

IAB Computer Workshop, 24 - 27 February 1989 Mont Rigi, Belgium

by

Catherine Lafarge-England and Brian O'Shea

A gathering of 18 enthusiasts for computer applications in bryology converged on Mont Rigi on 24th February. Jan-Peter Frahm and Brian O'Shea were responsible for the organisation of the meeting, which began with a warm welcome for participants from as far away as India. Setting up the computers and settling into the comfortable quarters was followed by a small aperitif and a wholesome meal. After dinner we were treated to bryophyte slides from Ecuador and Columbia by Jan-Peter Frahm, with comments by Rob Gradstein. The magic of the tropics was instilled in all of the participants while we sat on a snow threatened mountain to attend a computer workshop.

On Saturday morning Jan-Peter Frahm introduced the workshop which had come into being as a result of the success of the Computer Sessions at the Bryological Workshop in Mainz, 1987. He proposed the possibility of having a workshop every two years to exchange ideas, activities, and advances in bryological applications for all levels of users. Brian O'Shea outlined the general purpose of the workshop as being to bring users together to share software programs and explain different applications within the field of bryology.

The first working session was on statistics, cladistics and phytosociological programs. Rob Kruijt reviewed PAUP which is based on parsimony and TREESEARCH, which uses a combination of parsimony and compatibility for producing cladograms. Annelies Hofman discussed the PHYLIP program and its application using discrete versus continuous characters. Herman Stieperaere reviewed TWINSpan - a divisive polythetic classification program (a two-way indicator species analysis method) and DECORANA (Detrended Correspondence Analysis) an ordination program which can be run with the same data matrix.

Bodo Moseler ended the session with a presentation using MPSORT for classification of phytosociological data, based on the Multiplan spreadsheet. A good review of classification and ordination methods is given by Kent & Ballard (1988).

The second session surveyed the applications available for scanning and digitizing illustrations. Alain Empain began by demonstrating his program on a combined microscope-computer set up. Problems of scale, measurements and applications for counting entities were some of the topics covered. Jan-Peter Frahm followed with a discussion of the various scanning devices available on the market as well as their pros and cons.

DR. STANLEY W. GREENE passed away suddenly on June 14, 1989. His contributions to Bryology as President of the International Association of Bryologists and as editor of The Bryological Times were great and he will be missed throughout the Botanical World.

At 12:30 there was a luncheon feast followed by a brisk walk on the Hautes Fagnes. Herman Stieperaere gave a short historical account of the landscape which now serves as an important Nature Reserve covering 4000 hectares.

The first afternoon session concentrated on applications in taxonomy. Alain Empain began with a presentation on the digitizing of characters. He included a discussion of the application of Hypergraph and encoding and decoding of taxonomic

descriptions. Brian O'Shea discussed the various types of identification programs available and outlined the attributes of an identification program over an identification key.

Following coffee the remainder of the afternoon was open for the perusal of the IAB software library and the demonstration of any of the programs presented earlier in the day.

Dinner was again followed by a treat of tropical landscape slides of Ecuador and Colombia including those from the Bogotá Meeting last October. Some of the computer enthusiasts worked well into the night riveted by the delights of the new programs!

The fourth session started bright and early on the Sunday morning and was about herbarium management programs. Jan-Peter Frahm dealt with loans and was followed by Brian O'Shea who outlined what is needed in an herbarium management system. Rudi May discussed an advanced management program.

The fifth session started with the presentation by Brian O'Shea of DMAP, a mapping program which is applicable on any scale. One of the 'pluses' for the program is the 'publication quality' output it gives using an inkjet printer. Rudi May then demonstrated the program used for mapping German bryophytes and Alain Empain explained his programs that link his distribution data to mapping programs and climatic analyses.

After a break for lunch there was a walk (or should we say more accurately a 'trudge' through the snow by the hardy members of the workshop. Snowball fights and the making of a snowman were a mandatory part of the excursion!

