

BRITISH BRYOLOGICAL SOCIETY

PRESIDENT: DR S. W. GREENE

BULLETIN

No. 38. July, 1981

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DR W. D. FOSTER

While this issue was being prepared for the printers we learned of the sad death of Dr Derek Foster, one of the most enthusiastic and loyal members of the Society during the last decade and Honorary Treasurer from 1975 to 1980. Aged 57, he had endured a long illness with great courage. We would like to offer our deepest sympathy to his widow and his son. A full obituary will be published in the Journal of Bryology.

REPORTS OF OFFICERS FOR 1980

a) GENERAL SECRETARY'S REPORT

Last year I wrote that the membership has stabilized around the 520 mark. This happy state still exists, in spite of the fact that our Membership Secretary has had to remove a large number of members who were in arrears for more than one year. Our north American members now have a simpler and less expensive way of paying their dues: rather than sending sterling they may now pay in dollars to our American Treasurer, Dr. Nancy Slack who during the year very kindly offered her services to the Society (after, it must be admitted, a bit of persistent persuasion during the Spring meeting which we were very pleased she could attend !). It is with regret that I have to record the deaths of three of our members during the year, our Honorary member Mme. Z.N. Smirnova (Leningrad), Mr. A.P. Fanning (Tralee) and Mr. G.A. Shaw (Yorkshire).

During the year four excellent meetings were arranged and attended by a gratifying number of people. Accounts of all of them have appeared in Bulletin 37. The Spring Meeting, based on Haverfordwest, with its 30-plus participants, spent much of the week in square-bashing and showed just what could be done in this by a concerted effort, with 22 10 km squares being covered. The Summer Meeting was based in Durham and efficiently organized by Gordon Graham who showed us some good bryological spots. Denis Brown kindly hosted our Paper-reading meeting and A.G.M. in Bristol University in September, but for the excellence of the programme of papers we have to thank Jeff Duckett who really excelled himself in discovering a first class selection of speakers. Following in the footsteps of Eric Watson in Reading University, Royce Longton arranged the Taxonomic Workshop in November and we thank Eric Watson, Harold Whitehouse and Michael Fletcher for their contributions to the indoor instructional part of the weekend.

Our two Recorders have been working at full pressure on the production of a new combined Census Catalogue and in the course of this have vetted many hundreds of records and vouchers. Their industry is to be admired, and will be without doubt appreciated by a great number of our members. The Mapping Scheme is also progressing apace with Tony Smith desperately trying to get as many gaps as possible filled in the Situation Map before the present wave of activity comes to a head at the end of 1982 with the compilation of a Bryophyte Atlas. Discussions are at present taking place on the future of the mapping scheme after this event. During the year the newly formed Projects Committee put forward proposals to involve our members in critical species and network projects such as those very successfully organized by the Botanical Society of the British Isles. It is to be hoped that we will eventually see an enthusiastic involvement of our membership in this venture.

We were concerned during the year for the health of our Treasurer, Derek Foster, owing to which he unwillingly resigned his office. We wish him well and thank him for the excellent way in which he has watched over the financial affairs of the Society, and welcome Michael Pearman as his successor. Another resignation during the year was that of our Meetings Secretary, Jeff Duckett, this time due to pressure of work and increasing other commitments. The success of our meetings during the last five years are due in no

small measure to his influence and we thank him for his work and hope he will continue to support the Society in the future. Martha Newton has consented to take over from Jeff. It is with much regret that I myself have decided to resign as General Secretary as from the end of 1981. I have enjoyed my close connexion with Society affairs since late in 1973 but I now feel that a change is necessary both for myself and for the BBS.

At the Annual General Meeting three eminent bryologists were given honorary membership of the Society in recognition of their excellent bryological work : Mrs. Joan Appleyard, Dr. Ursula K. Duncan and Dr. Sinske Hattori.

A.R. Perry.
March, 1981

b) TREASURER'S REPORT

On January 1st 1981 when I handed over the treasurership to Michael Pearman the Society's capital, all invested in the National Savings Investment Account amounted to £16,004. At present interest rates this brings in an income of £2,400 a year. Although this seems a pretty satisfactory state of affairs members should note that, since Council did not recommend an increase in the annual subscription for 1981, each member is being subsidised by upward of £2 a year.

It should also be noted that expenses incurred by the Society's officers in 1980 has been higher than ever before and the same is true of expenses in connection with the organisation of meetings. This is a trend which, presumably, is likely to continue. The proposed reprinting of part of volume 7 of the Journal and the publication of new editions of the Census Catalogues in the not too distant future will make a considerable hole in our accumulated capital.

W.D. Foster,
January, 1981.

c) EDITOR'S REPORT

During 1980 the majority of papers submitted to Journal of Bryology were taxonomic and I am concerned at the fall off in papers on other aspects of bryology. If we are to maintain or increase circulation it is necessary to include papers on as wide a spread of topics as possible. Although it may be overstating the case "taxonomic and floristic papers are the death of a journal" to quote the editor of Lindbergia. Whilst finances are not tight all satisfactory papers can be accepted but if there have to be restrictions it may be necessary to apply these to non-British taxonomic contributions.

There has been a considerable delay in the publication of J. Bryol. 11 (2) although Blackwell's have given no reason for this. Everything now seems to have been sorted out and Blackwell's now have a new sub-editor.

I am indebted to Dr. E.W. Jones and Mr. A.R. Perry for their continued help with correcting proofs and to Mr. A.C. Crundwell for the great amount of refereeing of papers.

A.J.E. Smith,
March, 1981.

d) REPORT OF THE RECORDER FOR MOSSES

Like 1979, 1980 has been a very busy year; but the level of activity cannot be regarded as exceptional, as business seems to have become the norm. Preparations for the new Census Catalogue have continued at a steady rate. A draft of the text as well as the distributions has now been prepared. It still needs to be revised, but should be completed in a few months.

The rate of recording also resembles that of last year. There have, however, been fewer bracketings and deletions, 213 in all. In future, there should be even fewer bracketings and deletions, because those counties that are being studied intensively have now had their records purged. The pattern of records is as follows (an "old" species being one included in Dixon's Handbook).

	Old spp.	New spp.	Vars.	Total
England	67	25	33	125
Wales	21	21	7	49
Scotland	19	9	10	38
Ireland	49	13	9	71
Total	156	68	59	283

Several members of the BBS have provided valuable help during the year. I am very grateful to them. I should like in particular to thank Messrs Corley, Crundwell and Whitehouse, for providing second opinions on several specimens about which I was in doubt.

M.O. Hill,
December, 1980.

e) REPORT OF THE RECORDER FOR HEPATICS

The 1980 new vice-county records list has 163 entries, less than last year, of which 82 are new records and 81 are amendments. The numbers of new records for England, Wales, Scotland and Ireland are 34, 19, 16 and 13 respectively. The number of Irish records is disappointingly few, particularly since the majority were actually collected in 1979.

The 1980 list marks the completion of the hepatic section of the new Census Catalogue. This would appear to be an appropriate place to acknowledge my considerable debt of gratitude to Mark Hill who has undertaken the great bulk of the work involved in preparing, editing and publishing the new Census Catalogue. A.C. Crundwell has very kindly given me the benefit of his advice on nomenclatural problems.

I should also like to thank T.L. Blockeel, A.J. Harrington, D.G. Long, Mrs. J.A. Paton, M.R.D. Seaward and A.J.E. Smith for assistance in many ways, sending in amendments and specimens and for checking determinations.

M.F.V. Corley,
January, 1980.

f) LIBRARIAN'S REPORT

Sales:	Census Catalogues	51
	Transactions/Journal (parts)	56
	Library Catalogues	5
	Bulletins	6

Loans: 22 items of books/separates, 4 loans of slides,
111 xerox copies.

By arrangement with the reprographic services of the North East London Polytechnic the librarian also xeroxes, hand guillotines and staples over 1,000 photocopies annually for the BBS Reading Circle.

Kenneth J Adams,
January, 1981.

g) BIBLIOGRAPHER'S REPORT

The total number of entries for this year's bibliography is rather higher than that for 1979. It is too early to say whether this means that more research is being done on the bryophytes than before, but the amount of interest in them is certainly keeping its high level of recent years. Nevertheless, within the subject as a whole, fields of research are constantly changing. Thus, for example, there is relatively little effort put into pollution studies these days while an encouraging number of taxonomic revisions have appeared. Another trend that has become more pronounced over the last year is the progressively more erratic time of appearance of journals. This is, of course, a reflection of worldwide difficulties in publishing.

G.C.S. Clarke,
December, 1980.

h) CURATOR'S REPORT

279 mosses and 140 hepatics were added to the Herbarium. Loans totalling 407 specimens were made to four members. Almost half of these were sent to the Recorder for Mosses for checking. About 200 Philonotis specimens were sent to J.H. Field for examination.

S.G. Harrison,
March, 1981.

i) MAPPING SECRETARY'S REPORT

There has been continued work on recording in under-worked areas and Mrs. J. Appleyard has made great progress in Gloucestershire, Wiltshire and Devon (assisted in the last county by Dr. F. Rose). There are still severely under-worked areas in the English Midlands and parts of Scotland but there seems little point in delaying the termination of the present phase of the mapping scheme as it is unlikely that these areas will be worked in the foreseeable future.

A.J.E. Smith.
March, 1981.

j) MEETINGS SECRETARY'S REPORT

It is with considerable sadness, that increasing commitments at Queen Mary College, which prevent my regular attendance at meetings, have forced me to resign after a quinquennium as Meetings Secretary. My successor, Dr. Martha Newton, already has many years experience organizing bryological meetings of all types and will I'm sure be able to serve the society most efficiently.

The last 5 years has seen the first International Symposium jointly organized by the BBS and the Systematics Association. Hopefully the next 5 will see the 2nd if not 3rd similar venture. Another notable development has been the establishment of the taxonomic workshop as an integral part of the bryological calendar and the more regular use of Universities and College accommodation. On the debit side however, the summer field meetings are much less well attended than when first I became actively involved in bryology in the 1960's.

Since an essential part of any field meeting is an interaction with other bryologists it might be pertinent for the Society to reduce the Summer Field Meeting to a biannual event. In years when no Summer meeting is held perhaps the paper reading might be extended to give 3 or 4 days in the field.

J.G. Duckett,
January, 1981.

k) MEMBERSHIP SECRETARY'S REPORT

1980 opened with 501 paid up members, 17 having lapsed. Forty-one new members joined during the year, 22 home and 19 overseas. As 21 members have not paid their 1980 subscriptions, the paid up total at December 1980 stands at 521. During the year, Dr. Nancy Slack, of Troy, New York volunteered to act as local collector of subscriptions from U.S. members, which will simplify the transfer of sterling and is already being much appreciated. I was able to meet for the first time a number of new members at the Reading teach-in. The arrangements, demonstrations and exhibits by Dr. Longton and Dr. Watson were very helpful and were much appreciated. Several members attended specially to study the garden collection of pot grown species of Michael Fletcher. These meetings are of great value in encouraging newer members to make contacts. The field courses arranged by the Field Studies Council give beginners an opportunity for field work and the advantage of starting an Herbarium, and every year bring in applications for membership. Additionally a number of members take advantage of these courses, particularly those of us resident in drier and more polluted areas. There were eight members at Preston Montford with Martha Newton, four with Brian Brookes at Kindrogan, but unfortunately the two members booking for Malham were disappointed as there were no outside applicants so that course was cancelled. During the year G.A. Shaw, Shipley, Yorks (1947) died. Retirements and resignations: Prof. P.D. Voth (1949) Dekalb, Ill.; Dr. A.G. Long (1956) Newcastle-upon-Tyne; J.J. Haywood (1965) Ottery St. Mary.

George Geyman,
January, 1981.

1) CONSERVATION OFFICER'S REPORT

Conservation business has picked up quite remarkably over the past two or three months. As a result of the publicity given to our Code of Conduct in 'Habitat Digest', I was asked to give an interview to a journalist working for the Sunday Times and this was published on 4 January 1981. The article elicited a wide response and so far over 200 people have asked for copies of the Code or further information on the Society. Hopefully, some new members will join.

Conversations with Mr. Brightman (British Lichen Society conservation committee) proved mutually fruitful, with closer collaboration between us and an invitation for me to chair a session at a conference on conservation of non-vascular cryptogams, to be held at the BM (NH) in the autumn. There will be speakers on lichen, algae, fungal and bryophyte conservation.

The B.S.B.I. Conservation Committee has been much involved recently in advising on the proposed 1980 Wildlife and Countryside Act which is, at this moment, at the Committee stage in the House of Lords. It contains most of the provisions of the 1975 Act with a few important additions, in particular, an 8th Schedule listing action which can be taken if any person introduces a non-native British plant (including mosses, lichens and algae) into the wild in the British Isles.

At the meeting of the B.S.B.I. Conservation Committee on 21 January, Mr. Jermy presented a paper on the role of the B.S.B.I. in plant conservation. After lengthy discussion, it was decided that a working party should be set up to examine the question of liaison with other scientific societies (such as the Pteridological, Phycological, Bryological and Lichen societies). I was asked to represent the interests of the BBS, BPS and BLS; Joanne Martin (NCC) is the other member. We are due to report to a meeting of the B.S.B.I. Conservation Committee on 12 May, on ways in which liaison with SPNC, NCC and each other can be improved.

P.D. Coker,
JANUARY, 1981.

NOMINATIONS FOR OFFICERS OF COUNCIL AND ELECTED MEMBERS

At the end of 1981 several vacancies on Council of the B.B.S. will arise through resignation or the terms of office. These must be filled at the Annual General Meeting in September, 1981. So any nominations for these offices should be sent to A. R. Perry, Gen. Secretary BBS, National Museum of Wales, Cardiff in good time. Persons may not be nominated without their consent. The General Secretary will resign at the end of 1981 and Council has nominated Dr Royce Longton (Reading) to replace him. The present Vice-President, Dr H.L.K. Whitehouse succeeds to the Presidency on 1 January 1982, and Council has nominated Dr M.C.F. Proctor to the Vice-Presidency. All other Officers are due for re-election or replacement at the end of the year when their 2 year term finishes. They have all expressed their willingness to continue for a further 2 year period so Council will propose their re-election at the Annual General Meeting. Three of our present elected members, Messrs Long, Preston, and Stern retire at the end of 1981 and are not eligible for re-election as members of Council. Council have nominated Messrs Bloom, Crundwell and Fisk to replace them.

MINUTES OF THE ANNUAL GENERAL MEETING, BRISTOL, 1980.

Minutes of the Annual General Meeting held at 1650 hrs on Saturday 20 September, 1980 in Badock Hall, University of Bristol.

PRESENT: Dr. S.W. Greene (President - in the Chair) and 41 other members.

(1) APOLOGIES: Apologies for absence received from Dr. P.D. Coker, Dr. W.D. Foster, Mr. O.B.J. French, Dr. P.H. Pitkin, Prof. P.W. Richards, Dr. A.J.E. Smith and Mr. M. Walpole.

(2) MINUTES: The Minutes of the Annual General Meeting held on 22 September, 1979, in the University of Manchester, were approved and signed as a correct record.

(3) MATTERS ARISING: There were none.

(4) OFFICERS' REPORTS FOR 1979:

(a) GENERAL SECRETARY: Mr. Perry announced that a legacy of £100 had just been received from the estate of the late Miss Evelyn M. Lobley. He drew the attention of members to the recent offer of Lindbergia to BBS members at special terms, details of which had already been distributed with the Bulletin. He said Council had been considering whether Diamond Jubilee celebrations of the BBS should take place in 1983 and asked for members' views on this. From the letters he had received during the year he mentioned one sent by Mr. Walpole which commented on the high proportion of foreign papers in the Journal; it was generally agreed by the meeting that domestic affairs are treated well enough in the Bulletin. Mr. Perry was given a vote of thanks for his work.

