Department of Botany, University of Lucknow, Lucknow 226007, India.	Newsletter
<b>International Association of Bryologists</b> ( <a href="http://www.devonian.ualberta.ca/iab/">http://www.devonian.ualberta.ca/iab/</a> )	\$11 (including only The Bryological Times)	Dr Dale H. Vitt, Department of Botany, University of Alberta, Edmonton, Alberta T6G 2E9, Canada (e-mail: <a href="mailto:dvitt@gpu.srv.ualberta.ca">dvitt@gpu.srv.ualberta.ca</a> ).	Advances in Bryology, The Bryological Times, Bulletin of Bryology (no longer published)
<b>Koninklijke Nederlandse Natuurhistorische Vereniging / Bryological and Lichenological Study Group</b>		See Dutch Bryological and Lichenological Society	
<b>Mossornas Vänner</b> ( <a href="http://home6.swipnet.se/~w-65640/">http://home6.swipnet.se/~w-65640/</a> )	50 SEK (from Sweden), 90 SEK (all others)	Mossornas Vänner, c/o G. Kristensson, Dekanvägen 8, S-24010 Dalby, Sweden.	
<b>Nordic Bryological Society</b>	285 NOK, 205 NOK students, 65 NOK (without Lindbergia)	Nordic Bryological Society, c/o Lars Söderström, Department of Botany, University of Trondheim, N-7055 Drafvoll, Norway (e-mail: <a href="mailto:Larss@alfa.avh.unit.no">Larss@alfa.avh.unit.no</a> ).	Lindbergia (jointly with DBLW)
<b>Organisation for the Phytotaxonomic Investigation of the Mediterranean Area Bryophyte Working Group</b>		Dr I. Herrnstadt, Department of Botany, Hebrew University, Jerusalem 91904, Israel.	None
<b>Polish Bryological Society</b>		Krzysztof Jedrzejko, Department of Pharmaceutical Botany, Silesian School of Medicine, Jagiellonska 4, 41-200 Sosnowiec, Poland.	None
<b>Schweizerische Vereinigung für Bryologie und Lichenologie / Association Suisse de Bryologie et de Lichénologie</b>	20,- SFr., 10,- SFr. students	Patricia Geissler, Conservatoire botanique, Case postale 60, CH-1292 Chambésy, Switzerland (e-mail: <a href="mailto:geissler@cjb.unige.ch">geissler@cjb.unige.ch</a> ).	Meylania

NAME	MEMBERSHIP FEE	CONTACT PERSON	PUBLICATIONS
<b>Sociedad Española de Briología</b>	4000 Pts, 1000 Pts students	Dr Rosa María Ros, Departamento de Biología Vegetal, Facultad de Biología, Universidad de Murcia, 30100-Murcia, Spain (e-mail: <a href="mailto:rmros@fcu.um.es">rmros@fcu.um.es</a> ).	Boletín de la Sociedad Española de Briología
<b>Sociedad Latinoamericana de Briología</b> ( <a href="http://www.ecologia.edu.mx/slb/slb.htm">http://www.ecologia.edu.mx/slb/slb.htm</a> )	\$10	Noris Salazar, Smithsonian Tropical Research Institute, Apartado 2072, Balboa, Republica de Panama (e-mail: <a href="mailto:SLAZARN@tivoli.si.edu">SLAZARN@tivoli.si.edu</a> ).	Briolatina
<b>Vlaamse Werkgroep Bryologie</b>		Ludo Smets, Alb. van Dijkstraat 13, B-2300 Turnhout, Belgium.	Muscillanea
<b>Working Group for Mapping Bryophytes in Europe</b>		Dr R. Schumacker, University of Liège, Bât. BE Phytosociologie, flore et végétation des Htes Fagnes, Mont-Rigi, rue de Botrange, 137, B-4950 Robertville, Belgium (e-mail: <a href="mailto:rschumacker@ulg.ac.be">rschumacker@ulg.ac.be</a> ).	

Based on: Brian J. O'Shea (1990) Bryological Societies and Working Groups, *Flora Online Issue 25*, 1990 and *The Bryological Times* **88** and **90**, 1996. This information is also available on the web, at <http://www.uni-hohenheim.de/~schwarzu/bryology/bryosoc.html>.

Please send any amendments to Uwe Schwarz (e-mail: [schwarzu@uni-hohenheim.de](mailto:schwarzu@uni-hohenheim.de)).

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## CHANGES TO THE MEMBERSHIP LIST, JULY 1999

### CHANGES OF ADDRESS AND AMENDMENTS

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## **NEW MEMBERS**

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**Bartholomew-Began**, Dr S, Department of Biology, West Chester University, West Chester, PA 19383-2130, USA, (O), (1999)  
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**Cairns**, Mrs A, 65 Potts Street, Belgian Gardens, Townsville, Qld 4810, Australia, (O), (1999)  
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