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OF THE
BRITISH
BRYOLOGICAL SOCIETY

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Edited by M.J.M. Yeo

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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 2002

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The cover illustration is of *Ulaia ulmaria* Müll. (= *U. catenulata*) from Adolphus Gehlen's *Epiphyta orientalis. Die Lebermoose der arktischen Inseln*, 1910



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BRITISH BRYOLOGICAL SOCIETY

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 2001

	2001 £	2000 £
GENERAL FUND		
INCOME		
Interest	1,628	2,540
Grants	-	-
Subscriptions	11,536	11,387
Sales of publications, etc.		
<i>Journal of Bryology</i>	9,970	9,956
<i>Census Catalogue</i>	255	542
Other publications	300	795
Lenses and forceps	437	674
Reading Circle	119	95
Postage and sundries	203	291
AGM and other meetings	<u>2,556</u>	<u>2,342</u>
	<u>27,004</u>	<u>28,622</u>
EXPENDITURE		
Printing and distribution		
<i>Journal of Bryology</i>	14,497	14,943
<i>Bulletin</i>	2,181	2,322
Purchases for resale (publins, lenses and forceps)	970	480
Library purchases	138	30
AGM and other meetings	3,183	2,725
Officers' expenses	614	960
Reading Circle	109	129
Insurance	324	286
Return of overpaid subscriptions	40	40
Legal fees	-	1,029
Bank charges and sundries	<u>140</u>	<u>249</u>
	<u>22,196</u>	<u>23,193</u>
SURPLUS FOR YEAR	4,808	5,429
Less unrealised loss on investments	2,678	793
NET SURPLUS FOR YEAR	<u>£2,130</u>	<u>£4,636</u>
BEQUEST AND DONATION FUND		
Bequests and donations (net)	442	-
Interest	1,549	1,839
Awards	(2,250)	(165)
(DEFICIT)/SURPLUS FOR YEAR	<u>(259)</u>	<u>1,674</u>
Less unrealised loss on investments	2,417	171
NET (DEFICIT)/SURPLUS FOR YEAR	<u>(£2,676)</u>	<u>£1,503</u>

BRITISH BRYOLOGICAL SOCIETY

STATEMENT OF AFFAIRS AS AT 31 DECEMBER 2001

	2001 £	2000 £
GENERAL FUND		
Balance as at 1 January	49,145	44,509
Surplus for year	<u>2,130</u>	<u>4,636</u>
Balance as at 31 December	<u>51,275</u>	<u>49,145</u>
BEQUEST AND DONATION FUND		
Balance as at 1 January	45,047	43,544
(Deficit)/Surplus for year	<u>(2,676)</u>	<u>1,503</u>
Balance as at 31 December	<u>42,371</u>	<u>45,047</u>
	<u>£93,646</u>	<u>£94,192</u>
REPRESENTED BY:		
Cash at National Westminster Bank	1,039	323
COIF Deposit Fund	39,514	37,087
COIF Investment Fund at market value	39,407	43,809
COIF Fixed Interest Fund at market value	<u>19,723</u>	<u>19,974</u>
	99,683	101,193
Plus payments in advance	<u>616</u>	<u>459</u>
	100,299	101,652
Less current liabilities		
Publication cost of <i>J. Bryol.</i> (net)	6,653	7,460
NET ASSETS	<u>£93,646</u>	<u>£94,192</u>

M.A. WALTON
Secretary
16 March 2002



INDEPENDENT EXAMINER'S REPORT TO THE TRUSTEES OF THE BRITISH BRYOLOGICAL SOCIETY

I report on the accounts of the British Bryological Society for the year ended 31 December 2001, which are set out on pages 2-3.

Respective responsibilities of the trustees (British Bryological Society Members of Council) and the examiner

As the charity's trustees you are responsible for the preparation of the accounts; you consider that the audit requirements of section 43(2) of the Charities Act 1993 (the Act) does not apply. It is my responsibility to state, on the basis of procedures specified in the General Directions given by the Charity Commissioners under section 43(7)(b) of the Act, whether particular matters have come to my attention.

Basis of the independent examiner's report

My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the


accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

Independent examiner's statement

In connection with my examination, no matter has come to my attention:

- (1) which gives me reasonable cause to believe that in any material respect the requirements
 - (i) to keep records in accordance with section 41 of the Act; and
 - (ii) to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Acthave not been met; or
- (2) to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

R.N. Gutteridge
Chartered Accountant
16, Reid Avenue
Caterham
Surrey CR3 5SL



16 March 2002

ARTICLES FOR *BULLETIN* 80

Items for inclusion in the January 2003 issue of the *Bulletin* should be sent to me at the address below by **6 December 2002**. 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: marcus.yeo@jncc.gov.uk.

REPORTS OF OFFICERS FOR 2001

a) GENERAL SECRETARY'S REPORT

The report of the President to the AGM for 2001 (see pp 22-25 of this *Bulletin*), the Council Newsletter in the last *Bulletin*, and the reports from the officers in this issue give a good overview of the activities of the BBS during 2001. I do not propose to cover those items again in this report, but rather to consider briefly the issue of maintaining, or increasing, membership levels.

The financial position of the Society is sound and the implementation of the Gift Aid scheme should ensure that this happy situation holds for the immediate future, particularly if all those eligible UK members who meet the criteria, but who at the time of writing have not responded, 'sign up' to the scheme. The level of the subscriptions compares well with other societies, and the contract for the publication of the *Journal of Bryology* has stabilised the costs of that publication.

Worryingly, the number of new members who joined in 2001 showed a significant fall in contrast to the previous two years and the rate of loss of members increased. This may be only a momentary 'blip' but we cannot afford to be complacent.

The change in the subjects that are being taught at further education institutions, and the way in which they are taught, gives rise to the possibility that the influx of new members from such institutions will reduce for the foreseeable future. These education issues are now starting to be considered at a national level and the Society contributed to a joint initiative with other learned societies during the year. Whether or not there is a significant change, the BBS needs to implement measures to ensure a steady influx of new members and to ensure that, having attracted them, they continue in membership. There are several ways in which current activities will help:

- the activities of the Conservation and Recording Committee should ensure that the Society maintains a high profile within the botanical and conservation communities;
- the Publications Committee is reviewing the current publications and is making proposals for new publications which are aimed at attracting and holding members;
- the web site is being reviewed and should be an attractive shop window for the Society;
- discussions are being held with the National Museums & Galleries of Wales on ways in which the BBS can use the slides of the late Dr H.L.K. Whitehouse to promote bryophytes as an attractive field of study;
- in addition to its past activities, the Bequest Committee is actively supporting new members in their development.

However, the Council does not have a monopoly of ideas and only forms a very small proportion of the membership. If members have any views on ways in which the Society can improve its service to them or proposals for actions that can be taken to attract new members, please write or e-mail to the Secretary. Your views will be very welcome.

M.A. Walton, February 2002

b) TREASURER'S REPORT

Notes on the Accounts for 2001 (see pp 2-3 of this *Bulletin*)

1. Sadly, John Blackburn, the Treasurer, had to resign in January 2002 as a result of ill-health. The Secretary is acting as Treasurer on a temporary basis until a successor to John can be elected, and the accounts have been prepared by him from documents transferred from John. This has only been possible as a result of the high standards

that John adopted in keeping the Society's accounts, and it is appropriate to pay tribute here to John's work as Treasurer.

2. Income in the General Fund in 2001 exceeded expenditure by £4,808, following a year in which no exceptional items of expenditure were met. The Society received approval from the Inland Revenue to participate in the Gift Aid scheme. Although it was not possible to make a claim in 2001, income will be augmented in future years by receipts from tax paid by UK members who have agreed to participate in the scheme. (The initial claims during 2002 will include a back-dating to 6 April 2000.)
3. Interest rates fell during the year and this, together with the fact that some of the Society's funds were placed in non-interest-bearing investment accounts towards the end of 2000 (see notes 1 and 2 to the 2000 Accounts), has resulted in a fall in receipts from interest.
4. A further 27 copies of the new *Census Catalogue* were sold during the year.
5. Sales of lenses and forceps remained steady in 2001, and £925 of the £970 under 'Purchases for resale' was for the purchase of 45 lenses to maintain stocks.
6. No account has yet been submitted for our own solicitor's charges in respect of the Society's action against Blackwells.
7. Quoted Investments:

	Unrestricted Funds (General Fund)	Restricted Funds (Bequest Fund)	Total Funds
	£	£	£
Value at 1 January 2001			
COIF Accumulation Shares	24,207	19,601	43,808
COIF Fixed Interest Shares		19,974	19,974
Plus investment at			
13 December 2001		442	442
	<u>24,207</u>	<u>40,017</u>	<u>64,224</u>
Less net unrealised loss	<u>2,678</u>	<u>2,417</u>	<u>5,095</u>
	<u>21,529</u>	<u>37,600</u>	<u>59,129</u>

The stock market had another poor year resulting in a further fall in the value of the COIF investments which is reflected above. It should be remembered that the Investment Fund is for long-term growth and there will be inevitable fluctuations in value.

The Fund received a bequest of \$Can1,000 from the estate of Mr H. Williams, a Canadian member. At the prevailing rate of exchange this resulted in a sum of £457.66. Bank charges were £10.50 and the Society had to pay a solicitor's fee of £5.00 for verifying the 'release to executor' form. This resulted in a net income of £442.16.

8. Officers' expenses:

	Telephone	Postage	Stationery	Printing	Travelling	Total
	£	£	£	£	£	£
Mike Walton (General Secretary)	15	127	41	35	-	218
Mark Pool (Membership Secretary)	-	61	7	27	-	95
John Blackburn (Treasurer)	38	26	14	20	-	98
David Holyoak (Conservation Officer)	20	5	-	-	-	25
Total	73	219	62	82	-	436
Ken Adams (Librarian) (postage and packing recovered in sales but shown in 'Postage and sundries')						178
						<u>£614</u>

The figure of £127 for postage shown against the General Secretary includes a sum of £60 for postage for reply-paid envelopes for the Gift Aid scheme.

9. Payments in 2001 from the Bequest and Donations Fund totalled £2,250 as follows:

- financial support for three student members of the Society to attend conferences (£750 in total);
- financial support for a student member of the Society to undertake a bryophyte survey in Banat, Serbia (£710);
- payment of the postal costs incurred in the verification of specimens for the *Mosses and liverworts of Uganda*, which is in preparation (£400);
- a contribution to the cost of publication of *A bryophyte flora of South Wiltshire* (£390).

At the end of 2001 the accumulated and uncommitted interest available for awards amounted to £4,770.

10. The £459 that was paid in 2000 for the removal of the late Alan Crundwell's library to Peterborough for cataloguing was treated as a payment in anticipation of income and carried forward to 2001. The payment has been similarly treated in 2001 and carried forward into 2002. In addition, an insurance premium of £157, which was paid in 2001 has been carried forward into 2002. It is anticipated that sales from the library will generate income in 2002 and that these expenses will not be carried forward into 2003.

M.A. Walton, February 2002

c) BIBLIOGRAPHERS' REPORT

The new arrangement with two bibliographers (Len Ellis and Angie Newton) has been working smoothly, alternating lead authorship and responsibility for compiling and formatting the entries with each issue. For two issues no proofs were received, but this problem appears to have been remedied. A few minor changes in format have been established, primarily in the reduction of the number of categories used to arrange the entries.

Negotiations are now underway for a merger with the *Bryologist*'s 'Recent Literature on Bryophytes', proposed recently by Dale Vitt and Jeff Bates. The *Bryologist* version is compiled on a database held at Missouri Botanic Garden, and individual authors submit entries via the web. If the article has already been submitted by one of the other authors, this is apparent, so reducing duplication of work. There is significant overlap in the journals searched by the two groups of authors, but also areas of speciality in the different institutions involved, so this move should increase coverage while reducing the work-load for individuals. It is proposed that the journals will each maintain their existing titles and formatting for their 'Recent Literature' columns, and that the author responsible for final formatting and submission will take lead authorship for that issue, i.e. there will be different lead authors in the American and English versions, but all contributors will be co-authors for both versions.

Since the *Journal of Bryology* and the *Bryologist* have different publication dates, there will be some overlap when the merger takes place. As yet, the web link has not been set up. The first joint issue of the *Bryologist* version will include only half of the *Journal of Bryology* version, whereas the first joint issue of the *Journal of Bryology* version will include half of its new titles and half of the previous issue's titles. From then on, the *Journal of Bryology* and *Bryologist* versions will be identical, but the *Journal of Bryology* title accumulation will break six weeks before copy submission time. This, however, is inconsequential because the 'Recent Literature' column comes out several months after the submission date anyway. The other change that may potentially be necessary is that the *Journal of Bryology* titles may no longer be arranged in categories. The Missouri Botanic Garden database does not currently include this information, and it is often impossible to determine from the title alone whether the paper concerns mosses only or includes liverworts, since the words 'moss' and 'bryophyte' are often used ambiguously.

Angela Newton and Len Ellis, February 2002

d) BULLETIN EDITOR'S REPORT

Two issues of the *Bulletin* were published in 2001: number 76 in February and number 77 in July. As in previous years, I received a steady influx of material for publication in the *Bulletin*, and both issues contained 64 pages - the maximum number of pages that can be accommodated without incurring additional costs for binding.

Notable features of the *Bulletin* in 2001 included articles on the first record of *Leiocolea rutheana* var. *rutheana* in Scotland (Rod Corner), a survey of *Andreaea frigida* in the Cairngorms (Gordon Rothero and Andy Amphlett), a probable hybrid sporophyte on *Rhytidiadelphus subpinnatus* (David Holyoak), and an overview of arable bryophytes (Ron Porley).

Marcus Yeo, February 2002

e) CONSERVATION OFFICER'S REPORT

Publication of *British Red Data Books: mosses and liverworts* (edited by J.M. Church, N.G. Hodgetts, C.D. Preston and N.F. Stewart) in May 2001 represents a milestone in the conservation of bryophytes in Britain. Successive BBS Conservation Committees have played an active role in encouraging the work and supplying information, so it is especially pleasing to congratulate the editors and JNCC on its publication.

The welcome increase in the scale of collaborative work on bryophyte conservation noted in the last report has been maintained through 2001, much of it funded through the UK Biodiversity Action Plan (BAP). The role of Plantlife in carrying out work on threatened bryophytes has continued to grow, so it is particularly appropriate that they now have a permanent post for co-ordination of work on lower plants and fungi (held by Dr Jenny Duckworth). Considerable interlinked activity also continued with the project for *ex situ* conservation of bryophytes based at RBG Kew Wakehurst Place (Project Officer Jane Burch), and through the English Nature Cryptogamic BAP Officer based at the Natural History Museum (Gill Stevens). Substantial field research to gather data on threatened bryophytes in Ireland for a future Red Data Book of Irish bryophytes was again carried out by National Parks and Wildlife, Dublin.

The BBS Conservation and Recording Committee met twice during 2001, at Peterborough in April and at Cardiff in September. This was the first full year in which the 'combined' committee has met. Advantages in considering recording and conservation matters together are becoming clearly apparent in that so much of the focus of conservation work relies on detailed and up-to-date information on the locations of populations of rare bryophytes.

D.T. Holyoak, February 2002

f) CURATOR'S REPORT

The future of the Society's herbarium (BBSUK) has concerned Council for some time. The storage arrangements for the collection were only temporary and its curation was essential to ensure the long-term integrity of the specimens. These concerns prompted Council members to examine the options for the future upkeep and security of the herbarium.

The BBS has for many years had close links with the National Museums & Galleries of Wales (NMGW); past staff have been (and current staff continue to be) active members of the BBS. Also, the Society's herbarium has been housed at NMGW temporarily for over 30 years. A dialogue between Council and NMGW commenced to discuss the potential implications of a transfer of ownership. On 21 May 2001 an agreement was reached, and the BBS officially transferred ownership of the collection to NMGW.

The transfer of ownership has guaranteed the future of the collection. NMGW have agreed that the herbarium should retain its identity as BBSUK, separate from other NMGW collections. Members of the Society will continue to have access to the collection, including off-site loans. In addition, NMGW will continue to accept future additions to the collection. Efforts to curate (conserve and document) the specimens began soon after the ownership was transferred. So far, 4005 mosses and 326 liverworts have been documented. New packets have been printed for these specimens, and the process of transferring specimens from old packets to new has begun. All BBSUK *Sphagnum* specimens have been documented, and we hope to make the data available on the NMGW web site. The continued curation of all BBSUK specimens will remain a high priority for NMGW.

Voucher specimens incorporated this year were 309 mosses and 94 liverworts. There were nine loans of 160 mosses and two liverworts.

Kathryn Childerhouse, February 2002

g) JOURNAL EDITOR'S REPORT

The popularity of the *Journal of Bryology* among authors continued in 2001, with a further 53 manuscripts being submitted of which 25 were accepted, seven rejected and 21 remain in various stages of review or revision. A further 23 manuscripts that were 'under review' at the end of 2000 were also eventually accepted in the course of the year. The four parts of Volume 23 contained 27 main papers, one 'Bryological Monograph', 12 bryological notes, four book reviews, five obituaries and four parts of 'Recent bryological literature'. The mismatch between input and output has meant that a sizeable backlog of accepted papers continued through 2001, and times from acceptance to publication approached 12 months towards the end of the year. Efforts have been made to reduce this backlog by cutting the page allowance for 'Bryological Monographs', by exerting pressure on authors to write more concisely, and, increasingly, by rejecting papers that for one reason or another are deemed unsuitable.

During the year an agreement was reached with Maney Publishing to publish the journal electronically under 'Ingenta' for those in institutions that already subscribe to the normal paper version. This will start with Part 1 in 2002. On a sadder note, volume 23 of the *Journal* recorded the lives of three recently-deceased and much-missed Honorary Members (Eric Watson, Harold Whitehouse and Alan Crundwell), with cover photographs and extended obituaries of the latter two. Part 3 was dedicated to the memory of Alan Crundwell.

Once again I record my thanks to the Associate Editors and others who have freely given of their time to maintain high standards in the *Journal*.

J. W. Bates, February 2002

h) LIBRARIAN'S REPORT

Sales

TBBS (parts)	25	Special Volume 4: Mosses in English Lit.	2
<i>J. Bryology</i> (parts)	39	Special Volume 5: English Names (2nd ed.)	10
Census Catalogue (Corley & Hill)	2	Bryology (Linn. Soc.)	3
Census Catalogue (Blockeel & Long)	27	Mosses & Liverworts of Woodland	13
Census Catalogues (old)	7	German/English Glossary	1
Hepatics of Europe and the Azores	-	Microscope Techniques	10
Hepatics of Europe and Macaronesia	2	x20 lenses	17
BBS <i>Bulletins</i>	13	Stainless steel forceps (Patterson)	3
BBS Library Catalogues	1	Stainless steel forceps (Idealtek)	6
Moss Wall Charts	5	Eye-piece graticules	-
Special Volume 1: Jubilee	-	BBS ties	-
Special Volume 2: Chromosomes	2	Car stickers	1
Special Volume 3: Tropical Bryophytes	-		

Loans

35 mm slides	3	Micrometer slide	-
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Although the sales pages were omitted from the August 2001 *Bulletin*, sales for 2001 were not far adrift from last year although there were far fewer orders (60) to deal with. Members buying

x20 lenses and fine forceps are recommended to refer to last year's Librarian's report (*Bulletin* 77: 10) for tips about the care of these items.

Ken Adams, January 2002

i) MEETINGS SECRETARY'S REPORT

The 2001 spring meeting on the Isle of Wight had to be cancelled because of the epidemic of Foot and Mouth Disease. More accurately, it was postponed to the following year, so members did not lose their opportunity to see and explore the island in company with fellow-enthusiasts. The lack of a spring meeting on home soil made it particularly fortunate that the meeting on Tenerife in February went ahead.

With the epidemic lingering on through the year in many parts of Britain, the first week of the summer meeting in Lanarkshire became abbreviated to three days which were much enjoyed by members who broke their journey north for the following week on Skye, where movement and access fortunately remained unrestricted.

The paper-reading meeting and Annual General Meeting in Cardiff in September enjoyed an international flavour with talks by Jan Kučera (Czech Republic) on *Didymodon* and by Jesus Muñoz (Spain) on *Grimmia*.

Regarding the future, your Meetings Secretary takes the view that enjoyment is the most important feature of meetings, which are, after all, holidays for many members. Field meetings ought therefore to be in districts that members want to visit and explore, autumn meetings must include talks on topics that members want to hear about, and workshops should cover subjects that interest many members. However, this all depends on each member of the Society telling me what they wish to see arranged, and where they think meetings might be held.

Other (and in their own ways no less significant) considerations for arranging field meetings include:

- Maintaining a rolling cycle of meetings in all parts of the kingdom, as well as abroad.
- Assisting with fieldwork for regional bryofloras. With more pairs of eyes searching, a BBS meeting in your district will boost local recording, and moreover each visiting bryologist brings a slightly different expertise and hence ability to recognise species which may hitherto have been overlooked locally. Having a BBS meeting on your patch might also stimulate the birth of a local bryological group.
- Assisting conservation bodies and wildlife trusts by examining nature reserves, SSSIs, etc.
- Assessing the status of uncommon bryophytes at particular sites.
- Exploring districts which have been neglected in the past.

But what are your views and suggestions? Tell me what meetings you want, or all will remain pure guesswork on my part.