(b) TREASURER: Dr. Greene said the Balance Sheet for 1979 had been published but unfortunately the Treasurer was unable to be present owing to illness. He said it had been decided that more funds were to be used for mapping purposes during the coming year. On the subject of subscriptions he said a rise, though inevitable, had been deferred for the time being in spite of the fact that Blackwells' had urged us to put up our membership subscriptions now. Mr. Crundwell commented that when we last put up the membership subscriptions the rise was substantial in order to keep it level for some time; he saw no immediate urgency for a rise at present.

(c) EDITOR: There were no comments.

(d) RECORDER FOR MOSSES: Mr. Hill said the publication of the new Census Catalogue was up to schedule. Mr. Crundwell commented on the presentation of data for deleted records in the lists of New Vice-County Records and Amendments to the Census Catalogues and requested full details to be presented in future of all deleted or amended records. This was agreed.

(e) RECORDER FOR HEPATICS: There were no comments.

(f) LIBRARIAN: Dr. Adams requested that anyone wishing to borrow slides from the library should let him know well in advance as they may be out on loan already. He said there had recently been substantial decreases in other loans from the library probably because of increased postal charges. Recently three sets of Journal of Bryology had been offered to the library and Dr. Adams suggested that anyone wishing to sell their copies might offer them to members through an advertisement in the Bulletin. It was announced that library policy was presently being looked at.

(f) BIBLIOGRAPHER: There were no comments.

(h) CURATOR: Mr. Harrison noted a recent reduction in blanket borrowing from the herbarium.

(i) MAPPING SECRETARY: Dr. Greene said that some grants for mapping had been made during 1980 so that the present phase of the scheme might be completed in 1982. He said Dr. Smith had been asked how we can make a positive effort to fill the gaps by then. It was noted that it was not the intention to finish collecting records after 1982. Miss McAdam said that in north-east Scotland helpers are not always available to extract records from the local herbaria where innumerable records are undoubtedly present, and that this accounted for the blank patch in this area on the recent situation map. Dr. Smith's attention was drawn to this. On the subject of mapping European bryophytes Dr. Greene announced that a meeting to be attended by Mr. Corley and Dr. Smith on behalf of the Society was to be held in November.

(j) MEETINGS SECRETARY: Prof. Duckett suggested the possibility of occasionally amalgamating the summer meeting with the paper-reading meeting.

(k) MEMBERSHIP SECRETARY: Mr. Geyman said there had been 29 new members since last January.

(l) CONSERVATION OFFICER: It was announced that the role of the BSBI Conservation Committee (on which we were represented) and liaison with the Society for the Promotion of Nature Conservation was being looked into.

The best thanks of the meeting for the Officers' work was recorded.

(5) ELECTION OF TREASURER:

It was noted that Dr. Foster was resigning as Treasurer owing to ill health. Best wishes for an improvement in Dr. Foster's health and grateful thanks for all he had done during his term of office were expressed by the meeting. Mr. Michael Pearman had been nominated as Dr. Foster's replacement; he was unanimously elected as the new Treasurer.

(6) ELECTION OF THREE MEMBERS OF COUNCIL:

It was announced that there had been only three nominations, all from Council, viz. Mrs. Joan Appleyard, Mr. Tom Blockeel and Dr. David Chamberlain. These were elected unanimously

(6') ELECTION OF MEETINGS SECRETARY:

It was reported that Prof. Duckett had found it necessary to resign as Meetings Secretary owing to pressure of work, and that a replacement was needed. He was thanked for his work. Council had decided to nominate Dr. Martha Newton and accordingly her name was submitted to the meeting. She was proposed by Mr. Crundwell, seconded by Mr. Wanstall and unanimously elected.

(7) PLACE AND DATE OF A.G.M. 1981:

It was reported that Council's first choice for this was Lancaster, 18-20 September, 1981; or, failing that, Bradford. There were no other suggestions.

(8) OTHER MEETINGS IN 1980, 1981 and 1982:

(a) TAXONOMIC WORKSHOP, 1980: It was reported that this was being arranged at Reading with Dr. Royce Longton as local secretary, 1-2 November.

(b) SPRING MEETING, 1981: It was reported that this was to be in Suffolk, based possibly on Bury St. Edmonds, 8-15 April, and being arranged by Dr. Adams.

(c) SUMMER MEETING, 1981: It was announced that this was in Scotland, 27 July-11 August, the first week being based on Newtonmore and arranged by Mr. Long, and the second week based on Tyndrum/Crianlarich and arranged by Dr. Pitkin.

(d) TAXONOMIC WORKSHOP, 1981: It was reported that Dr. Coker was again arranging this at the Thames Polytechnic, London, possibly 21-22 November.

(9) ANY OTHER BUSINESS:

(a) INTERNATIONAL BOTANICAL CONGRESS, SYDNEY, 1981: Dr. David Lewis, it was reported, had presented some information on travel arrangements, including discounts, which was available for intending participants. It was stated that the Royal Society was proposing to assist with some travel grants.

(b) DR. SMITH'S MOSS FLORA: It was reported that this was now available in paperback edition at £12.50.

(c) PROJECTS: Dr. Adams said a small committee had been set up to make some money available each year for projects and that there would be an advertisement in the next Bulletin inviting people to apply.

(d) HONORARY MEMBERS: Dr. Greene reported that during the last year two of our Honorary members, Dr. H. Persson and Mme. Z.N. Smirnova, had died. He also said that Council had recommended three new names as Honorary Members viz. Mrs. Joan Appleyard, Dr. Ursula Duncan and Dr. Sinske Hattori. These were elected unanimously.

The meeting was brought to a close at 1820 hrs.

A.R. PERRY,
Hon. General Secretary,
September, 1980.

FUTURE MEETINGS OF THE SOCIETY

SUMMER FIELD MEETING, 1981

- a) Newtonmore, Inverness-shire, 21-28 July.
See Bulletin No. 37. Further particulars of the programme and of accommodation in the area are available from the local secretary, Mr. D.G. Long (Royal Botanic Garden, Edinburgh, EH35LR. Tel. : 031-552-7171).
- b) Crianlarich, Perthshire, 28 July - 4 August.
For details additional to those in Bulletin No. 37, please contact the local secretary, Dr. P.H. Pitkin (Nature Conservancy Council, 12 Hope Terrace, Edinburgh, EH92AS. Tel. : 031-447-4784)

ANNUAL GENERAL MEETING AND PAPER READING MEETING, 1981

Lancaster University, 19-20 September.

Accommodation has been reserved in a hall of residence close to the Biology Department. The number of members intending to take advantage of this facility is required by the middle of August. Booking forms, obtainable from the local secretary, Dr. A.J.C. Malloch (Department of Biological Sciences, University of Lancaster, Lancaster, LA1 4YQ), should therefore be returned to him no later than August 14th. Full board, inclusive of Friday dinner and a packed lunch for the Sunday field excursion,

will be about £28 or £29. For the convenience of members attending only part of the meeting, the costs will of course be itemized. Plans are being made for a field excursion to the area of the north Yorkshire-Lancashire border or to the southern part of the Lake District.

Speakers who have kindly agreed to present papers at this meeting include :- Dr. H.J.B. Birks (Botany School, Cambridge University) : Rare and endangered bryophytes in the British Isles : a case for conservation.

Dr. P. Ferguson & Dr. J.A. Lee (Department of Botany, Manchester University) : Pollution and Sphagnum growth in the southern Pennines.

Miss S.V. McAdam (Department of Botany, Aberdeen University) : Chromosomes in Eurhynchium : a pattern of relationships.

Dr. J. Priddle (School of Plant Biology, University College of North Wales) : Bryophytes in Antarctic lakes.

Dr. M.C.F. Proctor (Department of Biological Sciences, Exeter University) : Mosses and liverworts of Malham.

Dr. S.W. Greene (Institute of Terrestrial Ecology, Penicuik) will also give his Presidential address.

Exhibits will be welcomed. Titles and details of requirements should be sent as soon as possible to Dr. Malloch.

The ANNUAL GENERAL MEETING will be held on September 19th at 4.50 p.m. in the Department of Biological Sciences, University of Lancaster.

ANNUAL GENERAL MEETING, LANCASTER, 1981

A G E N D A

1. Apologies for absence
2. Minutes of the last A.G.M., Bristol, 1980 (see pp. 8-10 of this Bulletin)
3. Matters arising
4. Officers' Reports for 1980 (see pp. 2-7 of this Bulletin)
 - a) General Secretary
 - b) Treasurer
 - c) Editor
 - d) Recorder for Mosses
 - e) Recorder for Hepatics
 - f) Librarian
 - g) Bibliographer
 - h) Curator
 - i) Mapping Secretary
 - j) Meetings Secretary
 - k) Membership Secretary
 - l) Conservation Officer
5. Election of Officers, 1982-83
 - a) Vice-President
 - b) General Secretary (Mr. Perry is resigning at the end of 1981)
 - c) Officers (all are due for re-election as from 1.1.1982)
6. Creation of new office of Bulletin Editor on Council
7. Election of three members of Council (Messrs Long, Preston and Stern retire at the end of 1981)
8. Membership subscriptions
9. Place and date of Annual General Meeting, 1982

10. Other meetings in 1981 and 1982
11. Any other business

TAXONOMIC WORKSHOP, 1981 Thames Polytechnic, 28-29 November.

It is intended to concentrate on identifying species of Barbula and Sphagnum. To this end, Prof. J.G. Duckett (Queen Mary College, London University) and Mr. M.O. Hill (Institute of Terrestrial Ecology, Bangor), respectively, have kindly agreed to give practical advice and to provide the opportunity of comparing specimens with named material. Participants are welcome to take some of this for future reference. Full details of the meeting, including the associated field excursion to woodland in south Essex and east Hertfordshire, are available from the local secretary, Dr.P.D.Coker (School of Biological Sciences, Thames Polytechnic, Wellington St., London, SE18 6PF).

SPRING MEETING, 1982

SUMMER FIELD MEETING, 1982

ANNUAL GENERAL MEETING AND PAPER READING MEETING, 1982

TAXONOMIC WORKSHOP, 1982

Full details of the above meetings will be given in Bulletin No.39.

PROPOSED SUBSCRIPTION INCREASES

Our Treasurer, Michael Pearman, in a report on the current financial status of the Society presented to Council in April 1981, pointed out that in 1980 members received for their £6 annual subscription, publications and services worth approximately £9.20 (J. Bryol. + Bulletin + Society running expenses). This state clearly cannot go on. It is a decision that Council has reached with much deliberation that membership subscriptions must be increased in January 1982, regrettable though this is. It will therefore be proposed at the Annual General Meeting, Lancaster, 1981, that the ordinary membership subscription be raised to £10.00 p.a., the junior membership subscription be raised to £5.00 p.a. and that the family membership subscription be retained as at present at £1.00 p.a.

The ordinary membership subscription was last raised, to £6.00, in 1975. An increase of 66% over seven years is well below the rate of inflation and even further below the 230% rise in Society expenses which has taken place in the same period. The increase made in 1975, from £3.50, amounted to 71%. For a couple of years at least, £10 p.a. will be roughly equivalent to the cost of publications and services provided by the Society to members. Changing the subscription rate is a troublesome and time-consuming business, particularly for those members with standing orders. It will be in no-one's interest to make a smaller increase in 1982 and then be forced to repeat the operation almost immediately.

The subject will obviously be discussed at the Annual General Meeting, 1981, but if any members who are unable to attend have strong views about subscriptions that they wish to be made known they should send them to the Hon. Gen. Secretary, A.R. Perry, National Museum of Wales, Cardiff, CF1 3NP before 11 September 1981.

THE READING CIRCLE

The Reading Circle exists to circulate copies of the contents lists of the leading bryological journals, such that photocopies of any papers of interest may be requested. There are at present five journals involved, and as they may not be familiar to all, their contents are described briefly below:

The Bryologist (4 issues per year of 600-700 pages in total).

Published by the American Bryological and Lichenological Society.

Something up to a quarter of each issue is devoted to lichens.

Many local US bryophyte lists, but principal outlet for American bryologists.

Revue Bryologique et Lichenologique (4 issues per year of 450-500 pages in total). Written mainly in French, with perhaps more than half the papers being on lichens. Spread of subject matter is similar to J. Bryol., but with rather less taxonomy.

Lindbergia (4 issues per year, usually published with two parts per issue. About 350 pages per year). A joint publication of the Dutch and Nordic Bryological Societies written largely in English, but with some local native language contributions. Particularly strong on taxonomy.

Journal of the Hattori Botanical Laboratory (One issue per year, of 400-600 pages). A luxuriously produced hardback. Occasional papers on lichens. otherwise purely bryological. Specialises in longer papers, of high standard. Asiatic and Pacific studies are well represented.

Annales Botanici Fennici (4 issues per year of 200-300 pages in total). A general botanical journal, in English. Strong on ecology. Only one or two bryological papers per issue, usually by Koponen.

The Reading Circle works by sending out to members copies of the contents lists of any of the journals required, at a cost of 15p per list. Subscribing to all five journals will cost about £2 per annum. Any articles that look of interest may be requested, and a photocopy is returned at a cost, currently, of 3p per sheet. Payment for the service is in advance, with a credit account held for each member, which is used to pay both for distribution of contents lists and for requested copies of papers. When an account is running low, the member concerned is invited to replenish the account. No member is allowed to go into debit.

Although it might seem simpler to distribute the journals themselves, this is not done because of the expense, the damage to the journals (or even their loss) and the prolonged unavailability to other members of an important Library resource. It is hoped that the provision of a photocopying service via the Reading Circle is an acceptable, if second-best, alternative.

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Brian O'Shea, 58 Thornlaw Road, London SE27 0SA

BRITISH BRYOLOGICAL SOCIETY LIBRARY CATALOGUE

Recent Additions Supplement: 1981Ken Adams

- Adams K J (1974) Bryophytes. In the Flora of Essex by S T Jermyn. p229-271.
Publ: The Essex Naturalists' Trust Ltd., Colchester.
- Berdowski W (1974) Moss Flora and Bryophyte Communities of the Slezka Massif.
Monographiae Botanicae. Vol:45. 126pp. Państwowe Wydawnictwo Naukowe.
Warsaw. In polish.
- Clarke G C S & J G Duckett (1979) Bryophyte Systematics. Systematics Association
Special Volume No:40. 582pp. Academic Press.
- Gradstein S R (1975) A Taxonomic Monograph of the Genus Acrolejeunia
(Hepaticae) with an arrangement of the genera of Ptychanthoideae.
Bryophytorum Bibliotheca. Vol: 4. 162pp. & 24 plates. J Cramer.
- Hill M O (1981) Distribution of Bryophytes in the British Isles. Moss Revisions.
Unpublished manuscript and letters. 135pp.
- Kuc M (1964) Bryogeography of the Southern Uplands of Poland. Monographiae
Botanicae. Vol:17. 211pp. Państwowe Wydawnictwo Naukowe. Warsaw. In polish.
- Landwehr J (1978) Atlas van de Nederlandse Bladmossen. 559pp. with 475 full-page
plates of dutch mosses. Including the 1974 and 1978 supplements as one
bound volume. K.N.N.V. Amsterdam.
- (1980) Atlas Nederlandse Levermossen. 287pp. with 119 full-page plates
of dutch liverworts and seven colour plates. K.N.N.V. Amsterdam.
- Lisowski S (1956) Mosses of the Western Bieszczady. The Poznan Society of Friends
of Science. Biology Section. Vol:17 (Plantae Cryptogamae) No:3. 82pp.
Poznan. In polish with english and russian summaries.
- (1959) The Bryoflora of the Tatra Mountains. The Poznan Society of
Friends of Science. Biology Section. Vol:21 (Plantae Cryptogamae) No:2.
127pp. Poznan. In polish with english summary.
- (1966) Bryophytes of the alpine grassland associations of the
Western Tatras. The Poznan Society of Friends of Science. Biology
Section. Vol:26. No:5. 38pp. Poznan. In polish with french summary.
- Mamczarz H (1977) Bryoflora and Bryophyte Associations of Beskid Sadecki.
Part 1. Bryoflora. Monographiae Botanicae. Vol:54. 157pp. Państwowe
Wydawnictwo Naukowe. Warsaw. In polish with english summary.
- (1978) Bryoflora and Bryophyte Associations of Beskid Sadecki.
Part 2. Bryophyte Communities. Monographiae Botanicae. Vol:56. 93pp.
Państwowe Wydawnictwo Naukowe. Warsaw. In polish with english summary.
- Rejement-Grochowska I (1966) Flora Polska (Hepaticae) Vol: 1. 205pp. with 59
plates. Polska Akademia Nauk. Instytut Botaniki. Warsaw. In polish.
- (1971) Flora Slodkowodna Polski. Vol:17. Bryophyta 2. Hepaticae.
355pp. Polska Akademia Nauk. Instytut Botaniki. Cracow. In polish.
- Savicz-Ljubitzkaja L I (1952) Flora Plantarum Cryptogamarum U.R.S.S. Vol: 1.
Musci Frondosi (I). Sphagnales. Academia Scientiarum U.R.S.S.
Institutum Botanicum. In russian. (Donated by Prof. Dr. Th. Butterfass).
- Scott G A M, Stone I G and Rosser C (1976) The Mosses of Southern Australia.
495pp. with 86 full-page plates. Academic Press. London.
- Smith A J E (1978) The Moss Flora of Britain & Ireland. 706pp. with 332 figs.
Hardback. Cambridge University Press.
- (1980) ditto. Softback edition (with corrections). C.U.P. 2 copies.
- Swann E L (1975) Supplement to the Flora of Norfolk: Bryophytes. p75-92.
Crowe & Son. Norwich.

