

The BRYOLOGICAL TIMES

ISSN 0253-4738

Newsletter of the International Association of Bryologists

October, 1992

No. 68/69

Stability or Pedagogy

by Janice M. Glime

Ecology Column. Send contributions to the column editor J.M. Glime,
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I began this column by inviting controversy and dialog among the readership, but bryologists are a polite lot, and no one has chosen to be critiqued or critic. I shall then raise a point of controversy that should surely raise outcry from our respected systematists, and perhaps make me an unwelcome participant in bryological activities of the future.

Before I begin, let me clarify my own position. I defend to the fullest the need for systematists and the orderly arrangement of bryophytes into the best treatment of genera, families, and orders that can be devised. Having made that quite clear, however, I raise the question of practicality for the rest of the world who belong not to the systematically educated elite.

As an ecologist, I must deal with a wide body of literature concerning all aspects of bryophytes. I must examine the biochemical constituents that might influence the predators and I must peruse the habitat descriptions and community components with which the species must contend. I find exciting data in publications as recent as today and revelations in dusty journals of 1890.

But while the mosses remain the same, their names change. I find interesting old literature that names no species, or if it does, I can find no modern name listing it as a synonym. I worry about

the endangered species that will get protected by law, only to be placed in a new genus, and pity the bryologist who must explain bryophyte systematics and botanical nomenclature to a lawyer who is defending a land developer. I pity the stream biologist who tries to research *Platyhypnidium riparioides* when most of the literature falls under *Eurhynchium* and *Rhynchostegium*, or the paleobotanist working on *Warnstorfia* whose most pertinent literature is hidden under *Hypnum* and *Drepanocladus*.

As we develop more wonderful tools in the computer, we must be experts on systematics to learn of the literature hidden under an older name, or we must educate the computer on the newly created synonyms. Databases will become obsolete, poorly funded floras will be outdated before they reach the bookstores, legislation will be useless before it protects a single species.

These are problems of economics, problems of ecology, problems of systematics. Ecology benefits from systematic treatments, being able to group similar species that should behave most similarly under certain environmental constraints, being able to talk about groups instead of a list of individual species, being able to communicate with scientists around the world. I pose these problems because I know no solution. Is

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there no way, short of delving into the Kew Index or owning all the possible systematic literature? How does one keep the non-bryological users of our literature informed of the synonyms and changes that confuse their access to the rapidly growing body (at last) of information about the non-systematic aspects of bryophytes?

My student has offered the suggestion that we publish a yearly summary of all the name changes in a bryological journal each year. But who will decide which

new combinations will be accepted and which will not? The European checklists have listed vastly different nomenclature for some groups from the North American one. Many of these discrepancies were eliminated with the

most recent North American checklist, but newer combinations are now in the North American list but not yet in the European one. Then Zennoske Iwatsuki scrambled to coordinate the new Japanese list with the North American one while his was already on its way into print. Does anyone have any suggestions for maintaining accessibility to the non-bryologist using our literature?

Note from the Editor: please send us your reaction to the above article by Janice Glime. A first comment is provided below.

Stability or Pedagogy: a comment

by George A.M. Scott

A central difficulty in the way of finding a solution to Dr Glime's problems is that there are two sources of nomenclatural instability, one legal and the other taxonomic. Instability of legal origin is caused by adherence to the ICBN, mainly the principle of priority. This seems likely to be considerably reduced at some time in the future when the present moves towards listing *Names In Common Use* [Note from the editor: It is hoped to have an article on this important project in a next issue of The Bryological Times] eventually come to fruition; and there are other proposals being discussed, such as restriction to specified journals, which would also help. In principle this part of the problem is solvable.

The other part, taxonomic instability, is intractable and perhaps even (in principle) insoluble. Insoluble because a solution would depend on accepting that taxonomic is wholly subservient to utility, that the users of names had absolute ascendancy over the providers of names, and that there should be no feed-

back from taxonomy into nomenclature. Nomenclature would thereby become "received knowledge", a fossil, incapable of further evolution or at least greatly restricted in its powers to change. The absurdity of this proposition is obvious and the solution it provides would be selfdefeating. The best that can be done therefore is to minimise the instability and there are several ways in which that could be achieved.

For example, with species names, much more use could be made of explanatory nomenclature of the kind: "*Fissidens berterii* (F. fontanus auct.; see Pursell, 1987)" or "*Riccia* '*fluitans*' (*R. multifida* (Steph., *R. duplex* Lorb.))". This is always under editorial control and is merely a matter of policy. Personally, I feel that this kind of amplification is helpful, can never do any harm, and is well worth the small amount of extra space which it takes up.

Secondly, with generic names, far more use could be made of subgenera. Over the last few decades the characters which are used to discriminate genera have become more and more slender, especially in the pleurocarpous mosses but commonly in other groups also. In many cases (I won't cite any for fear of being invidious) the same scientific position could have been achieved, without nomenclatural change, by the creation of subgenera instead of genera - indeed that would be more informative treatment since it introduces an indication of relationships which is otherwise unattainable. What is required is merely acceptance that nomenclatural stability is a sufficiently desirable aim. In other cases, of course, where taxa are being transferred to a different but not new group, this would not help.

Thirdly, there is far too much blind and uncritical acceptance of nomenclatural changes just because they have been proposed by a specialist. Taxonomists' myopia, or X's syndrome (for X substitute any name you feel to be appropriate) is an occupational disease that seems to afflict very many of the world's best

and most critical taxonomists, and to be induced by the very act of practising their profession. Intense and prolonged study of minute distinctions magnifies them out of proportion in the same way that a batsman at cricket (does one have to say "batsperson" in these myopic days?) sees the ball larger and larger as play progresses. This phenomenon is called "getting your eye in" and it applies to taxonomy just as much as to cricket, and leads sometimes to quite ludicrous hyperbole: "vast differences", "huge cells", "utterly distinct" and the like, applied to differences minute in size and easily within the capability of one or two genes.

The counter to short-sightedness of this sort is to maintain critical acumen, as is the duty of every biologist but particularly of those who prepare general accounts such as regional floras and checklists. It is peculiarly their responsibility to stand well back from the specialist's treatment and see it in its proper perspective; not to deny the taxonomy but to weigh up the nomenclatural consequences. The recognition and circumscription of taxa in a thorough study by a competent specialist will normally carry conviction (except perhaps to other specialists in the same group) but the weight to be attached to them ought to be a matter for individual judgement not automatic acceptance. Far too often, these days, this distinction is not maintained and what is authoritative is uncritically confounded with what is mere opinion. It annoys me to hear, as one often does: "X has revised this group and we have to accept what he/she says". To agree with that is to abrogate our individual responsibility and quite often to accept nomenclatural changes that are not, in fact, either necessary or desirable.