The afternoon session opened with the announcement of a new computer-assisted journal, *Tropical Bryology*, to be edited by Jan-Peter Frahm and S. Rob Gradstein. It will be the first of its kind based entirely on electronic procedures. Thus manuscripts will be submitted as a diskette, be returned to authors in this form for correction and following resubmission be used for printing, thus avoiding the time-consuming galley proof stage.

The afternoon session concentrated on dBase applications. Jan-Peter Frahm explained the LITKEY program and Brian O'Shea outlined basic needs of a literature file program. Rudi May demonstrated his dBase program used for the distribution of European bryophytes.

Following the coffee break there was a flurry of activity, involving the copying of files and demonstrations of specific programs. Dinner was followed by slides of India and Mt. Fuji, Japan presented by S.C. Srivastava. As the snow swirled around the station with hints of blizzard activity, the members of the workshop were totally absorbed in computer tinkering and slide entertainment!

By Monday morning a "die hard crew" of 10 workshop members remained to 'take on' the last session. This session started with a presentation by André Pirard (University of Liège), armed only with a floppy diskette and a small portable modem, of a data communications link into the European Academic Research Network (EARN). This network covers continental Europe and Ireland, and is linked to the BITNET in North America. It is connected via nodes into other networks, such as JANET in Great Britain. The use of electronic mail was demonstrated, as was a link to Karlsruhe, to download information

about the IAB Software Library to the machine at Mont Rigi.

The morning continued with a discussion about standards for text and data. Brian O'Shea briefly described the XDF (Transfer Data Format) developed by Allkin and White in the UK to pull together the various legume databases around the world. In view of the limited amount of time available, it was decided to concentrate on bibliographic data. As examples two bibliographic files were considered, in conjunction with existing file structures in two dBase applications in the Software Library. Alain Empain and Brian O'Shea were asked to analyse available data to check on the maximum field sizes, and to suggest a flexible data structure for dBase to hold the data. They also agreed to pursue an extension to XDF to handle a more detailed structure for bibliographic references.

The workshop closed on a note of international co-operation, the need for data sharing and how this could be most easily established. We shall see between now and the next workshop how well this need is satisfied.

The remaining members went on their way into the snowy landscape of Mont Rigi after a warm meal and many wishes of good will. A special thanks is due to René Schumacker for making the station available for such a successful meeting for the exchange of computer knowledge.

References

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Computer Workshop, contd.

TER BRAAK, C. J. 1987. *CANOCO* - a FORTRAN program for canonical community ordination by partial detrended canonical correspondence analysis (version 2.0). Wageningen, TNO Institute of Applied Computer Science.

Botany School, Downing Street,
Cambridge and 131 Norwood Road,
London SE24 9AF, UK.

Is *Marchantia plicata* the largest thalloid liverwort?

by S.R. Gradstein

A contribution to the Bryological Book of Records edited by S.W. Greene.

In October 1988, Jan-Peter Frahm, Rüdiger Mues and I spent 3 weeks in Ecuador collecting bryophytes for chemical investigation. While driving along the Panamerican Highway to Mt. Cotopaxi, near Quito, we noticed huge rosettes of a species of thalloid liverwort on the steep-cut banks of the road. The diameter of the rosettes was up to 75 cm and individual thalli measured up to 30 cm long (Fig. 1). The plants proved to be *Marchantia plicata* Nees & Mont., a species common on soil and rock in the Andes of Colombia, Ecuador and Peru at altitudes of 2000–4000 m (Bischler, 1984). Around Quito *Marchantia plicata* can be found in many localities often covering large surfaces of road-side banks. As *Marchantia* species may contain unique bisbenzyls with anti-cancer properties (Asakawa, 1981), we were particularly keen to collect large quantities for analysis.

The question I would like to raise here is whether *M. plicata* might qualify as the largest thalloid liverwort in the world?



Fig. 1 *Marchantia plicata*: thallus about 30 cm long. Photograph by S.R. Gradstein.

