The Bryological Times

Number 110 August 2003

Newsletter of the International Association of Bryologists

CONTENT

Editorial

As you have noticed, this issue is nearly entirely filled with literature reviews and does not show the wide range of topics, which I received for the earlier newsletters.

The IAB is an association so please actively associate and inform you fellow colleagues of your whereabouts or any other news-worthy item or event. May I ask you to prepare small or larger notes and forward these to me or to one of the regional or column editors?

Finally, do register for the IAB World Conference on Bryology in Merida and benefit from the conference to discuss the future of our newsletter

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IAB

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The **International Association of Bryologists (IAB)** is an organisation open for all interested in bryophytes. For membership, contact Sandi Vitt, Department of Plant Biology, Southern Illinois Univ., Carbondale, IL 62901-6509, USA (svitt@plant.siu.edu). Visit also our web site at http://www.devonian.ualberta.ca/iab/. The Bryological Times is issued 4 times per year.

OBITUARY

Dame Ella Campbell
(1910-2003)

Many of you in the bryological community will have known Ella Campbell, veteran New Zealand hepaticologist. She died in her 93rd year. Ella had had failing health for the last month, but died peacefully with her nephew Eddie by her side, at her home in a retirement village in Palmerston North. In April this year she was well enough to attend, and enjoy, a ceremony at Massey University, in which the herbarium, MNP, was named in her honour, "The Dame Ella Campbell Herbarium" - a function attended by many members of the New Zealand botanical community. Myself, I first got to know Ella when I shared a room with her on the excursion following the International Bryological Congress in Tokyo. My husband Ross had known her much longer, when, as a school boy, he discovered a new orchid, and material was sent to Ella for her to work on its mycorrhizal association. I append here the biography of Ella that was prepared for the herbarium naming ceremony, passed on to me by Jill Rapson of Massey University..

Jessica Beever

"Ella Orr Campbell was born 28 October, 1910, in Dunedin, the oldest of a family of five children of a builder father, and a pharmacist mother, the latter with strong interests in science. She completed her schooling in Dunedin, trained as a teacher in 1930, and then went to Otago University where, in 1934, she completed an MA degree with a science component. She lectured briefly at Victoria University of Wellington (1935), before taking a position as Botany Lecturer at the University of Otago from 1936 to 1944. On a trip to the Coromandel to study frogs, she paid a visit to Massey University, and was promptly offered a position, which she commenced in March 1945, becoming the first woman on the academic staff.

At Massey University, Ella lectured to horticulture and agriculture students about plant morphology and anatomy, a subject on which she co-authored a significant early text. Her primary interest, which resulted in the majority of her publications, was the study of liverworts (small, non-flowering plants of moist areas). She specialised in morphology and taxonomy of the group, establishing many interrnational collaborations and exchanges with other bryologists. She and Dr Heather Outred, of Massey University, published a new species name, *Phaeoceros delicatus*, as recently as 1995.

Ella travelled widely overseas in pursuit of liverworts. But she also took the opportunity to develop interests in orchids, particularly the parasitic species, and was an internationally accredited specimen orchid judge. Additionally she pioneered work on the morphology of peat-accumulating species of restiads.

While developing her science, Ella was also active in the social life of her institutions, particularly in women's sports. She was captain of the hockey team for University of Otago, the New Zealand Universities, and provincial Otago, as well as acting as chaperone for the Massey University women's hockey team on both home and away matches, and was awarded a Massey Blue.

Ella remained on the teaching staff at Massey University until her retirement in 1976, but continued to work as a research associate there for more than another two decades, finally retiring at age 90.

Honours received:

1930 - Dip. Teaching (Otago)
1934 - MA Hons. (Otago)
1976 - Ella received an Honorary DSc from Otago University
1992 - Ella received the Massey Medal from Massey University
1997 - Ella was made a Dame Companion of the New Zealand Order of Merit (DNZM). Citation: "For services to science. She has been Senior Lecturer at Massey and Otago Universities. She is regarded as a pioneer in the field of University botanic research, and an authority on orchids, liverworts and ferns. She is the author of over 130 papers published in New Zealand and overseas scientific journals. She is an Honorary Life Member of and Past President of the Palmerston North Soroptimists International."