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XV International Botanical Congress, Tokyo, Japan 28th August to 3rd September, 1993

All bryologists wishing to attend the Congress should complete the Registration Form, which is enclosed in the Second Circular, and send it together with payment to:

Registration Secretariat, XV IBC
c/o International Communications, Inc.
Kasho Bldg., Tokyo 103, Japan
FAX: (81) 3-3273-2445
Telephone: (81) 3-3272-7981

Those who would like to receive the Second Circular should write to the Registration Secretariat or to Zennoske Iwatsuki, Botanical Institute, Faculty of Science, Hiroshima University, Higashi-hiroshima-shi, Hiroshima 724, Japan. There is a small fund, kindly provided by Japanese bryologist, to help bryologists to attend the congress. Support may be about US \$300 per person and may help to cover part of the living expenses. Any person who would like to apply for this fund, please write to Hironori Deguchi (Kochi University) or to Zennoske Iwatsuki (Hiroshima University). *Also, we would very much appreciate to receive donations to this fund from foreign countries!*

Programme

The bryological programme includes the following three Symposia in Congress Section I: Systematics and Evolution.

1. New Classification of Bryophytes. Organizers: T. Koponen, J.J. Engel and Z. Iwatsuki.

D.H. VITT: General remarks on moss classification.
A.J. FIFE: New classification of the Funariaceae.
H. AKIYAMA: New classification of the Leucodontaceae.
J. ENROTH: New classification of the Neckeraceae
R.M. SCHUSTER: General remarks on liverwort classification.
J. HASEGAWA: New classification of the Anthocerotae.
H. BISCHLER: New classification of the Marchantiaceae.
S.R. GRADSTEIN: New classification of the Lejeuneaceae.

2. Experimental Biology of Bryophytes: Phylogenetic Aspects. Organizers: M.Bopp, J.Shaw and K.Nehira.

D.V. and M.R. BASILE: The role of suppression in liverwort morphogenesis and phylogeny.
N.W. ASHTON: Genetical and physiological aspects of moss protonemal development.
S. TAKIO: Growth characteristics of bryophyte cell culture.
R. WYATT, A. STONEBURNER and I.J. ODRZYKOSKI: Isozyme evidence regarding phylogenetic relationships in the Mniaceae.
J. SHAW: Evolution and systematics of copper mosses.
W. HARTUNG: The function of ABA in bryophytes.

3. Reproductive Biology of Bryophytes. Organizers: R.E.Longton, L.Söderström and H.Deguchi.

S. IMURA: Reproductive phenology.
A. HOFMAN: Reproduction and population genetics.
T. HERBEN: Reproduction in transient and stable habitats.
B. MISHLER and A. NEWTON: Evolutionary roles of asexual reproduction in bryophytes.

Workshop

The International Association of Bryologist is organising a special workshop on "Bryofloras of the World - Current Projects" (Organizer: D.H. Vitt).

The workshop has the following objectives: (1) Awareness of current projects; (2) Organization of individual projects; and (3) Funding of projects. The Workshop will be held at the National Institute of Polar Research, Tokyo. Details will be announced in the next circular.

Poster sessions

The Scientific Program Committee welcomes the submission of original contributions for presentation at the congress. All contributions will be presented in the Poster Sessions.

Excursions

During the congress, several short tours around Tokyo will be arranged. These include Mt. Fuji, Sankei-en (Citizen's Park and Nature Observation forest), Tsukuba Academic City complex, Koishikawa Botanical Garden, Nikko, Ozegahara bog vegetation, etc.

It appeared to be difficult to arrange a special bryological excursion. We therefore suggest all bryologist who attend the Congress to take Post-Congress Excursion PO-6:

September 4-7: Kyoto, Nara and Shiga, old capitals of Japan

Seat limit: 40. Tour fare: 90,000 yen.

Professor N. Kitagawa will join this tour and will provide explanation at the moss gardens.

Stanley Greene Award in Bryology

Applications for this award are to be postmarked before February 1, 1993 and sent to the honorary secretary of the IAB, Dr. Dale H. Vitt, Dept. of Botany, University of Alberta, Edmonton, Alberta, Canada T6G 2E9. The award amount will be US \$ 1000.00. For details see THE BRYOLOGICAL TIMES no. 55 or write to the Secretary. The award will be announced at the 1993 IAB meeting in Tokyo.

REQUESTS

ZENNOSKE IWATSUKI and BENITO TAN are preparing an updated moss checklist for the whole Indochina region, covering the present countries of Vietnam, Laos, Kampuchea, Myanmar and Thailand, and would like to receive relevant publications. Now that peace has returned in the region after several decades

of war and the governments are talking about logging in order to generate hard currency for the sagging economy, an inventory of the plant diversity for the regional biota is timely. In compiling the moss checklist, Drs. Iwatsuki and Tan have gathered nearly most of the literature published outside of the region. However, they are in need of bryological papers published *within the region itself* and not widely distributed elsewhere (e.g. papers by T. Ninh and O. Na Thalang). They would appreciate receiving copies of these publications. Please send your reply to Benito Tan, Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, MA 02138, U.S.A.

MARKO LEWIS, Herbario Nacional de Bolivia, Casilla 10077, La Paz, Bolivia needs the help of a Spanish-speaking bryologist to check the first draft of his *Historia Natural de Musgos de Bolivia* (in Spanish) for language errors. The manuscript is about 300 pages single

spaced with 125 full-page plates and includes an introduction to bryology, an English-Spanish glossary (adapted from Magill's "Glossarium"), a bibliography, a floristic treatment of eight different habitats and a few surprises. Anyone who could offer help please write to Marko Lewis. In return, you may be acknowledged on the title page as co-editor and receive free hardbound copies of the book and five original plates of your choice.

C. CORTINI PEDROTTI, M. ALEFFI and R. SCHUMACKER, Dept. of Botany & Ecology, University of Camerino, Via Pontonni 5, I-62032 Camerino, Italy are preparing a check list and red list of Italian bryophytes and would like to receive lists (with date and locality) of bryophyte species which you might have collected in Italy, Sardegna and Sicilia. They are particularly interested in recent collections from the Italian Alps.

Sinske Hattori (1915-1992) Distinguished Bryologist

by A.J. Sharp

Sinske Hattori was born August 10, 1915, in Obi, southern Japan, where he resided most of his life. He received his B.S. in Botany at Tokyo Imperial University, in March 1940, and his doctor of Science in Botany at Tokyo University in February 1948. His dissertation title was "*Contributio ad floram hepaticarum Yakushimensis*." He had a strong professional interest in bryophytes with his special studies in the Hepaticae, particularly the Frullaniaceae. He published 383 articles and notes dealing directly or indirectly with bryology.