- Szafran B (1957) Flora Polska. Vol: 1. Musci. 448pp. Panstwowe Wydawnictwo Naukowe. Warsaw. In polish.
- (1961) Flora Polska. Vol: 2. Musci. 405pp. Panstwowe Wydawnictwo Naukowe. Warsaw. In polish.
- (1963) Flora Slodkowodna Polski. Vol:16. Bryophyta 1. Musci. 217pp. Polska Akademia Nauk. Instytut Botaniki. Warsaw. In polish.
- Szmajda P (1979) Bryoflora of the Stolowe Mountains and its Geobotanical Characteristic. The Poznan Society of Friends of Science. Biological Section. Vol:52. 79pp. Warsaw-Poznan. In polish with english summary.
- Szweykowski J (1951) On the Distribution of Moss-Communities in the Streams of the Gory Stolowe Mountains (Sudeten). The Poznan Society of Friends of Science. Biological Section. Vol:13. No: 3. 45pp. Poznan. In polish with english summary.
- (1953) Bryophytes of the Gory Stolowe. Part 1: Hepaticae. The Poznan Society of Friends of Science. Biological Section. Vol:14. No: 5. 133pp. Poznan. In polish with english summary.
- (1958) Contribution to the Liverwort Flora of the Sudety Mountains. 1: Liverworts Collected in the Gory Kaczawskie Mountains. The Poznan Society of Friends of Science. Biological Section. Vol:17 (Plantae Cryptogamae) No: 5. 56pp. Poznan. In polish with english summary and captions.
- (1958) Prodromus Florae Hepaticarum Poloniae. (List of all the polish liverwort localities to date). The Poznan Society of Friends of Science. Biology Section. Vol:20 (Plantae Cryptogamae). 596pp. Poznan. In polish with english summary.
- (1960) Floristic Investigations of the Liverwort Flora of the Tatry Mountains. The Poznan Society of Friends of Science. Biological Section. Vol:21 (Plantae Cryptogamae) 92pp. plus maps in folder. Poznan. In polish with english summary.
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- (1962/1964/1966/1968/1969/1971/1974/1977) Atlas of the Geographical Distribution of Spore-plants in Poland. Series 4: Hepaticae. Parts 1, 2,3,5,6,7,8 & 9 (No part 4). Captions in english and polish with large format coloured distribution maps for each species. The Poznan Society of Friends of Science. Biological Section. Poznan.
- Whelan P M (1977) Catalogue of the Herbarium. University College. Cork. Botanic Gardens. Fota. Co.Cork. Part 3: Bryophyta. 39pp. 2 copies.
- Wilczynska W (1974) Mossflora and Bryophyte Communities of Gory Kaczawskich. (North West Sudeten). Monographiae Botanicae. Vol:44. 111pp. Panstwowe Wydawnictwo Naukowe. Warsaw. In polish with german summary.

Journals Currently Received in Exchange for the Journal of Bryology:

Acta Phytotaxonomica Sinica

Annales Botanici Fennici

Cryptogamie: Bryologie & Lichenologie. (Replaced the Revue Bryologique et Lichenologique as from 1980).

Lindbergia

Svensk Botanisk Tidskrift

REFEREES (July,1981)

Specimens sent to the referees should have a 4- or 6- figure grid reference in addition to the locality description. THEY SHOULD ALWAYS BE ACCOMPANIED BY A STAMPED, ADDRESSED ENVELOPE, EVEN IF MATERIAL IS SENT TO UNIVERSITIES OR INSTITUTIONS. If anyone has difficulty in getting a specimen named they should send it to the appropriate Recorder - Mr Corley for hepatics or Mr Hill for mosses (addresses below).

The general Referee will help beginners who are having difficulty in placing their material in a genus. The numbers refer to genera in the current editions of the Census Catalogues.

General Referee: Mrs A.G. Side, 82 Poplicans Road, Cuxton,Rochester, Kent ME2 1EJ

Hepatic Referees:

- 1-9, 14-19, 21-30, 66, 67, 76-82: Prof. J.G. Duckett, Plant Biology & Microbiology, Queen Mary College, Mile End Road, London E1 4NS
10,11, 71-74: Dr H.J.B. Birks, Botany School, Downing Street, Cambridge CB2 3EA
12, 13,20, 31-33, 45-47, 68-70: D.G. Long, The Herbarium, Royal Botanic Garden, Inverleith Row, Edinburgh EH3 5LR
34-44, 63-65: M.F.V. Corley, Pucketty Farm Cottage, Faringdon, Oxon. SN7 8JP
48-53: Dr G.C.S. Clarke, Department of Botany, British Museum (Natural History). Cromwell Road, London SW7 5BD
54-56: Mrs Hilary H. Birks, 22 Rutherford Road, Cambridge
57-61, 75: M.O. Hill, Institute of Terrestrial Ecology, Penrhos Road, Bangor, Gwynedd LL57 2LQ
62: Mrs J.A. Paton, Fair Rising, Wagg Lane, Probus, Truro, Cornwall TR2 4JU

Moss Referees:

- 1: M.O. Hill, (address above); A. Eddy, Dept. of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD
2-7, 131: M.O. Hill (address above)
8-9, 54-56: Dr A.J.E. Smith, School of Plant Biology, University College of North Wales, Bangor, Gwynedd LL57 2UW
10-33: M.F.V. Corley (address above)
34, 57-69. 80-89. 91-97, 100-124: E.C. Wallace, 2 Strathearn Road, Sutton, Surrey
35-53: Dr D.F. Chamberlain, Department of Botany, Royal Botanic Garden, Edinburgh EH3 5LR
70-78, 90: Dr E.V. Watson, Little Court, Clevee, Goring on Thames. Reading, Berkshire RG8 0DG
79: Dr P.D. Coker, School of Biological Sciences, Thames Polytechnic, Wellington Street, London SE18 6PF
98, 99: Dr S.W. Greene, Institute of Terrestrial Ecology, Bush Estate. Penicuik, Midlothian EH26 0QB
125-130, 132-161: Mrs J. Appleyard, Sunnyside, West Horrington, Wells, Somerset BA5 3ED

MR A. R. PERRY

The General Secretary, Roy Perry, will be in the United States from 29 June until mid September, 1981 working on bryophyte ecology with Nancy Slack. Until 11 August he may be contacted in her department, Biology Department, Russell Sage College, Troy, N.Y. 12180, U. S. A.

NEW VICE-COUNTY RECORDS AND AMENDMENTS TO THE CENSUS CATALOGUES

All undated records are based on specimens collected in 1980. Preparations for the new Census Catalogue continue, so that, as last year, many records have been deleted or bracketed. With most such changes, no authority has been cited. Their origin is as follows : v.-c. 21, Kent (1975) plus advice from J.C. Gardiner; v.-c.'s 53,54, notes kept by M.R.D. Seaward; v.-c. 71, Paton (1971); v.-c.'s 80-84, notes kept by D.F. Chamberlain and D.G. Long; v.-c. 98, notes kept by M.F.V. Corley; v.-c. 101, Kenneth (1979); v.-c. H.23, notes kept by D.M. Synnott.

HEPATICA

M.F.V. Corley

The names and numbers follow Paton, Census Catalogue of British Hepatics, ed. 4, (1965).

- 1/1. Anthoceros punctatus, stubble field, N.W. of Llanccayo, N. of Usk (35), Paton & Perry; arable field, Harthill Reservoir, E. of Sheffield (63), Blockeel.
- 1/3. Anthoceros laevis, place 101 in square brackets, dubious record (Kenneth, 1979); ♂ subsp. carolinianus, stubble field, N.W. of Llanccayo, N. of Usk (35), Paton & Perry.
- 3/1. Targionia hypophylla, on shaded calcareous cliffs facing east, Little Hill, nr Erwood (42), Woods.
- 8/1. Marchantia polymorpha var. alpestris, flower bed, Duchy Woodlands, Pen-lyne Nursery, N. of Lostwithiel (2), Paton; at base of garden wall by water cistern, shaded by trees, Stagenhoe, St. Paul's Walden (20), Bloom; clearing in woodland, Bishops Wood, Crossway Green, nr Stourport-on-Severn (37), Fisk; stony base-rich flush, W. end of Coire Cheap, Ben Alder Forest (97), Long, 1979.
- 10/1. Riccia ciliata, delete entire entry (Paton, 1980).
- 10/2. R. michelii, delete entire entry (Paton, 1980).
- 10/3. R. crozalsii, delete 43,46,H.3,H.16,H.35,H36 (Paton, 1980).
- 10/4. R. warnstorffii, arable field, Harthill Reservoir, E. of Sheffield (63), Blockeel.
- 10/6. R. bifurca, delete 9,14,16,36,46,64,69,75,88,90; place 7,8,H.16 in square brackets (Paton, 1980).
- 12/1. Riccardia incurvata, in old sand-pit to W. of Reigate (17), Crundwell & Wallace, 1955.
- 12/2. R. multifida, side of old mill sluice, Cas Troggy Brook, Earlswood Common, Chepstow (35), Garlick.
- 12/5. R. palmata, on decaying wood in bog, beside track to N.E. of Allt Rhyd-y-Groes NNR, Rhandirmwyn, nr. Llandover (44), Woods; vertical peat wall N.E. of Lough Callaunyheeda, nr Derrymore House (H.9), van Melick, 1979
- 15/2. Metzgeria fruticulosa, branches of Sambucus in damp woodland, Dane's Moor,

- nr. Chipping Warden (32), Wigginton; on Sambucus racemosa, near Glen-truim House, Newtonmore (96), Paton.
- 15/2A. M. temperata, Hunthouse Wood Nature Reserve (37), Fisk.
- 17/2. Moerckia flotoviana, ditch on Bagshot Sand, nr Valley Rd., Frith Hill, nr. Primley (17), Gardiner & Milnes-Smith.
- 18/1. Blasia pusila, place 54 in (), no recent record, comm. Seaward.
- 19/1. Petalophyllum ralfsii, compacted track through sand dunes, Point of Air, (51), Perry, 1977.
- 20/5. Fossombronia caespitiformis, place 54 in square brackets, no specimen traced, comm. Seaward.
- 20/9. F. wondraczekii, bare damp clay on Molinia heath, Rudry Common, Rudry (41), Garlick.
- 27/2. Ptilidium pulcherrimum, bark of Crataegus at edge of cleared scrub, S. side of New Ditch, immediately W. of Stocking Close Ride, Monks Wood (31), Preston.
- 29/1. Blepharostoma trichophyllum, place 54 in (), no recent record, comm. Seaward.
- 31/1. Lepidozia pinnata, among rocks on moorland, Tarnbrook, Over Wyresdale (60), Blockeel, 1973; inclined face of sheltered grit boulder, Hardcastle Crag, Hebden Bridge (63), Blockeel.
- 31/3. L. pearsonii, Steep slope above stream below Pen-y-rhiw-iar, Pysgotwr Valley, N. of Llandovery (44), Paton et al.; reinstate 60, (Duckett, 1974); block scree above Lochan a'Choire, W. of Markie Burn, N. of Laggan (96), Paton.
- 31/4. L. setacea, boggy ground by stream, Brynberian Moor, Mynydd Prescelly (45), Hill.
- 31/5. L. trichoclados, the distribution of this species has been revised. It has either not been possible to name or to locate specimens from 45, 46, 58, 61, 63, 73, 75, 84-87, 93, 95, 107, 110, 111, H.9, H.21, H.23, H.28; these should be placed in square brackets.
- 31/6. L. sylvatica, face of damp gritstone boulder, Highgreenwood, Hebden Valley (63), Blockeel, 1978.
- 33/3. Calypogeia trichomanis, blanket bog, Gorllwyn, nr. Llanafan (42), Woods; damp ground in shade of boulders, S. side of Holyhead Mountain (52), Hill & Blackstock; humus-rich, wet dripping rocks in Glengariff Wood (H.3), van Melick, 1979.
- 33/5. C. sphagnicola, bog, Traeth Mawr, Mynydd Illtyd, S.W. of Brecon (42), Paton et al.
- 34/10. Lophozia ventricosa var. ventricosa, path above quarry, North Hill, Malvern (37), Fisk, 1979; bank in wood by estuary, W. of Lawrenny, Daugleddau (45), Corley.
- 34/4. L. alpestris, damp rock face, Seal Bark Rocks, Saddleworth (63), Blockeel.

- 34/6. L. excisa, side of ditch near road in acid woodland, Nomansland, nr. Wheathampstead (20), Bloom.
- 34/9. L. incisa, wet rocks, Abbey Brook, Upper Derwent Valley (63), Blockeel.
- 35/2. Leiocolea badensis, damp apparently calcareous, sandy ride, Bedgebury Forest, 2 km. N. of Flimwell Church (16), Townsend.
- 35/4. L. bantriensis, marshy area at S. of Loch nam Buadh, Ceann Ear, Monach Isles, (110), Blackstock, 1979.
- 35/6. L. gillmanii steep base-rich bank of streamlet, Ardverikie Forest, Badenoch (97), Paton & Long.
- 36/1. Barbilophozia floerkei, humus in heath on N. slope of Sugarloaf Mountain (H.3), van Melick, 1979.
- 36/3. B. attenuata, on broken bank, Lower Wake Valley, just upstream of Bellingranger's Hollow, Epping Forest (18), Adams, 1979; humus under overhanging heather near Glengariff Wood (H.3), van Melick, 1979.
- 36/8. B. barbata, place 54 in (), no recent record, comm. Seaward.
- 37/2. Tritomaria exsecta, sandstone rocks near stream, Black Burn, Newcastleton (80), Paton, 1960.
- 37/3. T. exsectiformis, peaty soil on clifftop, E. of Strumble Head, Fishguard (45), Corley; damp calcareous grit, Seal Bark Rocks, Saddleworth (63), Blockeel.
- 39/2. Sphenolobus minutus, block scree, N.-facing slope of Holyhead Mountain (52), Blackstock & Hill.
- 46/5. Solenostoma cordifolium, flush north of the tors on Mynydd Prescelly, S.E. of Brynberian (45), Paton.
- 46/6A. S. levieri, earthy ledge near waterfall, ravine E. of Creag Bheag, Glen Feshie (96), Paton & Long.
- 49/1. Jamesoniella autumnalis, upper surface of leaning ash tree over R. Neath, below Pont Melin-fach, Pont Nedd Fechan (42), Woods; small boulder in Betula wood, E. of Cruban Beag, Glentruim, Newtonmore (96), Paton.
- 52/7. Marsupella ustulata, place 101 in square brackets, no record traced (Kenneth, 1979).
- 52/9. M. funckii, loamy soil on a path on N. slope of Sugarloaf Mountain, Bantry Island (H.3), van Melick, 1979.
- 56/2A. Plagiochila britannica, limestone outcrops in wood, Lady Park Wood, Wye Valley (35), Perry; amongst shaded limestone outcrops by Afon Mellte, S. of Ystradfellte (42), Perry; magnesian limestone boulders, Edlington Wood, nr Doncaster (63), Blockeel; shaded carboniferous limestone, small gorge between Beckermonds and Oughtershaw (64), Blockeel; basic woodland, Middlehope Burn, Upper Weardale (66), Appleyard; basic rocks under trees by sea, Culzean Castle, N. of Girvan (75), Long; rock in spray of waterfall, Reeky Linn, nr Alyth (90), J. Aimer, 1904 (BM); Crathes Wood (91), J. Sim, 1879 (BM).
- 56/3. P. spinulosa, the distribution of this species has been revised. Delete