Source: Bryonet

THESES IN BRYOLOGY

Editor: Bill Buck

As reported in the last issue of The Bryological Times (99: 17. 1999), the International Association of Bryologists has decided to begin a repository of bryological theses. These theses will be housed in the Library of The New York Botanical Garden. They will be available via interlibrary loan. The NYBG Library online catalog (CATALPA) may be viewed at: http://www.nybg.org/bsci/libr/Catalog.html. As theses arrive, bibliographic data and a brief synopsis will be published in this column (see examples below). Bryological theses for any degree, covering any aspect of bryology in any language, will be included. Please send theses to Bill Buck at the address above. Please refer to the preliminary notice (cited above) for information on financial assistance from IAB for reproduction of theses.

Bergamini, Ariel. 2001. Species diversity of bryophytes in montane calcareous wetlands: Effects of environmental variables and influence of vascular plants. Doctoral dissertation, Mathematisch-naturwissenschaftlichen Fakultät der Universität Zürich, Switzerland. 101 pp. In English with German summary. Address of author: Sporrengasse 2, CH-8200 Schaffhausen, Switzerland. E-mail: ariel.bergamini@bluewin.ch

Species diversity is protected by law in Switzerland, but some species are still threatened by various practices associated with agriculture. This doctoral dissertation examines bryophyte diversity in montane calcareous fens as a way to determine which bryophytes are present so as to have baseline data. Additionally, the effects of the vascular plant layer on bryophyte performance were measured. Bryophyte species richness and communities were examined in 36 montane calcaeous fens in Switzerland. Diversity was determined by species density, species richness and β-diversity. Species richness was found to be higher in grazed sites than in sites that were mown, but no differences were noted in species density. It was determined that to preserve bryophyte diversity in montane wet meadows, it was crucial to have extensive grazing by cattle. However, increased vascular plant biomass decreased the species richness and favorability of bryophytes. Fertilization decreased bryophyte diversity. Apparently, this effect was not due to a negative impact of the fertilizer on the bryophytes directly, but rather it was due to the subsequent increase of vascular plant biomass. Portions of this dissertation were published in *Flora* 196: 180-193 (2001); *Journal of Ecology* 89: 920-929 (2001); and *Journal of Bryology* 23: 331-339 (2001).

Buczkowska, Katarzyna. 1999. Plastyczność morfologiczno-anatomiczna a problem gatunku u mszaków, na przykładzie pary krytycznych gatunków rodzaju Calypogeia Raddi: C. neesiana i C. integristipula. Doctoral thesis, Uniwersytetu im. Adama Mickiewicza, Poznań, Poland. 178 pp. + 2 pp. synonymy + 11 Tabs. on 46 pp. + 1 fig. on 3 pp. In Polish. Address of author: Department of Genetics, Institute for Experimental Biology, Faculty of Biology, Adam Mickiewicz University, ul. Międzychodzka 5, PL-60-371 Poznań, Poland. E-mail: androsac@main.amu.edu.pl.

This doctoral dissertation, whose title translates as Morphological-anatomical plasticity and the species problem in bryophytes, as evidenced by the critical species pair in *Calypogeia*: *C. neesiana* and *C. integristipula*, is a biometrical study of *Calypogeia* in Poland. The main purpose of the study was to resolve the taxonomic status of a critical species pair. All biometrically studied samples were previously identified using isoenzymes. Some of the samples were subsequently grown in a greenhouse, with their variability checked after one year. It was determined that all taxa of *Calypogeia* occurring in Poland are morphologically distinct and that these morphological characters correlate with the isoenzyme data and oil body types. The best diagnostic characters found included the depth of the sinus in the underleaves, the relative length of the underleaf decurrency, the width of cells of the rhizoidal intial field in the underleaves, the leaf length, the width of the marginal cells in the dorsal part of the leaf, the number of cells in the mid-line of the underleaf, and the width of the stem. The two critical species could be consistently separated in Polish material.