From 1941-1945, Dr. Hattori worked in the Natural Science Museum in Tokyo. In March 1946 he became the Director of the Hattori Botanical Laboratory in Obi where he served until his death. There he initiated the *Journal of the Hattori Botanical Laboratory* in February 1947. Published twice a year, it became one of the top bryological journals in the world. It occasionally included articles in other fields (mainly lichenology) which added to its importance. He remained editor of it until his death. Seventy-one volumes have been published. Volume 72 is now in press, and manuscripts for another volume are being reviewed and edited. The *Journal* was an important part of Dr. Hattori's life.

Dr. Hattori was married on June 19, 1944, to Hamako Toyama. They had four children: one daughter (Reiko) and three sons (Hirotooshi, Sinpei and Shin-sa). Reiko Sugita, their eldest, will serve as the Chairman of the Board of Directors of the Laboratory and take over its management.

In addition to his interest in Bryology, Dr. Hattori was president of his family company which had plantations of *Cryptomerica*. He also owned a small com-

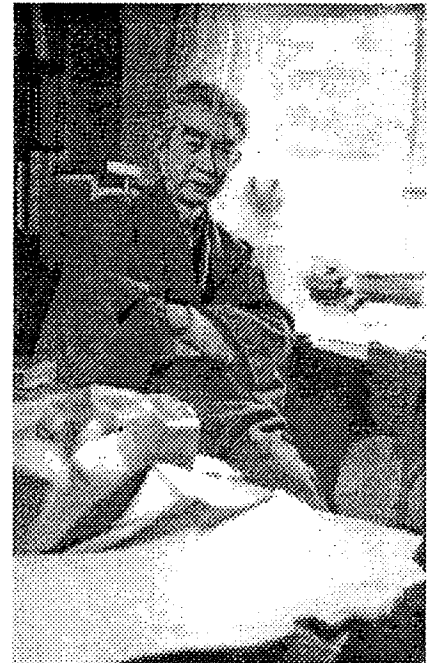
pany making plastic parts for cameras. But his primary interest seemed to be in the welfare of the Hattori Botanical Laboratory.

He served as a member and chairman of the International Committee for the Nomenclature of Bryophytes. He was also a committee member for the National Science Museum in Tokyo and served as President of the Bryological Society of Japan during 1978-79. He was elected as an honorary member of the American Bryological and Lichenological Society in 1955 and of the British Bryological Society in 1980. He became a member of the Finnish Academy in 1980. Included in his honors was the Purple Ribbon Medal awarded by the Japanese Government in 1970. It also awarded him the Kun Santo Zuiho-sho (Order of the Sacred) in 1985. The Asahi Shinbun Newspaper gave him the Asahi-sho prize in 1977. The Nichinan city awarded him a special prize in 1980 and elected him as an Honorary Citizen in 1990.

In addition to his other activities, he prepared and edited the *Hepaticae Japonicae Exsiccatae*, assisted by Dr. Masami Mizutani, and helped Dr. A. Noguchi to edit the *Musci Japonici Exsiccati*.

But most important was his personal influence on friends and colleagues. He was always quiet, pleasant, and generous in many ways. My first contact with him was in the early fifties when I suggested to him that his *Acrobolbus titibuensis* was the same as my *Acrobolbus rhizophyllus*. I greatly enjoyed his humorous reply that I was right, but we both were wrong, because Mitten had long before described the species from Himalayas, which he named *Acrobolbus ciliatus*.

His generosity was illustrated by his



providing us with a new house when we went to Japan in 1964 to work with him and his staff on the geographical relationships between Asia and North America, a project jointly funded by both our governments. He even offered me an auto to use while I was in Japan, which I refused because they drive on the left side of the road. He was a good companion in the field. My students enjoyed his company at the University of Michigan when he visited there. Later, while visiting the Southern Appalachians, he climbed to the summit of Mt. LeConte in the Smoky Mountains even though he was not feeling well.

Dr. Hattori will be missed throughout the world of Bryology because of his contributions in many ways: his philosophy, his friendliness, his knowledge, his wisdom, his generosity in many forms. It is hoped that he will be commemorated by the Hattori Botanical Laboratory and its staff with a continuance of its publications and other help in the field of Bryology.

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DEATH

EUSTACE W. JONES (1909-1992) died in hospital in Oxford on 21 August, in his eighty-fourth year. Eustace's contributions to forestry and British bryology were considerable but he was best known in the international bryological community for his outstanding work on the hepatics of Africa, having published more than 40 pages on these plants. His wisdom and guidance will be sorely missed. [A.J. Harrington].

News and Notes

JEFFREY W. BATES, Imperial College, U.K. has taken over from Dr. A.J.E. Smith as Editor of *Journal of Bryology*. All new manuscripts for the Journal should be submitted to his address: Dr. J.W. Bates, Dept. of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY United Kingdom. A new and international panel of associate editors has been appointed to help maintain a high standard for the Journal. The editor would like to enhance the proportion of publications dealing with *experimental* aspects of bryology. He may also introduce review aspects in topical areas. Authors wishing to contribute reviews should firstly contact the editor with an outline of their ideas. The *Instructions for contributors* remain unchanged from those in volume 17, part 1; however, authors will be asked to add their own lettering to figures and plates in future.

SHARON E. BARTHOLOMEW-BEGAN, Kutztown University, U.S.A., has won the 1992 *Jesse M. Greenman Award* for her publication "A morphogenetic evaluation of *Haplomitrium*", published as Volume 41 in *Bryophytorum Bibliotheca*. This study is based on a PhD dissertation from Southern Illinois University at Carbondale under the direction of Dr. Barbara Crandall-Stotler. The Greenman Award is presented each year by

the Missouri Botanical Garden. It recognizes the paper judged best in vascular plant or bryophyte systematics based on a doctoral dissertation published during the previous year.

New Publications

Sent items for this column to the editor, S. Rob Gradstein.

Bryophytes and Lichens in a Changing Environment. Edited by Jeffrey W. Bates and Andrew M. Farmer. Published by Clarendon Press, Oxford, 416 p., July 1992, hardback. ISBN 0-19-854291-7. Price 60 pounds sterling.

Endangered Bryophytes in Europe - Causes and Conservation. Edited by Lars Hedenäs and Lars Söderström. Special issue of *Biological Conservation* vol. 59 (2/3): 85-283, 1992. ISSN: 0006-3207. Regular Price 70.84 pound sterling. A few copies at a reduced price of 40 pounds sterling are available from T. Hallinbäck, Threatened Species Unit, SLU, Box 7072, S-75007 Uppsala, Sweden.