Mark Lawley, January 2002

j) MEMBERSHIP SECRETARY'S REPORT

After the slight increase in members during 2000, it is disappointing to have to report a net loss in 2001 of 26, taking the total down to 595. There appears to be no single reason for this, although it is a cause of some concern that no fewer than 37 members had to be deleted for non-payment of subscriptions. The deaths of four members are much regretted; it is particularly sad to have to mourn the passing of our Honorary Member Dr Ilma Stone. It is possible to glean some comfort from the fact that the losses by death and resignation were both fewer than in 2000; in addition, 28 new members joined during the year. No less than 17 of these joined by e-mail after referring to the BBS website, which is very definitely proving itself worthwhile. There has also been a small, but useful, increase in the number of UK members paying by standing order. Hopefully, the decline in numbers will turn out to have been only temporary.

The year also saw the Society's registration for the Gift Aid scheme, which means that the tax paid by UK members on their subscriptions can be claimed back by the Society from the Inland Revenue. To date, over 200 members have signed up for the scheme; our thanks as a society go to all of them. My own thanks also go, as usual, to Dr Diana Horton of Iowa, who has done sterling work in collecting subscriptions from our North American members; her work in 2001 was done as efficiently as ever despite a badly broken leg.

The following table shows the changes in membership over the last ten years.

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
New members										
UK	26	24	27	27	24	13	14	37	37	17
Overseas	4	11	18	9	16	7	18	34	14	11
TOTAL GAINED	30	35	45	36	40	20	32	71	51	28
Members lost by:										
Death	4	2	2	4	5	3	12	1	8	4
Resignation	9	3	4	14	11	7	18	7	13	11
Other	13	19	11	14	15	17	24	24	22	37
TOTAL LOSSES	26	24	17	32	31	27	54	32	43	52
Total overseas members	186	187	202	209	215	226	224	245	240	228
Total UK members	360	370	383	380	382	368	348	366	379	367
NET TOTAL	546	557	585	589	597	594	572	611	619	595
Comprising:										
Honorary	11	11	11	10	11	10	10	12	11	11
Ordinary & Junior	513	524	545	549	559	557	544	578	585	561
Family	22	22	29	29	27	25	18	21	23	23
Turnover ratio x 100	10	11	11	12	12	8	15	17	15	13

Mark Pool, February 2002

k) READING CIRCLE SECRETARY'S REPORT

2001 was a very similar year to 2000. There are four new members but seven accounts have been closed for various reasons, mainly because of inactivity of the account or resignations. The balances of these accounts have been transferred to a suspense account in case there is a request for them to be re-opened.

The contents of 16 issues of five journals have been distributed. Photocopies of 118 papers totalling 1,126 pages have been supplied to 17 members.

Financial statement

Income:

Opening balance	£225.24
Credit (cheques etc.)	<u>£119.00</u>
Total	<u>£344.24</u>

Expenditure:

Photocopying	£56.19
Postage	<u>£61.49</u>
Total	<u>£117.68</u>

Balance of members' accounts	<u>£226.56</u>
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Richard Fisk, January 2002

l) REPORT OF THE RECORDER FOR HEPATICS

Some 87 new records were registered for 2001; 24 of these were updates. Despite access difficulties to field sites due to Foot and Mouth Disease, this total is very slightly higher than last year. The bulk of the vouchers were submitted by a small group of recorders, including Tom Blockeel, Sam Bosanquet, David Holyoak, Mark Lawley and David Long.

	New records collected in 2001	New records collected pre-2001	Deletions
England	28	1	2
Wales	18	-	-
Scotland	12	5	-
Ireland	22	1	-
Total	80	7	2

There are some interesting finds among the new records, notably *Leiocolea rutheana* var. *rutheana* (VC 80), *Jungermannia polaris* (VC 94), *Scapania gymnostomophila* (VC H35), *Lophocolea semiteres* (VC 48, new to Wales, and VC 54), *Southbya tophacea* (VC 45), *Colura calyptrifolia* (somewhat surprisingly from VC 35), *Cololejeunea minutissima* (VC 38), *Fossombronia maritima* (VC 45), *Pallavicinia lyellii* (VCs 16 and 70), *Metzgeria leptoneura* (VC 44), *Ricciocarpos natans* (VC H30) and *Riccia huebeneriana* (VC 3).

TH Blackstock, February 2002

m) REPORT OF THE RECORDER FOR MOSSES

The number of new and updated records was close to 400 in 2001, a very healthy total. Ireland again made the largest contribution thanks to assiduous recording in under-worked areas by David Holyoak and Nick Hodgetts. There is a fairly even spread across the rest of the British Isles which means that recording in Wales has gathered pace recently. I have been the Recorder for Mosses for five years now and it seems appropriate to look at the gaps in the vice-counties represented by the vouchers. In England I have not received any vouchers from VCs 6, 12 and 30, in Scotland from VCs 73, 74, 87, 90, 91 and 100, and in Ireland from VCs H2, H4, H9, H10, H14, H15, H17, H21, H23, H26, H32 and H37. The reasons for the gaps are fairly obvious for most counties - no bryologists and no field meetings. There are also many more vice-counties with very few new records, including some from well-worked areas where new records are hard to come by (like VC 98 I would claim!) but others where there is still much of interest to be found.

	New records collected 2000-2001	New records collected pre-2000	Updated records	Deletions
England	56	8	42	2
Wales	49	-	30	-
Scotland	57	9	20	-
Ireland	91	-	32	-
Total	253	17	124	2

Such a long list of new records obviously contains a number of species of considerable national interest. Pride of place goes to the remarkable find of *Timmia megapolitana* in The Broads, a most unlikely addition to the British flora. The work on bryophytes generated by the EC Habitats Directive and financed by the various conservation agencies and Plantlife has produced a crop of new records for rare species of *Bryum*, including *B. marratii* and *B. salinum* from Cumberland, *B. knowltonii* from Holy Island, North Northumberland, *B. calophyllum* and *B. warneum* from Islay, *B. calophyllum* from West Sutherland, and *B. neodamense* from County Cavan in Ireland. Other *Bryum* records worthy of mention are a second record of *B. subelegans s.str.* from the Peak District and *B. arcticum* from Skye. Other interesting records in Scotland include *Dicranum subporodictyon* on Skye and *Tortella fragilis* from Bettyhill in Sutherland. In England there are several new records for *Weissia rostellata*, the Welsh borders has three new records of *Hedwigia ciliata* var. *ciliata*, and in Ireland there are new sites for *Fissidens monguillonii* and *Brachythecium appleyardiae*.

As usual I wish to thank the team of referees, who have saved me much time and the occasional embarrassment.

Gordon Rothero, February 2002

n) RECORDING SECRETARY'S REPORT

2001 saw a slight increase in recording activity if the number of cards submitted and the number of Regional Recorders are regarded as indicators. There was a total of 185 completed

record cards submitted (although about 25% originated in the early 1990s) and the number of Regional Recorders has risen to 58, between them covering 106 vice-counties (100 in Great Britain; six in Ireland). Sadly, we have seen the death of some much-respected Regional Recorders, but thankfully other members have stepped in to ensure that we, the Society, build upon the fine legacy they have left behind. The only down-side is that Regional Recorders often enquire why they do not receive completed cards from members whom they know have been actively recording in 'their patch'. I would encourage all members to make sure that their records are sent to Regional Recorders, otherwise the recording activities of the Society are not operating in the most efficient and useful manner.

The newly combined Conservation and Recording Committee has already breathed new life into our recording activities, and winter 2001 saw the start of a pilot arable bryophyte survey – a prelude to a major three-year project to understand this neglected element of our bryoflora and assess the conservation issues. Ideas for other recording projects are always welcomed.

2001 was also the year that the National Biodiversity Network (NBN) came fully on stream, and any member with internet access can log in and look at the national bryophyte dataset. If you wonder why certain 'dots' do not appear on the maps, perhaps certain recording cards have not been sent in?

Ron Porley, February 2002

REPORTS OF LOCAL MEETINGS

SOUTH-EAST GROUP

Lydden Down, East Kent (VC 15), 17 March 2002

Larks ascending in the clear air on a beautiful early spring morning heralded eight chalcophiliacs as they assembled in the car park at Temple Ewell to explore Lydden Temple Ewell National Nature Reserve with expert guidance from Joyce Pitt and Malcolm Watling. This excursion, postponed almost to the day from last year due to Foot and Mouth Disease, and a first step by the SE Group towards fulfilling a long-term ambition of gathering detailed information on the bryoflora of East Kent, not only yielded some outstanding discoveries but also revealed striking differences between Lydden and the chalk downlands of Sussex and Surrey.

Broken turf all along the escarpment was a veritable *Weissietum*; we recorded *W. brachycarpa* and *W. condensata*, both in quantity throughout the Reserve, with *W. sterilis* near Temple Ewell and *W. longifolia* var. *angustifolia* mainly at the other end of the Reserve. Other notable taxa were *Trichostomum brachydontium*, co-dominant with the *Weissias*, quantities of *Seligeria calycina* on chalk stones, and occasional patches of *Bryum caespititium* and *Rhynchostegium megapolitanum*. 'Find of the day' had to be *Cephaloziella baumgartneri* c.fr. growing on thin soil around pieces of protruding bed rock chalk. It was with great affection that I recalled to the Group my only previous British encounter with this esoteric hepatic. Ted Wallace showed it to Jack Gardiner, Brian O'Shea and myself, at Arundel Park, just north of the pond, way back in 1970.

However, despite this fruitful fossicking we reached the conclusion that the chalk at Lydden is far less species-rich than apparently similar habitats further west. Considering the 'Gestalt' of the Reserve, strange absentees were *Thuidia*, *Entodon* and uncommon chalk *Barbular*. There was also not a single '*Pottia*' *sensu antezander*, save for *Tortula truncata* growing with *T. acaulon* and *Bryum rubens* in the species-poor arable fields above the Reserve. This miserable situation, increasingly afflicting arabologists throughout Britain, is almost certainly the consequence of the application of fertilisers: too often and too much.

After lunch, we fought *Prunus*, *Fraxinus* and *Sambucus* scrub for epiphytes and were rewarded with *Tortula laevipila*, *Cryphaea heteromalla* and *Zygodon conoideus* (all *c.fr.*), but despite the proximity of Lydden to the coast, no *Ulota phyllantha* or *Cololejeunea minutissima*.

We left Lydden more than satisfied with our endeavours both bryological and physical, and firmly of the view that from the bryocentric viewpoint at least, management priorities for the Reserve should be to halve the cow count and leave the existing scrub untouched. Another excursion into East Kent is already planned for next season to explore further the arcane bryophyte distribution patterns on the English chalk. But what we really ought to do before too long is have a similar day trip to France.

JEFF DUCKETT

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 accommodation.

ANNUAL GENERAL MEETING AND BRYOLOGICAL SYMPOSIUM 2002, Royal Botanic Garden, Edinburgh, 13-15 September

Local secretary: Dr David Long, Royal Botanic Garden, Edinburgh, EH3 5LR, UK; tel: 0131 248 2861; fax: 031 248 2901; e-mail: d.long@rbge.org.uk.

The weekend is planned as follows:

- 13 September (Friday): arrive in Edinburgh (Pollock Halls of Residence, University of Edinburgh); committee meetings, Council meeting.
- 14 September (Saturday): bus from Pollock Halls to Royal Botanic Garden for Bryological Symposium, followed by AGM of British Bryological Society; tour of herbarium; return to Pollock Halls for dinner and conversazione.
- 15 September (Sunday): field excursion to East Lothian; members depart.

The Symposium, to be held in the Lecture Theatre of the Royal Botanic Garden, Edinburgh (RBGE) follows the theme of bryological exploration at home and abroad. The following have agreed to speak:

- Dr Montserrat Brugues (Autonomous University of Barcelona, Spain) – ‘The bryophytic richness of Spain’.
- Dr Heinjo During (Dept of Plant Ecology, University of Utrecht, Netherlands) – ‘The diaspore bank of a Zimbabwean savannah’.
- Dr Angela Newton (Natural History Museum, London) – ‘Mosses of the Maya Mountains: research and exploration in Central America’.
- Prof. Jeff Duckett (Queen Mary College, University of London) and Dr Roberto Ligrone (Caserta, Italy) – ‘What we couldn’t have done if we’d stayed in Europe: selection and serendipity in the southern hemisphere’.
- Dr Mark Hill (CEH Monk’s Wood) and Bryan Edwards (Dorset Environmental Records Centre) – ‘A very slow exploration: 40 years of bryology in Dorset, England’.
- Gordon Rothero (Dunoon, Argyll) – ‘Bryological exploration in Scotland’.

The Symposium will be followed by the AGM (for agenda see below) in the Lecture Theatre of the Royal Botanic Garden. In the evening (back at Pollock Halls) there will be a conversazione in the Conservatory of the John McIntyre Centre, for which posters and other exhibits are invited.

It is hoped to arrange a short tour of the bryophyte herbarium at RBGE on the Saturday but study of specimens will not be possible that day. However, any BBS member wishing to use the herbarium and library facilities is very welcome to do so on Friday 13 or Monday 16 September by arrangement with the local secretary.

Please note that the Pollock Halls of Residence is not within walking distance of RBGE, and a bus will be arranged to transport members on Saturday 14 September to and from RBGE.

The ANNUAL GENERAL MEETING will be held at 4.30 p.m. on Saturday 14 September 2002 in the Lecture Theatre at the Royal Botanic Garden, Edinburgh.

AGENDA

1. Apologies for absence
2. Minutes of the last AGM, Cardiff, 2001 (see pp 21-27 of this *Bulletin*)
3. Matters arising
4. Reports of Officers for 2001 (see pp 4-15 of this *Bulletin*)
5. Report from Council
6. Election of Officers (see pp 27-28 of this *Bulletin*)
 - a) Bulletin Editor
 - b) Journal Editor
 - c) Reading Circle Secretary
 - d) Recorder for Mosses
 - e) Treasurer
 - f) Web Site Editor
7. To approve the deletion of the office of Curator (see pp 27-28 of this *Bulletin*)
8. To approve the changes to the Society’s rules 5(a), 5(b) and 5(d), and the method of implementation, as set out in the report on pp 28-30 of this *Bulletin*
9. Election of Elected Members of Council (see pp 27-28 of this *Bulletin*)
10. Place and date of the next Annual General Meeting
11. Other future meetings
12. Any other business

**BRYOLOGICAL WORKSHOP 2002 (ARABLE BRYOPHYTES), Preston Montford
Field Studies Centre, Shropshire, 16-17 November**

Local secretary for Preston Montford: Dr Mark Hill, CEH Monks Wood, Abbots Ripton, Huntingdon, PE28 2LS; e-mail: MOH@ceh.ac.uk.

Bookings should be made through Mark Hill, preferably by e-mail, but he is very happy to have postal bookings if you do not use e-mail.

For other enquiries about the workshop and arable bryophyte survey, please contact Ron Porley, English Nature, Foxhold House, Crookham Common, Thatcham, RG19 8EL; e-mail: ron.porley@english-nature.org.uk.

The theme of this year's workshop is arable bryophytes. The workshop is the official launch of the BBS survey of arable bryophytes. We are pleased to announce that we expect Irene Bisang (Stockholm) to be present, to share her experiences of arable fields on the continent. The workshop includes training in the survey's methodologies (including how to measure the pH of your soil), as well as lectures on arable bryophytes and their reproduction.

The cost of board and lodging at the Field Studies Centre will be £75 per person. This includes meals from Saturday lunch to Sunday lunch, and a shared (2-bed) room on Saturday night. There is a supplement of £7.50 if you prefer a single room (not *en suite*), and an additional £18 if you require accommodation on the Friday night and breakfast on Saturday morning. It may not be possible to provide single rooms for all who want them. About mid-September, Mark Hill will review the list of participants and consult Preston Montford about space. He expects at that time to arrange some pairing of compatible participants.

A provisional programme for the workshop is given below.

16 November 2002 – in lab

- 09.30-10.30 Arrival of participants
- 10.30-11.00 *Ron Porley*: current knowledge of arable field bryophytes and what we hope to learn from the survey
- 11.00-11.45 *Irene Bisang*: diaspore bank in bryophytes, with special reference to arable fields
- 11.45-12.00 *Mark Hill*: BBS arable survey: sample design and plans for data analysis
- 12.00-12.15 *Chris Preston*: the recording card, how it will be computerised and how to fill it in
- 12.15-12.45 *David Holyoak*: *Bryum* in arable fields
- 12.45-13.45 Lunch
- 13.45-16.00 Practical sessions, including the following:
 - How to use our identification guides and information packs
 - How to take soil samples
 - How to describe soil texture
 - How to measure the pH of your soil
 - How to wash out your tubers
 - The main species and how to identify them
 - Difficult taxa, including some that baffle even experts

- 16.00-16.30 Tea
- 16.30-18.00 Practical sessions and planning:
- Selecting your field
 - Sending in your results
 - Finding champions for selected squares
 - Procedures for specimen checking
 - (continuing the themes from previous session)

17 November 2002 – in field

- 09.00-09.30 Form teams for field recording and discuss itinerary and fields to visit
- 09.30-10.00 Go to first field
- 10.00-11.00 Record field 1; divide into four teams
- 11.00-12.00 Teams A and B work field 2, at different ends; Teams C and D work field 3, at different ends
- 12.00-13.00 Plenary session on field 4
- 13.00-13.30 Lunch in the fresh air
- 13.30-14.30 Teams C and D work field 2, at different ends; Teams A and B work field 3, at different ends (thus finding out how repeatable our results are - this is an important experiment!)
- 14.30-15.30 Plenary session and final discussions on field 5
- 15.30 Depart

SPRING FIELD MEETING 2003, SOUTH NORFOLK / NORTH SUFFOLK, 10-15 APRIL

Local secretary: Richard Fisk, 1 Paradise Row, Ringsfield, Beccles, Suffolk, NR34 8LQ; tel: 01502 714968; e-mail: richardjfisk@onetel.net.uk.

Headquarters: Half Moon Inn, Rushall, nr Diss, Norfolk; tel: 01379 740793.

This part of East Anglia is not a major tourist area. Hotels have a regular trade, so they tend to be rather expensive and special deals/discounts are not available. A small discount for two or more nights is usual. The Half Moon Inn was chosen because it provides easy access to a number of interesting sites in this part of East Anglia.

The Half Moon is a very pleasant country inn in a very small village. There are 10 rooms, mostly modern chalet style to the rear, the others in the main building. Prices are currently from £25 per night B&B. The Half Moon has a flourishing restaurant trade, so when booking it will be advisable to specify whether you wish to eat there in the evenings. This is absolutely essential for Saturday night when there are two sittings in the restaurant. The first sitting is at 6.00 p.m. which will be necessary for Council members. If you mention that you are with the BBS it will help in organising the restaurant.

Rushall (pronounced Rueshall) is just off the A140 Norwich-Ipswich main road, approximately 6 miles from Diss and 17 miles south of Norwich. Diss is on the Norwich-Liverpool Street main railway line and all trains (which are very frequent) stop there. If anyone is travelling by train, please let me know and I can pick you up.

The Council meeting on Saturday will be in the church hall in Dickleburgh 2 miles away. Not one hotel in the area was prepared to provide a meeting room on a Saturday night.

Details of alternative places to stay can be found on the web site www.south-norfolk.gov.uk. The Tourist Information Centre, Mere St, Diss, IP22 3AG (tel: 01379 650523) can also help with any queries. A map of the area can be viewed by visiting www.multimap.com.

East Anglia may have no mountains and little rain but there are some interesting bryophytes around and picturesque scenery. The final programme is yet to be arranged but possible venues include the following:

- Wheatfen Broad/Ted Ellis reserve (TG30). It is anticipated that the reserve work boat will be available to take members to see *Timmia megapolitana*, recently discovered here.
- Dunwich Heath/Minsmere (TM46). The main attraction is in an area of wet woodland where some rotting pine logs are covered with *Nowellia curvifolia*, *Odontoschisma denudatum*, *Dicranum tauricum* and other species. *D. fuscescens*, *D. polysetum* and other local rarities have been found here, and there are a number of *Sphagna*. *Ricciocarpos natans* and *Riccia fluitans* are in Docwras dyke.
- Stubbing's and Gitting woods (TM07). These are unknown bryologically but are renowned for being the main site in Britain for unspotted lungwort *Pulmonaria obscura*. A number of 'boulder clay wood' species are to be expected.
- Thetford Warren/Risbeth wood (TL88). A small area of lichen heath with *Racomitrium canescens* is by the car park, whilst the wood contains *Herzogiella seligeri* and a number of local rarities. Barnhamcross Common, with abundant *Leptodontium gemmascens*, is close by.
- Waveney Valley Fens (Market Weston, Hopton, Thelnetham) (TL97/98). These sites contain a wide variety of calcareous fen species. *Preissia quadrata* has been recorded, but not recently, and *Moerckia hibernica* was found a few years ago.

SUMMER FIELD MEETING 2003, Kindrogan, 7-14 July

Local secretary: Martin Robinson, Dalreoch Farm, Enochdhu, Blairgowrie, Perthshire, PH10 7PF; e-mail: mcr@dalreoch.fsnet.co.uk.

This meeting will be based at the Scottish Field Studies Centre at Kindrogan. A workshop on *Schistidium* run by Hans Blom will form part of the meeting. Full details will be given in the next issue of the *Bulletin*.