- 1,H.9,C. which are P. killarniensis; 78,89,109 which are P. asplenoides; 90,91 which are P. britannica; H.7 which is P. punctata. Place 4,57,85, H.12,H.14,H.18,H.21,H.22,H.26,H.30,H.37 in square brackets, no specimens traced. Wet shaded rocks near a waterfall on the slope of Keeper Hill (H.10), van Melick, 1979.
- 56/3A. P. killarniensis, on rocks, Staveley (69), G. Stabler, 1872 (MANCH).
- 57/4. Lophocolea semiteres, abundant on bases of Sequoiadendron, Benmore Garden, N. of Dunoon (98), Chamberlain & Long. New to Scotland.
- 57/6. L. bispinosa, 102., (Wallace, 1979). New to Scotland.
- 58/1. Chiloscyphus polyanthos, add 10,30, transferred from var. rivularis, which is not a good variety (unpublished work by E.R.B. Little).
- 58/2. C. pallescens, Surfleet Silt Pit, (53), E.J. Redshare, 1973 (Herb. Seaward).
- 62/4. Cephaloziella rubella, tree stump, woodland, Somerford Common, Brinkworth (7), Garlick, 1978.
- 62/7. C. stellulifera, beside track, Lydstep Point, S.W. of Tenby (45), Paton.
- 62/9. C. starkei, add 87, transferred from var. scabra which is very doubtfully a distinct taxon.
- 63/2. Cephalozia bicuspidata var. lammersiana, place 53 in (), no recent record, comm. Seaward; place 101 in square brackets, not traced (Kenneth, 1979); rather wet heath on Keeper Hill (H.10), van Melick, 1979.
- 63/4. C. loitlesbergeri, among Sphagnum, N.E. of Lough Callaunyeeda, nr. Derrymore House (H.9), van Melick, 1979.
- 63/10. Cephalozia catenulata, rotting log in gully, Daren y Dimbath, Ogmores Forest (41), Perry, 1979.
- 64/2. Cladopodiella fluitans, blanket bog, Bryn Glas, nr. Abergwesyn (42), Woods.
- 66/2. Odontoschisma denudatum, old, rather dry heath under shade, Keeper Hill (H.10), van Melick, 1979.
- 66/3. O. elongatum, N. shore of Loch Caoldair, S. of Laggan Bridge (96), Paton.
- 69/1. Diplophyllum albicans, place 53 in (), no recent record, comm. Seaward.
- 69/3. D. obtusifolium, sandy bank, woodland, Coed Cefn Pwll Ddu, Rhydygwern, Machen (41), Garlick, 1979.
- 70/2. Scapania cuspiduligera, trampled path of Offa's Dyke, top of Blodwel rocks, N.W. side of Llanymynech Hill (40), Perry & Benoit, 1975; short stony turf over limestone, golf course, Llanymynech Hill (47), Duckett, 1974.
- 70/3. S. calcicola, delete 40,47, both are S. cuspiduligera comm. Paton.
- 70/4. S. parvifolia, soil on N.E. slope, Meall Mor, Glencoe (98), Paton.
- 70/5. S. curta, delete 88, specimen is S. scandica, comm. Paton.

- 70/9. S. umbrosa, decaying log in bog beside track to N.E. of Allt Rhyd-y-groes NNR, Rhandirmwyn (44), Woods.
- 70/11. S. aspera, on limestone near Inchiquin Lough (H.1), van Melick, 1979.
- 70/15. S. degenii, base-rich turf slope in gully, W. end of Coire Cheap, Ben Alder Forest (97), Long, 1979.
- 70/18. S. paludosa, delete 104, specimens are S. undulata, comm. Paton; place H.1 in square brackets, specimen not traced, comm. Paton.
- 73/4. Porella cordaeana, tree roots by R. Taw, nr Burrington (4), Appleyard; place 101 in square brackets, not traced (Kenneth, 1979).
- 74/1. Marchesinia mackaii, on bark, Clopook Wood, nr. Timahoe (H.14), Kelly.
- 75/2. Lejeunea patens, damp grit rock, Seal Bark Rocks, Saddleworth (63), Blockeel.
- 78/2. Cololejeunea rosettiana, dolomitised serpentine rock, Isle of Creinch, Loch Lomond (99), Stirling; on Marchesinia on bark, Clopook Wood, nr. Timahoe (H.14), D.L. Kelly.
- 81/1. Jubula hutchinsiae, N.E. side of Knochanimpha and Sugar Hill, W. of Newcastle West (H.8), van Melick, 1979.

MUSCI

M.O. Hill

The names and numbers follow Warburg, Census Catalogue of British Mosses, ed. 3 (1963).

- 1/3. Sphagnum papillosum, place 53 in ().
- 1/4. S. imbricatum, place 65,66,67 in (), comm. Birks.
- 1/6. S. strictum, place 69 in (), comm. Birks.
- 1/7. S. teres, boggy place, site of Red Ash Colliery, Cwm Sychan, Abersychan (35), Garlick: base-rich flush, Brynberian Moor, Mynydd Prescelly (45), Hill.
- 1/9. S. lindbergii, place 112 in (), comm. Birks.
- 1/12. S. recurvum α var. mucronatum, place 21 in (): β var. amblyphyllum, birch/sallow scrub, Tokavaig, Skye (104), Birse: γ var. tenuae, in native pinewood, Glen Affric (96), Birse.
- 1/16. S. cuspidatum, place 21 in ().
- 1/17. S. contortum β var. platyphyllum, species-rich flush, Dulas Valley (42), P. Day, comm. Benoit.
- 1/18. S. subsecundum α var. subsecundum, nr Brookwood (17 in ()), E.G. Hollingworth (BM); small moderately acidic basal mire, Glanyrafon Uchaf, N. slope of Preseli (45), G. Hutchins & J. Ratcliffe, 1979; β var. inundatum, place 21 in (): γ var. auriculatum, place 21 in (); Stapleford Wood (53), G.H. Allison, 1933 (herb. Seaward); wet heath, W. slope of Keeper Hill, S. of Silvermine Mts (H.10), van Melick, 1979.

- 1/19. S. fimbriatum, heathy ground among Molinia, Keeper Hill, S. of Silvermine Mts (H.10), van Melick, 1979; small bog S. of Currygrane Lough, Ballin-alea (H.24), Synnott.
- 1/20. S. girgensohnii, place 71 in square brackets, dubious record.
- 1/22. S. fuscum, place 60 in (), comm. Birks; place 71 in square brackets, dubious record; place 98 in (); waved peat NE of L. Callauntheeda, nr Derrymore House (H.9), van Melick, 1979.
- 1/23. S. warnstorffianum, place 60,65,67 in (), comm. Birks.
- 1/25. S. capillaceum, place 21,53 in ().
- 1/26. S. quinquefarium, woodland by Lud's Church, Gradbach (39), Perry, 1976.
- 2/3. Andreaea rothii δ var. crassinervia, rocks by Loch Trool (73), Wallace, 1937: ϵ var. huntii, nr Cromaglowan (H.2 in ()), G.A. Holt, 1885 (MANCH).
- 3/2. Atrichum undulatum β var. minus, place 21,98 in square brackets, not traced.
- 3/3. A. angustatum, place 33,37 in (), (distr. map, J. Bryol. 8, 495, 1975).
- 5/1. Polytrichum nanum, place 21,84 in ().
- 5/3. P. urnigerum, place 21 in (); slate quarry, N. side of Knockside Hill, 2½ km W. of Broadford (H.9), Synnott, 1979; path to raised bog, Ballinamore (H.17), Sleath.
- 5/4. P. alpinum, place H.23 in square brackets, dubious literature record.
- 5/8. P. alpestre, hummock in bog, Brynberian Moor (45), Perry; peaty heath, W. slope of Keeper Hill, S. of Silvermine Mts (H.10), van Melick, 1979.
- 5/9. P. aurantiacum, place 98,101 in square brackets, not traced.
- 5/11. P. commune β var. perigoniale, in Monk Wood, near the Wake Arms, Epping Forest (18), E. Saunders, 1960.
- 8/1. Fissidens viridulus, trampled ground by track, Little Warley Common nr Brentwood (18), Corley; delete 96,98,112 specimens (BBSUK) are incorrectly named, comm. Corley.
- 8/3. F. minutulus β var. tenuifolius, on crags of Magnesian limestone, Edlington Wood, Doncaster (63), M. Dalby, 1971 (DCR).
- 8/5. F. incurvus, place 80 in ().
- 8/9. F. curnowii, Great Saltee Island (H.12 in ()), H.W. Lett, 1913, conf. Corley.
- 8/12. F. exilis, soil from ditch in quarry, Cnwcau, Cilgerran, SE of Cardigan (45), Corley & N.G. Slack.
- 8/12*. F. celticus, clayey bank by R. Neath, S. of Pont Melin-Fach, Coed y - Rhaiadr (42), Perry & Paton; damp clay in Corylus scrub by Glengarriff River (H.3), Synnott, 1979.
- 8/14. F. osmundoides, place H. 23 in square brackets, dubious literature record.

- 8/17. F. adianthoides, place 21 in ().
- 9/1. Octodiceras fontanum, concrete wall under canal bridge, River Lee Navigation nr Fishers Green, Cheshunt (20), Woods, 1971; wood and stone by canal, Spring Gardens Lock, Leeds and Liverpool Canal, Leeds (63), Bockeel; aquatic, on stones at canal edge, Leeds and Liverpool Canal, Armley Mills, Leeds (64), Blockeel; on rocks in shallow water of reed-swamp, Lough Carrickaport (H.29), J.B. Ryan, 1978, comm. Lockhart - new to Ireland.
- 10/1. Archidium alternifolium, open clay soil on roadside, Yewtree Wood, Penny-Clawdd (35), Garlick, 1971; place 54 in ().
- 11/2. Pleuridium subulatum, place 21 in (), the only recent record is based on a nomenclatural confusion, comm. Gardiner.
- 12/2. Ditrichum pusillum, place 57 in square brackets, not traced; place 14, 16, 46, 60, 62, 64, H.5, H.12, H.32, H.35, H.38, H.39 in (), comm. Whitehouse.
- 12/3. D. heteromallum, loamy soil, W. side of Keeper Hill, S. of Silvermine Mts (H.10), van Melick, 1979.
- 12/4*. D. plumbicola, lead-enriched soil in open area of pine plantation, Priddy (6), Longton.
- 12/7. D. flexicaule, place 71 in square brackets, dubious record.
- 16/1. Brachydontium trichodes, place 81, 83 in (); place 98 in square brackets, not traced.
- 17/1. Seligeria doniana, on oolite stones in small wood, Snowhill, S. of Broadway (33), Corley; shady base-rich rockface in gully, W. end of Coire Cheap, Ben Alder Forest (97), Long, 1979.
- 17/2. S. pusila, place 21 in square brackets, dubious record; place 54 in ().
- 21/1. Pseudephemerum nitidum, damp clay by Glengarriff River (H.3), Synnott, 1979.
- 22/5. Dicranella rufescens, damp rut in woodland ride, Hitch Wood nr St. Paul's Walden (20), Bloom; place 21 in square brackets, dubious record.
- 22/6. D. crispa, place 101 in square brackets, not traced.
- 22/8. D. cerviculata, peaty bank, Cors Edern (49), Benoit; place 71 in square brackets, dubious record.
- 23/1. Rhabdoweisia fugax, place 28 in ().
- 23/2. R. denticulata, shady rock crevice, S. slope of Sugarloaf Mt, nr Lack-avane (H.3), van Melick, 1979; shady rock crevice nr waterfall, W. side of Keeper Hill, S. of Silvermine Mts (H.10), van Melick, 1979.
- 23/3. R. crenulata, wet rock above stream, N side of Foilastookeen Mt, Gougane Barra (H.3), Synnott, 1979; shaded granite rock crevice, 3 km W of Turlough Hill (H.20), Lockhart, 1979.
- 24/4. Cynodontium jenneri, place 81 in (); place 82 in square brackets, record not traced.
- 27/2. Dicranoweisia crispula, place 40 in square brackets, record dating from

1st edn of Census Catalogue not traced and unlikely.

- 29/1. Dicranum falcatum, on a rock ledge in Piers Gill, Scafell (70), R. Walker, 1950.
- 29/2. D. blyttii, place H.7 in square brackets, record not traced, comm. Synnott; delete H.38, specimen (DBN) is incorrectly named.
- 29/3. D. starkei, delete H.7, H.20 specimens (DBN) are incorrectly named.
- 29/5. D. montanum, on silver birch, shady damp woodland, Copi Gwythi, Rudry, Caerphilly (41), Garlick; place 54 in ().
- 29/7. D. strictum, nr Old Stump Road, Wintry Wood, Epping Lower Forest (19), G. Peck et al.; rotten branch in marsh, valley N of A472 road, ca 1 km E of Nelson (41), Perry, 1976.
- 29/8. D. scottianum, place 39 in (), comm. Birks.
- 29/10. D. fuscescens β var. congestum, delete H.27, specimen (BBSUK) is incorrectly named.
- 29/11. D. majus, place 53 in ().
- 29/15. D. undulatum, place 68 in (), comm. Coker; place 80 in ().
- 29/15. D. spurium, drier areas of dwarf-shrub heath, Linwood Warren (54), Wigginton, 1979; between Skipwith and Thorganby (61), G.A. Shaw, 1957 (reliable literature record ex Naturalist, 1958), comm. Blockeel.
- 30/3. Dicranodontium denudatum, rotting log in oakwood, Coed Hafod, Betws-y-Coed (50), Benoit.
- 31/1. Campylopus subulatus, gravelly path with Pohlia drummondii, Appleslade Enclosure, New Forest (11), Paton, 1958 (existing record in BBSUK is incorrectly named, comm. Corley); delete H.16, H.27 specimens (DBN) are incorrectly named, comm. Synnott.
- 31/5. C. pyriformis β var. azoricus, on peaty loam, Kettle Mere (40), Wigginton, 1979, conf. Corley.
- 31/7. C. shawii, place 71 in square brackets, locality is improbable and the record requires confirmation, comm. Corley.
- 31/9. C. atrovirens γ var. gracilis, place 104 in (), comm. Birks.
- 31/11. C. introflexus, on pine log, Wentwood, north of Gray Hill, Llanvair-Discoed (35), Garlick, 1973.
- 31/12. C. brevipilus, place 101 in square brackets, not traced; peat bog NE of L. Callaunhyheeda, nr Derrymore House (H.9), van Melick, 1979.
- 33/2. Leucobryum juniperoideum, rotting log in beechwood, Wentwood Lodge, N of Penhow (35), Perry, 1974; on fallen, rotten tree-trunk, Oaks Wood, SE of Pontesbury (40), Newton; woodland floor, Coed y Bedw, S of Gwaelod-y Garth, Taff Vale (41), Perry, 1976; banks and logs in forestry plantation, above Eglwysrwrw (45), Hill, 1978; on rotten tree stump in woodland by Afon Vyrnwy, Dolanog (47), Newton et al.
- 34/2. Encalypta vulgaris, place 21 in (); place 98 in square brackets, not

traced.