There is a fortunate, growing interest in the impact of environmental changes on the species of bryophyte and the conservation of rare and threatened taxa. This year two major publications have appeared which are dealing with these subjects.

Bryophytes and lichens in a Changing Environment, a book published in the Oxford Science Publications series and edited by Jeffrey Bates and Andrew Farmer, focuses primarily on the responses of bryophytes (and lichens) to environmental changes. There are fourteen major review articles, all written by experts. Subjects treated include changes in species ranges, changes in selected major ecosystems such as peatlands, temperate forests and tropical rain forest, and the impact of pollutants (acid rain, agrochemicals and fertilizers, heavy metals, etc.) on bryophytes.

A few chapters on general aspects of bryophyte ecology (ecological classification of bryophytes, their role in terrestrial ecosystems, growth and productivity, and the evolutionary capacity of bryophytes) are also provided. The chapters are usually very well written and provide excellent syntheses of current knowledge.

Endangered Bryophytes in Europe - causes and conservation, edited by Lars Hedenäs and Lars Söderström and published by Elsevier, contains the proceedings of the 1990 Symposium on this subject in Uppsala and has a focus on bryophyte conservation. Moreover, this volume is particularly strong in case studies. Thirty short papers deal with the possible causes of changes in the distribution of European bryophyte species as well as with various conservation-related activities in European countries, North America and China. A few review-type papers on the ecology and genetics of rare species are also provided. This volume shows the growing interest in bryophyte conservation in Europe and demonstrates very well what kind of research might be relevant to the subject. Many papers emphasize that we still do not know much about the causes of the observed distributional changes. Here is a field wide open for research!

The two books are not cheap but they are very professionally produced, make very stimulating reading and are a mine of information for those interested in the subject. As indicated above, copies of the symposium volume are available at a reduced price. [S.R.Gr].

New IAB Members

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SOFTWARE LIBRARY

New Entries 1992

#395 Active Life
Windows 3 version of the program #293.
#396 Various Windows Programs
BLANKER: screen saver
DBROWSER: displays dBase files and
allows you to copy records into other
Windows applications!
HPCALC: Implementation of Hewlett
Packard scientific calculator.
WINPOST: produces up to 32 reminder
notes which can be pasted into the
wordprocessor.
PPD: Powerpad texteditor.
#398 PaintShop
Displays and manipulates (e.g. dithers)
bmp, gif, img, mac, pcx and rle picture
files and captures
parts of them.
#400 Foreigner (G. Goldsborough, free-
ware)
A Windows program to paste foreign
characters not available on the key-
board into other other applications.
#401 More Windows 3 Programs I
WINGIF: graphics display and conver-
sion program
WUNZP: Windows version of the fa-
mous unzipper.
MATHGRAF: function plotter

cont. on p. 11

Call for Nominations

In 1993, at the International Botanical Congress in Tokyo, a number of the executive positions of the International Association of Bryologists are due for re-election. It is time to nominate appropriate persons for these offices. Terms are for 1993-1999.

PRESIDENT (As Dr. T. Koponen has not been previously elected to that office, he is eligible for renomination).

Two Vice-Presidents

Four Councillors

Please send your nominations to Dale H. Vitt, Secretary, before December 31, 1992. A ballot will be included in the first 1993 issue of The Times.

Those officers continuing until 1999 are as follows: Secretary-Treasurer - D. H. Vitt; Councillors - H. Ando, W.R. Buck, C. Delgadillo, J.-P. Frahm, P. Geissler, N.G. Miller. The Association would like to thank Marshall Crosby for serving as Vice-President and Zennoske Iwatsuki, Gert Mogensen, George Scott, and Jerzy Szwejkowski for serving as councillors.

An Assessment of Vanishing Rare Bryophytes in Kumaun Himalaya - Thalloid Liverworts

by Giribala Pant, Shiv Datt Tewari & Saurav Joshi

Conservation Column. Send contributions to the column editor T. Hallingbäck, Department of Ecology and Environmental Research, Swedish University of Agricultural Sciences, Box 7072, S-75007 Uppsala, Sweden

During the past 12 years we have been engaged in study and collection of bryophytes in the Kumaun region of North-west Himalaya. Bryophytes occupy nearly all types of habitats and niches in the Himalayan landscape; even in many man-made habitats these plants form a dense cover (Pant and Tewari 1990). At present, however, their survival in the disturbed Himalayan landscape is seriously threatened. The threats are mainly due to urbanization linked with pressures of population growth. The main causes of the decline are the following:

1. Destruction of natural habitats of bryophytes by:

- a) Land-clearing, digging and damage to the bryophyte-covered hill-sides, slopes and ridges.
- b) Road construction, broadening of roads due to increased vehicular traffic.
- c) Unplanned construction of residential buildings, offices and hotels.
- d) Deforestation on a very large scale despite Governmental efforts to protect the forest. The trunks of our common trees like Horse Chestnut, "Ayar", Oaks, Rhododendron, Cedrus and Himalayan Cypress are normally draped with a variety of leafy hepatics and mosses but their large-scale destruction is going on throughout Kumaun Himalaya. To illustrate the above points:

- Dhobighat was a cool, shady, humid area in Nainital, receiving moisture the whole year round from drainage channels and wet flushes. Up to the early eighties, hepatics like *Conocephalum conicum*, *Dumortiera hirsuta*, *Marchantia nepalensis*, *Wiesnerella denudata*, and *Pellia endiviaefolia* grew here in great profusion, but today their areas have been greatly

reduced due to cutting/clearing of forests and drying up of water channels. The unmetalled road is broadened each year and the area is subjected to biotic disturbances enough to unbalance the bryophytic communities and their substrates.

- The area where Vishal Cinema Hall and Tallital Tourist Complex have been constructed in Nainital was once extremely rich in *Cryptomitrium himalayense*, but now the species is rare.

- e) Development of villages and towns in the hills of Kumaun with modern amenities.

2. Commercial exploitation of bryophytes

Businessmen and commercial traders also pose a serious threat to the bryophytes of the entire Kumaun Himalayan range. Huge quantities of mosses and hepatics are being scraped from rocks, tree trunks and forest floors and packed in sacks and transported to the plains where they are used in various indoor decorations in the form of "moss-sticks" or "moss-pots". The beautiful Himalayan moss wealth is being sacrificed at the altar of fashionable indoor gardening and ornamentation in homes, offices, restaurants, hotels, cafés and inns. Hand-picked moss is free of cost but one "moss-stick" in Delhi costs Rs. 30 (approx. US\$ 1.50) and a moss-draped basket is available for Rs. 50.