Gabriel, Rosalina Maria de Almeida. 1994. Briófitos da Ilha Terceira (Açores): Ecologia, distribuição e vulnerabilidade de espécies seleccionadas. Master's thesis, Departamento de Ciências Agrárias, Universidade dos Açores, Angra do Heroísmo, Portugal. [vii] 212 pp. + 5 appendices [unpaginated] on 40 pp. In Portuguese. Address of author: Departamento de Ciênicas Agrárias, Universidade dos Açores, 9700 Angra do Heroísmo, Portugal. E-mail: rgabriel@angra.uac.pt.

This master's thesis examines the ecology, distribution, and conservation status of 31 species of hepatics (including one anthocerote) and 27 species of mosses from the island of Terceira in the Azore archipelago. The island, of volcanic origin and estimated to be about 2 million years old, has a mild, oceanic climate although it is about the same latitude as New York. Of the 416 threatened bryophytes documented for Europe, 58 are known from Terceira. These are the taxa treated here. The conservation status of the taxa between mainland Europe and Macaronesia is often different. Each taxon is evaluated locally, and "hotspots" within the island are documented.

Gabriel, Rosalina Maria de Almeida. 1994. Briófitos de pastagem – algumas noções de ecologia. Master's thesis, Departamento de Ciências Agrárias, Universidade dos Açores, Angra do Heroísmo, Portugal. [95 pp. + 5 appendices [unpaginated] on 38 pp. In Portuguese. Address of author: Departamento de Ciênicas Agrárias,

Universidade dos Açores, 9700 Angra do Heroísmo, Portugal. E-mail: rgabriel@angra.uac.pt.
This master's thesis (submitted with the one above), deals with the bryophytes found in the grasslands of the Azores. The appendices include keys to these genera. This portion of the thesis also includes a section on introductory bryology. It was found that bryophyte diversity in semi-natural grasslands was considerably higher than in man-made pastures.

Gabriel, Rosalina Maria de Almeida. 2000. Ecophysiology of Azorean forest bryophytes. Ph.D. thesis, Department of Biology, Imperial College of Science, Technology and Medicine, Silwood Park, England. 308 pp. In English with Portuguese abstract. Address of author: Departamento de Ciênicas Agrárias, Universidade dos Açores, 9700 Angra do Heroísmo, Portugal. E-mail: rgabriel@angra.uac.pt.
This doctoral thesis describes the bryophyte communities and related their occurrence to specific features of the native forest environment in Terceira Island, Azores. Six forest stands were studied and their cryptogamic flora inventoried using randomized quadrats. Included in the survey were one anthocerote, 65 hepatics, 41 mosses, and 16 lichens. Multivariate analysis showed the importance of water availability and pH of the substrate as a reliable indicator of forest bryophyte communities. Growth rate of seven species was measured, and all were found to have similar growth patterns and were strongly related to microclimatic temperature.

Pedersen, Niklas. 2002. Phylogeny and taxonomy of the acrocarpous moss family Bryaceae with emphasis on the genus *Bryum* Hedw. Ph.D. thesis, Stockholm University, Sweden. 23 pp. + 4 reprints (see below for details). In English. Address of author: Botaniska Institutionen, Stockholms Universitet, SE-106 91 Stockholm, Sweden. E-mail: niklas.pedersen@botan.su.se
This doctoral thesis examines the phylogeny of the Bryaceae using morphological characters and chloroplast DNA sequence data. The Bryaceae itself, as well as *Brachymenium*, *Bryum* and *Rhodobryum,* are shown to be not monophyletic. Parts of *Brachymenium* are shown to be most closely related to *Rhodobryum* and some species of *Bryum*. *Brachymenium* sect. *Dicranobryum* is part of a clade also containing *Acidodontium*, *Anomobryum*, *Bryum* p.p., *Haplodontium* and *Plagiobryum*. *Plagiobryum* along with some sections of *Bryum* deserve generic recognition. Similarly, *Bryum alpinum* and *B. coronatum* also appear to be a separate clade worthy of generic rank. Also included in the thesis are copies of four articles: Pedersen, N. 2000. A cladistic overview of the Bryaceae (Musci) based on morphological and anatomical data and with emphasis on the genus *Bryum*. J. Bryol. 22: 193-206; Pedersen, N. & L. Hedenäs. In press. Phylogenetic relationships between *Bryum* and supposedly closely related genera. J. Bryol., 24 p.p.; Pedersen, N., C. J. Cox & L. Hedenäs. In press. Phylogeny of the moss family Bryaceae inferred from chloroplast DNA sequences and morphology. Syst. Bot., 28 p.p.; Pedersen, N. & L. Hedenäs. In press. Phylogenetic investigations of a well supported clade within the acrocarpous moss family Bryaceae: evidence from seven chloroplast DNA sequences and morphology. Pl. Syst. Evol., 23 p.p.