- 34/4A. E. brevicollis, Reekie Linn, Den of Airlie, ca 5 miles NW of Kirkton of Glenisla (90 in ()), W. Mitten, 1871 (NY) - new to the British Isles (Horton, 1980).
- 35/2. Tortula ruraliformis, asbestos tile roof of house, Drymen (86), J. Mitchell et al.
- 35/6. T. laevipila, on elder, Callert, Loch Leven (97), Stirling; on elder, Hill of Ushnagh (H.23), Synnott.
- 35/7. T. virescens, by and on oak roots by water, Wadenhoe nr Oundle (32), N. Jardine.
- 35/8. T. papillosa, tree in woodland, Dippermill, nr Black Torrington (4), Appleyard; on elm, Carrigeen, W of Waterford, nr River Suir (H.11), van Melick, 1979.
- 35/9. T. latifolia, quay wall, S side of River Shannon at Limerick (H.8), van Melick, 1979.
- 35/10. T. subulata β var. subinermis, mud between stones beside river, Broken Scar Wier, Darlington (66), Lightowlers, 1978; δ var. graeffii, stone-faced roadside bank, N of Castletown (H.23), Synnott.
- 35/15. T. vahliana, on tree-root in chalk pit, Graveley (20), Bloom, 1979.
- 36/1. Aloina brevirostris, broken-up runway of disused airfield, Norton Manderville (19), E. Saunders, 1965: on uncompacted chalk in quarry, Redbourne (20), Bloom.
- 36/2. A. rigida, Boscombe Down (8), Wallace, 1956; chalk quarry, Redbourne (20), Bloom.
- 36/3. A. ambigua, clay-topped oolitic walls, Biddestone (7 in ()), H.W. Lett, 1888 (DBN); wooded chalkpit, Weston Hills nr Baldock (20), Bloom (previous records being doubtful and in need of confirmation); Springwell Chalkpit, Harefield (21), Boniface, 1951 (first record since 1907).
- 36/4. A. aloides, limestone wall, Draper Bridge, Royal Canal (H.24), Synnott.
- 38/2. Pterygoneurum lamellatum, Combe Down (6 in ()), Mrs. Hopkins, 1861 (BM); mud wall nr Falkirk Rly Station (86 in ()), T.L., 1850 (BM); place 3, 23,24,32,33,37,55,57,H.21,H.38 in () , comm. Coker; place 14,26,34,53, 83,85 in square brackets, untraced, comm. Coker.
- 40/3. Pottia heimii, base of sea-wall embankment, 1 km N of Foul Anchor (53), P. Adam, 1976.
- 40/10. P. commutata, Polesden nr Great Bookham (17 in ()), A.O. Black, 1856 (BM), comm. Gardiner.
- 40/11. P. starkeana α var. starkeana, place 5 in square brackets, not traced, comm. Appleyard; β var. brachyodus, old limestone quarry, Wrinton (6), Appleyard, 1968, conf. Chamberlain; γ ssp. minutula, bank of ditch on loam, Highmoor Copse, Highworth (7), Corley, 1965; chalky ground on Eggardon Hill (9), Hill, 1968; stubble field, N side of Graffham Downs (13), Wallace & Crundwell, 1953 (herb. Crundwell); chalk turf, S side

of Hog's Back, nr Guildford (17), Crundwell & Wallace, 1953 (herb. Crundwell); hoof-holes in shallow ditch, pasture beside Stort Canal, Tednambury (19), Adams; ride in chalk woodland, High Wood, Benington (20), Bloom, 1978; on sandy ground, Ruislip Common (21 in ()), P.W. Richards, 1926 (NMW); on ground in Rauceby Sand Pits (53), J.H.G. Peterken, 1954 (BBSUK); on calcareous loam, grassy bank in pasture, Tatham (60), Wigginton, 1978; calcareous flush, nr Painsthorpe, Kirby Underdale (61), Blockeel; stubblefield 1½ miles NW of Rivaulx (62), Crundwell, 1967; muddy field by R. Aire, Gargrave (63), Blockeel, 1979; earthy bank, old Magnesian limestone quarry, Wingate Hill, Tadcaster (64), Paton, 1965; bare earth, Magnesian limestone quarry, Nosterfield, E of Masham (65), Wallace, 1946; wet disturbed, calcareous ground by road, Greenay (111), Gardiner, 1974.

- 40/13. P. recta, place 83 in (); on drainage spoil N of Newtown Lough, Clonmellon (H.22), Synnott.
- 41/2. Phascum cuspidatum β var. piliferum, place 83 in ().
- 42/1. Acaulon muticum, place 5 in square brackets, not traced, comm. Appleyard; bare sandy soil on roadside, Coed-y-Fedw, Raglan (35), Garlick, 1971; place 80,83 in (); place 101 in square brackets, not traced.
- 42/2. A. triquetrum, place 3 in (), comm. Coker.
- 43/1. Cinclidotus fontinaloides, beam of water-mill, Yafford Mill, nr Shorewell (10), Snow; place 54 in ().
- 43/3. C. mucronatus, place 54,80 in ().
- 44/1. Barbula convoluta β var. commutata, quay wall on S side of River Shannon, Limerick (H.8), van Melick, 1979.
- 44/4. B. hornsuschuchiana, place 71 in square brackets, dubious record.
- 44/8. B. reflexa, place 71 in square brackets, dubious record.
- 44/13. B. nicholsonii, rocks by small stream, N of Wiveliscombe (5), Appleyard; damp stonework by canal, nr Claydon (32), Wigginton.
- 44/14. B. trifaria, large stone by drain, N of Newtown Lough, Clonmellon (H.22), Synnott; limestone boulder by road, N of Castletown (H.23), Synnott.
- 44/17. B. cylindrica, Ancaster (53), G.H. Allison, 1930 (herb. Seaward).
- 44/19. B. ferruginascens, crevice of boulder below high water mark of Afon Vyrnwy, Dolanog (47), Newton.
- 44A/1. Trichostomopsis umbrosa, sandstone wall-top in ruins, Battle Abbey (14), Townsend; on chalk wetted by spring water, Ashwell (20), Bloom.
- 45/2. Gymnostomum recurvirostrum, on wet slabs of Breccia in disused quarry, Alberbury Park (40), Newton; place 83 in ().
- 45/3. G. calcareum, in old limestone quarry, Crwbin, S of Carmarthen (44), Paton, 1977.
- 47/1. Eucladium verticillatum, place 53 in (); lock of Royal Canal at Drapers Bridge (H.24), Synnott.

- 51/1. Trichostomum tenuirostre α var. tenuirostre, delete 37, and replace by 39, which is correct v.-c. of Seckley Wood, comm. Fisk: β var. holtii, delete 5, comm. Appleyard.
- 51/2. T. hibernicum, place H.5 in (), comm. Birks.
- 51/3. T. sinuosum, delete 101, specimen (BBSUK) is correctly named; rocks, S slope of Sugarloaf Mountain, nr Lackavane (H.3), van Melick, 1979.
- 52/1A. Weissia perssonii, crevices in slaty rocks, sea cliffs, Craig-y-Gwbert, Gwbert-on-sea (46), Perry, 1973; crack of wall facing sea, West Tarbet, Mull of Galloway (74), R.P. Libbey.
- 52/3. W. crispata, limestone rocks nr sea, Penmon Point (52), Hill, 1972.
- 52/4. W. rutilans, damp clay ride, Yewtree Wood, Pen-y-Clawdd, Raglan (35), Garlick, 1971; on sandy woodland road, Copi Gwythi, Rudry, Caerphilly (41), Garlick; place 84 in (); place 103 in square brackets (Eddy, 1978).
- 52/6. W. microstoma, place 101 in square brackets, not traced.
- 52/10. W. multicapsularis, delete 17, record refers to W. mittenii, comm. Gardiner.
- 52/11. W. crispa, limestone wall, crevice in shade, roadside W of Killavally Torque, NE of Kilbeggan (H.23), Synnott: β var. aciculata, dolomite boulder, W bank of R. Taff, Gwaelod y Garth, Taff Vale (41), Perry, 1979.
- 53/2. Leptodontium gemmascens, place 3,13,14,33 in (), comm. Coker; on acid soil in heathland, Patmore Heath, nr Bishops Stortford (20), P.J. Driver; on decaying Arrhenatherum, Fir and Pond Woods, Enfield (21), P.J. Driver, 1981.
- 55/2. Grimmia apocarpa β var. homodictyon, siliceous outcrop above Keills House, Knapdale (101), Kenneth, 1975, conf. Smith.
- 55/3. G. conferta, place 80,83 in ().
- 55/7*. G. agassizii, boulder in Tees, S bank of river, just above Caldron Snout (69), Blockeel.
- 55/10. G. commutata, boulder on bank of River Tees, between Caldron Snout and reservoir dam (66), Blockeel; place 82 in ().
- 55/11. G. laevigata, sandstone wall and roof-tiles of farm building, Common Fields, Newent (34), Garlick, 1973; on basalt, Arthur's Seat, above Duddingston Loch, Edinburgh (83), Long, 1973 (E).
- 55/13. G. doniana, mortar of wall between Midhope and Langsett (63), Blockeel.
- 55/16. G. affinis, basalt crags, Kylvie Hills, SW of Holy Island (68), Appleyard, 1963; sloping rocks above Agassiz Rock, Blackford Quarry, Edinburgh (83), Long, 1978 (E).
- 55/24. G. trichophylla, place H.23 in square brackets, dubious literature record,
- 55/26. G. stirtonii, boulders on shore of Loch Cuaich, nr Dalwhinnie (96), Crundwell, 1952.
- 55/28. G. hartmanii, siliceous boulder in oakwood, Pen-Rhiw, S of Carningli

Common (45), Perry, 1973.

- 55/30. G. decipiens, place 71 in square brackets, dubious record; place 80 in ().
- 55/32. G. patens, Old Park, Chatsworth, nr Bakewell (57 in ()), Mr. Scott, ca 1840 (herb. specimen in library of Chatsworth House); place 82 in ().
- 56/2. Rhacomitrium aciculare, on flat tombstone, Womersley churchyard, nr Guildford (17), Gardiner et al.; stream, W side of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.
- 56/3. R. aquaticum, damp rocks by the roadside, Bedwellty Pits to Tredegar (35), Garlick, 1967.
- 56/6. R. microcarpon, place 98 in (); place 104 in (), comm. Birks.
- 56/7. R. canescens α var. canescens, marly bank on limestone, Fownhope Common (36), C.H. Binstead and L.B.C. Trotter, 1932 (NMW); in short turf on limestone, Llanymynech Hill, S of Oswestry (47), Newton, 1978; β var. ericoides, old slate quarry nr Wiveliscombe (5), Appleyard; Nomansland, S of Wheathampstead (20 in ()), A.E. Gibbs, 1882; between Llanidloes and Caencoed (47), J.A. Webb, 1940 (NMW); place 54 in ().
- 56/8. R. lanuginosum, steep stony bank beside road nr Hooks Cross, between Stevenage and Walton-at-Stone (20), Bloom; raised bog E of Lissmacaffry (H.23), Synnott.
- 57/1. Disclium nudum, on fine clay band in sand on E bank of River Severn nr Preston Montford, WNW of Shrewsbury (40), Newton, 1979; on vertical bank of River Severn to W of Breidden Hill (47), P.E. Jackson.
- 58/2. Funaria muhlenbergii, soil on limestone slope above cliffs, Craig y Cilau, Llangattock (42), Woods.
- 58/3. F. attenuata, place 83 in ().
- 58/4. F. fascicularis, place 83 in (); place 98,100,111 in square brackets, dubious old records dating from 1st edition of Census Catalogue (1907).
- 59/1. Physcomitrium pyriforme, place 84 in (); clay bank of drain, shore of Glen Lough (H.24), Synnott.
- 59/3. P. sphaericum, dried-out muddy margin of pool, Wards Ponds, Gartocharn, Loch Lomond (99), J. Mitchell, comm. Stirling.
- 60/1. Physcomitrella patens, place 21,84 in (); dried-out margin of pool, Wards Ponds, Gartocharn, Loch Lomond (99), J. Mitchell, comm. Stirling; meadow nr ruin of Carrygogunnell Castle, Corcamore, W of Limerick (H.8), van Melick, 1979.
- 62/1. Ephemerum recurvifolium, bare soil of woodland path on oolite, Lamphill Wood, Miserden Park (33), Garlick, 1979.
- 62/6. E. serratum α var. serratum, edge of dried-out pool, Aros Moss (101), Kenneth, 1969.
- 63/1. Oedipodium griffithianum, place 80 in ().
- 65/2. Tetraplodon mnioides, place 54 in (); in wet parts, Beeley Moors nr

- Bakewell (57 in ()), Mr. Scott, ca 1840 (herb. specimen in library of Chatsworth House).
- 66/1. Aplodon wormskjoldii, place 88 in (), comm. Birks; on partially decayed sheep, nr Allt A'Chaoruinn, Glen Banchor (96), Paton, conf. Crundwell.
- 71/1. Orthodontium gracile, thin soil on siliceous rock, Shaugh Bridge (3), Coker, 1959.
- 71/2. O. lineare, rotting tree stump nr Syke Farm, Walwyn's Castle (45), Fisk; bank in pinewood nr Loch Doire nan Sgiath, S of Loch Laggan, Badenoch (97), Paton.
- 72/1. Leptobryum pyriforme, Bloxholm (53), Seaward, 1963; sandy-loamy soil of meadow, Mungret, W of Limerick (H.8), van Melick, 1979; on side of tussock by lake edge, Lough Shesk, Clonmellon (H.22), Synnott.
- 73/4. Pohlia cruda, rock crevice nr waterfall, W side of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.
- 73/8. P. gracilis, damp sand in pit, W of Reigate Heath (17), Wallace, 1954 (BBSUK), conf. Crundwell; roadside Tatham Moor, Hindburn (60 in ()), A. Wilson & J.A. Wheldon, 1902 (NMW, labelled Webera erecta); damp sand, Luce Bay (74), U.K. Duncan, 1955 (BBSUK, labelled Pohlia rothii); damp sandy ground, Sands of Forvie, nr Newburgh (93), Crundwell, 1955 (BBSUK), labelled Pohlia rothii; wet sandy track by River Glenshelane, 2 miles N of Cappoquin (H.6), E.M. Lobley, 1966 (BBSUK, labelled Pohlia rothii); side of stony path, Baronscourt (H.36), Fitzgerald, 1957 (BBSUK, labelled Pohlia rothii) - new to Ireland.
- 73/9. P. rothii, delete 12,17,22,76,86,99,H.1, specimens belong to another taxon whose identity is uncertain, comm. Crundwell.
- 73/12A. Pohlia camptotrachela, Bohemia Bog, Rookley (10), Snow; track nr Brynberian, just N of Mynydd Prescelly (45), Hill; sandy bank of track by Harthope Burn, nr Langfeeford (68), Gardiner & Milnes-Smith, 1978; hedgebank bordering lane, W side of Slieve Bernagh (H.9), Bloom, 1979.
- 73/12B. P. muyldermansii, on shale and gritstone bank beside stream running NE into Vale of Cliviger, between Burnley and Todmorden (59), Newton & Foster; hedgebank bordering lane, W side of Slieve Bernagh (H.9), Bloom, 1979; delete 81 and replace by 80, locality mis-ascribed, comm. Chamberlain and Long.
- 73/13*. P. pulchella, Mad Bess Wood nr Ruislip (21), Milnes-Smith & Gardiner; clayey bank of R. Usk, NW of Monkswood (35), Perry & Paton, 1980.
- 73/13B. P. lutescens, sandy banks of forest road, Llangibby Park, Llangyby (35), Garlick, 1973; clearing, Hunthouse Wood Nature Reserve (37), Fisk; bank in wood W of estuary, N of Neyland (45), Paton; laneside bank, Guiseley, nr Leeds (64), Blockeel; rock crevices on W side of Keeper Hill (H.10), van Melick, 1979.
- 73/14. P. wahlenbergii γ var. calcareae, place 22 in square brackets, doubtful record, comm. Jones.
- 75/1. Plagiobryum zieri, damp calcareous grit, Seal Bark Rocks, Saddleworth (63), Blockeel.
- 76/1. Anomobryum filiforme, damp rocks above Afon Eiddew, Lake Vyrnwy (47),

Hill, 1975.