3. Use of mosses as packing material.

Mosses are widely used as packing or wrapping material of temperate fruits, especially plums and apples, in the di-

stricts of Nainital and Almora. Time has come to replace moss as packing material by some substitute.

4. Overcollecting.

Overcollecting of thalloid hepatics for scientific purposes has reduced areas in which masses of *Athalamia pinguis*, *Conocephalum conicum*, *Cryptomitrium himalayense*, *Cyathodium tuberosum*, *Dumortiera hirsuta*, *Reboulia hemisphaerica*, *Targionia hypophylla*, and monotypic endemics like *Aitchisoniella himalayensis*, *Sewardiella tuberifera* and *Stephensoniella brevipedunculata* once flourished (Pant 1983, 1986). Fortunately there has been some growing awareness in this respect amongst the University students and teachers lately.

Red list taxa.

The following monotypic endemics are on the brink of extinction and should be placed on the list of endangered species:

1. *Aitchisoniella himalayensis* Kash. *Present status: extremely rare.*

The monotypic Marchantialean genus *Aitchisoniella* Kash., notable for its limited geographical range, was established by Kashyap (1914) on the basis of collections from Mussoorie (2000 m). Subsequently he found it in other western Himalayan localities, e.g. Simla, Kulu and Dulchipass where it was recorded as fairly common. Over the years (despite repeated efforts by various workers) no one could spot this interesting thalloid hepatic at Kashyap's original localities until Kanwal (1977) collected it in Nainital. He refers to this plant as rare. For ten years we have been tracing this hepatic without success until finally, during August 1988, profusely

fruiting material was found at Orakhan (2000 m) and Mukteshwar (2150 m) in Nainital.

Reproductive limitations (Udar and Srivastava 1983) combined with habitat destruction may have been responsible for the rarity of this curious Indian hepatic. Due to its rarity and the lack of adequate herbarium material, there is restriction on further biological work on this taxon.

2. *Sauchia spongiosa* Kash.

Present status: rare.

Kashyap (1916) established the genus *Sauchia* on the basis of his collections made from the middle and main Himalaya, ranging from 2700-4350 m. Until recently this genus has never been re-collected. Recently, we have discovered this peculiar taxon in the districts Almora and Pithoragarh (Tewari et al. 1988). Our field observations confirm that this taxon is restricted to high altitudes. The populations of *S. spongiosa* are restricted to small isolated patches mixed with other hepatics and mosses.

It is noteworthy that even the high altitude areas are not free of biotic disturbances. Except during the three harsh winter months (Dec-Feb), these areas are under constant pressure of tourists, mountaineers, commercial exploiters, shepherds and their cattle.

3. *Stephensoniella brevipedunculata* Kash.

Present status: rare.

This famous monotypic endemic, first described by Kashyap (1914), has a very restricted distribution in the North-west Himalaya. It was reported as being very common in Kumaun, Mussoorie, Simla and Kulu, at altitudes of 1800-2100 m (Kashyap 1929, Mehra and Mehra 1939, Kanwal 1977). In Nainital it is used to grow in the joints of old walls and in more or less shady places in large, almost pure patches (Kashyap 1929). However, the situation has changed drastically during recent years. In 1984, we could locate 15 sites of *Stephensoniella* in and around Nainital (Tewari and Pant 1964), but since then

it has nearly gone from the region. At present, this plant can be located near Sainik school and Khurpatal areas in Nainital and even these sites are reeling under continuous biotic disturbances. In the undisturbed mountainous regions of Kumaun the status of *Stephensoniella* is not so poor. During 1985 and 1990 patches of *Stephensoniella* were observed at several localities in the districts of Almora and Pithoragarh, at about 2400-2700 m. Our field observations show that this delicate thalloid hepatic has to be labelled today as threatened and rare in Kumaun Himalaya. The luxuriance of yesteryear is undoubtedly gone.

4. *Sewardiella tuberifera* Kash.

Present status: endangered.

The discovery of this monotypic endemic member of Metzgeriales was based on the collections made by Kashyap (1915) from Mussoorie and Simla. As observed by Pande et al. (1955), it was quite common in Nainital and surrounding areas. Over the years, it has gradually disappeared from the original collecting sites. Despite our repeated attempts we have not succeeded in re-locating *Sewardiella* in Nainital. The landscape has changed drastically over the years due to massive urbanization. However, a few thalli were collected recently at Suyalbari (1100 m), in the district Almora. The plants were found growing on dung-mixed soil (Tewari and Pant 1984). Otherwise we have not been able to obtain even a single collection of *Sewardiella* during our various fieldtrips in the different parts of Kumaun Himalaya.

Endemics to Western Himalaya previously common in Kumaun, which are now rapidly vanishing.

1. *Athalamia pinguis* Falc. Restricted to Western Himalaya (Kulu, Simla, Mussoorie, Kumaun). *Rare*.
2. *Athalamia pusilla* (St.) Kash. Distributed in Western Himalaya (Kulu, Nainital, Almora) and South India. *Extremely rare*.
3. *Cryptomitrium himalayense* Kash.

Restricted to Western Himalaya (Nainital, Almora, Pithoragarh). *Rare*.

4. *Metzgeria himalayensis* Kash. Distributed in Western Himalaya (Kulu, Dalhausie, Mussoorie, Kumaun), Palni Hills, Assam, Mount Abu and Mahabaleshwar. *Rare*.

Conservation.

The above described taxa have little future unless immediate steps are taken to arrest the various causes leading to the bryological impoverishment in a region like Kumaun Himalaya.

1. Conservation and preservation of the Red List Taxa by declaring the best sites where they occur as "Restricted Areas". The best Bryophyte areas in Nainital and vicinity are:

- a. Dhobighat-Snow View Range (2000-2300 m).
- b. Kilbury-Pangot Forest Range (2100-2300 m).
- c. Orakhan-Mukteshwar Forest Range (2000-2150 m).

2. New forest laws should be framed for the prevention of uncontrolled scraping and transportation of bryophytes. The Forest Department officials should be alerted as to the importance of the bryophyte layer in nature so that these plants are not treated as useless "green weeds".

3. Authorities should be contacted:

- a. Secretary of the Ministry of Forest and Environment Paryavaran Bhawan, Lodhi Estate, New Delhi, 110003 India.
- b. Indian National Trust for Art and Cultural Heritage (INTACH), 71 Lodhi Rd., New Delhi, India.
- c. Mr. Akshobh Singh, Ayarpatta Hills Mallital, Nainital, 263001 U.P., India.