As far as I am aware the maximum length reported so far for a thalloid liverwort is 20 cm for a specimen of *Monoclea forsteri* from New Zealand and its close relative *M. gottschei* (sometimes considered a synonym) from tropical America. Indeed Allison & Child (1975), in their handsome guide to New Zealand liverworts, say that *Monoclea* is their largest thalloid liverwort and Schofield (1985) called the *Monocleales* the "Giant Thalloid Liverworts". However, our Ecuadorean *Marchantia plicata* beats the "Giant Thalloid Liverworts" by 10 cm.

Has anyone ever found a thalloid liverwort larger than this one?

References

- ALLISON, K.W. & J. CHILD. 1975. *The liverworts of New Zealand*. Dunedin, University of Otago Press.
- ASAKAWA, Y. 1981. Biologically active substances obtained from bryophytes. *Journal of the Hattori Botanical Laboratory*, 50: 123-142.
- BISCHLER, H. 1984. *Marchantia* L., The New World species. *Bryophytorum Bibliotheca*, 26: 1228.
- SCHOFIELD, W.B. 1985 *Introduc-*

tion to bryology. New York, Macmillan Publishing Company; London, Collier Macmillan Publishers.

Institute of Systematic Botany,
Heidelberglaan 2, 3584 CS Utrecht,
The Netherlands.

Stop Press

News has reached the editor, via a letter dated 15 Dec. 1988, that MALE PLANTS of *Takakia* have been found recently in the Aleutian Islands off the southern coast of Alaska.

This fascinating discovery could take us one step nearer to answering the question posed by Dr. Hattori many years ago in these columns (*Bryological Times*, 6: 2, 1980) "Can we find the sporophyte of *Takakia*?" The editor understands that an attempt is to be made to induce sporophyte formation.

Will the *Bryological Times* be able to scoop the results - if there are any? Watch this space for more thrilling announcements.

I.A.B. International Symposium on Tropical Bryology

July 30 - 3 August, 1989, St. Louis, Missouri

Programme

Sunday 30 July — Ridgway Center Missouri Botanical Garden

- 4-8 pm Registration
 6-8 pm SOCIAL – Floral Display Hall

Monday 31 July — Ridgway Center Schoenberg Auditorium

- 9-12 am Session 1: *Floristics of the tropics*
 T. Koponen Bryophyte flora of western Melanesia
 T. Pócs Exploration of the East African bryoflora
 D. Griffin, III Floristics of the Páramo region of the Andes
 12-1 pm LUNCH
 1-2 pm Special Meeting, Flora of Central Africa by R. Magill
 2-5 pm Session 2: *Global systematics*
 H. Robinson Notes on the genus *Leucobryum*
 D. Vitt Orthotrichaceae: Adaptive strategies of drought tolerant epiphytes
 J.-P. Frahm *Campylopus*, a modern and successful genus
 8-10 pm BANQUET – Monsanto Hall

Tuesday 1 August — Ridgway Center Schoenberg Auditorium

- 9-12 am Session 3: *Regional systematics*
 R. Pursell *Fissidens* in the Neotropics
 B. Thiers Lejeuneaceae in Tropical Australia
 P. Redfearn Tropical component of the moss flora of China
 12-1 pm LUNCH
 1-2 pm Special Meeting, Generic names in current use - IUCN project by M. Crosby
 2-5 pm Session 4: *Regional systematics and floristics*
 B. Tan Species diversity of Bornean & Philippine hepatics
 B. Allen *Crossomitrium*, a revision
 S.R. Gradstein Floristics of the Guianas

Wednesday 2 August — Washington University

- 9-12 am Session 5: *Contributed papers*
 12-2 pm LUNCH
 2-5 pm Session 6: *Contributed papers*
 7-10 pm BARBECUE – Lehmann Building

Thursday 3 August — Ridgway Center Schoenberg Auditorium

- 9-12 am Session 7: *Origins of tropical bryophytes*
 Z. Iwatsuki Origins of the New Caledonian bryophyte flora
 R. Buck Origins of the pleurocarp flora of the Greater Antilles
 R. Schuster Origins of neotropical Hepaticae
 12-1 pm LUNCH
 1-2 pm Special meeting, Moss flora of Central Africa by B. Allen
 2-5 pm Session 8: *Contributed papers*