- 77/2. Bryum warneum, place 6 in (), comm. Appleyard; on stabilized sand nr water, disused area of working gravel pit N of road between Lydd and Dungeness (16), Townsend; place 49 in () (Hill, notes).
- 77/4. B. pendulum, place 21 in square brackets, dubious literature record.
- 77/8. B. inclinatum, place 21 in ().
- 77/13. B. pallens, drained shore of Glen Lough, S of Mostrim (H.24), Synnott.
- 77/16. B. weigeli, flush on mountain slope, W slope of Chno Dearg, Loch Treig (97), Long; delete H.6, dubious record which is almost certainly erroneous, comm. Smith.
- 77/20. B. creberrimum, disused railway nr Fuller's Earth works, Baynards, nr Cranleigh, S of Guildford (17), Gardiner & Milnes-Smith.
- 77/21. B. pallescens, concrete wall in old quarry, Ryburn Reservoir, nr Rippen-den (63). Blockeel; rock crevices, SW shore of Inchiquin Lough, Cloonee Lakes area (H.1), van Melick, 1979.
- 77/23. B. caespiticiu β var. imbricatum, on Carboniferous limestone rocks, Y Moelydd, nr Nantmawr (40), Benoit, 1978.
- 77/26A. B. gemmiferum, soil bank by brook, Bilson Green, Cinderford (34), Orange; soil in fallow field, Darlington (66), Wigginton, 1977; on shell-marl beside drainage ditch, N of Newtown Lough, Clonmellon (H.22), Synnott.
- 77/26C. B. dunense, Christchurch churchyard, Sandown (10), Snow; gravelly spoil heap by disused brickworks, south of Newdigate (17), Gardiner & Milnes-Smith, 1979; stone in field, Ragnall Farm, Littleworth, nr Far- ingdon (22), Corley; soil on cliffs, Marloes Sands (45), Corley; on sandy loam in turf just above saltmarsh, Lune estuary (60), Wigginton, 1979; sandy soil in Magnesian limestone quarry, Wentbridge (63), Block- eel, 1981; dunes, Kilmory Bay, Loch Sween, Knapdale (101), Corley.
- 77/27. B. radiculosum, wall of farm building, Sunnyslaw Farm, nr Bridge of Allan (86), Long; damp wall in woodland, Cortachy Castle nr Dykehead (90), Long, 1979.
- 77/27A. B. tenuisetum, edge of pond in woodland, Basil's Park Wood nr Bramfield (20), Bloom, 1977; muddy detritus by Watergrove Reservoir, N of Roch- dale (59), Perry & Hill, 1979.
- 77/28. B. micro-erythrocarpum, in acid grassland, Panshanger Park, nr Welwyn Garden City (20), Bloom, 1977; stubblefield nr Llanbed, E of Mathry (45), Whitehouse; boggy ground at margin of Mount Dalton Lough, W of Mullingar (H.23), Synnott.
- 77/29. B. rubens, bare ground of gateway, nr Mount End, Theydon Garnon (18), Adams.
- 77/29*. B. ruderale, waste ground by road, nr Aynho (32), Wigginton; roadside, Abercych, by junction of Afon Cych and Afon Teifi (45), Hill; limestone wall, Draper Bridge, Royal Canal (H.24), Synnott.
- 77/30. B. klinggraeffii, soil in pasture, Hornspike Farm, nr Wem Moss (40), Newton; stubblefield nr Camrose, NW of Haverfordwest (45), Whitehouse; waste

- ground by bridge over Avonbeg River, Greenan, WSW of Rathdrum (H.20), Perry, 1975
- 77/30*. B. violaceum, cornfield nr Little Bentley (19), Hill, 1969; stubble-field nr Pirton (37), Fisk.
- 77/31. B. sauteri, sandy verges of forest road, Llangibby Park, Llangibby, Usk (35), Garlick, 1973; clearing in woodland, Abberley Hill (37), Fisk.
- 77/34. B. alpinum, delete 31, specimen (BBSUK) is correctly named, conf. Whitehouse.
- 77/37A. B. elegans, delete 6, erroneous record, comm. Appleyard; delete 40, 52, specimens (BBSUK) are B. caespiticium var. imbricatum.
- 77/37C. B. flaccidum, hedgerow just E of Shales More, Stapleford Tawney (18), Adams; on ash, Horse Wood, Mileham (28), R.P. Libbey & E.L. Swann, 1977; on elder and ash in hedge, Moun-ton, Chepstow (35), Garlick, 1978; bole of lakeside willow, Talygarn Estate, S of Llantrisant (41), Perry, 1976; roadside elder nr Rathillet House, N of Cupar (85), Long, 1979; tree trunk in native oak woodland, Uragh Wood, SW shore of Inchiquin Lough, Cloonee Lakes area (H.1), van Melick, 1979 - new to Ireland.
- 77/37E. B. torquescens, rocky ground on limestone, West Williamston, nr Carew (45), Appleyard.
- 77/40. B. canariense, limestone rocks nr Symonds Yat (34), Appleyard, 1954.
- 78/1. Rhodobryum roseum, damp grassland in dune slack, Quendale (112), anon., 1977, comm. Ms E. Field.
- 79/4. Mnium marginatum α var. marginatum, place 53, 54 in (); place 71 in square brackets, dubious record; β var. dioicum, Mowthorpe Dale (61 in ()), R. Spruce, 1847 (MANCH).
- 79/7. M. cuspidatum, place 71 in square brackets, dubious record; in turf beside Bhran Cottage, Glen Tromie, S of Kingussie (96), Paton.
- 79/10. M. affine, hedgebank by field just NE of Sparkey Wood, Wickham Bishops (19), Adams, 1968.
- 79/11. M. rugicum, place 21 in (); marsh, Dowrog Common, nr St David's (45), Hill.
- 79/12. M. seligeri, place 21 in square brackets, not localized.
- 79/14A. Rhizomnium magnifolium, amongst Harpanthus flotovianus at about 420 m alt., above Allt Mhainsteir, Ardverikie Forest, Badenoch (97), Paton, conf. Crundwell.
- 79/15. R. pseudopunctatum, delete 5, specimen (BRIST) on which record is presumably based is incorrectly named, comm. Appleyard; place 6 in (), comm. Appleyard; flush at edge of boulder scree, NE side of Llyn Cerrig-llwydion Uchaf, nr Claerwen (43), Woods, 1973; base-rich flush, Brynberian Moor, Mynydd Prescelly (45), Hill.
- 79/16. Mnium cinclidioides, flush on mountain slope, W slope of Chno Dearg, Loch Treig (97), Long.
- 80/1. Cinclidium stygium, place 98 in square brackets, not traced.

- 81/1. Aulacomnium palustre β var. imbricatum, place 54 in ().
- 81/3. A. androgynum, place 98 in square brackets, not traced; rotting logs on river bank, River Kelvin at Dawsholm, Glasgow (99), Stirling.
- 83/1. Meesia uliginosa, place 82 in ().
- 84/1. Amblyodon dealbatus, basic flush, E side of Black Height, Newcastleton (80), Corner; place 81 in ().
- 85/1. Catoscopium nigratum, place 82 in (); damp ditch in young conifer plantation on fixed dunes, Dunnet Links (109), Long & Crundwell.
- 86/1. Plagiopus oederi, place 83 in ().
- 87/1. Bartramia hallerana, moors, Buxton (57 in ()), Mr. Scott, ca 1840 (herb. specimens in library of Chatsworth House).
- 87/2. B. pomiformis, stone wall in lane on W side of Slieve Bernagh hills, 5 km N of Broadford (H.9), Synnott, 1979.
- 87/4. B. stricta, place 45 in square brackets, dubious record, comm. Coker.
- 90/1. Philonotis rigida, near Conway Falls, on Denbighshire side of river between Pentrefoelas and Betws-y-Coed (50 in ()), H.C. Broome, 1909 (BM), conf. G. Raeymaekers.
- 90/2. P. fontana, place 21 in ().
- 90/3. P. caespitosa, Glen Doll (90), E.A. Richards, 1909 (BM); nr Lough Coomacullen, Glenbeigh (H.1), Wallace, 1951.
- 90/6. P. calcarea, boggy flush, Holford Combe, nr Nether Stowey (5), Appleyard (previous record being based on erroneously named material in BRIST); place 53 in (); place 71 in square brackets, dubious record.
- 91/1. Breutelia chrysocoma, place 54,81 in (); nr waterfall, W side of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.
- 94/1. Ptychomitrium polyphyllum, place H23 in square brackets, no localized record.
- 95/1. Glyphomitrium daviesii, place 3,69 in (), comm. Birks; place 98 in ().
- 96/1. Amphidium lapponicum, place 80 in ().
- 97/1. Zygodon viridissimus β var. stirtonii, limestone cliff, Wass Bank nr Kilburn (62), Blockeel; walls beside road nr ruin of Carrygogunnell Castle, Corcamore, W of Limerick (H.8), van Melick, 1979: γ var. vulgaris, on ash, steep hillside behind Craig-y-Cwm, Llanover (35), Garlick; basic boulder in woodland by Vartry River, the Devil's Glen, NW of Ashford (H.20), Perry, 1975.
- 98/3. Orthotrichum cupulatum β var. nudum, west shore of Lough Kinale (H.24), Synnott.
- 98/8. O. lyellii, place 21 in (); on willow, shore of Lough Kinale (H24), Synnott.

- 98/9. O. rivulare, stones by banks of River Mole (17 in ()), A.O. Black, 1856 (BM), conf. Gardiner & Wallace.
- 98/10. O. sprucei, tree by River Taw nr Burrington (4), Appleyard; delete 37, vice-county wrongly ascribed, comm. Fisk.
- 98/12. O. stramineum, on Sambucus in open woodland, Thenford (32), Wigginton; place 101 in square brackets, not traced.
- 98/13. O. pallens, place 80 in square brackets, no specimen traced.
- 98/14. O. tenellum, delete 37, vice-county wrongly ascribed, comm. Fisk.
- 98/15. O. pulchellum, on Sambucus, Dane's Moor, nr Chipping Warden (32), Wigginton; on hawthorn in hedge, Pant Glas, Llanishen (35), Garlick, 1973.
- 98/17. O. obtusifolium, place 34 in square brackets, inadequately localized; delete 37, vice-county wrongly ascribed, comm. Fisk.
- 99/1. Ulotia phyllantha, place 23 in (), comm. Jones; place 54 in ().
- 99/3. U. crispa, place 54 in (); place 53 in square brackets, not traced.
- 99/5. U. bruchii, old sallow, Lodge Coppice, Hatfield Forest (19), Adams, 1972.
- 99/6. U. drummondii, on Salix, E slope of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.
- 100/1. Fontinalis antipyretica β var. gigantea, ditch in Glen Feshie, N of Tolvah (96), Paton; stream, Coire Cheap, Ben Alder Forest (97), Long, 1979: γ var. gracilis, delete 37, vice-county wrongly ascribed, comm. Fisk.
- 101/1. Climacium dendroides, grassland in wet hollow of derelict land, flood plain of Cobbins Brook, Waltham-Holy-Cross (19), Adams; place 21 in ().
- 103/1. Cryphaea heteromalla, place 54 in ().
- 104/1. Leucodon sciuriodes, place 63 in (), comm. Blockeel.
- 105/1. Antitrichia curtipendula, on old wall of Fixby Park, nr Elland (63 in ()), James Bolton, ca 1783, (CMM), det. & comm. Blockeel; place 80,83 in (); steep shaded rocks, NE slope of Lackawee, (H.3), van Melick, 1979.
- 110/1. Omalia trichomanoides, base of Acer pseudoplatanus by marsh S of Curry-grane Lough, Ballinalea (H.24), Synnott.
- 114/1. Cyclodictyon laetevirens, place H.6 in (), comm. Birks.
- 117/1. Habrodon perpusillus, on elder, Callert, Loch Leven (97), Stirling; place 4,75,99,100 in (); place 86 in square brackets, not traced; delete 98, locality of old record (Salen) is in v.-c. 97, comm. Coker.
- 120/3. Pseudoleskea incurvata, place 80 in square brackets, no specimen traced; place 98 in square brackets, record not traced.
- 121/1. Heterocladium heteropterum, place 84 in square brackets, record not traced: β var. flaccidum, shaded boulder, Great Wood, nr Egglestone (66), L. Freese.

- 122/1. Anomodon longifolius, one small patch on ledge of limestone rock, Ingleborough (64 in ()), J. Nowell, 1861 (BM); place 35,36,66 in (), comm. Coker.
- 123/5. Thuidium philibertii, damp limestone grassland between Skipton and Gargrave (63), Blockeel; limestone quarry N of Bunbrosna (H.23), Synnott.
- 126/1. Campylium stellatum, place 21 in square brackets, no record traced; Holywell Mound (53), Seaward, 1965.
- 126/2. Campylium protensum, place 21 in (); steep roadside bank, Coolamber Lissmacaffry (H.23), Synnott.
- 126/3. C. chrysophyllum, limestone wall, Draper Bridge, Royal Canal (H.24), Synnott.
- 126/4. C. polygamum, bog in Little Monk Wood, Epping Forest (18 in ()), P. Thompson, 1912.
- 126/6. C. calcareum, place 53 in (); place H.21 in square brackets, provenance of specimen dubious; place H.23 in square brackets, record not traced.
- 128/1. Hygroamblystegium tenax, place 54 in ().
- 128/2. H. fluviatile, place 53 in square brackets, dubious record.
- 129/3. Amblystegium kochii, wet, sheep-grazed field nr the former Braughing railway station (20), Bloom; soil at edge of shallow dyke, Will Pits, Thorne Moors (63), J. Verhees, 1971 (DCR).
- 129/4. A. varium, place 21 in ().
- 129/5. A. compactum, cliff of Magnesian limestone in gorge, Castle Eden Dene, NW of Hartlepool (66), A.J. Richards, 1973.
- 130/2. Amblystegiella sprucei, shaded rock ledge, Allt na Chaorach, E of Ben Wyvis (106), Chamberlain.
- 131/2. Drepanocladus sendtneri, calcareous seepage on W side of old spoil-heap, Crump Meadow Inclosure, Cinderford (34), Orange, 1979.
- 131/4. D. fluitans α var. fluitans, depression in peat, Holyhead Mt (52), Smith, 1965: β var. falcatus, place 19 in square brackets, not localized, comm. Adams; moor S of Brynberian, Mynydd Prescelly (45), Paton; Twig-moor (54), Seaward, 1965; Eldrig Moss (74), Corner, 1976.
- 131/5. D. exannulatus α var. exannulatus, field nr Decoy Pool Farm, N of Meare (6), Appleyard, 1966; margin of pond, Wintry Wood, Epping Lower Forest (19), Adams, 1967: β var. rotae, in a flush, Holford Combe nr Nether Stowey (5), Appleyard; marshy ground, Priddy Pools, ca 6 km N of Wells (6), Appleyard, 1966.
- 131/6. D. revolvens α var. revolvens, place 53 in ().
- 131/7. D. vernicosus, base-rich flush, Brynberian Moors, Mynydd Prescelly (45), Hill et al.
- 131/8. D. uncinatus, rotten stem beside stream, W side of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.