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WEB-NEWS

Type Catalogues about Bryophytes in Herbaria

Time to time all bryologists need type specimens for their taxonomic work, therefore it is necessary to know where the types can be found.
In the **Compendium of Bryology** (Vitt, Gradstein, Iwatsuki 1985) or in the **Index Herbariorum** (Eds: P. & N. Holmgren and Barnett 1990; http://www.nybg.org/bsci/ih/) we can look after herbaria and we can obtain important information (the name, acronym, address, status and foundation of a herbarium; the number of specimens deposited in it; geographical areas that they cover; loan and exchange possibilities; researchers and their research topics), including the list of important collectors, whose specimens are presented in that place. In the aspect of finding type specimens, the collector lists are one of the starting points, but usually these lists are not totally complete, because they can not contain collectors, who are represented by relatively few specimens. Another starting point would be the protologues of new taxa, but we know, that in old descriptions we can not always find exact reference about where the types are placed. On the other hand, in many cases during exchanges between researchers or herbaria, or in the course of buying or giving collections, types, especially isotypes, might get to another place, that we can not know, because it has not been published, unless it was an exsiccata exchange. So I think, lots of type specimens can be hidden from us. It would be very important to know about these concealed specimens, because the old types are rather scanty, or they are mounted on the paper with glue, therefore their examination is limited.
From this problem and because I intend to prepare a new type catalogue of our herbarium (EGR), I started to search, which herbaria have registered and published type material either on traditionally printed form or on the internet. The result is much poorer than I hoped, but this fact is completely understandable. Of course, to prepare such kind of lists is relatively dry and time-consuming bryological work.
In this way, I am bringing out my results for the use of the bryologist community. I am not sure whether this list is complete, although I scanned more than five thousand internet pages.
I would like to encourage everybody to let know us all further information in the Bryological Times.

Bryophyte type catalogues and databases

AUSTRALIA
Ramsay H & Suer J: Register of type specimens of mosses in Australian Herbaria. Flora of Australia Suppl. Ser. Number 2. 2000.

B (Herbarium, Botanischer Garten und Botanisches Museum Berlin-Dahlem / Berlin)
Schultze-Motel W. 1962. 1962: Das Moosherbar von Carl Warnstorf. - Willdenowia 3: 289-313.

BISH (Herbarium, Botany Department, Bishop Museum / Honolulu)
http://128.171.128.178:591/FMRes/FMPro?-db=bryophyte%20types.fp3&-format=tablevw.htm&-lay=webfields&-sortfield=Basionym&-skip=25&-findall=
or:
http://www2.bishopmuseum.org:591/FMRes/FMPro?-DB=Bryophyte%20Types.FP3&-Lay=WebFields&-Token=25&-Format=TableVw.htm&-Error=Err.htm&-Findall

CANM (Herbarium, Canadian Museum of Nature / Ottawa)
Ireland RR, Ley LM. 1984. Type specimens of Bryophytes in the National Museum of Natural Sciences, National Museums of Canada. Syllogeus 47. National Museum of Natural Sciences, National Museums of Canada, 1-69.

EGR (Herbarium, Botany Department,Eszterházy College / Eger)
Pócs T. 1976-77. The catalogue of the Bryophyte Herbarium of Ho Si Minh Teachers' College, Eger, Hungary. Folia Historico-Naturalia Musei Matrensis 4: 15-36. (recently: Eszterházy College).