New arrangements for the *Bryological Times*

I am very happy to say that, although this copy of this Newsletter is another issue that is coming out later than I would have wished, things are getting back to normal and future issues should be back to the usual bimonthly schedule from now on. Drs. Guido B.A. van Reenen, of Baarn, The Netherlands, has agreed to become an Assistant Editor, the Newsletter's first, with immediate effect. In addition to assisting with editing he will have prime responsibility for layout and presentation. Printing and distribution will take place in Edmonton and be under the control of Dr. Dale H. Vitt.

The *Bryological Times* will be processed on an Apple Macintosh computer and FullWrite Professional is the word processing program we are using for the text. The Master Copy for this and future issues is produced here in The Netherlands on an Apple Laserwriter II.

Connected to the Macintosh is a 5.25" DOS Disk Drive and owing to the availability of file translation software articles may be submitted on floppies or diskettes in 3.5" Macintosh format or in 5.25" MS-DOS format, as an alternative to the normal manuscript. The following word processing formats are supported directly: FullWrite Professional, MacWrite, MS-Word, WordPerfect, WordStar, DCA-RFT, MultiMate, OfficeWriter, Print-Capture, WPS-Plus, XYWriteIII. But also other formats are available through these. When sending disks we would like to suggest that authors also include a hard copy print-out so that we can be sure that disks have suffered no damage in the post

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Bryol. Times arrangements, contd.

the floppy or diskette being returnable to the sender.

Please be assured that we have no intention of restricting submission to articles in machine readable form and that material can be submitted in any printed form in English, French, German or Spanish (see *Bryological Times*, 4: 4, 1980).

S.W. Greene,
Editor

IMPORTANT NOTICE!
During the transition to a new editor for the *Bryological Times*, the newsletter will continue to be edited in Bilthoven. Please send all articles and communications as instructed in above article.

Personalia

Dr. JOHN STUART BURLEY, of the Arnold Arboretum, Harvard University, 22 Divinity Avenue, Cambridge, MA 02138, USA, is willing to collect bryophytes in South East Asia. Anyone interested is asked to get in touch with him directly.

Dr. STEVE L. TIMME, formerly of the University of North Alabama, Florence, Alabama 35632-0001, has accepted a plant systematist and herbarium curatorship at the Theodore M. Sperry Herbarium, Pittsburg State University, Pittsburg, Kansas 66762, to where all future correspondence should be sent. He will be adding approximately 4800 bryophyte specimens of his personal collection to the Sperry Herbarium (KSP). His research emphasis will include tropical bryology (Peru), hepatics of the interior Highlands, Kansas and Alabama, and prairie bryocology.

Letter to the Editor

Dear Sir,

re: Use of term Strategy

I have much sympathy for your correspondent from Duisberg (*Bryological Times*, 49: 4) in his objection to the use of the term strategy as applied to bryophytes, or for that matter, to other plants. I personally refrained from using the term in a botanical context for many years because, in common English usage, it does indeed signify a plan arrived at as a result of conscious thought — and plants don't think! However, the term is now so firmly entrenched in the general literature on plant population biology, and with a somewhat different meaning, that its extension to bryology seems justified.

In J.P. Grime (1979) *Plant Strategies and Vegetation Processes*, Wiley, defines strategies as "groupings of similar or analogous genetic characteristics which recur widely among species or populations and cause them to exhibit similarities in ecology". The implication here is that a strategy arises not through conscious thought, but through natural selection operating on organisms inhabiting a common ecological niche. It is in this sense that I have, somewhat reluctantly, employed the term in several recent publications and, no doubt, it was in this sense also that it was used by Düring.

R. E. Longton,
Department of Botany, Plant
Science Laboratories, University of
Reading, Whiteknights, P.O. Box
221, Reading, Berkshire RG6 2AS,
UK.