- 132/2. Hygrohypnum luridum, place 21,53 in (); place 71 in square brackets, dubious record: β var. subsphaericarpon, boulders, River Tyne, Chollerford (67), H.N. Dixon, 1905 (E); Lomond Hill (85), C. Ewing, 1884 (GL).
- 132/6. H. dilatatum, place 98 in ().
- 133/1. Scorpidium scorpioides, Draper Bridge, Royal Canal (H.24), Synnott.
- 134/1. Acrocladium stramineum, place 21 in {}; wet ground on W side of Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979.
- 134/4. A. giganteum, place 21 in ().
- 135/1. Isothecium myurum, place 21 in ().
- 137/2. Camptothecium lutescens, low outcrops of volcanic tuff, Meikle White Hill, Kilpatrick Hills (99), Stirling.
- 138/12. Brachythecium populeum, place 21 in (); shaded limestone wall, S side of Hill of Ushnagh, W of Mullingar (H.23), Synnott; roadside wall, crossroads NE of Lisryan (H.24), Synnott.
- 138/13. B. plumosum, place 53,54 in ().
- 139/2. Scleropodium tourretii, place 18 in (), comm. Adams.
- 140/1. Cirriphyllum piliferum, place 21 in ().
- 141/4. Eurhynchium praelongum β var. stokesii, among grass on woodland floor, Sutton Clough, Glusburn, nr Keighley (63), Blockeel.
- 141/6. E. schleicheri, place 108 in square brackets, no specimen traced, comm. Long; loamy soil in woodland, Keeper Hill, S of Silvermine Mts (H.10), van Melick, 1979 - new to Ireland.
- 141/7. E. speciosum, place 21 in ().
- 142/1. Rhynchostegiella pumila, loamy bank in grounds of Chiswick House, Chiswick (21), Milnes-Smith & Gardiner, 1977 (first localized record).
- 142/2. R. curviseta, delete 69, specimen (BBSUK) is incorrectly named.
- 142/3. R. teesdalei, stone in stream, Park Gill, Carleton, nr Skipton (63), Blockeel.
- 142/4. R. tenella β var. litorea, place 21 in ().
- 143/1. Pterigynandrum filiforme, Ashford, nr Bakewell (57 in ()), Mr. Scott, ca 1840 (herb. specimen in library of Chatsworth House).
- 148/2. Isopterygium depressum, bole of ash tree, Garret Wood, nr Harefield (21), Boniface, 1955; place 71 in square brackets, dubious record; on stone of limestone in wood, W of Killavally Torque, NE of Kilbeggan (H.23), Synnott.
- 149/1. Plagiothecium latebricola, place 81 in ().
- 149/6. P. curvifolium, Mad Bess Wood, Ruislip (21), Milnes-Smith & Gardiner; delete 52, specimen (BBSUK) is incorrectly named; rotting wood, Creinch,

Loch Lomond (99), Stirling et al.; delete H.29, specimen (BBSUK) is incorrectly named; delete H.33, specimen (herb. Fitzgerald) is P. laetum.

- 149/7. P. laetum, tree-base by road, upper end of Ceiriog valley (50), Hill, 1973; peaty soil among boulders in wooded gorge, Newsholme Dean, Keighley (63), Blockeel; siliceous boulders in lane wall, SE of Dalegarth Hall, Boot (70), Perry, 1973; on raw humus in wood nr Carrick Lough, Derrygonnelly (H.33), Fitzgerald, 1961.
- 149/11. P. sylvaticum, base of tree, Elliot's Wood (53), J.H. Chandler (herb. Seaward).
- 151/1. Pylaisia polyantha, place 54,83 in ().
- 152/1. Platygyrium repens, on beech and ash, Lady Park Wood, N of Staunton (35), Perry, 1979.
- 153/1. Homomallium incurvatum, place 71 in square brackets, dubious record.
- 154/1. Hypnum cupressiforme δ var. mamillatum, old tree trunk, Redlands Wood, nr Dorking (17), Mrs. J.E. Smith & Gardiner, 1976; woodland nr Drumcliff, N of Sligo (H.28), Appleyard, 1970; ϵ var. ericetorum, ditchbanks, Woodside, Epping Lower Forest (19), Adams, 1978; margin of Mad Bess Wood, nr Ruislip (21), Milnes-Smith & Gardiner.
- 154/1A. Hypnum uncinulatum, Torc Mountain, Killarney (H.2 in ()), W. Wilson, 1829 (Ando & Townsend, 1980).
- 154/7. H. lindbergii, ride in Hailey Wood, Cirencester (33), Garlick, 1971.
- 155/1. Ptilium crista-castrensis, place 81,83 in ().
- 159/1. Rhytidium rugosum, place 59 in (), comm. Birks.
- 160/2. Rhytidiadelphus squarrosus β var. calvescens, wooded valley, Glendine Bridge, N of Youghal (H.6), Appleyard, 1966 - new to Ireland.
- 160/3. R. loreus, damp ground, Little Monk Wood, Epping Forest (18 in ()), P. Thompson, 1912; place 54 in (); place 53 in square brackets, dubious record.
- 161/4. Hylocomium splendens, place 21 in ().

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FIRST RECORDS OF VARIETIES OF PHILONOTIS CAESPITOSA AND P. SERIATA IN IRELAND AND WALES.

In 1981 I received on loan from Mr. A.R. Perry a number of Philonotis specimens belonging to the National Museum of Wales, Cardiff (NMW) and the British Bryological Society (BBSUK). One of these (NMW), an Irish sample of Philonotis caespitosa, was collected by Mr. Perry from a vertical sandy-clay cutting by a stream in a wooded gorge at an altitude of approximately 130 metres above Leenaun Hotel, W. Galway, Irish grid L 8760. When I studied this specimen it was evident that the aristate variety was mixed with it. There is a set of parallel aristate varieties in the Philonotis species. In these forms the leaf nerves are longly excurrent and sometimes piliferous.

I have previously reported¹ Philonotis fontana var. tomentella and Philonotis caespitosa var. aristata growing in close proximity in ditches near the Ben Cruachan Dam, Argyllshire. In Wales I have encountered a closely similar situation involving the same species in Beddgelert Forest and have also collected Philonotis caespitosa var. aristata from ditches near Rhosgadfan².

There is no previous record of Philonotis caespitosa var. aristata for Ireland and therefore the specimen from W. Galway is new to the Irish bryoflora.

Another specimen (BBSUK), collected by W.N. Tetley in September 1919 from Carnedd Llywelyn, North Wales, I have identified as Philonotis seriata. A small quantity of the laxa variety³ is intermingled with the specimen. There is no previous record of this variety in Wales.

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- ² Proc. Birm. Nat. Hist. Soc. 22, 247 (1974).
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THE EARLY BRYOLOGISTS OF SOUTH WEST YORKSHIRE

by Tom Blockeel

This account brings together information which I have encountered during work on the bryology of South West Yorkshire (v.-c. 63). It lays no claim to originality, but is rather a collation of biographical data from disparate sources, and is presented here in the hope that it may be of interest to readers. I have confined myself largely to those botanists of the eighteenth and nineteenth centuries who made significant contributions to the bryology of v.-c. 63. If there are any omissions or other deficiencies, I should be grateful to hear of them, and of any additional information which readers may have to hand.

The Parish of Halifax has been a centre of bryological tradition for over two hundred years. It was there that there appeared, in 1775, the first contribution of substance to South Yorkshire bryology, in the form of an anonymous catalogue of plants published as an appendix to the Rev. J. Watson's History and Antiquities of the Parish of Halifax. Traditionally, the catalogue was attributed to James Bolton (d. 1799) of Stannary, near Halifax, whose life was researched by Charles Crossland at the beginning of this century (Crump & Crossland, 1904; Crossland, 1908, 1910). Bolton was the author of fine illustrated botanical works, notably Filices Britannicae and the History of Fungusses growing about Halifax, the latter being the first British work exclusively devoted to fungi. However, his work extended beyond the purely botanical. Shortly after the completion of the History of Fungusses, which was dedicated to and sponsored by Henry, the sixth earl of Gainsborough, Bolton wrote to his friend John Ingham: 'You must know, John, that I have been so long tilted between roses and toadstools, and back again from toadstools to roses, that I am wearied out with both for the present, and wish (by way of recreation only) to turn for awhile to some other page in the great volume. I have not painted a bird this nine or ten years, and yet have so much of this ugly self-sufficiency about me, that I think I can do it tolerably, after a few days' practice.' The result was an ornithological work, Harmonia Ruralis. As the letter indicates, Bolton etched his own plates for his works, and he was an acute observer. He worked with only a single lens - what he called a little spy-glass - and was therefore more or less restricted to macroscopic observations. His correspondents included James Dickson the cryptogamist. His mycological work showed him to be a fine taxonomist, fully aware of the need for discipline and accuracy. It is interesting that he expresses a thoroughly modern aversion to the 'unnecessary multiplying of names in our botanical nomenclature'. His approach is summarised in these words from the History: 'I have endeavoured to clear the subject from those difficulties wherewith it has long been encumbered. In some species, indeed, it was very difficult to determine with precision; the plants are so very similar in figure; so very different in appearance, at different stages of their growth ... and so confounded by authors, that a man might spend his whole life amongst them, in order, clearly and accurately, to ascertain their species.'

The catalogue of plants in Watson's History (Watson, 1775) lists 87 mosses and 28 hepatics. W.B. Crump, the Halifax historian, found evidence (Crump, 1940) suggesting that James' brother Thomas (d. 1778) was responsible for the catalogue. Thomas, apparently,

was also a good naturalist and made considerable collections. Pennant and Lightfoot, on a visit on their return from Scotland in 1774, were 'surprized with his vast collection of natural history got together to improve his mind after the fatigues of business'. Probably both brothers had a hand in the production of the catalogue. Though compiled over two hundred years ago, and without the aid of the compound microscope, the list is valuable because the Boltons were careful workers, and such mistakes as there are in the list are probably few. The great majority of the species have since been confirmed for the area, with the exception of the more sensitive ones which would not be expected to persist in industrial areas. This highlights the real value of the catalogue: it dates from the earliest industrial times before any real deterioration of the environment had set in. Cryphaea, Leucodon, Antitrichia, Pterogonium and Ptilium have never been seen since.

In the herbarium of F. Arnold Lees at Cartwright Hall, Bradford, are six bryophyte packets on which the collector's name has been written (probably by Lees) as J. Bolton. Though the origin of these packets is mysterious, they include a specimen, mis-named as Anomodon, of Antitrichia curtispindula, confirming the occurrence of this species in Calderdale in the eighteenth century (the locality is given as Elland).

Unfortunately, no localities are given for bryophytes in the catalogue, 'to avoid being tedious', in the author's words. The curious botanic reader is invited to apply to the publisher for further information! As the authors of the Flora of the Parish of Halifax said dryly in 1904, 'we should have preferred him being "tedious"' (Crump & Crossland, 1904, p.146).

Some ten years before the death of James Bolton was born the first of the long line of working-men, or 'artisan', botanists in Calderdale, Samuel Gibson of Hebden Bridge (c. 1790-1849). He was the son of a whitesmith and received no formal education other than at Sunday School. He was married at 19 and brought up a family of nine. He met misfortune in later life, being disabled by a fall, and had to part with most of his treasured collections in order to keep himself and his wife. For a time he had established a small Museum in an inn at Mytholmroyd, but this had failed to support him. He was a friend of Richard Spruce, who recorded meeting Gibson in his workshop with Hooker's British Flora 'so begrimed and blackened as to be almost illegible'. Gibson was an all-round naturalist, with special interest in geology and botany. He contributed to Baines' Flora of Yorkshire (1840) and to early numbers of the Phytologist, and at the request of a local doctor, Robert Howard, wrote two letters, on the geology and botany respectively of Heptonstall, to be published in a pamphlet written by the doctor (Howard, 1844). His botanical contributions related, among others, to hawkweeds, sedges and ferns, but he was also interested in bryophytes, among which he discovered Targionia at Hebden Bridge, a species whose former occurrence on the millstone grit is usually treated with some scepticism. However, his description of the plant (in Howard, l.c.) leaves no doubt that Targionia was the plant he found: 'The plant is a very rare one, and bears the name of Targionia hypophylla, It is a curious little Cryptogamous plant, whose green frond is somewhat similar to that of a Marchantia, and from the underside of which a black perianth takes its rise, occupying, when full grown, the whole of the under surface, and then forcing up the frond into nearly, and sometimes

quite, a vertical position. The perianth now appears somewhat like a black skull-cap, or helmet with the vizor down, and thus transformed, the dried up prond [sic] or leaf is scarcely to be seen - acting as a peduncle to it. The glossy black perianth now splits into two concave valves, and numerous brown seeds ooze forth, accompanied by woolly filaments, forming a rather dense mass.'

Contemporary with Gibson was Roberts Leyland (1784-1847), an enthusiastic botanist and collector, a member of a respected Halifax family and of the firm of Leyland & Son, Printers. He was one of the original members, and a trustee of, the Halifax Literary and Philosophical Society and was curator of botany in the Society's Natural History Museum, in connection with which he also formed collections in conchology, mineralogy and ornithology. Like Gibson, he was interested in and contributed to Baines' Flora of Yorkshire, which was printed by his firm.

Leyland's herbarium at Halifax contained important vouchers of now-extinct species from Calderdale, including Andreaea spp., Hedwigia ciliata and Breutelia chrysocoma. Regrettably, the herbarium was destroyed some years ago with the exception of a single stem of Breutelia which had been transferred to the collection of James Needham.

A younger contemporary of Gibson and Leyland was John Nowell of Todmorden (1802-1867), most celebrated of the working-men bryologists, a worthy type of the genus. Since his life has been fully described in a recent number of this Bulletin (Foster, 1980), I do not repeat the details here but wish to emphasize the quality of Nowell's work against a most difficult background. It is a rare event indeed to find a moss mis-named by him. His packets, neatly folded from thin, plain paper, have found their way into many herbaria, though a collection formerly at Todmorden is now apparently lost.

Most of Nowell's work was done in his home district of Todmorden and in the Craven district of Yorkshire. He was occasionally able to travel more widely: in addition to his visit to Ireland in 1860, his letters to William Wilson (BM) show that he made excursions to North Wales in 1852 and 1853, Tadcaster in 1853, Pontefract in 1853 and 1857, Southport in 1854 and 1856, Derbyshire in 1855, the Lake District in 1857 and Skipwith Common (near Selby) in 1858. His friends and many botanical acquaintances must have assisted him in his travels. The visits to Pontefract were made no doubt by courtesy of Dr. J.B. Wood, who was born there but later resided in Manchester. Some of the more distant excursions were made on cheap trip trains, including those to Bangor. His Lake District ramble began with a train to the Lancashire seaside town of Fleetwood, from where he walked with a companion as far as Keswick, finding en route Habrodon perpusillus at Rydal Water. Nowell's own publications were few, though his records appear in many floras (e.g. Wilson, 1855; Braithwaite, 1887-1905; Windsor, 1873). He compiled a moss flora of Yorkshire, published in Baker and Nowell (1854) and with his friend Abraham Stansfield wrote the Flora of Todmorden, although this was not published until many years after his death (Stansfield and Nowell, 1907-1909). A short paper, read by Nowell as vice-president to the Todmorden Botanical Society, is reported in the Naturalist for 1866 (p.1-3).

Of the large circle of botanists in Calderdale in the middle years

of the nineteenth century, most are now unknown to us. By chance, the bryophyte collection of one of them, William Sutcliffe of Heptonstall, is preserved at the Bankfield Museum, Halifax (see Blockeel, 1980). By profession, he was most probably a school-master, and evidently was one of the companions who accompanied Nowell to Ireland in 1860. Some of the plants they collected there are in Sutcliffe's herbarium.

The records of these early Calderdale bryologists formed the basis of the bryophyte portions of the Flora of the Parish of Halifax (Crump and Crossland, 1904). Charles Crossland (1844-1917) wrote the cryptogamic sections of this Flora. It is reported that his interest in botany was not aroused until the age of forty, when he assisted one of his daughters to collect wild flowers for a Sunday School competition. Subsequently he came into contact with members of the Halifax Scientific Society and formed a group devoted to the study of British flowering plants. Several of the group succeeded in qualifying as botany teachers. Another outcome of these studies was the formation of a Natural History Section of the Halifax Scientific Society, whose work laid the foundation for the Flora. Eventually, Crossland turned to the study of cryptogams, including for a time mosses and hepatics. However, his attendance at a Fungus Foray at Leeds in 1888 led to a desire to know more about these plants, and in due course all his spare time from his business was directed to their study. He was a meticulous worker, and had some accomplishment in drawing fungi in their natural colours. His local colleagues included James Needham and H.T. Soppitt, and he was well acquainted with George Massee of Kew. He became a recognised authority on the fungi and his achievements were considerable, not least in the difficult and neglected field of micro-fungi. His knowledge of local history was also extensive and he published notes on local place-names, surnames and dialect.