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British Bryological Society Tropical Bryology Group Expedition to Mount Mulanje, Malawi, 12th June - 4th July 1991

by B.J. O'Shea

The BBS TBG was formed in late 1987, and amongst its earliest considerations was a collecting trip to the tropics. Having satisfied some of its more pressing objectives, the suggestion was considered more seriously in 1990, and Mount Mulanje, in Malawi (East Africa) was chosen as a worthwhile objective. Mt. Mulanje was well known as a site for a number of endemic plants and animals, and the few bryophyte collections that had been made suggested that the flora was likely to be rich. In addition, there was considerable pressure on the mountain flora through both forestry and deforestation, and proposals have been made to make the mountain a National Park and an IUCN World Biosphere Reserve. Our trip was seen as a contribution to the evidence to support these proposals, and was given generous support by Dr. James Seyani of the National Herbarium and Botanical Garden of Malawi.

The trip was made in three and a half weeks in June and July 1991. The trip was timed for the Malawi winter - after the summer rainstorms, but before the height of the dry season. The climate on the mountain (at about 2000m) was pleasantly warm (c.30degC), but at the base (800m), particularly to the north of the mountain, it was much hotter, and at the top of Sapitwa, the highest peak of the mountain (3000m), the temperature was below freezing during the night. Very suitable for the European contingent, but a little cold for some of the Africans.

Sponsorship was received for about half of the £7000+ cost of the expedition, the rest being paid for personally by the participants. The costs were kept low thanks to very generous assistance from within Malawi, both University staff who provided accommodation and laboratory facilities, the Herbarium which

provided transport and other support, and the unstinting assistance of Cathy and Stephen Temple from Mulanje. The largest financial contributions came from the BBS and the Missouri Botanical Garden.

The expedition was nine strong: four from Africa and five from Britain. The British contingent were Nick Hodgetts (conservationist, Peterborough), Royce Longton (academic, Reading), Brian O'Shea (amateur, London), Ron Porley (conservationist, Taunton) and Martin Wigginton (conservationist, Edinburgh), and from Africa were the expedition leader, Shaun Russell (academic, who moved from Namibia to England just before the expedition), Liz Kungu, (academic, Nairobi, Kenya) and Zac Magombo and Edwin Kathumba (herbarium staff, Zomba, Malawi). We also had a local guide, Master Singana. The bryogeography of southern afro-montane Africa, despite severe population pressure, is still very interesting. The forest biome is the smallest in southern Africa, but the richest in bryophytes (montane/forest mosses represent about 70-80% of the total moss flora), and it was in and above the forest where we spent the majority of our time. There is a clear 'Malawi gap' in botanical distribution along the mountain ranges of East Africa, and Mount Mulanje is several hundred miles from the nearest mountain of similar height, and forms an important, but little-studied part of the east African mountain archipelago. We hope the expedition will demonstrate whether the gap is real, or just the result of undercollecting.

The African bryophyte flora has a much lower number of endemics than Asia or America, and is less well-known. Nevertheless, significant work has been done in South Africa by Bob Magill, and by Tamas Pocs in Tanza-

nia. Similarly Eustace Jones, Vanden Berghen, De Sloover, Demaret and others have published widely over several decades, but the literature is very widely spread, and in journals that are not always easy to find. The inception of the Bryologia Africana project, now being managed by Bob Magill and Tamas Pocs, will be the first attempt to pull all of this together, and we hope that our work in Malawi will contribute to this. The expedition had been preceded only two months earlier by bryological expeditions from AETFAT, and both Zac Magombo and Shaun Russell had attended these, and Zac had also had the benefit of Tamas Pocs' company during his trip. Shaun took the opportunity during the AETFAT trip to gain the support of the local helpers, and we thus benefited greatly in the logistics of the expedition from the assistance of Cathy and Steven Temple, of the Tea Research Foundation (TRF), Mulanje.

After the initial provisioning, the expedition spent over two weeks on the mountain, supplied at intervals by the Temples, who also took away our collections and dried them in the TRF ovens. Our preliminary research had produced a checklist of the bryophytes of Malawi, but very few of us were familiar with tropical bryophytes, so little accurate identification was done in the field - apart from easily recognisable genera such as Fissidens, Sphagnum and Campylopus.

Each expedition member was given a range of collecting numbers, with pre-printed collecting books containing tear-off numbers to put in with the specimens in strong brown bags. The collections were dried initially at the TRF, but then re-dried at Zomba University before final packing. About 4500 collections were made, and the bags were all dispatched together back to England. One lot has still not arrived, containing about 200 collections. The specimens were then logged in at Reading Herbarium, and labels generated. The packets were distributed to the UK-based members in September 1991, for identification to start.

Although our inexperience may have caused us to miss some plants (and over-collect some common ones), the results so far suggest that we have nevertheless got some very interesting collections. These include significant range extensions, a fair number of families and genera as well as a large number of species (particularly hepatics) new to the country, only the second known collection of one plant, and one plant that appears to be new to science. We have so far looked at perhaps a fifth of the collections, and many of these only down to family or genus level.

We are concentrating initially on the more obvious easily identifiable groups such as Andreaeaceae (a family new to Malawi), Sphagnum, and Campylopus. The intention is to publish the results in a series of papers that will cover the introduction and background, a checklist of bryophytes known in Malawi prior to the expedition, and then a series of taxonomically based papers on the collections. The first two are in hand for publication later this year/early next year, and the others we expect to be collaborations between expedition members and 'experts'.

The process of identification is being tackled differently by different expedition members, and some are doing family/genus identifications for everything before starting on specific identifications, and others are doing full identifications as they go. Expedition team members are being asked to take responsibility for particular taxonomic groupings (at family, genus or species level), and to coordinate the detailed identification work. We are accumulating a list of experts who have offered to help, but there are a number of families where we are still seeking assistance. The most serious gaps are probably those families which were frequently collected, such as Bartramiaceae, Brachytheciaceae, Bryaceae, Pottiaceae, Hookeriaceae, Hypnaceae, Neckeraceae - and most of the liverworts. Any offers greatly received.

Specimens are committed to the BBS

herbarium (Cardiff, UK), Zomba herbarium (Malawi), Missouri Botanical Garden and Reading herbarium, as well as the identifier and collector. Distribution will take place when identifications are confirmed.

#402 More Windows 3 Programs II
ZM301: Zip Manager, Windows version of the famous archiving utility.

XVTGRAF: Draw program, comparable to Microsoft Draw.

#403 More Windows 3 Programs III
Sloop Manager: replaces Window's program manager, can copy or move files by dragging, has multiselect ability to copy, delete and move, and more.

Udelete: The ultimate delete command, deletes also hidden and read only files.

#404 WinPost

Manages up to 100 reminder notes. Windows 3 required.

#405 WinWord Macros

Envelope: prints addresses from a letter on an envelope.