On the occasion of the 350th anniversary of Helsinki University, the Finnish Bryological Society and the Department of Botany, Helsinki University will arrange a

Congress of East Asiatic Bryology

12-19 August 1990, Helsinki, Finland

The Congress will feature:

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

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

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

Endangered Bryophytes in Europe — Causes and Conservation

Uppsala, Sweden 24 – 28 September 1990

The Swedish Committee for the Conservation of Endangered Bryophytes will hold an international symposium on Endangered Bryophytes in Europe – Causes and Conservation at the Swedish University of Agricultural Sciences in Uppsala, 24–28 September 1990. The members of the Committee are: Nils Cronberg, University of Lund; Lena Gustafsson, Swedish University of Agricultural Sciences; Tomas Hallingbäck, Swedish University of Agricultural Sciences, Uppsala; Lars Hedenäs, University of Stockholm and Lars Söderström, University of Umeå.

Four topics are planned for discussion:

- (i) Status and distribution of endangered bryophytes.
- (ii) Population biology and population genetics of rare and decreasing bryophytes;
- (iii) Bryophytes in a changing environment – invasion and extinction.
- (iv) Conservation and measures for the future.

Each topic will be introduced by an invited speaker, followed by contributed papers. There will also be the possibility of poster presentations. The programme will also include two field excursions.

Preliminary applications and offers of posters and contributed papers should be sent to the address below not later than 15 December 1989. For further information please contact the organizers. A second circular with further details will be issued at the latest by the beginning of 1990.

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

News from Leiden

Drs. J. D. (Hans) KRUIJER has accepted a temporary position as a junior scientist at the Rijks-herbarium. He is going to prepare a revision of the genera of Hypopterygiaceae sensu amplo, and of the species found in Asia, Australasia and Oceania.

Dr. A. (Dries) TOUW is continuing his work on the Thuidiaceae with a revision of the species of *Thuidium* and related genera of tropical continental Asia, including Malesia and Oceania. A revision for Australasia is in the press. He is also preparing a survey of the mosses of the Lesser Sunda Islands (Nusa Tenggara),

Indonesia, and has made short collecting trips to Lombok (in 1986) and Flores (in 1988). He would like to learn of any collections in private or public herbaria from these islands (Bali, Lombok, Sumbawa, Sumba, Flores, Timor and nearby smaller ones). In the past this island group of great phytogeographical interest has been almost totally neglected by collectors of bryophytes, but nowadays the westernmost islands of Bali and Lombok have become popular resorts and may have been visited by some of us.

A. Touw, Rijksherbarium,
P.O. Box 9514, 2300 RA Leiden,
The Netherlands.

William Campbell Steere 1907 - 1989

Early on the morning of February 7, 1989, Bill Steere died after about a month's stay in hospital, putting an end to an era in American bryology. Bill was probably the most cosmopolitan bryologist of any I know; he worked on mosses and hepatics from the Arctic, through the north temperate zone into the American tropics, from Mexico and Puerto Rico down to Ecuador and Argentina, and even to the Antarctic. He was the consummate diplomat, and encouraged or participated in international co-operation among bryologists.

When he entered bryology it was during the years of the Great Depression and was a gamble at best. At that time American bryology was primarily a field of amateurs as readily evidenced by the articles in *The Bryologist*. However, undaunted, Bill with his lust for life charged in and transformed the field into a viable academic pursuit. His editorship of *The Bryologist* turned the journal from a chatty serial of local interest into an internationally-respected periodical; and his research and teaching of graduate students vitalized bryology in America into the discipline that it is today.