Most of the new bryophyte records for the Flora of the Parish of Halifax were contributed by Crossland's friend and colleague, James Needham of Hebden Bridge (1849-1913). Like Crossland, Needham's major interest was the fungi, but he was also a competent bryologist. He was an iron-moulder by trade, and it was not until he reached the age of 36 that he became interested in botany - after a ramble to Hardcastle Craggs under the auspices of the Hebden Bridge Co-operative Society. Four years later he met Crossland, and they became constant companions. Crossland introduced Needham to the mosses and fungi, and they went on many excursions together, and through their 24 years of acquaintance Needham kept Crossland supplied with a constant stream of specimens for examination. He knew every corner of the Hebden Bridge district, and often guided and assisted other naturalists, both local and visiting. After one such excursion, he received the gift of a microscope 'as a memento of a pleasant day spent in Crimsworth Dean on Saturday July 6, under your leadership, and as an expression of hearty good wishes for further successes in your researches for micro-fungi'.

On the other hand, Needham also had to tolerate a lot of leg-pulling from his workmates and the local farmers whose land he searched. His eccentric behaviour in searching one pasture for Clavaria was described by the farmer as 'babby wark'. Nevertheless, he gained admiration and respect in local circles and gave talks to interested bodies. His house was a store of botanical specimens, the

walls being closely hung round with framed, mounted mosses. His most important discovery was that of Jubula hutchinsiae in the Hebden Valley, of which he was very proud, visiting the site regularly. It is still there today. His herbarium is at Bankfield Museum, Halifax.

The last of the resident bryologists of Calderdale was Harold Walsh of Luddendenfoot (1881-1962). Though already over thirty years old when Needham died in 1913, it was another thirty years before his main period of bryological work, and he is therefore strictly outside the scope of this article. Nevertheless I include a brief mention here because he follows very much in the tradition of Gibson, Nowell and Needham. He left school at 10 to work as a half-timer and was in full-time work at 13. He was already interested in his youth in botany and biology, making a hand microtome at the machine tool shop where he worked during the first world war. He began to publish bryological notes at the end of the second war, and he joined the B.B.S. in 1946, contributing several short notes to early issues of the Transactions. His most outstanding local discoveries were a single capsule of Buxbaumia aphylla on a wall near Hebden Bridge in 1946, a colony of Moerckia flotowiana on the moors near Halifax, and at least a dozen sites for the hepatic Solenostoma caespitium in various parts of Calderdale.

Calderdale has been unusually productive of bryologists and no other part of South Yorkshire has been so well endowed. Sheffield was the home of Jonathan Salt (1759-1815), described as a 'manufacturer' of that town, of the firm of J. and J. Salt, Table Knife Cutlers. He was a correspondent of Sowerby and collected plants widely in the Sheffield district, of which one, a sedge from near Rotherham, was identified by Dr. Smith as Carex elongata new to Britain. His manuscript 'Flora Sheffieldensis' (c.1800) has in addition to the vascular plants 66 mosses and 19 hepatics listed for the district, but unfortunately it gives few localities. Bryophytes are represented in his herbarium at Sheffield City Museum, again with minimal data.

Amos Carr (c. 1829-1884), originally of Frant on the Kent-Sussex border, and then of Warwick, lived his later years in Sheffield. As a rural postman, he learned many of the plants of the districts where he worked. In Sheffield, however, he was in trade as a bootmaker and spent his limited spare time in studying the local plants, specialising in roses, brambles and willows. He was evidently active with the Sheffield Naturalists' Club, leading an excursion up the Rivelin Valley in 1881 (reported in Sheffield Naturalists' Club Annual Report for 1881). A collection of his plants was presented to Sheffield Museum, now mostly lost. It contained 53 bryophytes (listed in Sheff. Nat. Club Ann. Rep. for 1884). Through his correspondence with F.A. Lees, many of his records appeared in Lees' Flora of West Yorkshire (1888), and there are some of his bryophytes in Lees' herbarium at Bradford.

Abraham Shackleton of Keighley (1830-1916) was a printer of that town, first serving an apprenticeship with the printer and publisher Robert Aked, and later purchasing and running the same man's business. His grandfather - also Abraham - had a wide knowledge of natural history, and his own interest in botany developed early. He specialised in mosses and lichens. However, it was not until after his wife's death in 1876 and the subsequent

termination of his business career, that he had any great degree of leisure for his studies. During this time he travelled widely in Britain and Ireland to collect specimens, and much of his work was in association with the lichenologist Thomas Hebden (1849-1931). His correspondents included Dr. Nylander of Paris. He published little specifically bryological, but was a principal contributor to the section on mosses in the Flora of Skipton (Rotheray, 1900). Thomas Hebden helped with the hepatics in the same publication. A book of mounted mosses is preserved at Cliffe Castle Museum, Keighley, inscribed at the front: 'Collection of British Mosses, Arranged according to Dixon's Hand Book, 1896, By A. Shackleton, of Braithwaite, Near Keighley'. It includes some of the rarest British mosses and indicates correspondence with a number of contemporary bryologists.

Charles P. Hobkirk (1837-1902) was a native of Huddersfield. His father was in the woollen business but he himself was a banker by profession, rising to branch manager of the West Riding Union Bank at Dewsbury, and later at another bank. When still in his early twenties, he published his book Huddersfield: its History and Natural History, and in the 1860s he was submitting moss notes to a short lived series of The Naturalist. When the present series of that periodical began publication in 1875, Hobkirk became editor with George T. Porritt, and he played a leading part in the evolution of the Yorkshire Naturalists' Union. His bryological work included a brief and rather terse volume, the Synopsis of the British Mosses, first published in 1873, and in 1877 he compiled, along with Henry Boswell, the first London Catalogue of British Mosses. He also wrote on West Riding mosses in the Journal of Botany. His other activities included the publication of a River Drainage Map of the West Riding for Scientific Purposes, and the serialisation of a novel 'Sir John de Eland, Knight, a Legend of the 14th Century', in the Huddersfield Weekly News !

One of the few bryologists to live in the relatively unproductive Humberside district was Dr. Franklyn Parsons (1846-1913), who first practised medicine at Beckington near Bath but moved to the port of Goole in 1874. He lived there for some six years, until his appointment as Medical Inspector of the London Government Board. He died in Croydon at the age of 67 after losing a leg from an obscure bone disease. Described as a man of great nervous energy, F.A. Lees said of him, 'Charles Darwin, alone of men I have met, impressed one with a like mental magic'. He recorded some bryophytes for the eastern part of v.-c. 63, but was more involved with the East Riding (v.-c. 61), for which he compiled the first comprehensive moss list (in the Botanical Transactions of the Yorkshire Naturalists' Union, 1, 51-61).

William West (1848-1914) is celebrated for his work on the freshwater algae. I mention him briefly, however, because of his contributions to the bryophyte portion of Lees' Flora of West Yorkshire, and indeed to the remainder of that work. He was a native of Leeds and began his career as a pharmaceutical chemist in Bradford, though later, with his self-acquired botanical knowledge, he became a lecturer at Bradford Technical College. A full obituary was published by Roebuck (1914), who remarked that West's 'most extraordinary knowledge of cryptogams, which was both wide and deep, whether these were mosses, hepatics, lichens, or algae,

and of their ecological conditions, made him quite a unique personality certainly in Britain, probably in Europe'.

This account would be incomplete without some reference to the bryologists of the Manchester area who made incursions into the part of Yorkshire (now within Greater Manchester) that encompasses the western slopes of the Pennines near Oldham. Some of them were friends of Nowell and like Nowell were acquaintances or correspondents of William Wilson of Warrington, who himself visited Seal Bark Rocks near Saddleworth on June 15, 1832 (see Cash, 1887). Like most of the bryologists already described, these men were of humble origins. They include Edward Hobson (1782-1830), of whom Wilson said, 'He was unwearied in his pedestrian trips, disregarded refreshment, would stay till dark, sometimes exhausting the patience of his companions. Jethro [Tinker] said he was excessively abstemious, and not to be deterred by rain or tempest.' There is a volume of Hobson's mosses at Warrington Museum; he was the first collector to find Diphyscium in v.-c. 63.

Jethro Tinker (1788-1871) was a native of Stalybridge in Cheshire. His father was an intelligent man who 'combined the vocation of hand-loom weaving with that of a village schoolmaster' (Bradshaw, 1945). At first in service as a shepherd, Jethro himself became a hand-loom weaver at the age of 18, but a year or two later he settled in the town of Stalybridge on the introduction of power looms. Subsequently he became overlooker and manager at his mill, then shopkeeper and publican and, towards the end of his life, a gardener. His interests extended to all branches of natural history including bryophytes, and his enthusiasm is revealed by the story how, after choir one Sunday morning, on seeing an unusual butterfly, he chased along the street, top hat in hand, until he captured the specimen and returned home with it pinned to the top of his hat. As a participant in the excursion to Seal Bark Rocks in 1832, he was clearly already well acquainted with William Wilson. Two extracts from a biographical note (Bradshaw, 1945) help to put his circumstances (and those of others like him) in context:

"He used to take long pedestrian journeys, thinking nothing of setting off on the Saturday evening - cotton mill hours being then 10 a.m. to 6.30 p.m. and 4. p.m. on Saturdays - into the districts round about. There were no trains, trams, or buses in those days. Shanks ponies were invariably the organs of locomotion. The naturalists of the period would think little of walking o'er hill and dale to Buxton and Bakewell, or down to the Cheshire plain, even to Delamere...."

"In his later years he invariably attended some of the local botanical meetings and often acted as referee or umpire, and his decisions were always accepted as final. To anyone who has never attended any of these working-men naturalist meetings it is always a revelation, for here are perhaps 30 or 40 men from the lathe or loom, taking it may be a Butterfly, Moth, Beetle, or Snail, describing it as correctly as the most learned professor, giving you its name with, to-day, the most modern methods of nomenclature, often running through the whole gamut of Class, Division, Genus, and Species..... Here a group of men, lovers of the open air, of nature and her secrets, with one of them, a specimen in his hand, giving you his description of its habitat and all its characteristics without a pause. Then finally he may roll out Class, Dicotyledon, etc., Natural Order, and finally its Latin name, Bellis perennis, with unconcern."

The third and last of this group of botanists that I wish to mention is Richard Buxton of Manchester (1786-1865), interesting not just because his Botanical Guide to Manchester (1849) included a section on mosses, but because he is one of the few working-men botanists to have left an autobiographical memoir (in the introduction to his Botanical Guide). He was born the second of seven children to John and Ann Buxton, at Sedgley Hall Farm, Prestwich. When Richard was not yet two years old, his father 'became much reduced in circumstances' and had to leave the farm to work as a labourer for the rest of his life. Consequently, Richard had almost no schooling other than three months at a 'dame's school', where he had 'no recollection of having learned anything', and a period at Sunday School between the age of eight and ten, where irregular attendance left him with no more than a knowledge of the alphabet and some monosyllabic words, and even this little he was subsequently to forget. At twelve, he went to learn the trade of bat-maker with James Heap (bats were small leather shoes for children), and eighteen months later joined one James Hyde. Although the hours were long, trade was good and the wages relatively high (14 to 15 shillings a week), a situation that was to change later in life as leather bats fell into disuse. Nevertheless, at 16 Richard was pained that he alone of his family was unable to read, and he determined to teach himself, first with a common spelling-book, then with the New Testament, and finally with Jones's Pronouncing Dictionary, which he worked steadily through from beginning to end. Although he recalled being attracted as a young child by wild flowers such as Tormentil and Germander Speedwell, it was not until he was 18 that his mature botanical interest was stimulated, when he returned to work for his old master, James Heap. This man was fond of country walks to gather herbs with which he made diet drinks, and he often took Richard along with him. Finding many unknown plants, he was eager to obtain greater knowledge and bought copies of Culpeper's Herbal, which he found very imperfect, and then Meyrick's Herbal, which was better but still inadequate. Subsequent books which he found useful were Jenkinson's Flora, Robson's English Flora, Withering's Botany and Smith's Introduction to Botany.

In these early years, he botanized largely alone, and was very much a field rather than a herbarium botanist. 'To obtain a true idea of a plant, let me see it alive and flourishing in the place where it grows, surrounded by all the conditions necessary for its growth. In my eyes, dried specimens look like pallid corpses. Besides a dislike to dead plants, I did not like to take away and destroy living things which might be enjoyed by others as well as myself'.

In 1821 Buxton became fully occupied with his trade and was compelled to discontinue his botanical excursions for some years. When he resumed in 1826, he began to broaden his botanical acquaintances and activities, initially because of a chance meeting with John Horsefield, President of the Prestwich Botanical Society. In the following years, he came to know most of the Manchester botanists, including Jethro Tinker, and two of the Yorkshire bryologists already mentioned in this account, Samuel Gibson ('that superior naturalist') and John Nowell ('the first among working-men with whom I am acquainted, as a muscologist'). He first attended the Prestwich Botanical Society in 1833, and in 1839 attended meetings of the Natural History Class held at the Manchester Mechanics' Institution. The venues of his excursions included many parts of

Cheshire, Derbyshire, the Craven district of Yorkshire, and North Wales (by steamer from Liverpool). Some of his excursions were sponsored by an unnamed gentleman 'who had just begun to study botany and appeared very anxious in its pursuit'. The results of his local work were published in his Botanical Guide to Manchester in 1849.

In later life he had to supplement his worn-out trade by delivering newspapers on a Saturday. He was never of a strong constitution, yet could still manage a thirty mile hike over the age of sixty. He remained single all his life and lived with an elder sister, Mrs. Robinson.

I end by quoting from Buxton's view of his situation and that of his fellow workers: 'The operative who lives in a large manufacturing town, sees plenty of the handyworks of his fellow-men in the giant steam-engine, the ingenious mule, which rivals the gossamer in spinning threads, the never-tiring power loom, and the countless other contrivances of mechanical skill which have resulted from the fertile brain of man. He sees much of what is termed the triumphs of science and art, but little of the works of nature. This renders him an intelligent, but to a certain extent, an artificial man.....'

'To the poor, as a class, it is to be feared that the possession of land in this country is not generally attainable..... I hope that the lords of the soil will yet allow the pent-up dwellers of the crowded city to walk about and view the beauties of creation - yes, not only permit it, but derive much true pleasure from seeing the sons of toil rationally enjoying themselves in rambling through their domains, and exploring the wonders of nature, after a week of labour'.

POSTSCRIPT

There is a class of men in Manchester, unknown even to many of the inhabitants, and whose existence will probably be doubted by many, who yet may claim kindred with all the noble names that science recognises. I said "in Manchester," but they are scattered all over the manufacturing districts of Lancashire. In the neighbourhood of Oldham there are weavers, common hand-loom weavers, who throw the shuttle with unceasing sound, though Newton's Principia lie open on the loom, to be snatched at in work hours, but revelled over in meal times, or at night. Mathematical problems are received with interest, and studied with absorbing attention by many a broad-spoken, common-looking factory-hand. It is perhaps less astonishing that the more popularly interesting branches of natural history have their warm and devoted followers among this class. There are botanists among them, equally familiar with either the Linnean or the Natural system, who know the name and habitat of every plant within a day's walk from their dwellings; who steal the holiday of a day or two when any particular plant should be in flower, and tying up their simple food in their pocket-handerkerchiefs, set off with single purpose to fetch home the humble-looking weed

And Margaret's grandfather was one of these.

.....
.....

"..... grandfather has been out moss-hunting, and will not be home till late."

Mrs. Gaskell, Mary Barton, ch. V.

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I wish to thank Miss M. Hartley (Cliffe Castle Museum, Keighley, and Cartwright Memorial Hall, Bradford) and Mr. T.H. Riley (Sheffield City Museum) for helping me with my enquiries.

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RUTLAND BRYOPHYTE SURVEY

Rutland is largely contained in about five 10 Km. squares, but I am trying to do the survey on a tetrad basis, to follow Guy Messenger's excellent Flora of Rutland (1971). This is a somewhat daunting project for one person (or this one anyway) and I should welcome any help, especially in the west of the county. There is a considerable number of records in the Leicester Museums, with whom I am in contact, but any others would be welcome as well.

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