OTHER BRYOLOGICAL AND BOTANICAL MEETINGS

Botanical Society of Scotland Symposium: Plant Conservation in Scotland

This symposium will be held at the University of Edinburgh on 10-11 September 2002 (a few days before the BBS AGM and paper-reading meeting).

The goal of the meeting is to tackle conceptual issues of plant conservation, with a focus on Scottish plants. The programme will comprise three sessions, devoted to aspects of species conservation, habitat conservation and conservation policy respectively. It will provide an opportunity to hear about the latest work in Scottish plant conservation, bringing together data and experience from researchers and conservation practitioners.

Speakers will include Chris Preston (overview of Scottish flora), Gordon Rothero (bryophytes), Brian Coppins (lichens), Charles Gimingham (Scottish habitats), Andy Amphlett (native pinewoods), and Tim Clifford (Atlantic oakwoods).

For further information, see <http://www.ierm.ed.ac.uk/bssconference>, or contact Shiela Wilson, IERM, University of Edinburgh, King's Buildings, Mayfield Rd, Edinburgh, EH9 3JU (e-mail: Shiela.wilson@ed.ac.uk).

Field Centre courses

A list of Field Centre bryological courses in 2002 was published in *Bulletin* 78: 43-44. An additional course is planned for January 2003 at Preston Montford Field Centre:

24-26 January 2003: MOSSES AND LIVERWORTS UNDER THE MICROSCOPE. Tutor: Dr Martha Newton, Preston Montford Field Centre, Montford Bridge, Shrewsbury, Shropshire, SY4 1DX. Details from the Centre Director, Ms S. Townsend.

MINUTES OF THE ANNUAL GENERAL MEETING, CARDIFF, 2001

Minutes of the Annual General Meeting held at the National Museum and Gallery of Wales, at 4.30 p.m. on Saturday 8 September 2001.

PRESENT: Mr T.L. Blockeel (President, in the chair) and 34 other members.

1. **APOLOGIES FOR ABSENCE:** Apologies had been received from Dr J.W. Bates, Dr G.C.S. Clarke, Prof. J.G. Duckett, Dr M.E. Newton, Mr R.D. Porley, Mr J. Port, Mr G.P. Rothero, Mr R. Stevenson and Mr M. Watling.

The meeting observed one minute's silence to respect the memory of the following members of the Society who had died since the last AGM: Dr T. Arts, Mr P.C. Bowes, Mr B.S. Brookes, Mr L. Castelli, Dr A.J.C. Malloch and Dr I. Stone, an Honorary member of the Society,

2. **MINUTES OF THE MEETING ON 9 SEPTEMBER 2000:** The minutes were approved as a correct record of the meeting and were signed by the President.
3. **MATTERS ARISING:** There were no matters arising.
4. **REPORTS OF OFFICERS FOR 2000:** The reports had been published in *Bulletin* 77, and gave rise to the following comments:

- a) **Treasurer:** Mr Blackburn drew attention to the fact that there had been a drop in the value of the Society's investments as a result of the recent decline in the stock markets but that it was anticipated that values would rise in the long term.

Mr Sleath asked whether all legal costs connected with the Society's action against Blackwell had been paid. Mr Walton said that the only cost that was outstanding, so far as he was aware, was the charge from the Society's own solicitor. He did not intend to pursue this.

The remaining Officers' Reports were accepted without question or comment, and Mr Blockeel thanked the officers for the work that they had put into the activities of the Society, commenting that, after his two years as President, he realised just how much work the officers carry out.

5. **REPORT FROM COUNCIL:** Mr Blockeel reported on the work of Council through the year, as follows:

- a) **Contract for the publication of the *Journal of Bryology*:** Mr Blockeel said that many of those present would be aware that the Society had agreed a contract with Maney for the publication of the *Journal*, which came into force in January 1999. The financial arrangements included a contribution of £4,000 by Maney towards the cost of the editorial office. The contract had worked well for the Society, and Maney had maintained the level of institutional subscribers (who actually provide most of the funding for the *Journal*), against a general background of falling subscriptions. Under the new arrangement the net cost of the *Journal* to each member of the Society during the first two years of the arrangement had been less than £10 (£9.82 in 2000).

In February 2001 the Executive and the Editor held a meeting with Michael Gallico of Maney to discuss the renewal of the contract, which had an initial three-year term. The meeting had been very profitable and the arrangement had been renewed with the following modifications:

- the amount of the editorial expenses payable to the Society would be increased to £5,000 with effect from Volume 24 (2002);
- that sum would be indexed in subsequent years by the same percentage as is applied annually to the EU institutional subscription rate;
- Volume 23 would include 16 additional pages and Volume 24 at least 16 additional pages at no additional charge to the Society;
- the full text of Volume 24 and subsequent volumes would be published on-line via the Ingenta journals service, with access limited to those institutions with a paid-up subscription.

On-line publication of the *Journal* would not affect the distribution of printed copies, and the Society would not incur any additional costs. The main benefits were for institutional subscribers, and should help to maintain those subscribers. Some bryological journals were already available on-line.

- b) **Future of the BBS herbarium:** Last year it was reported that Council had agreed to transfer ownership of the Society's herbarium permanently to the National Museums & Galleries of Wales (NMGW) in Cardiff, subject to a number of conditions. Most importantly, these were that the herbarium would retain its separate identity (as BBSUK) and that members would continue to have the right to borrow specimens. Mr Blockeel now reported that the formalities had been successfully completed and the herbarium was now in the ownership of NMGW and could be properly curated. This was an important task, as many of the older packets were badly worn and, in some cases, disintegrating.
- c) **Dr H.L.K. Whitehouse's slides:** A set of Dr Whitehouse's slides, and a large part of his bryological archives, had been donated to the Society by his daughters Anne Whitehouse and Jane Cooper. To ensure permanent care of the slides, Council had agreed that ownership (and copyright) should be transferred to NMGW. The Society would retain the right to publish copies of the slides, and members would be able to borrow them on certain conditions. Mr Blockeel now reported that the formalities had been completed.

Prior to this, Dr Jonathan Sleath, assisted by his son, had catalogued and subsequently scanned some 1,800 images (900 species) onto disk in a format that would allow them to be viewed stereoscopically. As a way of displaying these images he had incorporated them into web pages which could be viewed by a standard browser. The size of these pages on CD was substantial (123 MB) because of the number of images. The size of the file raised some issues with placing it on the BBS web site, and the Publications Committee had, therefore, recommended publication on CD and would be in contact with NMGW to agree how this can best be achieved.

The Society was indebted to Dr Sleath and his son for the time and effort that they had invested in this significant piece of work. Dr Philip Stanley and Dr Chris Preston had also been instrumental in sorting out Dr Whitehouse's effects.

Dr Preston said that each slide was backed up by a voucher specimen which would need to be appropriately referenced when it was curated. Dr Sleath said that Ms Childerhouse, the BBS Curator, was aware of this.

- d) **Index to the *Journal of Bryology*:** Dr Philip Stanley, assisted by Mr Roy Perry, had made substantial progress with the Cumulative Index and had completed the input of all citations up to the end of 2000. There was substantial formatting still to be done, including the consolidation of multiple citations under common headings. Because of the amount of work required it had not been possible to meet the timetable envisaged at the Council Meeting in Reading in September 2000. However, Council had reaffirmed its intention to publish a printed copy of the Index when it was complete, and to supply a copy free of charge to all members who wished to have one, subject to budgetary costs not being significantly different from those agreed in September 2000 and subject also, if necessary, to a fee for p&p costs.

- e) **Systematics and whole-organism biology:** In 2000, the Society had received a letter from Dr Peter Crittenden, the retiring President of the British Lichen Society, expressing concern at the current state of 'systematics and whole-organism biology' in the UK, and the decline in traditional taxonomic skills.

Dr Crittenden subsequently wrote an open letter, signed by the Presidents of several scientific and learned societies, including the BBS, to Professor David King, the Chief Scientific Adviser at the Office of Science and Technology. A response was received from the Director General of the Research Councils, to whom the Societies' joint letter had been forwarded by Prof. King. The response, while listing activities that the Research Councils were supporting, did not answer the concerns that had been expressed. Dr Crittenden had since submitted the Societies' joint letter, together with a summary of the response, to the editors of a number of scientific journals in the hope of generating some public debate.

- f) **The library of Mr Alan Crundwell:** Mr Alan Crundwell had bequeathed his library of botanical books to the Society. The task of dealing with the books was still in progress. It was a very large library and it had been a very time-consuming task to catalogue it. Council had decided that the bryological books that were not required in the BBS library should be offered for sale to members, and this would be organised during 2002.

Dr Fred Rumsey had agreed to prepare Mr Crundwell's draft bryophyte flora of North Hampshire for publication, with the support of the Hampshire Wildlife Trust.

- g) **Kew Gardens Review:** The Society had been invited to contribute towards the Quinquennial Review of Kew Botanic Gardens. On behalf of the Society, the President had sent a statement in April 2001 endorsing Kew's activities in the field of bryophyte conservation and *ex situ* cultivation.
- h) **Code of conduct for the conservation and enjoyment of wild plants:** Council had approved the adoption by the Society of the *Code of conduct for the conservation and enjoyment of wild plants* in place of the British Bryological Society code of conduct. The new Code had been issued under the auspices of Plantlife Link, in which the Society was a participant.
- i) **Bequest Committee:** The criteria for awards had been extended to allow members to apply for assistance in attending courses and meetings. This was in recognition of the Society's duty to promote the education and training of new bryologists, particularly when bryology was now hardly taught in universities as a subject in its own right.
- j) **Meetings Secretary:** The meetings programme for 2001 had been adversely affected by the Foot and Mouth Disease outbreaks and by the resignation of the former Meetings Secretary, as a result of pressure of work.

The meetings programme was a critical part of the Society's activities and,

with the need to appoint a new Meetings Secretary, Council was deliberating how best to organise this very important post. One option being considered was the possibility of appointing separate officers for field and indoor meetings. Any changes recommended by Council would be brought forward at the next AGM in 2002.

Members were urged to submit any views that they might have, and proposals for the type of activities that they would wish to be provided, to the new Meetings Secretary.

- k) **Archivist and Curator:** The posts of Curator and Archivist also needed to be reconsidered. The transfer of ownership of the herbarium meant that the Society no longer needed a Curator, in the practical sense of the word. Mr Roy Perry had also asked to relinquish the post of Archivist. Council needed to consider whether the two posts were still necessary and, if so, what their roles should be. The BBS paper archives were currently stored at Cardiff and the first step towards this would be to assess the volume and nature of the paper archives.

In response to a question from Mr Perry, Mr Blockeel said that the Society's photographic archive would be included in the review.

- l) **Expression of thanks to Dr Giles Clarke and Mr Roy Perry for their work on behalf of the Society:** Dr Clarke was retiring from Council after an almost continuous presence of 30 years. He had served the Society in a number of posts, including Meetings Secretary, Bibliographer, Treasurer and, of course, as President (in 1998-1999). His administrative and organisational skills, as well as his sound judgement, had been of enormous value to the Society.

Mr Perry had a unique record in various offices of the Society. He had held the onerous post of General Secretary from 1973-1981, Curator from 1984-1999, and President in 1996-1997. One of his most outstanding achievements had been to develop the Society's *Bulletin*, as its editor for a quarter of a century, into its present attractive and informative format. He had organised numerous successful meetings, and had an unparalleled knowledge of the Society and its affairs.

Those present showed their appreciation to Dr Clarke and Mr Perry in the usual manner.

Mr Perry responded by thanking members for their appreciation and said that it had been 'a great pleasure'. Dr Clarke unfortunately was unable to be at the meeting and had submitted his apologies.

Mr Blockeel then also congratulated Dr David Long, the current Vice-President, on recently obtaining his doctorate for his researches into the genus *Asterella*.

6. **ELECTION OF OFFICERS:** Council nominated Mr H.W. Matcham for the office of Vice-President, Mr M. Lawley (who had been carrying out the duties of Meetings Secretary on a temporary basis following the resignation of Mr D. Wrench) for the

office of Meetings Secretary, and the present holders for the remaining offices that were subject to re-election as follows: Mr M.A. Walton (General Secretary), Mr J.M. Blackburn (Treasurer), Dr D.T. Holyoak (Conservation Officer), Ms K. Childerhouse (Curator), Dr K.J. Adams (Librarian), Mr M. Pool (Membership Secretary), Mr T.H. Blackstock (Recorder for Hepatics), Mr G.P. Rothero (Recorder for Mosses), and Mr R.D. Porley (Recording Secretary). The Secretary had received no other nominations and the foregoing officers were duly elected.

7. **ELECTION OF ELECTED MEMBERS OF COUNCIL:** Sqn Ldr M.F. Godfrey had resigned as a result of pressure of work and Mr J.M. Turner was elected for the remaining year of Sqn Ldr Godfrey's term of office. Mr J. Graham, Mr J. Mott and Mr G. Smith were each elected for a two-year term of office. Dr R. Tangney, who had been co-opted by Council in accordance with the resolution passed at the previous AGM, was confirmed for the second year of his term.
8. **PLACE AND DATE OF THE NEXT ANNUAL GENERAL MEETING:** The next Annual General Meeting will be held on 14 September 2002, in Edinburgh.
9. **OTHER FUTURE MEETINGS:** Mr Lawley confirmed that the spring meeting in 2002 would take place on the Isle of Wight from 13 to 20 March.

The summer field meeting would be in south-west Wales, probably in early July and based in Lampeter. Mr G.S. Motley had agreed to act as local secretary, with assistance from Mr S.D.S. Bosanquet.

Subject to confirmation, it was likely that a workshop on arable bryophytes would be held in the autumn of 2002.

It was his intention that full details of the meetings for 2003 would be available for the AGM in 2002.

Mr A.R. Perry, the local secretary for this meeting, said that some members had commented on the fact that, for the first time, a registration fee had been charged. He said that the Icon Suite, where the AGM was taking place, had been provided free of charge but outlined the costs that had been incurred in providing facilities for the enjoyment of those who were attending the meeting and which were not connected with the official business of the Society. Mr Blockeel said that it was now policy that an administration charge should be levied on members who attend meetings to cover the cost of rooms that are available for the use of members generally but that no charge should be made to cover any costs for rooms that are used solely for the official business of the Society. Dr A.J.E. Smith pointed out that this was common practice for many societies. Dr J.D. Sleath and Mrs J.A. Paton both said that a charge of £5 (as opposed to the charge of £3.50 that had been levied) would be reasonable so that the costs were covered by those who attend the meeting and are not subsidised by the membership at large.

10. **ANY OTHER BUSINESS:**

- a) **Red Data Book:** Mr R.C. Stern mentioned, with pleasure, the fact that the Red

Data Book for bryophytes had now been published. The project had started under the auspices of CABS, at which stage Mr N. Stewart had undertaken much of the original work. The work had been continued by Plantlife and the JNCC where Mr N. Hodgetts had had a considerable input into its completion.

- b) **Images of threatened bryophytes:** Mr M. Pool said that he had been approached by an organisation called 'Archive' which was trying to build up a library of images of threatened bryophytes within the next two to three months. Any members who wished to help should contact him. Dr G. Stevens added that the project was being supported by English Nature who had seconded a member of staff to it. The original owner of an image would be asked for permission if others wished to make use of it.
- c) **Cumulative Index to the *Journal of Bryology*:** Mr M. Wigginton asked for more detail on progress with the Index. Mr Blockeel replied that Council was awaiting delivery of the finished manuscript and that he hoped and expected it to be published 'sooner rather than later' given the likely increase in publication costs if there is any undue delay. Council had confirmed its intention to publish the Index when it was available, although no specific level of funding was committed at the present time, and the precise means of publication and distribution might need to be reviewed if publication costs were significantly different from their level when Council considered the matter in September 2000.

Mr Blockeel then thanked members for their support during his two years as President. The Society was in a very healthy condition, thanks in part to the great deal of work that is carried out by the officers, and closed his remarks by giving his very best wishes to his successor, Dr Long.

Dr Long responded by paying tribute to Mr Blockeel's dedicated work for the Society generally and in his role on Council - he had been 'a fantastic President'.

Mr Blockeel then thanked the National Museums & Galleries of Wales for inviting the Society and for the facilities that it had provided. The Society's links with the Museum went back many years and he hoped that they would continue for many years to come. He also especially thanked Mr Perry for the considerable work that he had done which had ensured the success of the meeting.

There being no other business, the meeting was drawn to a close at 5.39 p.m.

M.A. Walton, General Secretary, September 2001

ELECTION OF OFFICERS AND ELECTED MEMBERS OF COUNCIL

The terms of five Officers, the Bulletin Editor, the Journal Editor, the Reading Circle Secretary, the Recorder for Mosses, and the Web Site Editor, expire at the end of 2002. With the exception of the Journal Editor, the present incumbents are all eligible for re-election.

Additionally, the Treasurer has, regrettably, had to resign as a result of ill health and it will, therefore, be necessary to elect a successor.

The previous *Bulletin* recorded the fact that the Membership Secretary, Mark Pool, had given notice that he was not able to continue in the office after December 2002. Following the resignation of the Treasurer, I am pleased and grateful to report that Mark has agreed to continue to serve until December 2003 to minimise any consequent disruption.

The Curator, Ms K. Childerhouse, has resigned. Following the transfer of the BBS Herbarium into the ownership of the National Museums & Galleries of Wales, the former duties of the office no longer apply and Council is reviewing the situation, together with a review of the Society's archives. Pending a further report to a future AGM it is recommended that the office of Curator be deleted.

The Journal Editor will have served a total term of ten years and, as such, can only be re-elected if nominated by the President and the Vice-President. Members will understand that this is a particularly critical appointment in terms of the qualities needed by the incumbent, the access to appropriate resources, and the timescale that is necessary for an effective transfer of responsibilities. The Executive, together with the current Journal Editor, has been considering the matter for some time and it is intended that a suitable nomination can be put to the AGM in 2004. In the meantime, the President and the Vice-President intend to nominate the present incumbent, Dr J.W. Bates, for re-election at the AGM in 2002 and are delighted that he has agreed to stand for re-election for this interim period.

Three Elected Members of Council will retire at the end of 2002 and neither Dr C.D. Preston nor Dr R. Tangney is eligible for re-election in this capacity until two years have elapsed. The third retiring Elected Member, Mr J.M. Turner, is eligible for re-election since he will not have served a full, two-year term as an Elected Member.

Members are invited to submit nominations for Officers and Elected Members, sending them to the General Secretary of the BBS, Mr M.A. Walton, Ivy House, Wheelock Street, Middlewich, Cheshire, CW10 9AB, to arrive no later than 17 August 2002. 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 Edinburgh on 14 September 2002.

M.A. WALTON

AMENDMENTS TO THE SOCIETY'S RULES: THE PRESIDENT AND THE ELECTED MEMBERS OF COUNCIL

Introduction

Council is proposing that the Society's rules should be amended to a) provide that the President, and consequently the Vice-President and Past-President, may combine that office with certain other offices on Council, and b) provide that two Elected Members shall be

elected at each AGM for a period of three years instead of the present practice of electing three at each AGM for a period of two years.

The President

In reviewing candidates whom it would wish to propose for Vice-President at the AGM in September 2001, Council took the view that there could be occasions when it would want to propose members who might, at the time, be officers of the Society. The British Bryological Society rules do not specifically exclude such a possibility but Council proposes an addition to the rules which would remove any doubt.

For personal or practical reasons, it will not always be possible, even if it might be desirable, for one person to combine the office of President with another office but such issues would be addressed as they occur. In fact, in some respects, the activities of the President complement the roles of some of the officers. It is recognised that the office of President should not be combined with the office of General Secretary or that of the Treasurer.

The implementation of such a practice could mean, on occasion, that the number of members on Council would reduce and, as such, the opportunity for input to Council by members could be said to have reduced. However, in practical terms and taking into account the way in which Council carries out its business, this is considered to be a theoretical rather than a practical problem.

Elected Members

The rules of the Society provide that three Elected Members be elected each year for a two-year term of office.

The rules under which these terms of office were established were agreed by the AGM in 1989. In practice, many officers of the Society are re-elected for multiple terms, but this does not apply to Elected Members. It is necessary to strike a balance between, on the one hand, the need for new people and ideas in Council and, on the other, the need for continuity in administering the Society's affairs and guiding its policies and the time that it may take for Elected Members to become fully conversant with the Society's business. At a time of continuing change and greater complexity in the Society's affairs, Council considers that two-year terms limit the effectiveness of Elected Members and that, therefore, these terms of office should be increased to three years. It is not proposed that the terms of office of the other officers should be altered.

Amendments to the rules

To implement the proposals, rules 5(a), 5(b) and 5(d) would need amendment as follows (the amended wording being shown in *italics*):

- 5(a) The officers of the Society shall be President, Vice-President, General Secretary, Treasurer, Editor or Editors, Librarian and such others as the Society may appoint. *The President and the Vice-President shall not be debarred from simultaneously holding one of the other offices of the Society, apart from those of General Secretary or Treasurer.*

- 5(b) The management of the Society shall be in the hands of a Council which shall consist of the officers, six Elected Members, and the immediate Past-President who shall remain a member of the Council for two years after he ceases to hold office. *The immediate Past-President may also hold one of the other offices of the Society, apart from those of General Secretary or Treasurer.* The Council shall meet at least once each year but its business may also be conducted, at the discretion of the President, by correspondence. The Council shall have power to co-opt.
- 5(d) The six Elected Members shall ordinarily serve for *three years, two* being elected at each Annual General Meeting. Vacancies occurring among the Elected Members shall be filled at the next Annual General Meeting for the remainder of the unexpired term. Elected Members *whose initial appointment was for, and* who have served, the full term shall not be eligible for re-election in this capacity for *three* years after their term expires.