Dinger: inserts foreign characters in WinWord texts.

#406 WScan84b

Windows version of the famous McAfee virus scanner for 84 viruses.

#407 Various Windows programs

POSTMAN: Postmanager, posts notes. GTOOLS: collection of WinWord macros.

WFW-EPS: filter to include Postscript files into WinWord.

#408 Windows utilities

Banner: Windows version of the famous sideways print program. Bothside: Prints text with a laser printer on both sides of a sheet of paper, in single or double column format, with a variety of options (footer, page no., etc.) in different fonts.

#409 Windows Utilities

PChart: Simple program to create bar, 3D bar and pie charts. Pixfolio: Program to archive picture files and to search for special subjects. Supports (and converts between) most graphics formats, displays contents of a picture

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Programs of the IAB Software Library

Bryological Bibliographies and
Memory resident programs
by Jan-Peter Frahm

Computer Techniques Column. Send contributions to the column editors: J.-P. Frahm, Universität Duisburg, FB 6, Botanik, Postfach 101503, 4100 Duisburg, Germany, or B.J. O'Shea, 131 Norwood Road, London SE24 9AF, U.K.

Bibliographies

Bibliographies are highly necessary tools for scientific studies, but computerised bibliographies offer many advantages. In the past it was necessary to prepare card files and to store the same title several times in an author's file, a subject file, a taxonomic file or a geographic file. Now it is possible to search one file on disk for every item, author, taxon, country (in the bibliographic data) or subjects (in a keyword field) and even to paste bibliographic data into word processors, even in the appropriate style required for a particular journal.

The disadvantage is that such bibliographies must first be created and typed into the computer. An alternative would be to buy bibliographies on disk or to pay for literature retrievals. "Current Contents" is available at a price of approx. 600\$ a year on disk. It comes with a special literature retrieval program. The disk version of "Current Contents" can be tested. A trial version of the retrieval program plus a data disk are offered in the software library (#410-411 on HD disks). Although the journals evaluated for "Current Contents" have been extended to some of the major bryological journals (e.g. The Bryologist, Journal of Bryology), the coverage of bryological references is relatively poor. In addition, one has to store 98% of non-bryological data from other fields of biology. Another possibility is to make an online search in one of the major biological databases (e.g. BIOSIS) and to pay for every reference. Although universities get a reduction in the price, the costs are still high. Furthermore, the references are provided only as a printed listing and not on disk and have to be retyped into the computer! Downloading on disk is forbidden (although

technically possible). The IAB software library, however, provides more than 20,000 bryological references, and this for free! This saves thousands of dollars for literature retrievals and a typist!

1. The Bryological Bibliography provided by Janice Glime (#221230 on 10 DD disks, #149-151 on 3 HD disks) contains more than 13,000 references as an ASCII file. For evaluation, the program GASP (#235) is necessary. It outputs the results of a retrieval as a text file on disk. This enormous bibliography has been converted for use with dBase by H. Bruelheide (University of Gottingen). Since dBase has fixed field length, this form requires much more space and is available on request on 10 3.5" HD disks or (for computer users with dBase experience) in delimited format on 3 3.5" HD disks. The database format is the same as used by the bibliography program INFO (#169 in German, #234 in English). The same bibliography is also available in the format required by the bibliography program LIDOS converted by U. Drehwald (Hannover).

2. The "Recent literature on Hepatics and Anthocerotales" viz. "Mosses" published in The Bryologist and at present the most comprehensive bryological bibliography, will be available on disk through the IAB software library from 1985 issues onwards. Although it was announced that the "Recent literature on Mosses" would be available on disk for a fee, it was apparently never regularly distributed, perhaps because of forthcoming online database at the Missouri Botanical Garden, which will charge for the duration of access. To make these huge bibliographical databases usable, all the references from 1985 on have been retyped (with the

exception of the reviews) in dBase format used by the program INFO (see above). So far 5000 references are available compressed on one 3.5" disk occupying 3 MB space on harddisk.

3. There are several smaller bibliographies available in the software library such as:

- a bibliography on Pottiaceae by R. Zander,
- a bibliography on Chinese bryology by P.L. Redfearn, jr.,
- a bibliography on the ecology of tropical bryophytes by J.-P. Frahm and S.R. Gradstein supplemented by U. Drehwald,
- a bibliography on Campylopus by J.-P. Frahm,
- a bibliography on German bryology from 1987 on by J.-P. Frahm,
- a bibliography on computer applications in botany by J.-P. Frahm,
- a bibliography on tropical African bryophytes by T. Focs and B.J. O'Shea.

All bibliographies are available free for IAB members on disk (please refer to the software library number and enclose the appropriate number of disks) and also directly by downloading from IBIS, the International Bryological Information System (see Bryol. Times 64:11, 1991).

Another source of bibliographic data is Tropical Bryology on disk. The disk version of this journal contains not only the references of the contributions but also a combined bibliography for the whole volume prepared by B.J. O'Shea as an ASCII file, which can be imported into card file or other unstructured database programs in which one paragraph is recognised as one reference.

Memory resident programs

Switching from one program to another, e.g. from a database to a word processor is a very convenient way to use a computer. Users of Microsoft Windows have the facility to run several applications at a time and even to paste text or diagrams from one program to the other. For non-Windows users, program switching is only possible either with programs which stay resident in memory and can be activated with a "hot-key", or special resident programs like MS Windows (often called "shells") which allow several programs to be managed in the memory at the same time. The IAB software library offers several of such programs: Dosamatic (#93) is a DOS-shell which allows you to install and switch between up to seven programs.

Resicalc (#92) is a memory resident calculator and can be invoked when needed.

Instant Recall (#71) is a memory resident database program for unstructured databases. It allows you to use all ASCII files (e.g. the bibliographies of "Tropical Bryology on disk") as data files, and can be invoked from a word processor to search for references.

Deskcommand (#90) or *Copilot* (#255) are desktop-utilities with calendar, clock, text editor and a card file program similar to the *Sidekick* program.

Galaxy (#91) is a WordStar compatible word processor which can be run resident.

VShield (#309) is a memory resident virus scanner and prevents infected programs being executed.

D-Lite (#254) is a memory resident database program which is dBase compatible. The shareware version comes with a mail-list application which allows addresses to be pasted into letters. These programs are not the most advanced and are some years old, but are useful for those who do not have a multitasking environment such as Microsoft Windows, GEM or Geoworks.

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in small pictures like in a 35 mm film. MS-Windows 3 required.

#410-411 Current Contents on Disk Trial Version with literature retrieval program plus data disk.

#412 WinQVT (Shareware) Terminal program for Windows3 with keyboard map for definition of keys. Allows @ to be used for e-mail addresses, which is not possible with the Windows terminal program.