GZU (Herbarium, Institut für Botanik, Karl-Frances-Universität / Graz)
Suanjak, M. 2001: Types of Hepaticae in Herbarium GZU. - http://www.kfunigraz.ac.at/botanik/gzu-hepaticae-typen2.htm
Suanjak, M. 2001: Types of Mosses in Herbarium GZU. - http://www.kfunigraz.ac.at/botanik/mosses-types-in-gzu.htm

HBG (Herbarium, Institut für Allgemeine Botanik, Universität Hamburg / Hamburg)
von Walter K, Martienssen G. 1976. Die Laubmoostypen des Herbariums Hamburgense Institut für Allgemeine Botanic der Universität Hamburg, 1-94.
http://www.biologie.uni-hamburg.de/ialb/herbar/hbg_b2.htm
and
BRYOPHYTES: Fossombroniineae Nomenclator
http://www.biologie.uni-hamburg.de/b-online/library/bryophytes/nomenclator.html

MANCH (Herbarium, Manchester Museum, University of Manchester / Manchester)
Clarke GCS 1973. Type specimens in Manchester Museum Herbarium: Musci. Manchester Museum Publications, New Series 1973 NS.2.73. The Manchester Museum, The University of Manchester, Manchester UK

MICH (Herbarium, University of Michigan / Ann Arbor)
http://herbarium.lsa.umich.edu/

L (Rijksherbarium / Leiden)
http://nhncml.leidenuniv.nl/rhb/

NY (Herbarium, New York Botanical Garden / Bronx, New York)

http://scisun.nybg.org:8890/searchdb/owa/wwwspecimen.searchform
and
Thiers BM 1983. Index to the genera and species of Hepaticae described by William Mitten. Brittonia, 35(3): 271-300.
Thiers BM. 1992. Indices to the species of mosses and lichens described by William Mitten. Mémoirs of the New York Botanical Garden 68: 1-113.

S (Herbarium, Swedish Museum of Natural History / Stockholm)
http://www.nrm.se/cgi-bin/SFgate

TCD (Herbarium, Trinity College / Dublin)
Long D.G. (1985). The Musci Indici: its authors, types and localities. Botanical Journal of the Linnean Society, 119: 1-33.

TNS (Herbarium, National Science Museum / Tokyo)
Inoue H. 1987. Index of type specimens of Bryophyta in National Science Museum, Tokyo. National Science Museum, Tokyo, 1-119.
http://research.kahaku.go.jp/botany/koke/koke00.htm

UC (University Herbarium, University of California / Berkeley)
Types of Bryophytes at UC (The following is a partial list of type specimens of bryophytes in UC)
http://ucjeps.berkeley.edu/bryolab/moss_types.html

US (United States National herbarium, Smithsonian Institution / Washington)
http://www.nmnh.si.edu/gopher-menus/TypeSpecimenRegisterU.S.NationalHerbarium,US.html

Acknowledgements and apology: I would like to thank everybody who has given me any information on this topic: Marshall R. Crosby, Johannes Enroth, Sean Edwards, Janice Glime, Rayna Natcheva, Tamás Pócs, Rod Seppelt and Michael Suanjak. I would like to excuse myself if I didn't cite the name of the compiler of an online database. I could not always ascertain it.

Cited literature

Vitt DH, Gradstein SR, Iwatsuki Z. 1985. Compendium of Bryology. A world listing of herbaria, collectors, Bryologists, and Current research. J. Cramer, Bryophytorum Bibliotheca 30, pp. 1-355.
Index Herbariorum Part I: The Herbaria of the World. 1990. Eds.: PK & NH Holmgren and LC Barnett. New York Botanical Garden, Bronx, New York. Regnum Vegetabile vol. 120, pp. 1-693. Online variation: http://www.nybg.org/bsci/ih/

Gabriella Kis. Research Group for Bryology of the Hungarian Academy of Sciences at the Eszterházy College, Eger, Pf. 222. 3301-Hungary
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LITERATURE COLUMN Editor: Johannes Enroth

Guide to the Bryophytes of Tropical America.