Exceptionally, rule 5(d) will be implemented by the election of two Elected Members for a term of two years and one for a term of three years at the AGM in 2002 (two serving for 2003-2004 and one for 2003-2005) and then one Elected Member for a term of two years and two for a term of three years at the AGM in 2003 (one serving for 2004-2005 and two for 2004-2006). Thereafter, commencing with the AGM in 2004, two Elected Members will be elected for a term of three years each at each AGM.

For the avoidance of doubt, the terms of the amended clause 5(d) will permit an Elected Member to serve for a maximum period of five consecutive years (two following election for the unexpired term of a resigning member and an additional three following re-election immediately afterwards).

M.A. WALTON

SUBSCRIPTION PAYMENTS

Please could members paying their subscriptions by cheque or credit card be sure they send their payments to me rather than to Mike Walton? Mike has not been Membership Secretary since the end of 1999; although he can and does pass payments on to me, this slows things down considerably and can result in payments going astray. In addition, since Mike is currently acting as both General Secretary and Treasurer he could do without any unnecessary work!

My thanks, as always, go to all those who have paid their subscriptions promptly - rather more of you than last year, I think. If anyone has yet to pay, please could I encourage you to do so quickly so as not to miss out on any of the benefits of membership?

Mark Pool (Membership Secretary), 91 Warbro Road, Torquay, Devon, TQ1 3PS; tel: 01803 316154; e-mail Mark.Pool@care4free.net.

COUNTY FLOWERS: PUTTING WILD FLOWERS ON THE MAP

To commemorate HM The Queen's Golden Jubilee, Plantlife is co-ordinating an exciting project which, with the help of all our partner organisations (including the British Bryological Society), will get people out visiting the countryside again, post Foot and Mouth, and put wild flowers well and truly on the map.

Wild flowers give an area its character and sense of place, and *County Flowers* will allow everyone an opportunity to vote for the flower that does this best, both in the area where they live and in any places they visit in 2002. A flower will then be selected to represent each county, based on the most popular choices.

Many of the nations of the world have a common language: the language of flowers. Wild flowers often take on symbolic meanings, or help to express the identity of a particular area. In the United States and Canada, for example, every state has an emblematic wild flower: Texas Bluebonnet, Californian Poppy, or the Prairie Crocus of Manitoba. *County Flowers* is based on this model, and Plantlife hopes that it will give people an added incentive to get out into the countryside, and that this will stimulate the local economy.

The selection of suitable flowers is based on very simple criteria. It should be a wild flower that means something to the community. Perhaps it lends a special quality to the local scenery, whether woodland, open fields, or coastal cliffs and dunes. Perhaps it has some character, or even use, that people value, or perhaps it is a rare and precious flower that is valued for that reason. Or perhaps there is no particular reason, but that you value it anyway.

You can register a vote for a species that you feel is the most appropriate choice for the county where you live, which is weighted with two votes. You can also vote for as many counties as you visit in 2002. To find out more about this exciting new project, to see a complete list of nominations so far and, most importantly, to register your votes or suggest new nominations, look on the Plantlife web site (www.plantlife.org.uk).

RECENT DEATHS

It is with regret that we announce the deaths of:

Dr H.A. Crum, an internationally acclaimed bryologist and Honorary Member of the Society, who made a major contribution to bryology in north America and will be particularly remembered, amongst his other publications, for his co-authorship of *Mosses of Eastern North America*.

Prof. W.D. Reese, a member of the Society since 1957, who contributed to the study of tropical bryophytes, particularly the Calymperaceae, publishing *Mosses of the Gulf South*, amongst other publications.

A TRAVELOGUE OF BRITISH BRYOPHYTES

Would you like to contribute to a 'where-to-go-and-what-to-see' regional guide to the bryophytes of interesting districts?

The travelogue will be for members of the public who are interested in natural history and set out to explore with 'Watson' in their pocket, but are uncertain where best to look for bryophytes.

The Publications Committee envisages the travelogue as a hands-on, corporate project for all members of the Society who wish to participate, with each contribution attributed to its author unless he or she wishes to remain anonymous.

The travelogue will be published on the BBS web site at the end of 2003, with free complementary paper copies sent out to all contributors. If the guide approaches comprehensive coverage of the country, the BBS intends to prepare the text for publication as an illustrated book.

If you are interested in contributing material about your district for the travelogue, please let me know. I would be pleased to supply further details.

Mark Lawley, 12A Castleview Terrace, Ludlow, SY8 2NG; tel: 01584 876564; e-mail: m.lawley@virgin.net.

BEQUEST AWARDS: ATTENDANCE AT COURSES AND CONFERENCES

The Bequest Fund is available to give financial support for a range of activities (see *Bulletin* 77: 27, and note 9 to the Accounts for 2001 on p. 7 of this *Bulletin*), amongst which is support for attendance at courses and conferences. To assist people who might wish to apply for financial assistance for attendance at courses and conferences, Council approved the following criteria at its meeting in March 2002.

For courses and field meetings

- A maximum of two grants per year will be made towards the cost of attendance on courses in bryology, with the applicant being expected to fund the travel costs plus half of the course fee. Support will be given only to full-time students or unemployed persons who may not receive more than one grant under this head.
- Bursaries of £50 may be awarded to full-time students or unemployed persons for attendance at an advertised field meeting of the Society. Closing dates for applications will be as follows:
 - i. 1 February for spring meetings
 - ii. 1 May for summer meetings
 - iii. 1 September for autumn workshop meetings
- The Bequest Committee may increase the sum awarded if few applications are received.

For conferences and paper-reading meetings

- A maximum of two grants per year will be made to full-time students or unemployed persons for attendance at the Society's autumn paper-reading meetings, with special consideration being given to those who make a formal presentation to the meeting.
- Applications may be considered for attendance at conferences and paper-reading meetings in countries other than the person's country of residence. Grants will not exceed £250 or 50% of the total cost, and only one application per person will be granted. Grants may be made to research students during their three PhD years and, similarly, to post-doctoral researchers during their tenure on a three-year grant. It will generally be a condition of payment that, following the meeting, the applicant will provide a short report for the Bequest Committee.

Applications for support from the Fund for these purposes are welcomed and should be sent to the Treasurer (address inside front cover) giving full details of the activity for which support is requested and the potential benefits that will result from the applicant's participation.

M.A. WALTON

RECORDING MATTERS 22

Regional Recorders

There are a few amendments to the Regional Recorders list. I am delighted to welcome two new recruits:

37: Lorna Fraser, 26 Hinton Avenue, Alvechurch, Birmingham, B48 7LY.

39: John Smith, 2 Park Lane Avenue, Madeley, Telford, Shropshire, TF7 5HQ.

There are two changes of address:

31, 86-88, 99, 104: Nick Hodgetts, 55 Norton Street, Grantham, Lincolnshire, NG31 6BX.

36: John Port, 7 Coronation Road, Kington, Herefordshire, HR5 3BU.

Please also note that the postcode of CEH, Monks Wood (Mark Hill (9) and Chris Preston (29) is now PE28 2LS.

Please keep sending me completed record cards so that we can keep the national database up to date. If you do any recording in the patch of another Regional Recorder, send a copy of the card to that person, otherwise they will be unaware of the records. Normally, it is the Regional Recorder who would then send completed cards to me so that they can be incorporated in the national database. This only has to be done once or twice a year so it shouldn't be too onerous. There is also the option of providing your data in electronic form, such as an Excel spreadsheet, with columns (fields) for species name, grid reference, date and other information. However, please check with Chris Preston at CEH to confirm appropriate fields for your data before submitting records in electronic form.

Our recording effort would be much more useful if it was done on a site basis; recording in 10-km squares is fine for mapping, but is of little use when trying to establish what species occur within named sites - crucial if we are to defend sites from inappropriate development or loss. So please use names as they appear on 1:50,000 or 1:25,000 OS maps, and give a 6-figure grid reference (ideally by GPS) that is approximately in the centre of the site. A grid reference range is also acceptable if the site is particularly large or straddles 10-km squares. Finally, when filling in a record card do not score through the species code numbers, as it obscures the numbers, makes life difficult for the data operators, and could lead to errors.

BBS special recording project: arable bryophyte survey

The pilot phase of the arable bryophyte survey was completed in spring this year, and went very well. We will consider any amendments to the methodology ready for the launch of the

national project in autumn 2002. A bonus so far is the discovery of some good populations of the Biodiversity Action Plan priority species *Weissia rostellata* in Devon and Cambridge. This moss may be more common in arable fields (as opposed to reservoir margins and damp soil in other situations) than previously thought; well-developed sporophytes are needed for a positive identification. We looked at some arable fields during the BBS Isle of Wight excursion in March, and investigated an interesting organic field which had three *Riccia* species. We also re-found *Chenia leptophylla* on arable field margins at Brook, the original site where it was found, new to Britain, in 1964. At that time it was thought to be an undescribed species, hence its former name *Tortula vectensis* (which was later made a synonym of *T. rhizophylla*). This is the only known extant station for the species in Britain, as it appears to have been lost from the Isles of Scilly and the Lizard Peninsula. However, the Brook population is clearly testimony to its persistence, and the plant could turn up more or less anywhere.

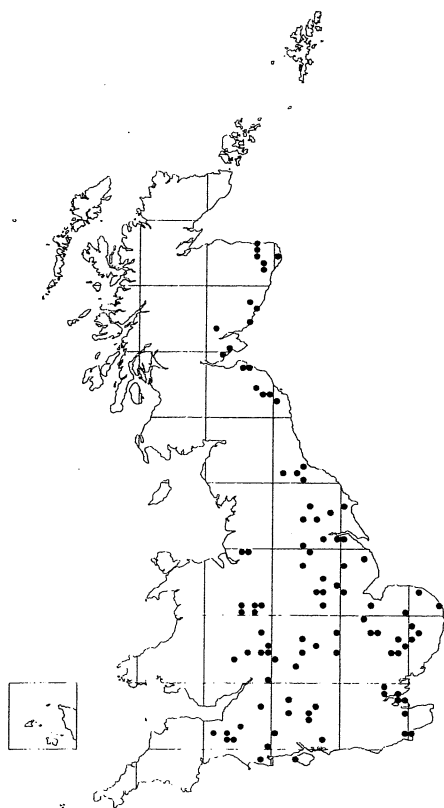


Figure 1. Map of Great Britain, showing 10-km squares in which survey tetrads are located

Table 1. Tetrads selected for survey within each 100-km square

100-km square	Tetrad	Arable land (% of tetrad)	100-km square	Tetrad	Arable land (% of tetrad)	100-km square	Tetrad	Arable land (% of tetrad)	100-km square	Tetrad	Arable land (% of tetrad)
30	SY88B	56	36	NT74Y	78	42	SP65G	51	51	TQ87I	67
31	ST12I	61	36	NT83D	74	42	SP94E	79	51	TQ88Z	52
31	ST31S	54	36	NT93M	65	42	SP97H	92	51	TQ92R	79
31	ST32A	52	37	NO13U	59	43	SK47Y	57	51	TQ95C	62
31	ST41C	52	37	NO30B	72	43	SK59I	70	51	TQ97V	53
31	ST53F	54	37	NO64N	88	43	SK63K	56	52	TL39Z	90
31	ST86B	52	37	NO67X	68	43	SK71B	50	52	TL47B	74
31	ST90U	54	37	NO76P	57	43	SK73P	60	52	TL57D	73
32	SO43Q	56	38	NJ74H	53	43	SK75M	54	52	TL74W	82
32	SO64V	54	38	NJ75L	58	43	SK94V	73	52	TL84F	74
32	SO84Z	51	38	NJ76F	50	44	SE40U	55	52	TL86V	74
32	SO87S	56	38	NJ82L	60	44	SE44G	59	52	TL95U	82
32	SO90F	74	38	NJ83V	64	44	SE56W	76	53	TF03T	62
32	SO94V	64	40	SZ38Y	74	44	SE64K	68	53	TF07Z	69
32	SO95F	53	41	SU02R	76	44	SE71X	89	53	TF38Z	63
33	SJ50J	53	41	SU25P	51	44	SE85N	73	53	TF41B	88
33	SJ51Z	63	41	SU27M	62	44	SE91H	79	53	TF90Q	67
33	SJ59W	63	41	SU54M	51	45	NZ11L	67	54	TA01T	86
33	SJ69B	52	41	SU55Y	50	45	NZ31G	73	54	TA06E	77
33	SJ70V	60	41	SU66V	53	45	NZ40Z	67	61	TR02H	76
33	SJ71V	53	41	SU71H	64	45	NZ42N	66	62	TM06K	61
33	SJ81M	52	42	SP03M	64	46	NU02E	56	62	TM08A	63
36	NT29X	55	42	SP32G	56	48	NK04C	57	62	TM17N	58
36	NT57Q	88	42	SP44U	64	51	TQ68G	69	63	TG13G	72
36	NT67E	76	42	SP46I	51	51	TQ69I	57	63	TG41R	71

I am keen to hear from members who would like to participate in either the systematic or selective (or both) elements of the arable bryophyte survey (outlined in *Bulletin* 78: 50-52). Many members have already committed themselves to participating, but if this ground-breaking BBS project is to be truly a success we need as many volunteers as possible. The survey pack (customised recording cards and identification guidance featuring colour pictures of tubers to take away the worry and stress of those little *Bryums*) is nearing completion, and will be available for the autumn 2002 season. Table 1 lists the random tetrads selected within 100-km squares containing at least 15% arable land, and Figure 1 shows the locations of 10-km squares in which survey tetrads are located. If you are one of the lucky ones that live fairly near a tetrad then you do not want to miss out on this exciting project. The survey will be launched on 16-17 November 2002 at a workshop held at Preston Montford Field Centre (see pp 18-19 of this *Bulletin*), and we hope to have a guest speaker from Europe who will inspire us all about arable bryophytes. There will be plenty of British experts on hand too, so do let me know if you would like to attend.

Ron Porley, English Nature, Foxhold House, Crookham Common, Thatcham, RG19 8EL; e-mail: ron.porley@english-nature.org.uk.

FREE BRYOPHYTES OF NATIVE WOODS GUIDE

The second edition of *A field guide to the common mosses and liverworts of Scotland and Ireland's native woodlands* by Carol L. Crawford has just been published. This is a full-colour 40-page booklet with photographs of 36 common woodland bryophytes. It is, thanks to generous sponsorship from Scottish Natural Heritage, available free to all interested parties. The booklet has been prepared for the Native Woodlands Discussion Group Lower Plants Section.

The booklet is a handy size for the pocket and has a laminated cover to withstand damp mossy places! It is arranged with one moss or liverwort to a page. There is a 'group' photo of each species and shots of single stems. The text is arranged in colourful boxes covering separately for each species: habitats, microhabitats, key identification features, and the species it may be confused with. Informal English names are given as an *aide memoire* for beginners.

The book is very much aimed at beginners but those with some knowledge of bryophytes will find it helpful as well. Ecologists and forest managers should find it particularly useful. It will also help members of the general public get started.

Anyone wishing to obtain a copy of the guide should send a stamped, self-addressed A5 envelope to the author at the address below. The weight of the package is 110 grams (currently 57p first class and 44p second class within Britain). The author is happy to sign copies if requested. Donations to the Native Woodlands Discussion Group will be gratefully received and put towards future lower plant guides. Cheques should be made payable to NWDG and sent to the author.

Carol Crawford, The Natural Resource Consultancy, 4d New Bridge Street, Ayr, KA7 1JX;
tel: 01292 280800; e-mail: tnrcmoss@aol.com.

THE INTERNATIONAL ASSOCIATION OF BRYOLOGISTS

The International Association of Bryologists (IAB) was established in 1969. Its aim is to promote international co-operation and communication among bryologists, whether amateur or professional. The organisation has a world-wide membership.

The IAB sponsors and arranges meetings and symposia that relate to the various aspects of bryology. It also produces publications, including *The Bryological Times* and *Advances in Bryology*. *The Bryological Times* is published 4-6 times a year and contains items of interest to all bryologists. It includes a variety of columns expressing current thoughts in the field, reports of IAB meetings, news and notes, personalia, reviews of recent publications, a diary of future meetings and workshops, and information on computer developments. *Advances in Bryology* contains review articles summarising progress in all aspects of research involving bryophytes.

All persons interested in any aspect of bryology are eligible for membership of the IAB. Members will receive *The Bryological Times* free of charge and other publications at a

reduced price. Annual dues are currently \$11.00 US or an equivalent amount. If you are interested in joining, please contact Professor Dale H. Vitt, Department of Plant Biology, Southern Illinois University, Carbondale, IL 62901, USA (email: dvitt@plant.siu.edu). More information on the IAB is available on their web site (www.devonian.ualberta.ca/iab).

AWARDS TO MEMBERS OF THE SOCIETY

It is a pleasure to be able to report the following awards.

The H.H. Bloomer Award for 2002 to T.L. Blockeel

The award was established in 1963 by the Council of the Linnean Society as an award to an amateur naturalist who has made an important contribution to biological knowledge. The award is made by the Council of the Linnean Society at intervals, the recipients being alternately a botanist and zoologist, and consists of a silver medal and a donation. The award for 2002 was made to Tom Blockeel in recognition of his contribution to bryological taxonomy as evidenced by his many papers, his contribution to the *Atlas of the Bryophytes of Britain and Ireland*, and his work on the latest *Check-list and Census Catalogue of British and Irish Bryophytes*.

The Hattori Prize for 2002 to Mrs J.A. Paton

The award, which was announced at the recent World Conference of Bryology in Lucknow, India, by the President, Prof. S.R. Gradstein, is awarded by the International Association of Bryologists (IAB) for the best bryological paper, series of papers or book published over the previous two years by an IAB member. The award was presented to Jean Paton for her *Liverwort Flora of the British Isles*.

M.A. WALTON

BRYOPHYTES OF SOUTH BANAT (VOJVODINA, SERBIA)

During 2001 I conducted some field investigations into the bryophyte flora of South Banat with the support of the Bequest Fund of the British Bryological Society. South Banat is exceptionally poorly known bryologically, and most of the investigated territory is used for the cultivation of crops. However, the region is large enough (with a surface area of ca 80 km²) to comprise a great microvariety of continental climatic conditions. It is situated at the southern edge of the Great Pannonian plain, and ranges in altitude from 70 to 641 m. The geology is also varied, but the prevailing substrates are basic to subneutral. A variety of soils, from sand to deep black humus, is present within the investigated area.

Although the literature on Vojvodina did not seem very promising for bryophytes (with previous records of only 78 taxa), my survey of 73 carefully chosen localities revealed a diverse flora of 165 bryophytes (159 mosses and six liverworts). Of these, 144 taxa are new to

the area of Banat, 123 are new to the province of Vojvodina, 22 are new to Serbia, and 11 are new to Yugoslavia. Mosses are dominant within the bryophyte flora because of the frequent periods of drought; the Pottiales and Hypnales account for 29% and 28% of the flora respectively. As might be expected from the climate, xerophytic bryophytes (53%) are prevalent, and the flora is composed mainly of temperate (30%) and submediterranean (30%) elements.

One of the most interesting habitats is provided by the many small loess banks and cliffs, usually at the edges of the field roads, which support *Hilpertia velenovskyi*, *Pterygoneurum lamellatum*, *P. ovatum*, *Crossidium crassinerve* and *Didymodon cordatus*. There are also tracts of sandy soil, in which *Aloina obliquifolia* was found, new to the Balkan peninsula. The largest of these sandy areas is the nature reserve at Deliblatska, and here the rare cleistocarpous moss *Phascum piptocarpum* was recorded on disturbed sandy soil by the road through the reserve. *Campylium elodes* from wet hollows in sand dunes is another interesting record, since it is a rare species in south-eastern Europe. *Syntrichia papillosa* and *Leskea polycarpa* are quite frequent on trees on the banks of the R. Danube, with *S. latifolia* somewhat rarer on tree bases, boles and branches. *Zygodon forsteri* was recorded once in a similar situation.

I wish to thank the Bequest Fund of the British Bryological Society for financial support towards this research, and Tom Blockeel for revising the English language in this note.

Marko Sabovljević, Katedra za Ekologiju Biljaka, Institut za Botaniku, Biološki Fakultet, Univerzitet u Beogradu, Takovska 43, YU - 11000 Belgrade, Yugoslavia.

NEW VICE-COUNTY RECORDS AND AMENDMENTS TO THE CENSUS CATALOGUE

All undated records are based on specimens collected in 2001; 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

- 5.1 *Trichocolea tomentella*, on wet ground in a hollow, 'The Great Bog', Wyre Forest, SO77, (37), Fraser.
- 7.3 *Kurzia trichoclados*, edge of pool on blanket bog, ca 560 m alt., between Dod Hill and The Tongue, above Coulter Reservoir, NT02, (77), Long *et al.* 30092.
- 8.2 *Lepidozia pearsonii*, steep sheltered bank, 320 m alt., Coutstane Linns, Newcastleton Forest, NY58, (80), 1997, Corner.
- 9.1 *Bazzania trilobata*, on rocky bank in oak woodland, ca 110 m alt., Black Spout Wood, Pitlochry, NN95, (89), Blockeel 30/276.