It was with this impression of Bill that I came to the New York Botanical Garden fresh out of graduate school - a "grandson" of Bill one might say since Howard Crum was his student and I Howard's. I only knew Bill slightly, having met him, at some meeting or another. Naturally, though, I had corresponded with Bill and with his typical generosity he had sent me a set of his reprints. Nevertheless, I was somewhat intimidated by the man and his reputation. This didn't last long. Bill immediately did every-

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W.C. Steere, *contd.*

thing he could to make me welcome and to encourage me in my research. For this I will be forever grateful. Bill undertook the enormous task of identifying the overwhelming backlog of unidentified specimens stockpiled at NY, as well as keeping on top of the flow of specimens coming in to be named by ever-eager collectors. He was continually patient with my lack of experience and knowledge and from time to time asked my opinion thus making me feel that I had something to offer. This thankless service work that Bill undertook at NY allowed me, in those important early years, to get on with developing my research program without the burden he so readily shouldered. Although Bill willingly tackled these jobs, without expectation of remuneration I nevertheless felt a sense of debt to the man who was both a friend and colleague. When Bill's 80th birthday approached I was able to repay a small part of my debt.

Although it was late the organization for Bill's 80th birthday started scarcely before his 79th. It was at the Garden's in-house party for Bill on November 4, 1986 that I approached his wife Dorothy to write about her life and travels with Bill. Reluctantly she agreed, her hesitation stemming not from lack of interest but rather from ill-founded modesty about her writing ability. In the weeks that followed scores of bryologists from around the world were approached to write original research articles for the proposed *Festschrift*. This was the easy part since the editing and copy-marking was yet to come. Also at that time the plans for the dinner party itself were underway. Hundreds of printed invitations were sent out, both locally and abroad. Then in the spring of 1987, Bill became very ill and it was uncertain whether he would make it to his octogenarian

party. However, with Bill's typical strength and will power, he made a pact with his physician to get him through to his birthday. It seemed grim for a while with both Bill's physical and mental health flagging. However, he pulled out admirably, and although he had temporarily stopped coming into his office during this time, once again his familiar face was to be seen at the Garden. Fortunately by the time his birthday arrived his health was much better and he was able to greet the many friends, some of whom had travelled many thousands of miles to see him.

As the day of the party approached, there were hundreds of details to attend to, any number of which foretold doom: the printer couldn't guarantee the *Festschrift* would be ready on time; although I had requested tables for the dinner party I had neglected to requisition separately chairs, etc., etc. However, the day arrived and all went well. My greatest joy was seeing Bill well and enjoying his party - he always enjoyed *acolades* and I wanted to make this one measure up to his standards. Near the end of the evening he came over and thanked me; I told him I was glad to do it, but just don't have another 80th birthday because I couldn't handle it!

During Bill's last year his pet project was a moss flora of Ecuador. In 1948 Bill published his "Contribution to the bryogeography of Ecuador. I", which was a literature compilation of the mosses of Ecuador. He intended this current work to be part II, forty-some years later, based on specimens examined. When Bill died the manuscript was nearing completion. At least drafts of all the families had been completed, and some of these had been mailed to specialists for their comments. The garden intends to publish this manuscript, perhaps

also with a reprint of the 1948 part, in the future.

It is hard to believe that Bill is gone. His ready smile and good humor had become part of the heritage of the New York Botanical Garden. He was always willing to look at a specimen, or find time to talk with a bryologist. He had hundreds of stories about his experiences with other bryologists, both at home and from his numerous travels. To end, I would like to relate one of my favorites. I think it was in 1960 that Bill was invited as an honored guest to an Argentine Botanical Congress. His wife Dorothy was along on the trip and because of Bill's status, Dorothy was considered the person deserving of the highest respect. Therefore, after an extensive field trip, at the celebratory barbecue, Dorothy was offered what was considered the choicest food: lamb's intestines nailed to a board and grilled before the fire. Well, this was not exactly typical American food and Dorothy was somewhat reluctant to try it. Carefully she cut into it only to find something green ooze forth. She explained the only-too-obvious situation to Bill who calmly and discretely told her "Shut up and eat it, it's only alfalfa." Dorothy decided that with enough red wine she could eat anything and indeed she did!

The New York Botanical Garden has established "The William C. Steere Fund" in his honor. It will be used primarily to fund travel to NY for bryologists who need to consult the library and herbarium here. Donations may be sent c/o The Herbarium, New York Botanical Garden, Bronx, New York 10458-5126, USA.