Gradstein, 8. (Stephan) Robbert; Churchill, Steven P. & Salazar-Allen, Noris. 27 July 2001. Guide to the Bryophytes of Tropical America. The New York Botanical Garden Press, 200th St. and Kazimiroff Blvd., Bronx, NY 10458-5126, USA (www.nybg.org/bscilspub) (series: Memoirs of the New York Botanical Garden, vol. 86). viii, 577 pp., ill., cp. maps, ISBN 0-89327-435-6 (PB), 75 USD

Now at discount price: 30 USD (see page 11)

A superb guide to tropical American bryophytes
The Neotropies - vast in area, species rich, but poorly known - is the area covered by this fantastic new treatment of the genera of all bryophytes. It includes descriptions, illustrations, and keys to the 597 genera and 120 families of hepatics, hornworts, and mosses presently recorded from tropical America. What a difference a decade or two make! I clearly remember attempting to put names on collections I made in tropical America in the 1970s and 1980s. What was one to use for references? It was clear for mosses: if one read German, then V. F. Brotherus's treatment in Engler & Pranti dating to 1924-25, but in English there was only E. B. Bartram's well-done Mosses of Guatemala (1949) and P. A. Florschütz's then recent but incomplete treatment of mosses in Flora of Suriname (1964). Additionally, one could browse through H. A. Crurn & Bartram's Jamaican florule, A survey of the moss flora of Jamaica (1958) or Crum & W. C. Steere's The mosses of Puerto Rico & Virgin Islands (1957), but these islands are generally species poor and their floras thus not very useful outside their own small areas. For hepatics one could try out M. H. Fulford's Manual of the leafy Hepaticae of Latin America (1963-76, two volume's currently completed). Overall, there was not much to choose from!
Then came the 1990s and tropical America began to open up through a series of skilfully done country or regional treatments that included: B. H. Allen's Moss flora of Central America (1994); W. R. Buck's Pleurocarpous mosses of the West Indies (1998), with acrocarps still to appear; A. J. Sharp's The moss flora of Mexico (1994) completed by Crum & P.M. Eckel; and S. P. Churchill & C. E. Linares's Prodromus bryologiae Novo Granatensis (1995) written in Spanish. These floras have paved the way for our understanding of the remarkable diversity found in the Neotropics, but still there was not a usable treatment that allowed the non-expert to begin - and in bryology the beginning is always the most difficult. We have it here in this book.
Gradstein et al.'s book has all the elements needed for it to be the guide to the Neotropics for the next generation of students. It can be used by beginning students experiencing the tropics for the first time, and it can be used by the seasoned veteran looking for a name that he or she has forgotten over the years.
The book begins with a well-written overview (by Gradstein et al. plus Geert Raeymaekers) of the general features of bryophytes that includes drawings of the taxonomic features necessary for identification. Following this are sections on distribution, habitats, how to collect and preserve bryophytes, a nice list of herbaria in the Neotropics, and important literature (a seven-page bibliography). The introduction includes a glossary.
There are keys to the orders and distinctive genera; orders are then keyed to families and some small genera, with the larger families to genera. Although personally I would have preferred one large key directly to genera, the authors' approach seems equally effective. The keys appear to work well; the couplets are comparative and use clear features. There is the occasional "not" in the keys rather than the

stating of what is. However, making usable keys is difficult, and the authors have done well.
Each genus is described in some detail, with brief synonymy, and there are valuable discussions that clearly show the experience of the three authors.
What I like about this book is the evenness of treatment of the hepatics and mosses. Rarely are treatments produced that cover both of these major green plant groups, because, I think, we as bryologists restrict ourselves to one or the other group. In this work we have two experienced moss authors, both of whom have lived and worked extensively in the Neotropics. Steve Churchill has made many collections from South America and Noris Salazar-Allen's intimate knowledge of the Central American species gives a nice balance to the treatments. For the hepatics, probably no one knows more of tropical American species then Rob Gradstein, and he brings a wealth of knowledge to the book. The drawings are nice-they are rather simple, but clearly show the necessary features. The dotted lines that divide the genera on the plates make me feel at home, reminding me of similar lines so prevalent in A. J. Grout's three-volume Moss flora of North America north of Mexico (1928-40).
Thus, in conclusion, should this be on your bookshelf? No, it needs to be beside your microscope where it will allow the identification of countless unnamed specimens. That's where mine will be, and maybe, just maybe (as I have faith this book will make it easy, even for me) I will be tempted to name a liverwort.