- 10.6 *Calypogeia sphagnicola*, in old *Sphagnum* hummock, scrubby raised bog, ca 65 m alt., Low Moss, near Bishopsbriggs, NS67, (77), Long 30013.
- 10.8 *Calypogeia arguta*, sandy bank by side of ditch/stream, ca 10 m alt., Pigneys Wood, North Walsham, TG23, (27), Stevenson.
- 12.4 *Cephalozia macrostachya* b var. *spiniflora*, on peat in ride by raised bog, now afforested, near Muckle Samuel's Crags, Kielder Forest, NY67, (67), 1987, Hill.
- 12.6 *Cephalozia lunulifolia*, decorticated log in deciduous woodland, Aberedw Gorge, SO04, (43), 2000, Lawley; on rhododendron log in shelter of N-facing crag, ca 90 m alt., Muck Rock, Howth Peninsula, O23, (H21), Blockeel 30/252.
- 14.1 *Cladopodiella fluitans*, damp hollow in *Sphagnum*, ca 240 m alt., flat bog N of Shotts, NS86, (77), Long 30116; Croagh Lusty, Tullywanya, G96, (H33), 1990, Weyl.
- 16.1 *Hygrobiella laxifolia*, with *Entosthodon attenuatus* and *Scapania undulata* on wet rock face, Cwm Twrch, SN71, (42), Bosanquet & Motley; on damp, slightly base-enriched rock face, Cwm Twrch gorge, SN71, (44), Bosanquet.
- 18.3 *Cephaloziella rubella*, delete records for 1 and 2: no unequivocal Cornish material was identified among specimens recently examined from BBSUK, NMW and CGE, comm. Holyoak.
- 21.3 *Barbilophozia floerkei*, forming part of hepatic mat on N side of sandstone block on rocky W-facing hillside, ca 384 m alt., W slope of Slieve Anierin, H01, (H29), Holyoak 01-848.
- 21.4 *Barbilophozia atlantica*, over rock, SW of Ritton Castle, SO39, (40), Lawley.
- 23.1 *Lophozia longidens*, on trunk of birch tree in N-facing woodland, Soay, NG41, (104), Lawley.
- 23.13 *Lophozia bicrenata*, S-facing slope, edge of small pit, Knettishall Heath, TL98, (26), Stevenson *et al.*
- 24.1 *Leiocolea rutheana* a var. *rutheana*, basic mire, 270 m alt., W end of Branhholme Wester Loch, NT41, (80), Corner, conf. Long.
- 24.2 *Leiocolea gillmanii*, in flushed limestone turf by burn with *Moerckia hibernica*, 170 m alt., tributary of Abhainn a'Chnocain, Assynt, NC20, (108), 2000, Rothero 980012.
- 24.8 *Leiocolea turbinata*, bare chalk on bank of stream, Exning, near Newmarket, TL66, (26), Fisk.
- 25.1 *Gymnocolea inflata*, bare ground on steep, heathy coastal slope, 80 m alt., Headon Warren, SZ38, (10), Blockeel 30/237.
- 28.1 *Anastrophyllum minutum*, on steep wet peat of low bank in gritstone block-scrub, slightly shaded by *Vaccinium myrtillus*, ca 314 m alt., S of Englishman's House, H03, (H30), Holyoak 01-711.
- 32.4 *Jungermannia polaris*, in bryophyte turf on river gravel in limestone ravine, 340 m alt., Water of Ailnack, Delnabo, Tomintoul, NJ11, (94), 2000, Rothero 10010.
- 32.12 *Jungermannia paroica*, on rocks by small waterfall, moorland valley, ca 500 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long 30103.
- 34.1 *Marsupella emarginata* b var. *aquatica*, on sandstone block in stream on N-facing hillside, ca 425 m alt., NW slope of Slieve Anierin, H01, (H29), Holyoak 01-852; c var. *pearsonii*, in stream draining into Lough Agh, ca 300 m alt., Slieve League, G57, (H35), Hodgetts 3807.
- 34.4 *Marsupella funkii*, on soil on edge of narrow path through heather above ravine, 410 m alt., Water of Ailnack, Delnabo, NJ51, (94), 2000, Rothero 10008.
- 38.2 *Scapania gymnostomophila*, scattered on very steep, heavily grazed slopes above beach, among other bryophytes, ca 10 m alt., Trabane, Malin Beg, G57, (H35), Hodgetts 3788.

- 38.19 *Scapania aequiloba*, on mossy rock face by burn, moorland valley, ca 430 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long 30110.
- 38.20 *Scapania aspera*, forming part of bryophyte mat at base of limestone crag shaded by *Fagus sylvatica* woodland, ca 220 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-762.
- 38.21 *Scapania gracilis*, in crevice among boulders in scree, below The Rock, Stiperstones, SO39, (40), Lawley.
- 40.3 *Lophocolea heterophylla*, on rotting wood of tree stump in shade of *Fagus sylvatica* plantation, ca 95 m alt., N edge of Lough Ramor at Deerpark, W of Virginia, N58, (H30), Holyoak 01-658.
- 40.4 *Lophocolea semiteres*, female, on slaty-gravel of surface of track, lightly shaded inside pine plantation, ca 5 m alt., Morfa Harlech, SH53, (48), Holyoak 01-915, new to Wales; male, peaty soil in woodland, overlying sand, 10 m alt., Epworth Turbary, SE70, (54), Rieser & Lammiman.
- 44.1 *Saccogyna viticulosa*, over rock on bank beside track, Withins Wood, SO38, (40), Lawley.
- 46.7 *Plagiochila spinulosa*, on rock, Rock of Woolbury, SO37, (40), Lawley; part of bryophyte mat on vertical side of gritstone rock in block scree, partly shaded by *Calluna vulgaris*, ca 301 m alt., S of Englishman's House, SW of Monesk, H03, (H30), Holyoak 01-706.
- 46.8 *Plagiochila killarniensis*, on N-facing rock, Aberedw Rocks, SO04, (43), Lawley; on soil in crevices in dry acidic outcropping rocks, W side of Llansteffan Castle, SN31, (44), Bosanquet.
- 47.1 *Southbya tophacea*, abundant on damp gravelly N-facing slope below limestone crag, N side of Lydstep Point, SS09, (45), Bosanquet.
- 54.1 *Frullania tamarisci*, on fallen bough with *Metzgeria fruticulosa*, in *Salix* carr, Brandon Marsh, SP37, (38), Turner; on willow, streamside woodland, between Furze Hill and Snipe Dales, near Hagworthingham, TF36, (54), Rieser & Lammiman.
- 54.2 *Frullania teneriffae*, on vertical rock face in cove, ca 20 m alt., Howth Peninsula, N of Baily Lighthouse, O23, (H21), Blockeel 30/255.
- 54.4 *Frullania fragilifolia*, growing through cushion of *Ulota crispa* on branch of rowan tree in sheltered ravine by burn, Trowie Glen, Hoy, HY20, (111), McCance; on vertical rock face in cove, ca 20 m alt., Howth Peninsula, N of Baily Lighthouse, O23, (H21), Blockeel 30/256.
- 55.1 *Jubula hutchinsiae*, on dripping rock, Bach Howey Gorge, SO14, (43), Lawley.
- 58.1 *Harpalejeunea mollerii*, with *Plagiochila exigua* and *Neckera crispa*, locally abundant over ca 4 x 3 m of base-enriched rock face in spray zone of waterfall, Cothi Gorge, SN74, (44), Bosanquet.
- 59.1 *Microlejeunea ulicina*, on ash, Smethcott Hollow, SO49, (40), Lawley; on rhododendron bark in shelter of N-facing crag, ca 80 m alt., Muck Rock, Howth Peninsula, O23, (H21), Blockeel 30/254.
- 60.1 *Lejeunea cavifolia*, on mortared-stone wall of bridge over stream in deciduous woodland, partly shaded by trees, ca 95 m alt., Deerpark, W of Virginia, N58, (H30), Holyoak 01-663.
- 60.2 *Lejeunea lamacerina*, on rock, stream bank, Smethcott Hollow, SO49, (40), Lawley.
- 61.1 *Colura calyptrifolia*, locally abundant on trunks of two *Fraxinus* trees, sheltered NW-facing woodland, Yew Tree Woodland, Penyclawdd, SO40, (35), Bosanquet; epiphyte on twigs of tall *Calluna vulgaris* and *Vaccinium myrtillus* in gritstone block-scrée, ca 301 m alt., S of Englishman's House, SW of Monesk, H03, (H30), Holyoak 01-708.

- 62.1 *Cololejeunea calcarea*, on steep damp limestone at base of low crag, partly shaded by *Corylus avellana* scrub, ca 208 m alt., near Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-749.
- 62.3 *Cololejeunea minutissima*, abundant on one alder, on E bank of River Rhymney, Michaelstone, ST28, (35), Bosanquet; on *Salix*, Brandon Marsh, SP37, (38), Turner.
- 64.1 *Fossombronia foveolata*, large amount on winter-flooded peat, Cors Geirch, Lleyn, SH33, (49), Forster-Brown.
- 64.6 *Fossombronia maritima*, on wet peaty soil in depression on top of rock, Llech Cyllyll, Porthclais, SM72, (45), Bosanquet.
- 64.7 *Fossombronia wondraczekii*, with *Fossombronia pusilla* on the vertical edge of an old wheel track on a path through a conifer wood, ca 30 m alt., Swannington Bottom Plantation, Felthorpe, TG11, (27), Hall; margin of Culter Reservoir, NT02, (77), Bosanquet.
- 64.9 *Fossombronia incurva*, on unshaded partly bare damp sand among sparse low vegetation in dune slack, ca 5 m alt., S of Drigg, SD09, (70), Holyoak 01-976.
- 65.1 *Petalophyllum ralfsii*, on pile of sand of coastal origin mixed with mine spoil, 240 m alt., Nant-y-bai, SN74, (44), Motley (photographic voucher).
- 67.1 *Pallavicinia lyellii*, on Wadhurst Clay, on bank of former forestry track, under sweet chestnut coppice, with holly, bramble, hard fern, *Cladonia* spp, *Dicranella heteromalla* and *Campylopus introflexus*, extending in a band approximately 5.7 x 0.4 m, Kilndown Wood, Scotney Estate, near Lamberhurst, TQ63, (16), Hendey; on *Molinia* base with *Lophozia ventricosa*, 291 m alt., edge of Butterburn Flow, NY67, (70), Turner.
- 68.1 *Moerckia hibernica*, on wet ledges on more-or-less basic sandstone crag by waterfall, 350 m alt., Bloodycleuch Linn, Mosspeeble Burn, Langholm, NY49, (72), 2000, Rothero 10012.
- 69.1 *Blasia pusilla*, on almost unshaded damp soil of track between felled coniferous plantations, ca 315 m alt., just S of R200, W of Bellavally Gap, H12, (H30), Holyoak 01-641.
- 72.2 *Riccardia chamedryfolia*, on almost unshaded steep damp soil of bank above ditch, beside track, ca 219 m alt., N of Legeelan, H03, (H30), Holyoak 01-741.
- 72.4 *Riccardia palmata*, bank of ditch cut in peat, Dyfi SSSI, SN69, (46), Hale.
- 73.1 *Metzgeria fruticulosa*, on sycamore in woodland on Coal Measures, ca 240 m alt., Limb Valley (Sheffield), SK38, (63), Lake & Egan.
- 73.2 *Metzgeria temperata*, on bark of *Salix caprea*, Blakeridge, SO38, (40), Lawley.
- 73.4 *Metzgeria conjugata*, forming part of pendent bryophyte mat over wet base of limestone crag shaded by *Fagus sylvatica* woodland, ca 220 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-758.
- 73.5 *Metzgeria leptoneura*, low rock face in humid stream gorge, Cothi Gorge, Cwrt-y-cadno, SN74, (44), Bosanquet.
- 75.1 *Sphaerocarpos michelii*, in some quantity at the margins of trial beds, Royal Horticultural Society's Gardens, Wisley, TQ05, (17), Rumsey.
- 77.1 *Lunularia cruciata*, on thin compressed soil among limestone fragments of track, partly shaded by *Fagus sylvatica* plantation, ca 95 m alt., N58, (H30), Holyoak 01-656.
- 82.1 *Marchantia polymorpha* a subsp. *polymorpha*, on unshaded partly bare horizontal clay soil on bank of stream, ca 313 m alt., just S of R200, W of Bellavally Gap, H12, (H30), Holyoak 01-645; b subsp. *ruderalis*, on unshaded damp sand with sparse low vegetation in flood-zone at edge of disused sand/gravel pit, ca 5 m alt., Dungeness,

- TR01, (15), Holyoak 01-1022; damp sand in disused gravel pit, Cavenham, TL77, (26), Fisk & Turner; on base of wall in garden, *ca* 240 m alt., Insh, NH80, (96), Long 29893.
- 83.1 *Ricciocarpos natans*, on drying mud beneath *Phragmites australis* and *Schoenoplectus lacustris* beside dried pool at lake edge, *ca* 70 m alt., NW shore of Lough Sheelin, near Kilnahard, N48, (H30), Holyoak 01-674.
- 84.1 *Riccia cavernosa*, wet sandy shoreline adjacent to a flooded shingle quarry, *ca* 3 m alt., Dungeness, TR01, (15), Mountford; on basic clay, edge of Llandegfedd Reservoir, SO30, (35), Bosanquet; exposed sandy mud, edge of Belvide Reservoir, SJ80, (39), Godfrey; on almost unshaded damp mud exposed at edge of pool, *ca* 5 m alt., Pembrey Burrows, SN30, (44), Holyoak 01-887; on unshaded partly bare sandy mud in shallow depression on lake shore *ca* 1 m above water-level, *ca* 46 m alt., shore of Lough Oughter, W of Inishconnell, H30, (H30), Holyoak 01-685.
- 84.2 *Riccia huebeneriana*, on damp unshaded mud in flood-zone exposed beside reservoir, among sparse herbs and grasses close to inlet stream, *ca* 248 m alt., W edge of Trenchford Reservoir, SX88, (3), Holyoak 01-1018.
- 84.7 *Riccia sorocarpa*, on exposed mud, *ca* 355 m alt., foot of Snow Gill, Coulter Reservoir, NT02, (77), Long *et al.* 30092.
- 84.10 *Riccia subbifurca*, 'muddy' crevices in sloping Torridonian outcrop, N of Ard na Moine, Clachtoll, Assynt, NC02, (108), 1998, Rothero.
- 85.1 *Anthoceros punctatus*, on vertical loamy soil of edge of lawn/flower border in garden, slightly shaded, *ca* 45 m alt., SE of Loughrinn, N09, (H29), Holyoak 01-862.

Contributors of hepatic records in 2001

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MUSCI

G.P. ROTHERO

- 1.6 *Sphagnum squarrosum*, under *Salix* at edge of pool, Heathy Park, Brampton Bryan, SO37, (36), Lawley.
- 1.9 *Sphagnum girgensohnii*, on N-facing slope, 350 m alt., Gogyrnant, SN74, (44), Bosanquet & Motley.
- 1.10 *Sphagnum russowii*, by track in plantation, 260 m alt., Beachen Wood, Grantown-on-Spey, NJ02, (95), Amphlett.
- 1.19 *Sphagnum compactum*, in wet heath with *S. subnitens*, Cefn Coch, N end, Brynmawr, SO21, (35), Hodgetts 3654.
- 1.20 *Sphagnum subsecundum*, in wet hollows in valley mire, 30 m alt., Doire Mhor, NG41, (104), Long 30138, conf. Hill, and in *Sphagnum* lawn at edge of loch, 55 m alt., 2.5 km SE of Skulamus, near Broadford, NG62, (104), Long 30155, conf. Hill.
- 1.21 *Sphagnum inundatum*, in drainage ditch by path, Wyre Forest, SO77, (37), Lawley, conf. Sleath.
- 1.22 *Sphagnum denticulatum*, in wet shady ditch at edge of raised bog, 65 m alt., Low Moss, near Bishopriggs, NS67, (77), Long 29845.

- 1.23 *Sphagnum contortum*, in basic flush, 520 m alt., E side of Gana Burn, Daer Water, NS90, (77), Corner, det. Hill; in wet heath with *S. subnitens*, *Carex echinata* and *Eriophorum angustifolium*, 330 m alt., near Bridge of Brown, NJ12, (94), Amphlett; in flush, 280 m alt., E of Burn of Ruthven, NN79, (96), Amphlett; in open flush on mixed woodland slope, 265 m alt., by track on N slope of Kennapole Hill, NH80, (96), Long *et al.* 29909, conf. Hill; in rich flushes at edge of peaty moorland, 260 m alt., corrie above Knappagh Lough, L76, (H16), Long 29961, conf. Hill.
- 1.24 *Sphagnum platyphyllum*, at edge of flush with *S. contortum*, *Drepanocladus revolvens* and *Blindia acuta*, 310 m alt., Allt Iomadaidh, N side, Bridge of Brown, NJ12, (95), Amphlett.
- 1.26 *Sphagnum cuspidatum*, in pools in peat bog, 275 m alt., W end of Alemoor Loch, NT31, (79), Corner.
- 1.28 *Sphagnum balticum*, near Netherton, SD30, (59 in ()), 1898, Wheldon, (NMW), det. Hill; in mire with *S. magellanicum*, 400 m alt., Coire Eagan, near Rynunie, NJ0052, (96), 1997, Payne, (E), det. Hill.
- 1.32 *Sphagnum angustifolium*, in wet turf above beach, 5 m alt., Camas nan Gall, Soay, NG41, (104), Hodgetts 3687.
- 1.35 *Sphagnum lindbergii*, in *S. cuspidatum* carpet in watercourse through mire, 230 m alt., Saxa Vord, Unst, HP61, (112), Payne, conf. Hill.
- 2.4 *Andreaea mutabilis*, on dry rocks amongst *Calluna* on bank, 550 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long *et al.* 30099.
- 2.6 *Andreaea rothii* b subsp. *falcata*, on slab of bare rock, Bloreng SSSI, W of car park, SO21, (35), Bosanquet & Motley; on rock wall in small rocky valley, 275 m alt., Benchoona, N slope, L76, (H16), Long 29993; on steep, E-facing sandstone crag, 420 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-792.
- 2.8 *Andreaea megistospora*, small cushions on granite rocks at side of burn, 645 m alt., Allt Coire nam Fionn, Glen Geusachan, NN99, (92), Nisbet, det. Amphlett.
- 4.1 *Polytrichum alpinum*, on eroded, open peaty soil on hilltop, Cefn Coch, Brynmawr, SO20, (35), Hodgetts 3651.
- 4.5 *Polytrichum commune* c var. *humile*, delete 9, no specimen traced, comm. Hill.
- 4.8 *Polytrichum strictum*, in *Eriophorum vaginatum* blanket bog, Bloreng SSSI, N of summit, SO21, (35), Bosanquet.
- 6.2 *Atrichum tenellum*, on wet gravel at edge of track, 20 m alt., Lower Glen Elchaig, near Camas-luinie, Inverinate, NG92, (105), Blockeel 30/313.
- 8.1 *Tetrodontium brownianum*, on shaded acidic outcrop in woodland, S of Allt Rhyd y Groes NNR, SN74, (44), Bosanquet & Motley; on sandstone rock face in wooded river valley, 245 m alt., Newhall, North Esk valley, NT15, (78), Long 29516; on shady rock face in gully on steep hillside, 150 m alt., Benchoona, NW slope, L76, (H16), Long 29988.
- 9.1 *Diphyscium foliosum*, on gravelly bank under *Calluna*, 420 m alt., tributary of Snow Gill, above Coulter Reservoir, NT02, (77), Long *et al.* 30087; on soil in crevice on steep, E-facing crag, 420 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-790.
- 11.1 *Archidium alternifolium*, on wet shale bank by road, Pontddu, Llanybri, SN31, (44), Bosanquet.
- 13.1 *Pseudephemerum nitidum*, on steep clay bank of small stream, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-637.
- 14.1 *Dirichum cylindricum*, on damp soil on track, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-640.