#413 ChemWin Program to draw chemical structures and to write chemical formulas which can be pasted into other Windows applications.

#414 Graphics Workshop (shareware) Windows version of the famous program to display and convert pictures.

#415 PFFlow, Windraw (Demos) Working versions of a flowchart and drawing program.

#416 ATM Fonts Twelve different free scalable fonts for use with the Adobe Type Manager, amongst them Zapf Dingbats, Kaufmann, Latin Wide, Linoscript, Linotext, Lettergothic, machine, marriage, mystical, Upper West Side, Show, Cottonwood, Century Schoolbook and Century Old Style symbols.

#417 Winadress (shareware) German address program.

#418-419 Rockford (shareware) Program to design and print calling cards, with graphics input for logos. Excellent for high quality herbarium labels.

#420 Windows Icons (shareware) HD Disk 799 different icons for Windows applications plus 9 Icon Programs such as Iconmanager, Listicon, Iconmaster, Icondraw etc.

#421 Fontshow 3.0 Displays all fonts available under MS-Windows and prints test pages.

#422 Windbase Database program, in German.

#423 Lithe 117,119,125 Recent literature on hepatics, dBase format, continued.

#424 PCWritePlus (Demo) HD Disk Word processor demo.

#425 Microsoft System Diagnosis Displays all system parameters, maps (extended and expanded) memory.

#426 Generic names of mosses and hepatics. Genera of mosses and hepatics with full citation incl. types. Taken from Names in CurrentUse, an extract of Nomina Genericorum.

#427 Lithe 121,122,124,126 Recent Literature on hepatics in dBase format.

#428 Karten (S.Risse) BASIC programs to print grid maps, versions for VGA and Hercules graphics card, with source code in Quickbasic.

#429 Bibliography of endangered bryophytes (T. Hallingbäck)

#430 Choco.dbf (J.-P. Frahm) Small database of mosses of the Choco region of Colombia (Dept. Valle, Cauca, Narino and Choco) in dBase format.

#431 Scan V. 93 (McAfee) Latest version of the famous virus scanner. Recognizes (scan.exe), erases (clean.exe)

viruses and protects from infection (vshield.exe). Compressed (*.zip).

(*) Delivered on High Density (HD) disk

All programs still available free of charge by sending a blank 5.25" disk per number.

If you have public domain or shareware programs, or bryological data on disk (checklists, bibliographies, etc.) which are not yet in the software library, please consider making them available to other colleagues by allowing them to be incorporated into the software library. We regret that no more than 10 programs can be ordered at a time in the future. Requests to copy 60, 100 or even all programs in the library cost a lot of time and it is questionable whether more than 10 programs can be evaluated and used at a time.

Jan-Peter Frahm, Universitaet Duisburg, FB 6, Botanik, Postfach 101503, D 4100 Duisburg, Germany.

Colophon

The Bryological Times, founded in 1980 by Stanley Wilson Greene (1928-1989), is the newsletter of the *International Association of Bryologists*. It is published in Edmonton (Canada) and distributed from Albany (USA), Canberra (Australia), Edmonton (Canada), Eger (Hungary), Geneva (Switzerland), Hiroshima (Japan), Moscow (Russia), Praha (Czechoslovakia), St. Louis (USA) and Umea (Sweden).

Items for publication in *The Bryological Times* are to be sent to the Editor, S. Rob Gradstein, Institute of Systematic Botany, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands, FAX (31) 30-518061, **except** for those for the regular columns, which may go **direct** to the column editors.

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S.R. Gradstein, Utrecht

Assistant Editor

P.W.A. Greene, Bilthoven

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J.-P. Frahm & B. O'Shea (computer techniques); J.M. Glime (ecology); T. Hallingbäck & E. Urmi (conservation); T. Pócs (tropical bryology); M.L. Sargent (techniques); J. Vána & W.R. Buck (floristics and phytogeography); D.H. Vitt (diary, best book buys, taxonomy).

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For details regarding membership of the *International Association of Bryologists* (currently US \$ 10,- per year) write to the Honorary Secretary, Dale H. Vitt, Department of Botany, University of Alberta, Edmonton, Alberta, Canada T6G 2E9. All correspondence concerning mailing to Mrs. Sandi Vitt at the same address.

Diary

Send contributions to D.H. Vitt,
University of Alberta, Department of Botany, Edmonton, Alberta, Canada T6G 2E9

1992

October 31 - November 1. BBS Bryophyte Workshop, Polytechnic of East London, on the Taxonomy of *Fissidens*. Further information from: K.J. Adams, 63 Wroths Path, Baldwins Hill, Loghton, Essex IG10 1SM, UK. Telephone 081 508 7863.

November 26 - December 1. 8th John Child Fieldtrip, Mt. Ruapehu, New Zealand. Inquiries: Barbara Pilly, c/o Botany Department, National Museum, Box 467, Wellington, New Zealand.

1993

Mar. 31 - Apr. 7. BBS Sprong Field Meeting, Brittany, France. Further information from J.W. Bates, Imperial College Field Station, Silwood Park, Ascot, Berkshire SL5 7PY, U.K. Telephone 0344 23911.

July 28. - Aug. 4. BBS Summer Meeting at Dumfries and Galloway. Further Information from Alexander Rowan, 1 Robertson Avenue, Dumfries DG1 4EY, U.K. Telephone and Fax 0387 63051.

August 28 - September 3. XV International Botanical Congress, including Symposia on Bryophyte Classification and Bryophyte Chemistry and the IAB general meeting. Tokyo, Japan. Inquiries: Zennoske Iwatsuki, Hiroshima University, Botanical Institute, Higashi-hiroshima-shi, Hiroshima, 724 Japan, FAX (824) 240709. *Programme: see The Bryological Times 58, 1992*

Sept. 17-19. Annual General Meeting and Symposium of BBS at Ripon. Special theme is 100th anniversary of the death of Richard Spruce, a 19th century bryologist who is known for his collections and studies in South America. Cost approximately £38 per day (full board). Further information from Mike Longman, 8 St. Quentin Rise, Bradway, Sheffield S17 4PR, U.K. Telephone 0742 368010.

Special offer:

Past issues of Tropical Bryology are now out of stock. The disk version is, however, still fully available. Vols. 1-4 (covering nearly 600 printed pages) comes on 8 5.25" HD disks plus one utility disk. It includes texts in ASCII format as well as all illustrations as .pcx files and can be ordered at a reduced price of DM 50.-- (US\$ 30) from Jan-Peter Frahm, Universität Duisburg, FB 6, Botanik, Postfach 101503, 4100 Duisburg, Germany.