William R. Buck,
New York Botanical Garden,
Bronx, New York 10458-5126, USA.

Diary

For explanation of acronyms, see *Bryological Times*, 31: 7-8, 1985.

1989

July 30-4 Aug. IAB. Symposium on tropical bryology. St. Louis, Missouri Botanical Garden. See this issue p.4. Further information from Robert E. Magill and Bruce H. Allen, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.

July 30-4 Aug. NBS. Excursion and annual field meeting in Blåsjön, North Sweden. Further information from Lars Hedenäs, Naturhistoriska Riksmuseet, Box 50007, S-10405, Stockholm, Sweden.

Aug. 2-9. BBS. Summer field meeting, Aberystwyth. Local Sec: Mr. A. Orange, Dept. of Botany, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP. U.K.

Aug. 6-10. ABLs Annual Meeting during AIBS Meeting, University of Toronto, Canada.

Aug. 30-2 Sept. SBLs. Melchtal (Central Switzerland). Annual field meeting. Bryophyte vegetation of cave entrances in the context of a larger speleological research project. Further information

from Dr. K. Ammann, Syst.-Geobot. Institut, Altenbergrain 21, CH-3013 Bern, Switzerland.

Sept. 22-24. BBS. A.G.M. and paper-reading meeting, Lincoln. Local Sec.: Dr. M. R. D. Seaward, Postgraduate School of Studies in Environmental Science, The University, Bradford, BD7 1DP.

Sept. 22-24. Joint 14th Andrews & 5th Blomquist Bryological Foray. Grantsville, Western Maryland 4-H Center, University of Maryland. Further information from Richard E. Andrus, Department of Biological Sciences, SUNY, Binghamton, NY 13901 or Brent Mishler, Dept. of Botany, Duke University, Durham, NC 27706, USA.

Oct. 21-22. SBLs. Bern, Botanical Institute (Swiss bryophyte mapping project). Taxonomic workshop on Anthocerotae (Irene Bisang) and *Anthelia* (Norbert Schnyder). Further information from Dr. K. Ammann, Syst.-Geobot. Institut, Altenbergrain 21, CH-3013 Bern, Switzerland.

Nov. 25-26. BBS. London. Bryophyte workshop for beginners. Local Sec.: Miss J. Ide, Roehamp-

ton Institute for Higher Education, Whitelands College, West Hill, Putney, London, SW15 3SN. U.K.

1990

Spring BBS field meeting. Malvern area. Details to be announced.

Summer BBS field meeting. Ireland with 2 weeks in Northern Ireland or one week there and the other in Donegal. Details to be announced.

July. 1-7. IV International congress of systematic and evolutionary biology. University of Maryland, College Park, Maryland, U.S.A.

Aug. 12-19. Helsinki. Congress of East Asiatic bryology. See this issue p.5. Further information from Prof. T. Koponen, Department of Botany, University of Helsinki, Unioninkatu 44, SF-00170 Helsinki, Finland.

Sept. 24-28. Uppsala, Sweden. Symposium on endangered bryophytes in Europe. See this issue p.6. Further information from Tomas Hallingbäck, Swedish University of Agricultural Sciences, Dept. of Ecology and Environmental Research, P.O. Box 7072, S-750 07, Uppsala, Sweden.

THE INTERNATIONAL ASSOCIATION OF BRYOLOGISTS publishes *The Bryological Times* every two months, the *Bulletin of Bryology* twice a year, and the *Advances in Bryology* irregularly. Material for the *Bryological Times* can be sent at any time, but submission dates for the *Bulletin* and the *Advances* should be discussed with the Editors, Dr. Diana G. Horton (University of Iowa) U.S.A. and Dr. Norton G. Miller (Albany) U.S.A. respectively. The Editors do not accept responsibility for the views of the authors. For details regarding membership of the International Association of Bryologists (currently U.S. \$8.00 p.a.) write to the Honorary Secretary, Dr. Dale H. Vitt, Department of Botany, University of Alberta, Edmonton, Alberta, Canada, T6G 2E9.

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