- 14.10 *Ditrichum gracile*, on soil and rock, Penny Hill Quarry, near Martley, SO76, (37), Lawley.
- 20.2 *Rhabdoweisia crispata*, on acid rocks in wooded quarry, Esgym Bottom SSSI, SN93, (45), Bosanquet; on rock outcrop by stream, Culter Water reservoir, NT02, (77), Bosanquet; on thin dry soil in crevice of NW-facing gritstone crag, 370 m alt., Slieve Anierin, W slope, H01, (H29), Holyoak 01-845.
- 21.1 *Cynodontium bruntonii*, in crevices of open sandstone at base of E-facing crag, 418 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-794.
- 25.2 *Dicranella schreberiana*, on thin soil by stump on bank of stream, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-646.
- 25.7 *Dicranella staphylina*, on damp soil on track, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-641B.
- 26.1 *Dicranoweisia cirrata*, on stone wall by lane, 20 m alt., Doonan, Teelin Bay, G57, (H35), Hodgetts 3767.
- 26.2 *Dicranoweisia crispula*, on acid boulders, 850 m alt., Lower Man, N side, Helvellyn, NY31, (70), 1989, Corner.
- 27.1 *Arctoa fulvella*, on rock face in gully, 500 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long & Bosanquet 30100.
- 29.5 *Dicranum majus*, at edge of ride, Rishbeth Wood, Thetford Warren, TL88, (26), Fisk.
- 29.8 *Dicranum fuscescens*, in scree with *Bazzania trilobata*, Bloreng SSSI, Cwm Llanellen, SO21, (35), Bosanquet; on top of boulder, 570 m alt., Crow Craigs, Gana Hill, Daer Water, NS90, (77), Corner.
- 29.11 *Dicranum scottianum*, on rock, Nipstone Rock, The Stiperstones, SO39, (40), Lawley, det. Rothero.
- 29.12 *Dicranum tauricum*, on dead oak in woodland, Gelli-deg Woods, SO20, (35), Bosanquet; on old fence post by road, 200 m alt., N of Kilnmaichlie, NJ13, (94), Amphlett.
- 29.14 *Dicranum flagellare*, on old tree stump, 15 m alt., Hardy Gang Wood, Wragby, TF07, (54), Lammiman & Rieser.
- 29.15 *Dicranum subporodictyon*, on wet sloping rocks by waterfall, 36 m alt., Eas a Bhradain, Loch Ainort, Skye, NG52, (104), Long 30159.
- 30.3 *Dicranodontium denudatum*, on open peaty bank, 580 m alt., Dod Hill, above Coulter Reservoir, NT02, (77), Long *et al.* 30089.
- 31.4 *Campylopus fragilis*, on anthill in calcareous turf, Cwm Ifor, Pwll-du, SO21, (35), Bosanquet.
- 31.8 *Campylopus shawii*, on open peat in mire on bealach, 225 m alt., S of Creag na h-Iolaire, Assynt, NC12, (108), Rothero 11002.
- 31.12 *Campylopus brevipilus*, on wet peat in mesotrophic mire, 425 m alt., Lochan nan Caer, Tummel Forest, NN76, (88), Robinson, det. Rothero.
- 33.2 *Leucobryum juniperoideum*, on wet ground at base of felled tree, Wyre Forest, SO77, (37), Lawley, det. Sleath.
- 34.2 *Fissidens viridulus*, on soil bank in chalk quarry, 50 m alt., Fir Hill Quarry, Little Cawthorpe, TF38, (54), Lammiman & Rieser.
- 34.4 *Fissidens pusillus*, on boulder by stream, Chaddesley Corbett, SO87, (37), Lawley, det. Sleath; on skin of marl on limestone boulder on lough edge, 70 m alt., SE edge of Lough Sheelin, NW of Ross, N48, (H22), Holyoak 01-605.
- 34.5 *Fissidens gracilifolius*, on steep limestone at base of crag, 230 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-752.
- 34.10 *Fissidens monguillonii*, on damp, loamy soil on river bank at upper edge of reed-

- swamp, R. Shannon at S edge of Carrick-on-Shannon, M99, (H29), Holyoak 00-753; on damp soil on lough edge in carr, 45 m alt., Lough Oughter, near Gartnanoul Point, H30, (H30), Holyoak 01-835.
- 34.11 *Fissidens crassipes*, on limestone boulder at edge of lough, 70 m alt., SE shore of Lough Sheelin, NE of Ross, N48, (H30), Holyoak 01-653.
- 34.14 *Fissidens celticus*, on soil on bank of stream, Smethcott Hollow, SO49, (40), Lawley.
- 34.18 *Fissidens dubius*, on open limestone blocks on bank of stream, 320 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-628.
- 35.1 *Oetodiceras fontanum*, Chesterfield canal at Walkeringham, SK79, (56), Sibley, det. Blockeel.
- 36.1 *Encalypta streptocarpa*, on mortared wall of bridge, 95 m alt., Deerpark, W of Virginia, N58, (H30), Holyoak 01-662.
- 36.3 *Encalypta rhaptocarpa*, on damp sand in short vegetation on slope at edge of dune slack, Holy Island, NU14, (68), 1998, Holyoak 98-150.
- 37.1 *Eucladium verticillatum*, on damp limestone in cave, 220 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-757.
- 38.5 *Weissia brachycarpa* b var. *obliqua*, 90 m alt., Dukes Covert, Copper Hill, Ancaster, SK94, (53), Lammiman & Rieser.
- 38.7 *Weissia rostellata*, on open mud in flood zone of reservoir, 245 m alt., Wistlandpound Reservoir, N edge, SS64, (4), Holyoak 01-1007; on open clay in flood zone of reservoir, 240 m alt., Wimbleball Reservoir, N edge, SS93, (5), Holyoak 01-880; on partly bare clay-mud high in inundation zone, 75 m alt., Bewl Water, N edge, TQ63, (14), Holyoak 01-1037; on open silty clay on bank, 45 m alt., River Erne, S of Baker's Bridge, H31, (H30), Holyoak 01-824.
- 38.12 *Weissia longifolia* b var. *angustifolia*, on calcareous soil in disused quarry, Penny Hill Quarry, near Martley, SO76, (37), Lawley, det. Chamberlain; dense patches on thin soil over limestone, E side of Stackpole Quay, SR99, (45), Bosanquet, det. Chamberlain.
- 39.1 *Tortella tortuosa*, on open limestone blocks on bank of stream, 320 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-627.
- 39.3 *Tortella fragilis*, in open vegetation in dune slack, 5 m alt., Bettyhill NNR, NC66, (108), Rothero 11048.
- 39.4 *Tortella nitida*, in clints in limestone pavement, 20 m alt., St John's Point, Dunkineely, G76, (H35), Hodgetts 3735.
- 39.8 *Tortella flavovirens* a var. *flavovirens*, on consolidated sand dunes, Ferry Links, Loch Fleet, NH89, (107), MacLean, det. Rothero; b var. *glareicola*, on exposed sea-cliff, 10 m alt., Yesnaby, West Mainland, HY21, (111), McCance, det. Chamberlain.
- 40.1 *Trichostomum brachydontium*, on soil in crevice in limestone outcrop, 265 m alt., Legnaveagh, S of Blacklion, H03, (H30), Holyoak 01-744.
- 40.2 *Trichostomum crispulum*, on rock in disused quarry, Penny Hill Quarry, near Martley, SO76, (37), Lawley; on open soil at edge of track, 220 m alt., N of Legeelan, H03, (H30), Holyoak 01-740.
- 40.3 *Trichostomum tenuirostre* a var. *tenuirostre*, on damp rock beside stream, 46 m alt., Seckley ravine, Wyre Forest, SO77, (39), Lawley.
- 45.1 *Pseudocrossidium hornschurchianum*, on gravel at roadside, 252 m alt., near Invertromie, Kingussie, NH79, (96), Long 30213.
- 45.2 *Pseudocrossidium revolutum*, on mortared wall, Presteigne, SO36, (43), Lawley; on open mortared wall of ruined house, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-633.

- 46.2 *Bryoerythrophyllum ferruginascens*, on open gritty soil near disused granite quarry, 220 m alt., Hantergantick Quarry, SX17, (2), Holyoak 01-1060; on soil in flush, Stankey Hill, SO17, (43), Lawley, det. Sleath; on stones on flushed slope by burn, 390 m alt., Snow Gill, above Coulter Reservoir, NT02, (77), Long 30085.
- 47.1 *Leptodontium flexifolium*, with *Hypnum* on open ledge at base of sandstone crags, 418 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-795.
- 48.1 *Hymenostylium recurvirostrum*, on damp ledge in ravine, Bachowey Gorge, SO14, (43), Lawley, det. Chamberlain; on dripping limestone rock face in wooded river valley, 250 m alt., Newhall, North Esk valley, NT15, (78), Long 29530.
- 50.1 *Gyroweisia tenuis*, on shallow soil near stream, below Beacon Lodge, SO17, (43), Lawley, det. Sleath; on sandstone coping stones by chapel, Dawyck Botanic Garden, Stobo, NT13, (78), Chamberlain, (E); on mortared wall near bridge, 60 m alt., Dermaferst Bridge, near Lough Gowna, N28, (H30), Holyoak 01-695.
- 51.3 *Gymnostomum aeruginosum*, on limestone boulders at edge of lough, 70 m alt., NW shore of Lough Sheelin, near Kilnahard, N48, (H30), Holyoak 01-678.
- 53.2 *Barbula unguiculata*, on mortared wall, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-630A.
- 54.2 *Didymodon icmadophilus*, on top of low limestone outcrop with *Ditrichum flexicaule*, 320 m alt., Lairig Unapool, Assynt, NC22, (108), 1998, Rothero 98206.
- 54.4 *Didymodon nicholsonii*, on thin soil on limestone by unsurfaced track, between Stanshope and Milldale, 1.5 km S of Alstonefield, SK15, (39), Blockeel 30/001; on tarmac path in churchyard, Presteigne, SO36, (43), Lawley; on wet tarmac, Myddfai sewage works, SN72, (44), Bosanquet; in crevices of damp tarmac, 245 m alt., Slieve Glah, E slope, H40, (H30), Holyoak 01-687.
- 54.7 *Didymodon umbrosus*, on crumbling mortar of old mine building, Wheal Busy, E of Scorrier, SW74, (1), 1995, Holyoak 95-375, det. Kučera; in quantity on mortar between flints on buttress on N side, 3 m alt., St George's Church, Colegate, Norwich, TG20, (27), Stevenson.
- 54.8 *Didymodon vinealis*, on mortared wall, Presteigne, SO36, (43), Lawley.
- 54.12 *Didymodon sinuosus*, on tarmac path in churchyard, Presteigne, SO36, (43), Lawley; on limestone boulder, W of Glencar waterfalls, G74, (H29), Holyoak 00-505; on soil over limestone by river in wooded ravine, near Pollreagh, H13, (H33), Holyoak 00-420.
- 54.13 *Didymodon tophaceus*, on thin tufa on wet clay bank above stream, 320 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-626A.
- 54.14 *Didymodon spadiceus*, on steep clay bank above stream, 320 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-625.
- 54.17 *Didymodon ferrugineus*, on thin soil between limestone fragments on track, 100 m alt., Deerpark, W of Virginia, N58, (H30), Holyoak 01-665.
- 57.1 *Pterygoneurum ovatum*, on bare calcareous ground on grassy knoll, 75 m alt., St Catherines Point, SZ47, (10), Blockeel 30/222.
- 58.2 *Aloina rigida*, on S-facing Magnesian limestone soil on road embankment, 150 m alt., Wheatley Hill by-pass, near Bankdan farm, NZ33, (66), Hodgetts 3713.
- 58.4 *Aloina ambigua*, on sandstone, by River Irwell, SD70, (59), Lowell, det. Chamberlain.
- 60.5 *Tortula marginata*, on damp base of wall, Capeston, SM80, (45), Bosanquet.
- 60.12 *Tortula lanceola*, on thin soil over Magnesian limestone on quarry floor, 120 m alt., Bishop Middleham quarry, NZ33, (66), Hodgetts & Blackburn 3709.
- 60.14 *Tortula viridifolia*, Morfa Bychan, Pendine, SN20, (44), Bosanquet.

- 60.15 *Tortula modica*, on mound in saltmarsh, Bynea, SS59, (44), Bosanquet; on earth bank at side of ditch, seawall, Dyfi, SN69, (46), Lawley.
- 60.16 *Tortula truncata*, on open damp soil at edge of track, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-638.
- 60.17 *Tortula protobryoides*, on gravelly soil in car park, Wilton, Ross-on-Wye, SO52, (36), Lawley, det. Chamberlain.
- 60.18 *Tortula acaulon* b var. *pilifera*, on coarse gravel path, Ratho Park Golf Course, NT17, (83), Chamberlain; d var. *papillosa*, on bare sand on S-facing slope of hill, Brightwell, TM24, (25), Fisk, det. Blockeel.
- 61.1 *Microbryum starckeianum*, on silty soil on roadside bank, 5 m alt., Blakeney village, TG04, (27), Stevenson.
- 61.2 *Microbryum davallianum*, on bare slightly brackish ground, Machynys, SS59, (44), Morgan, det. Bosanquet.
- 61.4 *Microbryum curvicolle*, on soil gaps in basic turf, crags above Cymyoy Church, SO22, (35), Bosanquet; on soil in disused Magnesian limestone quarry, Bishop Middleham, NZ33, (66), Hodgetts.
- 62.2 *Hennediella macrophylla*, on bare soil of shaded lawn, gardens at head of Shanklin Chine, SZ58, (10), Blockeel 30/230.
- 65.1 *Syntrichia ruralis*, on soil amongst limestone gravel of car park, 80 m alt., N shore of Lough Sheelin, near Kilnahard, N48, (H30), Holyoak 01-671.
- 65.4 *Syntrichia intermedia*, on igneous outcrop with thin covering of sand, Yellowcraig Plantation, Yellowcraigs SSSI, NT58, (82), Chamberlain; on open vertical concrete wall near lough, 75 m alt., N shore of Lough Sheelin, NW of Mount Nugent, N48, (H30), Holyoak 01-667A; on S-facing limestone rocks above fen, 30 m alt., near Lough Naharash, Ballyshannon Turloughs, G86, (H34), Hodgetts 3728.
- 65.6 *Syntrichia virescens*, on stone block on roadside, Dingestow Court, SO40, (35), Bosanquet, det. Blockeel; on elder, 30 m alt., Rigsby Wood, TF47, (54), Lammiman & Rieser, det. Blockeel.
- 65.7 *Syntrichia laevipila* a var. *laevipila*, on bole of elm tree, 50 m alt., N of Balmacara Square, Kyle of Loch Alsh, NG82, (105), Blockeel 30/280; on concrete wall near lough, 75 m alt., Lough Sheelin, N shore, NW of Mount Nugent, N48, (H30), Holyoak 01-667B; b var. *laevipilaeformis*, on sloping trunk of mulberry in garden, 5 m alt., 9, The Hythe, Reach, TL56, (29), Preston; on ash in roadside hedge, Chainbridge, SO20, (35), Bosanquet.
- 65.8 *Syntrichia papillosa*, on elder by lane, 65 m alt., Burton Leonard lime quarries, SE36, (64), Blockeel 30/382.
- 65.9 *Syntrichia latifolia*, on tarmac on sheltered lane, 80 m alt., Old Blackgang Road, Niton, SZ57, (10), Blockeel 30/217.
- 68.3 *Schistidium platyphyllum*, on large concrete block, River Usk, above Pant y Goytre, SO30, (35), Bosanquet; on rock in river, Eastern Cleddau, near Cleddau Bridge, SN01, (44), Bosanquet; on side of stepping stones, 145 m alt., River Derwent, 1.5 km W of Hathersage, SK28, (57), Blockeel 30/002; on unshaded rocks in river with *S. agassizii* and *Racomitrium aciculare*, MacGregor's Leap, River Lyon, NN74, (88), Orange 13209.
- 68.5 *Schistidium apocarpum*, on stone slabs at base of wall, Brent Eleigh church, TL94, (26), 1999, Fisk, det. Smith; on boulder at edge of loch, 110 m alt., Loch Achaid na h-Inich, E of Duirinish, NG83, (105), Blockeel 30/356; on limestone of tomb, 35 m alt., Creevykeel megalithic tomb, G75, (H28), Hodgetts 3723; on limestone cliffs in railway cutting, 30 m alt., near Lough Naharash, Ballyshannon Turloughs, G86, (H34), Hodgetts 3729.

- 68.12 *Schistidium confertum*, on igneous rocks, 400 m alt., Roughten Ghyll, Caldbeck Fells, NY33, (70), 1975, Corner, det. Smith.
- 68.15 *Schistidium atrofusum*, on dry basic schist on E-facing crags, 700 m alt., Creag an Lochain, NN54, (88), Long 30241.
- 68.16 *Schistidium crassipilum*, on concrete parapet of former pig-pen, Wootton Fitzpaine, SY39, (9), Hill; on lid of tomb, Little Saxham churchyard, TL76, (26), 1999, Fisk, det. Smith; on concrete fencepost, below Cefn-crib, near layby on A472, ST29, (35), Hodgetts 3653; on rock in disused quarry, Penny Hill, SO76, (37), Lawley; on limestone rocks on hillside, Pant-y-Gilwern, SO21, (42), Hodgetts 3650; on concrete bridge, Camddwr stream, SO17, (43), Lawley, det. Smith; base of stone memorial, Lake Vyrnwy, SJ01, (47), Lawley; on limestone boulders, Eglwyseg Rocks, Llangollen, SJ24, (50), Meilleur, det. Smith; on concrete cover, 210 m alt., Foxglove Covert NR, Catterick Garrison, SE19, (65), Blackburn; on rocks in disused limestone quarry, 102 m alt., Bishop Middleham, NZ33, (66), Blackburn; on limestone boulder on W-facing slope above loch, 40 m alt., Loch na Gainmich, Assynt, NC22, (108), Rothero 11032; on open mortared wall of ruined house, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-634.
- 69.3 *Grimmia laevigata*, on S-facing roof, Llanrapley Church, SO31, (35), Bosanquet.
- 69.5 *Grimmia montana*, on rock, Old Radnor Hill, SO25, (43), Lawley, det. Sleath; on low exposed basalt outcrop, 186 m alt., Smailholm Tower, NT63, (80), Long 29094.
- 69.11 *Grimmia ovalis*, on stone tiles of roof, Penrhos Church, SO41, (35), Bosanquet; on S-facing, stone-tiled roof, Gwernyfed farm, Felindre, SO13, (42), Sleath.
- 69.16 *Grimmia orbicularis*, on dry, open limestone on W-facing crag, 130 m alt., Stronchrubie crags, Assynt, NC21, (108), 1999, Rothero 99263.
- 69.19 *Grimmia trichophylla*, on west wall of the church, 60 m alt., Godshill, SZ58, (10), Blockeel 30/229.
- 69.21 *Grimmia hartmanii*, on rock in flood zone of river, gorge of Afon Sawdde, SN72, (44), Bosanquet & Motley.
- 70.5 *Racomitrium macounii* subsp. *alpinum*, on rock by small burn, 520 m alt., Bealach Traligill, Conival, Assynt, NC31, (108), 1998, Rothero 98216.
- 70.6 *Racomitrium sudeticum*, on acid rock outcrop, Fadre Fawr Farm, Trapp, SN61, (44), 1994, Graham, det. Blockeel; in shallow crevices of open gritstone rocks, 650 m alt., Cuilcagh, SW of summit, H12, (H30), Holyoak 01-769.
- 70.7 *Racomitrium affine*, on rock, Carding Mill Valley, SO49, (40), Lawley, det. Blockeel; on acid rock outcrop, Dolaucothi Gold Mines, Pumpsaint, SN64, (44), 1995, Graham, det. Blockeel; on boulder in block scree, 90 m alt., Glen Elchaig, W of Falls of Glomach, NG92, (105), Blockeel 30/310.
- 70.8 *Racomitrium heterostichum*, on acid rock, 250 m alt., Malvern Hills ridge, E side, SO74, (37), Hill; on acid rock outcrop, Banc Cefn Garreg, Cynghordy, SN74, (44), 1994, Graham, det. Blockeel; on gneiss boulder in garden, 40 m alt., Calltuinn, Nedd, Assynt, NC13, (108), Rothero 11035; on steep, E-facing sandstone crag, 420 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-793; on open horizontal rock on heathy hillside, 285 m alt., Slieve Glah, E slope, H40, (H30), Holyoak 01-691.
- 70.11 *Racomitrium ericoides*, on iron furnace slag, Garn-ddyrys, SO21, (35), 1999, Bosanquet, and on N-facing reclaimed mine waste, reclaimed land S of Brynmawr, SO21, (35), Hodgetts 3657; on boulder in scree, Titterstone Clee Hill, SO57, (40), Lawley; in leached upland grassland on Carboniferous limestone, Mynydd Du, SN71, (44), 1993, Graham, det. Smith; on broken tarmac in lane, 20 m alt., Doonan, Teelin Bay, G57, (H35), Hodgetts 3756.

- 70.12 *Racomitrium elongatum*, on gravel on roadside by dam, 360 m alt., Culter Waterheads, NT02, (77), Long *et al.* 30078.
- 70.13 *Racomitrium canescens*, dune grassland, Loch Fleet, Ferry Links, NH89, (107), MacLean, det. Rothero; on low hummock in damp calcareous grassland on shell-sand slope, 8 m alt., Dunnet Links NNR, ND26, (109), Rothero 11059.
- 71.1 *Ptychomitrium polyphyllum*, on large boulder, 100 m alt., N side of Loch Faskally, Pitlochry, NN95, (89), Blockeel 30/279.
- 74.1 *Blindia acuta*, on rocks in small gorge, 455 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long 30108, and in flush, 550 m alt., W side of Earncraig Hill, Daer Water, NS90, (77), Corner.
- 75.1 *Seligeria pusilla*, on limestone rock face by river in wooded river valley, 250 m alt., Newhall, North Esk valley, NT15, (78), Long 29529; on damp limestone at base of crag, 230 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-753.
- 75.2 *Seligeria acutifolia*, in vertical crevice of limestone in woodland, below Pen y Galchen, Gilwern Hill, SO21, (35), Bosanquet; on damp limestone in entrance to small cave at base of crag, 205 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-748.
- 75.9 *Seligeria donniana*, on damp limestone at base of crag, 230 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-751.
- 75.13 *Seligeria patula*, on thin tufa film over wet limestone at base of N-facing crag, N of Glencreawen Lough, H05, (H33), Holyoak 00-279, new to the British Isles.
- 77.1 *Discelium nudum*, on open damp clay on bank above roadside ditch, 265 m alt., SE of Slievenakilla, N of Bencroy, H02, (H29), Holyoak 01-798A.
- 78.2 *Funaria muhlenbergii*, on thin soil on limestone block below tram road, Cwm Ifor, Pwll-du, SO21, (35), Bosanquet.
- 79.1 *Entosthodon attenuatus*, on slightly base-flushed outcrops, Allt Rhyd y Groes NNR, SN74, (44), Bosanquet.
- 79.3 *Entosthodon obtusus*, on clay bank by burn, 400 m alt., tributary of Snow Gill, above Coulter Reservoir, NT02, (77), Long *et al.* 30086.
- 80.1 *Physcomitrium pyriforme*, on open sandy mud at edge of lough, 60 m alt., E shore of Lough Allen, near Gubarusheen, G91, (H29), Holyoak 01-783.
- 81.1 *Aphanorhagma patens*, on bare mud on bank, River Waveney at Hoxne, TM17, (25), Fisk; on cattle-trampled field margin, Whalley, SD73, (59), Lowell; on open silty clay on bank, 45 m alt., River Erne, S of Baker's Bridge, H31, (H30), Holyoak 01-823.
- 83.1 *Ephemerum recurvifolium*, on bare, slightly basic soil on roadside bank, 95 m alt., Calke Abby, Calke Park, SK32, (57), Blockeel 30/379.
- 83.2 *Ephemerum sessile*, on soil in flood zone of reservoir, 245 m alt., Wistlandpound Reservoir, NE edge, SS64, (4), Holyoak 01-1009; on bare clay-mud in inundation zone, 65 m alt., Bough Beech Reservoir, NW edge, TQ44, (16), Holyoak 01-1044; abundant on seasonally inundated banks of reservoir, Llandegfedd reservoir, SO30, (35), Bosanquet; on open mud on lough shore, 60 m alt., Lough Gowna, S shore, W of Dring, N28, (H24), Holyoak 01-864.
- 83.3 *Ephemerum cohaerens*, on open mud on lough shore, 60 m alt., Lough Gowna, S shore, W of Dring, N28, (H24), Holyoak 01-868.
- 83.5 *Ephemerum serratum* a var. *serratum*, on open mud in flood zone of reservoir, 250 m alt., Trenchford Reservoir, W edge, SX88, (3), Holyoak 01-1016; on mud at side of reservoir, Cutter Water Reservoir, NT02, (77), Bosanquet; on mud in open carr on lough shore, 60 m alt., Lough Gowna, S shore, W of Dring, N28, (H24), Holyoak 01-

- 870; on soil over sand on lough margin, 60 m alt., Lough Gowna, NW of Dermaferst Bridge, N29, (H30), Holyoak 01-701.
- 88.2 *Splachnum ampullaceum*, on dung in *Molinia*-dominated marshy grassland, Waen Afon, Blaenavon, SO21, (35), Bosanquet.
- 89.1 *Schistostega pennata*, on dry soil in crevice under boulder, Trellech Hill Quarry, SO50, (35), Bosanquet.
- 91.1 *Orthodontium lineare*, on rotting wood of stump in woodland, 60 m alt., N shore of Garadice Lough, E of Killaphort, H11, (H29), Holyoak 01-818; on tree stump, 95 m alt., Deerpark, W of Virginia, N58, (H30), Holyoak 01-655.
- 92.1 *Leptobryum pyriforme*, in flower bed in car park, 70 m alt., Llandeilo, SN62, (44), Motley.
- 93.1 *Pohlia elongata* a subsp. *elongata* var. *elongata*, on steep, E-facing sandstone crag, 420 m alt., Coal Pit, E slope of Bencroy, H01, (H29), Holyoak 01-791.
- 93.8 *Pohlia filum*, on moist gravelly soil on forest track, 75 m alt., Dunardry forest walk, Knapdale, NR89, (101), Pool.
- 93.10 *Pohlia bulbifera*, on damp shale by stream, 455 m alt., W slope of Cuilcagh, H12, (H30), Holyoak 01-785.
- 93.11 *Pohlia annotina*, on damp shale by stream, 455 m alt., W slope of Cuilcagh, H12, (H30), Holyoak 01-779.
- 93.13 *Pohlia campotrachela*, on gravel soil by forest track, Allt Gochen, W of Cwmduad, SN33, (44), Bosanquet; on open damp soil on track in plantation, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-642.
- 93.14 *Pohlia flexuosa*, on fine gravel over wet rock, Bannau Sir Gaer, Mynydd Ddu, SN72, (44), Bosanquet; on muddy margin of reservoir, Culter Water reservoir, NT02, (77), Bosanquet.
- 93.17 *Pohlia lescuriana*, in stubble field, 90 m alt., near Warmford, SU62, (11), Stern.
- 93.19 *Pohlia wahlenbergii* c var. *calcareae*, delete 9, no specimen traced, comm. Hill; on bare sandy soil on bank by path, Alton Reservoir, Tattingstone, TM13, (25), Fisk, det. Holyoak.
- 95.1 *Plagiobryum zieri*, on mossy calcareous rocks in small gorge, 390 m alt., Black Burn, above Coulter Reservoir, NT02, (77), Long 30111.
- 96.1 *Anomobryum julaceum* a var. *julaceum*, in flush by stream, Carding Mill Valley, SO49, (40), Lawley; b var. *concinatum*, in dune grassland, 10 m alt., Finner Camp, Ballyshannon, G86, (H34), Hodgetts 3726.
- 97.1 *Bryum marratii*, on open clay-mud amongst low grasses on tussocks in cattle-poached upper fringe of saltmarsh, 1 m alt., River Irt, NW bank, 0.5 km S of Drigg church, SD09, (70), Holyoak 01-979.
- 97.2 *Bryum warneum*, on damp bare sand by burn through dunes, 1 m alt., Killinallan dunes, Islay, NR37, (102), Rothero.
- 97.4 *Bryum calophyllum*, on open bare sand among sparse low vegetation in dune-slack, 10 m alt., Tywyn Aberffraw, SH36, (52), Holyoak 01-926; on damp bare sand by burn through dunes, 1 m alt., Killinallan dunes, Islay, NR37, (102), Rothero; on damp bare sand in short grassland by burn through dunes, 3 m alt., Bettyhill NNR, NC66, (108), Rothero 11040.
- 97.5 *Bryum arcticum*, in moist crevice on wall of gully in N-facing basalt crags, Sgurr a'Mhadaidh Ruaidh, Trotternish, Skye, NG45, (104), Blockeel 30/336, conf. Holyoak.
- 97.13 *Bryum algovicum* var. *rutheanum*, near entrance to open sandy ground, 20 m alt., Half Moon Plantation, Kennett, TL66, (29), Preston, conf. Hill; on open sand/shingle bar between lagoon and sea, 2 m alt., Lady's Island Lake, SE edge, T00, (H12),

- Holyoak 01-594; on soil and sandstone boulders on lough margin, 45 m alt., N shore of Lough Erril, N09, (H29), Holyoak 01-855.
- 97.14 *Bryum salinum*, on open sand amongst sparse grass on dune slope close to saltmarsh, 2 m alt., S of Drigg, SD09, (70), Holyoak 01-973A.
- 97.15 *Bryum knowltonii*, on damp sand in patchy grass just above upper edge of saltmarsh, 1 m alt., The Snook, Holy Island, NU14, (68), Holyoak 01-987.
- 97.17 *Bryum imbricatum*, on rock in abandoned quarry, Cefn Vron Hill, SO18, (40), Lawley, det. Holyoak; on damp bare sand in short grassland by burn through dunes, 5 m alt., Bettyhill NNR, NC66, (108), Rothero 11043; in thin lime soil at edge of track by lough, 70 m alt., SE edge of Lough Sheelin, NW of Ross, N48, (H22), Holyoak 01-602.
- 97.19 *Bryum donianum*, on sandy soil at edge of small pit, Knettishall Heath, TL98, (26), Fisk, det. Holyoak.
- 97.20 *Bryum capillare* b var. *rufifolium*, on mortar of wall by road, 45 m alt., Boyle River, W bank, near Cootehall, G80, (H25), Holyoak 01-830.
- 97.23 *Bryum subelegans*, in crevice of N-facing limestone rocks, 360 m alt., Coniesdale, Peak Forest, SK18, (57), 1989, Blockeel 18/486; on flushed, calcareous mica-schist rocks, 950 m alt., Glas Choire Beag, Glas Tulaichean, NO07, (89), Hodgetts 3543, det. Arts.
- 97.26 *Bryum creberrimum*, on limy mortar of wall, 257 m alt., Tesco car park, Aviemore, NH81, (95), Long 30208, conf. Holyoak.
- 97.27 *Bryum pallescens*, large mounds below dripping aluminium/copper slag wall, Barryport, SN40, (44), Bosanquet, conf. Holyoak; in wet turf on rifle range, Dowry Quarry, Groby, SK50, (55), Ballard, det. Holyoak; on limey soil beneath wire fence, 20 m alt., Ashton and Neumann's Flashes, Northwich, SJ67, (58), Hodgetts 3716, conf. Holyoak; on concrete below galvanised fence, 415 m alt., E slope of Bencroy, H01, (H29), Holyoak 01-797; on open damp mortared wall, 50 m alt., River Erne, W bank, W of Belturbet, H31, (H30), Holyoak 01-702.
- 97.29 *Bryum neodamense*, on thin marl on almost unshaded limestone boulder about 50 cm above lough shore, 75 m alt., NW shore of Lough Sheelin, near Kilnahard, N48, (H30), Holyoak 01-672.
- 97.34 *Bryum gemmiferum*, on limestone boulders at edge of lough, 70 m alt., NW shore of Lough Sheelin, near Kilnahard, N48, (H30), Holyoak 01-677.
- 97.37 *Bryum dunense*, on slumped soil below low cliffs, Marros Sands, SN20, (44), Bosanquet; on sand dunes, Mablethorpe, N end, TF48, (54), Lammiman & Rieser, conf. Holyoak; on damp sand in patchy grass just above upper edge of saltmarsh, 1 m alt., The Snook, Holy Island, NU14, (68), Holyoak 01-990; on open sandy mud above brackish lagoon, 1 m alt., SW of Tacumshin Lake, T00, (H12), Holyoak 01-875.
- 97.38 *Bryum radiculosum*, on mortar of brick wall, 5 m alt., Hessele, Humberside, TA02, (61), Blockeel 30/405; on mortared wall of ruined house, 190 m alt., S of Crumpaun, G74, (H29), Holyoak 01-725; on open mortared wall of ruined house, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-632.
- 97.39 *Bryum ruderale*, on soil at base of wall, Snailbeach, SJ30, (40), Lawley, det. Holyoak; low rocks on shore, 1 m alt., foot of Milldown Burn, Coldingham, NT96, (81), Long 28977; on limestone soil at edge of track, 55 m alt., N shore of Garadice Lough, E of Killaphort, H11, (H29), Holyoak 01-815; on open soil amongst limestone gravel at edge of car park, 50 m alt., Town Lough, near Killashandra, H30, (H30), Holyoak 01-833.

- 97.40 *Bryum violaceum*, in stubble field, 90 m alt., near Warmford, SU62, (11), Stern; on gravelly soil in gateway, N of Llandissillio, SN12, (44), Bosanquet; on sand-loam soil in stubble field, 45 m alt., Hook House Farm, Kirkby Fleetham, SE29, (65), Preston; on open soil in garden, 50 m alt., SE of Loughrinn, N09, (H29), Holyoak 01-858.
- 97.41 *Bryum klinggraeffii*, on bare sandy ground at edge of stubble field, 10 m alt., S of the Links, Holy Island, NU14, (68), Holyoak 01-986; on open sandy soil on lough shore, 45 m alt., shore of Lough Oughter, W of Inishconnell, H30, (H30), Holyoak 01-684.
- 97.42 *Bryum sauteri*, on slightly acidic hedgebank, Glandy Cross, SN12, (44), Bosanquet; on thin soil between limestone fragments on track, 100 m alt., Deerpark, W of Virginia, N58, (H30), Holyoak 01-666.
- 97.43 *Bryum tenuisetum*, on damp sand on lough shore, 60 m alt., E shore of Lough Allen, W of Cleighran More, G91, (H29), Holyoak 01-784.
- 97.44 *Bryum subapiculatum*, on peaty bank above rocky sea shore, 5 m alt., Dunstanburgh Castle, NU22, (68), Long 29466; on soil in grassland at upper edge of saltmarsh, 2 m alt., Lady's Island Lake, SE edge, T10, (H12), Holyoak 01-597; on open damp soil on bank by track, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-639.
- 98.1 *Rhodobryum roseum*, in calcareous turf over quarry spoil, 400 m alt., Gilwern Hill, SO21, (35), Motley; in calcareous turf over limestone with *Festuca ovina*, *Thymus polytrichus*, 400 m alt., Blaen Onnau, SO11, (42), Motley.
- 99.5 *Mnium marginatum* a var. *marginatum*, on wooded bank, 170 m alt., N side of River Ettrick at Kirkhope Linns, NT32, (79), 1972, Corner, conf. Orange.
- 99.6 *Mnium stellare*, on limestone rockery in garden, Earlham Hall, Norwich, TG10, (27), Fisk & Mott; on shaded calcareous rocks in wooded ravine, 240 m alt., Thirlestane Burn, Ettrick Valley, NT21, (79), 1998, Long 27694; on ruined mortared wall, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-630B.
- 101.3 *Rhizomnium pseudopunctatum*, in poor fen at margin of lough, 180 m alt., Croleavy Lough, Teelin, G57, (H35), Hodgetts 3763.
- 102.1 *Plagiomnium cuspidatum*, on horizontal trunk of willow, Little Ouse at Santon Downham, TL88, (26), Goodwin, det. Fisk.
- 102.2 *Plagiomnium affine*, in wooded ravine, 215 m alt., Roughley Linns, Shaws, Newcastleton, NY59, (80), 1975, Corner, det. Orange.
- 102.4 *Plagiomnium elatum*, in fen with *Juncus articulatus* and *Carex* spp, 25 m alt., near Lough Naharash, Ballyshannon Turloughs, G86, (H34), Hodgetts 3734.
- 104.3 *Aulacomnium androgynum*, on rotting railway sleeper, Bynea, SS59, (44), Bosanquet.
- 110.2 *Bartramia pomiformis*, on hedgebank, Lower Layham, TM03, (26), 1982, Smith.
- 112.3 *Philonotis arnellii*, on damp shale by stream, 460 m alt., W slope of Cuilcagh, H12, (H30), Holyoak 01-776.
- 112.4 *Philonotis caespitosa*, on damp soil on track, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-641C.
- 113.1 *Breutelia chrysocoma*, in flush, 550 m alt., W side of Earncraig Hill, Daer Water, NS90, (77), Corner.
- 114.3 *Timmia megapolitana*, on base of *Salix cinerea* in carr inundated by tidal freshwater, 0 m alt., Wheatfen Nature Reserve, Surlingham, The Broads, TG30, (27), Ellis & Porley, new to the British Isles.
- 116.1 *Zygodon viridissimus* b var. *stirtonii*, on slightly basic sandstone, Jerviswood, Cleghorn valley, NS84, (77), Bosanquet; on vertical limestone on low crag, 230 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-750.

- 116.3 *Zygodon conoideus*, on hazel in scrub near river, 95 m alt., Owenmore River, NW of Glengevlin, H02, (H30), Holyoak 01-649.
- 117.1 *Orthotrichum lyellii*, on horizontal tree branch, 181 m alt., Broomhead reservoir, SK29, (63), Lake, det. Blockeel; on bark of willow in carr, 75 m alt., N shore of Lough Sheelin, NW of Mount Nugent, N48, (H30), Holyoak 01-670.
- 117.2 *Orthotrichum striatum*, on old *Fraxinus* on N edge of wood, Park Wood, Michaelstone, ST28, (35), Bosanquet; on elder by public path, filter beds, Flotterstone, NT26, (82), Chamberlain; on willow in scrub on lough shore, 95 m alt., Lough Ramor at Deerpark, W of Virginia, N58, (H30), Holyoak 01-660.
- 117.9 *Orthotrichum cupulatum* a var. *cupulatum*, on tarmac path, Llanwrda church, SN73, (44), Bosanquet; on limestone steps, 35 m alt., Creevykeel megalithic tomb, G75, (H28), Hodgetts 3724; b var. *riparium*, on vertical concrete wall by lough, 75 m alt., N shore of Lough Sheelin, NW of Mount Nugent, N48, (H30), Holyoak 01-668.
- 117.10 *Orthotrichum rivulare*, on willow and alder by river, 95 m alt., Owenmore River, NW of Glengevlin, H02, (H30), Holyoak 01-648.
- 117.11 *Orthotrichum sprucei*, on silt-covered tree-root, Barcombe Mills, N of Lewes, TQ41, (14), 1997, Stern.
- 117.13 *Orthotrichum tenellum*, on riverside *Fraxinus*, Pont y Fenni, Whitland, SN21, (44), Bosanquet; on willow in swampy woodland, Stoneycliffe wood, SE21, (63), Hodgetts 3660, conf. Porley; on sycamore, Dunkeld, banks of River Tay near the cathedral, NO04, (89), Blockeel 30/261.
- 117.17 *Orthotrichum pulchellum*, on bole of *Salix* by stream, 15 m alt., River Medina, between Newport and Blackwater, SZ58, (10), Blockeel 30/214.
- 118.2 *Ulota drummondii*, on oak and birch by small stream in woodland, 170 m alt., Glencoyne Wood, Glenridding, SE31, (70), Hodgetts 3915.
- 118.3 *Ulota crispa*, on branch of oak, Rishbeth Wood, Thetford Warren, TL88, (26), Fisk, det. Porley.
- 119.1 *Hedwigia ciliata* a var. *ciliata*, fallen from stone-tiled roof, Rhydspence, Whitney on Wye, SO24, (36), Sleath; fallen from stone-tiled roof, Rose and Crown, Hay-on-Wye, SO24, (42), Sleath; fallen from stone-tiled roof, cottage no. 16, Clyro, SO24, (43), Sleath; on exposed basalt rocks on cliff top, 105 m alt., Meall Tuath N cliffs, Rubha Hunish, NG47, (104), Long 30164.
- 119.2 *Hedwigia stellata*, on tarmac path, Summersdale, Chichester, SU80, (13), Stern; on roadside rock, Pont Glandy, near Glandy Cross, SN12, (44), Bosanquet; on rockery stone with *Racomitrium* spp, Alexandra Park, Oldham, SD90, (59), Lowell; on rock outcrop, 380 m alt., foot of Snow Gill, above Coulter Reservoir, NT02, (77), Long *et al.* 30081; on dry rocks by falls in wooded glen, 50 m alt., Glenmassan Falls, Cowal, NS18, (98), Long & Rothero 29773.
- 120.1 *Fontinalis antipyretica* c var. *gigantea*, on margin of ornamental lake, 120 m alt., Powerscourt House, O21, (H20), Long 29930.
- 120.2 *Fontinalis squamosa* a var. *squamosa*, on rock in shallow river, 95 m alt., Owenmore River, NW of Glengevlin, H02, (H30), Holyoak 01-651.
- 121.1 *Climacium dendroides*, in boggy wet flush in small copse, Castlemorton Common, Malvern, SO73, (37), Hill.
- 122.1 *Cryphaea heteromalla*, on wood, Beach Bank, Church Pulverbrook, SJ40, (40), Thorne, det. Lawley; on elder by sheltered stream, 165 m alt., Porter Brook, near Hanging Water, Sheffield, SK38, (63), Blockeel 30/210.
- 123.1 *Leucodon sciurioides* a var. *sciurioides*, on old *Aesculus* at edge of parkland, 265 m alt., near Newhall House, NT15, (83), Long 29538.

- 128.2 *Neckera crispa*, on large limestone rock in rock-garden, Smithfields Garden, Spalding, TF22, (53), Lammiman & Rieser; on sandstone cliff by river, 150 m alt., S bank of Mouse Water, Jerviswood, NS84, (77), Long 30119; on limestone rock in hazel scrub, 265 m alt., Legnaveagh, S of Blacklion, H03, (H30), Holyoak 01-743.
- 128.3 *Neckera pumila*, on *Salix*, Den of Alyth, NO24, (89), Blockeel 30/272.
- 133.1 *Hookeria lucens*, on damp earthy banks of stream, 46 m alt., Seckley ravine, Wyre Forest, SO77, (39), Ricketts.
- 136.1 *Myrinia pulvinata*, on *Salix* in flood zone of river, River Usk, N of Govilon, SO21, (35), Bosanquet.
- 138.1 *Leskea polycarpa*, on *Salix viminalis* by river, 95 m alt., Owenmore River, NW of Glengevlin, H02, (H30), Holyoak 01-650.
- 144.2 *Heterocladium wulfsbergii*, on rocks by waterfall, 10 m alt., Carrick Lower Bridge, Carrick, G57, (H35), Hodgetts 3758.
- 145.1 *Thuidium abietinum* b subsp. *hystricosum*, in dune grassland, 10 m alt., Finner Camp, Ballyshannon, G86, (H34), Hodgetts 3725.
- 145.4 *Thuidium philibertii*, in limestone grassland with *Rhytidiadelphus triquetrus*, 124 m alt., Penny Hill Bank, SO76, (37), Fraser, det. Porley.
- 147.1 *Palustriella commutata* a var. *commutata*, on unshaded tufa in flush, 225 m alt., N of Manragh, H03, (H30), Holyoak 01-766; b var. *falcata*, on open wet soil on flushed bank, 220 m alt., N of Legeelan, H03, (H30), Holyoak 01-742.
- 150.1 *Campylium stellatum* b var. *protensum*, on N-facing mortared wall of bridge, 45 m alt., River Erne at Carratraw Bridge, H31, (H30), Holyoak 01-839.
- 152.1 *Campylophyllum calcareum*, over rocks, Crews Hill Wood, SO75, (37), Lawley; on soil, Halford Quarry, Craven Arms, SO48, (40), Lawley.
- 153.5 *Amblystegium humile*, on rotten wood in fen, Pulfin, TA04, (61), Hodgetts 3662, conf. Blockeel.
- 153.7 *Amblystegium confervoides*, on limestone in wood, Blakeney Coppice, Wenlock Edge, SO69, (40), Lawley, conf. Blockeel.
- 154.1 *Leptodictyum riparium*, on sandstone by stream, 75 m alt., N shore of Lough Sheelin, NW of Mount Nugent, N48, (H30), Holyoak 01-669.
- 156.2 *Warnstorfia exannulata*, at edge of pond, 15 m alt., Messingham Sand Pits, near Scunthorpe, SE90, (54), Lammiman & Rieser.
- 157.1 *Drepanocladus polygamus*, damp ground just above saltmarsh, Loch Fleet, S shore, NH79, (107), MacLean, det. Rothero.
- 157.5 *Drepanocladus revolvens*, in flush, 550 m alt., W side of Earnraig Hill, Daer Water, NS90, (77), Corner; in flush, 500 m alt., Phawhope Coomb, Ettrick, NT20, (79), 1974, Corner.
- 157.6 *Drepanocladus cossonii*, in flush by burn, 370 m alt., Snow Gill, above Coulter Reservoir, NT02, (77), Long *et al.* 30082.
- 160.1 *Sanionia uncinata*, on willow in carr at edge of lough, 60 m alt., Lough Gowna, NW of Dermaferst Bridge, N28, (H30), Holyoak 01-699.
- 161.3 *Hygrohypnum luridum* a var. *luridum*, on boulder in stream, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-643.
- 161.5 *Hygrohypnum eugyrium*, on rock in stream in scrub woodland, 20 m alt., The Commons, Killybegs, G77, (H35), Hodgetts 3754.
- 163.1 *Scorpidium scorpioides*, in base-rich flush near car park, 300 m alt., near Llyn-y-fan Fach, SN82, (44), 1994, Motley; in flush, 550 m alt., W side of Earnraig Hill, Daer Water, NS90, (77), Corner.

- 164.3 *Calliergon cordifolium*, on soil in sallow carr, 60 m alt., Lough Gowna, NW of Dermaferst Bridge, N28, (H30), Holyoak 01-698.
- 164.4 *Calliergon giganteum*, on flushed sides of moorland stream, Bwlch Bach, SO22, (35), Bosanquet; in mire, 500 m alt., Garepool Burn, E of New Cumnock, NS61, (75), 1995, Corner.
- 166.2 *Isothecium alopecuroides*, on sandstone blocks of ruined wall, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-629.
- 168.2 *Homalothecium lutescens*, amongst limestone boulders on bank, 50 m alt., River Erne, W bank, W of Belturbet, H31, (H30), Holyoak 01-703.
- 169.12 *Brachythecium appleyardiae*, on limestone boulders below overhang near cave in N-facing crag, 225 m alt., N of Manragh, H03, (H30), Holyoak 01-764.
- 169.14 *Brachythecium populeum*, on base of gravestone, 10 m alt., Spalding cemetery, TF22, (53), Lammiman & Rieser.
- 170.2 *Scleropodium cespitans*, on wet tarmac, Llangain, Llanstephan peninsula, SN31, (44), Bosanquet.
- 173.5 *Eurhynchium pumilum*, on damp limestone of ledge in cave entrance, 220 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-755.
- 173.7 *Eurhynchium hians*, on open damp soil on track in plantation, 315 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-641D.
- 173.10 *Eurhynchium crassinervium*, on shaded wall in garden, Lime Kiln House, Claydon, TM14, (25), Fisk; on limestone rockery in garden, Earham Hall, Norwich, TG10, (27), Fisk & Mott; on sloping limestone boulder, 70 m alt., SE shore of Lough Sheelin, NE of Ross, N48, (H30), Holyoak 01-654; on rocks by waterfall, 10 m alt., Carrick Lower Bridge, Carrick, G57, (H35), Hodgetts 3759.
- 174.1 *Rhynchostegiella tenella*, 30 m alt., Claxby Spring, near Alford, TF47, (54), 1997, Lammiman & Rieser; on old mortared wall, 25 m alt., Scone Park, N of Perth, NO12, (89), Blockeel 30/277; on ruined mortared wall, 305 m alt., W of Bellavally Gap, H12, (H30), Holyoak 01-631.
- 174.2 *Rhynchostegiella litorea*, on shaded boulder of calcareous greensand, 85 m alt., Old Blackgang Road, Niton, SZ47, (10), Blockeel 30/219.
- 174.4 *Rhynchostegiella teneriffae*, in seepage over sandstone in cove, Nab Head, St Brides, SN71, (45), Bosanquet.
- 175.1 *Entodon concinnus*, by path in taller vegetation on dunes, Loch Fleet, Coul Links, NH89, (107), MacLean.
- 178.1 *Platydictya jungermannioides*, on cliff face in ravine, Bachowey Gorge, SO14, (43), Lawley, conf. Holyoak.
- 179.2 *Orthothecium intricatum*, on vertical limestone in cave at base of crag, 200 m alt., Legnaveagh, S of Blacklion, H03, (H30), Holyoak 01-746.
- 180.3 *Plagiothecium denticulatum* b var. *obtusifolium*, on low sandstone crag, Graig Fan Ddu, SO01, (42), Bosanquet.
- 180.9 *Plagiothecium cavifolium*, on damp soil in flushed area in deciduous woodland, Chygarkye Wood, SE of Garras, SW72, (1), 1995, Holyoak 95-138.
- 181.2 *Isopterygiopsis pulchella*, growing through *Anoetangium aestivum* on Pennant sandstone crag, Craig y Llyn east, SN90, (41), Bosanquet.
- 184.1 *Taxiphyllum wissegrillii*, on limestone rock in woodland, Blaencilcoed Quarries, SN11, (45), Bosanquet; on damp limestone in cave, 220 m alt., Giant's Leap, S of Blacklion, H03, (H30), Holyoak 01-756.
- 188.1 *Platygyrium repens*, on fallen alder, The Wild Grounds, Gosport, SU50, (11), Stern.

- 190.6 *Hypnum andoi*, on dead branch, 95 m alt., Deerpark, W of Virginia, H58, (H30), Holyoak 01-652.
- 190.11 *Hypnum lindbergii*, in grassy ride, conifer plantation, E of Templeton, SN11, (45), Bosanquet.
- 192.1 *Ctenidium molluscum* c var. *condensatum*, on rock face by waterfall, 455 m alt., Fingland Burn, above Coulter Reservoir, NT02, (77), Long 30105; on flushed vertical NW-facing sandstone at base of crag, 375 m alt., Slieve Anierin, W slope, H01, (H29), Holyoak 01-846.
- 195.1 *Hylocomium brevirostre*, on old limestone wall in hazel scrub, 235 m alt., Legnaveagh, S of Blacklion, H03, (H30), Holyoak 01-745; on limestone in railway cutting, 30 m alt., near Lough Naharash, Ballyshannon Turloughs, G86, (H34), Hodgetts 3730.

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SOME THOUGHTS ON THE HABITAT AND DISTRIBUTION OF *PALLAVICINIA LYELLII* IN BRITAIN

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If you ever find yourself stuck in a seemingly endless expanse of waist-high Purple Moor-grass (*Molinia caerulea*) tussocks looking for a way out, hopefully on to more promising botanical ground, you might be forgiven the utterance of the odd profanity or two. More than likely you can't see where to put your wellies, because last year's leaves hide the spaces between the tussocks, and your ankles feel as if they may have been broken in more than one place from the numberless times you have missed your footing. It's probably raining too. Worse still, the botany is unspeakably dull - just acres of *Molinia*, a little Tormentil (*Potentilla erecta*), and possibly a few common Sphagna in the more open runnels. However, if you pause awhile, part the dead leaves, and examine the peaty base of a *Molinia* tussock, you may have a welcome botanical surprise in store. The tussock bases, where conditions are permanently shaded and constantly humid, can support some quite interesting bryophyte assemblages. In fact you may well come across flourishing communities, dominated by various species of *Calypogeia*, and sometimes *Tetraphis pellucida*, and you may also find *Lophozias*, *Cephalozias*, *Kurzias*, *Riccardias*, and even *Ptilidium ciliare* as I once did in Wales. Best of all, you may be rewarded with *Pallavicinia lyellii*.

Oddly for a species with oceanic tendencies, *Pallavicinia* is normally thought of as a south-eastern species in Britain, particularly associated with East Sussex where it grows at a couple of sites on sandrock outcrops in the High Weald. It has also been recorded at a few sites in southern England from Suffolk to Hampshire, with scattered outposts in the Somerset Levels, west Wales and Yorkshire. In the south of England it is mostly known from tree bases in carr woodlands or shaded woodland banks and ditches, while in the west it is mostly recorded from the tussocky margins of raised bogs. A few recorders have noted other substrates, such as rotting wood, and the species was even found growing on an old boot at Wimbledon in 1948.

Up until 2000, *Pallavicinia* had been recorded from 26 localities in Britain. However, since 1970 it had only been seen at ten of these localities, and so the species was thought to have suffered a decline, especially in the northern part of its range. Drainage and the supposed inability of single sex populations (the majority) to disperse effectively were believed to have caused some extinctions and to threaten further losses. Because of this, *Pallavicinia* was classified as vulnerable in the recent bryophyte Red Data Book and made the subject of a Species Action Plan (SAP) under the UK Biodiversity Action Plan.

Plantlife, the wild-plant conservation charity, and the Royal Botanic Garden Kew were appointed joint lead partners for the *Pallavicinia* SAP, and the species is included in Plantlife's 'Back from the Brink' programme, supported by English Nature. As Plantlife's project officer, my work on the species began early in 2001 with the aim of building up a clearer picture of its historic and present distribution, through collation of records and survey of sites in its southern English strongholds. It was also hoped that a better understanding of its ecology would be provided by careful observations of the plant in the field and examination of bryological literature. Maybe an answer would emerge to a question that has long puzzled British bryologists - why, when *Pallavicinia*'s broad habitats are so common in Britain, is it so rare?

With the first year's work complete and that for 2002 well under way, we now know that *Pallavicinia* is not in fact as rare as had been supposed, and that some of the fears expressed in the SAP are misplaced. Discovery of new sites and unpublished records have raised the total number of recorded localities to 45, and the plant has been found at 18 sites within the last five years. Four new sites were discovered in 2001. In southern England, Rod Stern found it in Hampshire outside the New Forest (VC 11), while a joint meeting of the BBS Southern and South-East Groups turned up an impressive all-male population in West Kent (VC 16, new to the vice-county) near Scotney Castle. Further north, I stumbled upon *Pallavicinia* growing on *Molinia* in the border mires of Cumbria (VC 70, again new to the vice-county), and thought this to be the most northerly find, but was trumped by Keith Watson who found the plant in Renfrewshire (VC 76), new to Scotland.

Some old populations have been lost, certainly, but not so many as were feared. One of the most encouraging aspects of Plantlife's findings is that *Pallavicinia* can be remarkably persistent where it is well-established and where there is a continuity of stable habitat. It still survives in quantity at the type locality in the New Forest where it has been known for nearly 200 years, and has recently been rediscovered, fruiting, in North Somerset after a gap of 35 years. A healthy female-only population still thrives at Wimbledon Common, even in the absence of old leather boots; unusually for the south-east, it grows mostly on *Molinia* in London.

These findings have prompted the suspicion that there may be a lot more *Pallavicinia* out there than had previously been thought. This may be especially true in northern England, Wales and the south-west, where thousands of hectares of *Molinia* grassland must get ignored by botanists as not being worth a broken ankle. Other habitats that *Pallavicinia* seems to prefer may also be overlooked by botanists. Woodland sites in southern England can also look quite boring and are incredibly prickly. Plantlife surveys carried out in 2001 show that at nearly all of its woodland sites, *Pallavicinia* is associated with holly - usually where the latter is quite dense. These places are just not that attractive to botanists, so there must surely be more woodland sites to be discovered.

If this has inspired you to get out there and find some *Pallavicinia* (which I hope it has), it's worth bearing in mind some of its more precise ecological requirements. To do that we need to look at what each locality has in common. What factors does a tussocky *Molinia* moorland in Cumbria, for example, share with a chestnut coppice in Kent, or a sandrock cliff in Sussex?

At all of *Pallavicinia*'s localities the substrate is acidic with a constantly high moisture content. Additionally, that substrate is both firm and relatively well-drained. *Pallavicinia* very rarely grows on sloppy peat in woods or amongst *Sphagna* on open bogs, not because it isn't physically able to, but more likely because *Pallavicinia* is a poor competitor in such places. It competes much better in drier spots, such as on the roots of holly or the upper parts of *Molinia* stools, where *Pallavicinia*'s central conducting strand appears to give it the upper hand over potential competitors such as *Pellia epiphylla*. (The two species do often grow together, but rarely mix, with *Pallavicinia* invariably occupying the drier patches.) Most sites are also quite heavily shaded - things don't get much murkier than the inter-tussock spaces of dense *Molinia* mires or the ground below a holly thicket. I have even encountered healthy *Pallavicinia* growing beneath a ten-inch thick cover of *Sphagnum palustre*, in the sort of place you might expect to find *Cryptothallus mirabilis*. A further factor to note is warmth. Even on moorland, the microclimate below the insulating layer of *Molinia* litter presumably ensures that extreme winter temperatures are avoided.

I recently came across some very impressive *Molinia* stools at the edge of a bog in West Sussex. The bases were fairly exposed and, as they were on a slope, if I crouched in a suitably contorted fashion, I could look up at them. When I narrowed my eyes to distort the scale, the stool bases looked for all the world like sandrock cliffs in the High Weald, complete with a typical sandrock flora of *Calypogeias*, *Kurzia sylvatica*, *Cephalozia connivens* and *Tetraphis pellucida*. But, unfortunately, no *Pallavicinia*. The bases were extremely firm, the kind that *Pallavicinia* likes, but maybe they were just a little too dry. You can waste a lot of time looking at *Molinia* bases that won't support a good liverwort community (and getting a really nasty back-ache in the process). They have to be just right. If the *Molinia* is young or grazed, or just slightly too high above the water table, the tussock bases will either be too grassy, fibrous, or dry. Very coarsely fibrous tussocks are quite unsuitable, probably because they dry out more quickly. This is why tussock sedges tend not to be profitable, although they are still worth searching - *Pallavicinia* was recorded from *Carex paniculata* for the first time this year.

Despite the good news, *Pallavicinia* should still be considered a very rare plant in Britain, and care should be exercised when handling it. Some populations are very small and must be considered highly vulnerable. Because our knowledge is still incomplete, it is important that bryologists actively look for the plant where the habitat feels right, and pass any records to

Plantlife, so that a true assessment of its conservation status can be made. In the south, *Pallavicinia* hunting is likely to be most profitable in regions with extensive areas of ancient semi-natural habitats, such as the commons and woods of Surrey and the New Forest, although *Molinia* mires should also be searched. In parts of the west and north there is so much potentially suitable habitat, you will probably have difficulty knowing where to begin. But if you do ever find yourself stuck in a seemingly endless expanse of waist-high Purple Moor-grass tussocks ... you'll know what to do.

***ULOTA CALVESCENS* WITH HAIRY CALYPTRAE**

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The sparsely hairy calyptra of *Ulota calvenscens* provides a distinctive field character that has usually been assumed to be reliable in separating this species from *U. bruchii* and *U. crispa*, both of which are commonly associated with it and differ in having strongly hairy calyptrae. Indeed, the literature appears consistent in describing calyptrae of *U. calvenscens* as sparsely hairy, e.g. 'glossy, with very few scattered hairs' (Dixon, 1954) and 'glossy with a few sparse hairs' (Smith, 1978). This note reports the occurrence of populations of this species in Ireland in which many plants have strongly hairy calyptrae.

During fieldwork in Co. Fermanagh and Co. Leitrim in 2000, numerous puzzling *Ulotas* were seen that combined the proportionately short capsule on a relatively long seta characteristic of *U. calvenscens* with the strongly hairy calyptrae that are usual only in *U. bruchii* and *U. crispa*. Samples of these puzzling plants, and of other *Ulotas* growing near them, were collected. With some samples each tuft was placed in a separate packet in order to keep calyptrae with the plants that produced them, and care was always taken to avoid dislodging the calyptrae.

Later study revealed samples of *U. calvenscens* consisting partly or exclusively of plants with strongly hairy calyptrae from four scattered localities, all in situations that seem entirely typical for this species: on *Sorbus aucuparia* at edge of low woodland near river, Correl Glen, Co. Fermanagh, H073546 (Holyoak 00-193); on *Salix cinerea* on damp north-facing slope below Braade Scarp, Co. Fermanagh, H052550 (Holyoak 00-371B); on *Salix cinerea* and *Fraxinus* above river near waterfalls in open woodland, W of Rossinver, Co. Leitrim, G912479 (Holyoak 00-587); and on *Salix* bushes near stream, near Dergvone, Co. Leitrim, G954316 (Holyoak 00-677). All the material is retained in my own herbarium at present, but these specimens will eventually be lodged at DBN.

Close study of the *U. calvenscens* with hairy calyptrae from these four localities left no doubt that in other respects they were typical of that species, with no evidence of hybridisation with the other *Ulotas* species growing close by (which included non-fertile *U. phyllantha*, in addition to much fertile *U. bruchii* and *U. crispa*). Diagnostic characters of *U. calvenscens* present in the plants with strongly hairy calyptrae are: leaves with two basal plicae, narrow cells extending high up leaf margins, proportionately short capsule on relatively long seta, and high mean number of stomata (35-37) at the base of well-formed capsules. Like other *U.*

calvescens, these plants have well-formed, coarsely papillose, dull green to olive-brown spores of 22-27 μm diameter, dehiscing from capsules ripening in summer.

Detailed characters of the peristome in *U. calvescens* are closer to those described for *U. crispa* by Garilleti *et al.* (2000) than to those of *U. bruchii*, although they differ somewhat from both species. Thus the exostome teeth are similar in form to those of *U. crispa* and are likewise papillose externally (on OPL) although appearing striate at lower focus; they are also papillose internally (PPL) but more strongly striate at lower focus. The character of the endostome processes is much as in *U. crispa*, these being translucent and wide at the base, rather than opaque and linear throughout and narrow-based as in *U. bruchii*. However, ornamentation on the inner side of the endostome processes (IPL) is stronger than in *U. crispa*, with the basal one-third appearing almost smooth at x400 magnification by transmitted light whereas the upper two-thirds had irregular transverse striae. No differences were detected between typical *U. calvescens* and those with hairy calyptrae in any of these characters.

An interesting note by Armitage (1938), forming part of the report of the visit to Co. Leitrim during the 1937 BBS Meeting in Ireland, mentions: '*Ulotia crispa*, hawthorns, Glenade; a remarkable form; calyptras sometimes naked, resembling *U. vittatae* [= *U. calvescens*]; or with few hairs, otherwise the normal densely hairy form. None of the latter plant was seen or a hybrid sporophyte might have been suspected.' During my prolonged fieldwork in Glenade in 2000 and 2001 a close watch was kept for *Ulotia*, and contrary to Miss Armitage's comment, much *U. calvescens* was found, along with abundant *U. bruchii* and *U. crispa*. It therefore remains uncertain whether some muddle involving *U. calvescens* resulted in the 1938 comments, or whether, as claimed, a form of *U. crispa* (or *U. bruchii*, which might not then have been regarded as distinct) was really found with naked to sparsely hairy calyptrae.

While a sparsely hairy calyptra still apparently provides evidence that *U. calvescens* is present, it is clear that relying on this character alone may result in *U. calvescens* with a more strongly hairy calyptra being overlooked as *U. bruchii* or *U. crispa*. However, the proportionately short capsule on a relatively long seta provides another field character helpful in separating most *U. calvescens* from the other two species. Other helpful field characters are that the timing of capsule maturation and spore dehiscence in summer in *U. calvescens* resembles the timing in *U. crispa*, and differ from the winter spore dehiscence usual in *U. bruchii* (cf. Smith & Proctor, 1993). Also, *U. calvescens* is often but not always a larger plant than *U. crispa*.

Acknowledgements

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References

- Armitage E. 1938. Addenda to report of Irish meeting. *The British Bryological Society Report for 1937* 4(1): 14.

- Dixon HN. 1954.** *The student's handbook of British mosses*. 3rd ed. Eastbourne: Sumfield & Day.
- Garilleti R, Lara F, Albertos B, Mazimpaka V. 2000.** Peristomial ornamentation, a precise character for discrimination of *Uloa bruchii* and *U. crispa* (Bryopsida, Orthotrichaceae). *Journal of Bryology* **22**: 273-278.
- Smith AJE. 1978.** *The moss flora of Britain and Ireland*. Cambridge: Cambridge University Press.
- Smith AJE, Proctor MCF. 1993.** Further observations on the *Uloa crispa* complex. *Journal of the Hattori Botanical Laboratory* **74**: 171-182.
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