Dale. H. Vitt. Email dvitt@plant.siu.edu

Moss Flora of Central America

Allen, Bruce (with contributions from Dennis Hall, Jesús Muñoz, Ronald A. Pursell & William R. Buck): Moss Flora of Central America. Part 2. Encalyptaceae–Orthotrichaceae. 699 pp., with line drawings and distribution maps. Hard cover, ISBN 0-915279-87-8. Monographs in Systematic Botany from the Missouri Botanical Garden Vol. 90, Missouri Botanical Garden Press 2002. Advertised price USD 95.00, further purchasing information available at: www.mobot.org/mbgpress

The first part of this series was published in 1994, eight years ago. That may at first seem like a long time, but when one considers the sheer volume of and especially the scientific content – the taxa – treated in the 2nd part, eight years is not much at all. The families are Dicranaceae (only *Rhamphidium* and *Amphidium*; the other genera were treated in the first part), Encalyptaceae (by Allen and Hall), Pottiaceae, Grimmiaceae (*Grimmia* by Muñoz and Allen), Ephemeraceae (Pursell), Funariaceae (Buck & Allen), Splachnaceae (Allen & Hall), Splachnobryaceae (Pursell & Allen), Bryaceae, Plagiomniaceae, Mniaceae, Meesiaceae, Helicophyllaceae, Phyllodrepaniaceae (Pursell & Allen), Eustichiaceae (Pursell), Racopilaceae, Bartramiaceae, Erpodiaceae (Pursell & Allen), and Orthotrichaceae. When one considers for example that in this geographic region there are 32 genera and 89 species in Pottiaceae, 13 genera and 70 species in Bryaceae, and eight genera and 65 species in Orthotrichaceae (31 in *Macromitrium*), and how notoriously difficult many genera and species in these families are, it is easy to realize what a major undertaking preparation of this book has been – even with the help from several experts.

The basic organization of Part 2 is similar to Part 1, but in some details the format slightly differs. New nomenclature (nine new combinations, two *nomina nova*, five new species) is listed on p. 1. The type information is more exactly cited directly from the protologues; each species is illustrated in line drawings; and the generic as well as specific descriptions and discussions are longer than in Part 1. In my opinion all of these changes are improvements – there is simply more information now, all of which is relevant in a flora like this. Also the editorial work has been excellent; I found only very few typos or inconsistencies, none of them really significant.

According to the present volume (p. 225) and also the protologue (Muñoz 1998), the type specimen of *Grimmia ochyriana* is *Zimmermann 558* (G), collected 31. May, 1964. Someone has made a mistake somewhere along the way, since the collecting date is given as "31-V-1952" by Muñoz & Pando (2000) and as "May 1952" by Greven (2003). There seems to be some confusion also regarding the circumscription and distribution of this species, since Greven (2003) cites it as "endemic to the Himalayas", adding "Muñoz (1999) reported *G. ochyriana* from Guatemala and Mexico, confusing it with *G. mexicana*, an error corrected by Delgadillo (2000)". If Greven and Delgadillo are right, then this species, known in Central America only from Guatemala, should be called *G. mexicana*. This is not commented on in the present flora.

I consider Bruce Allen one of the most sharp-eyed and careful observers among the current bryologists, and have learned to trust his taxonomic judgments. It is for the advantage of all of us that this very important work with the Central American moss flora has been done and will continue to be done by him.

Johannes Enroth

Moss Flora of China, Volume 3.

Chien, G., Crosby, M. R. & He, S. (eds.): Moss Flora of China, English Version. Vol. 3. Grimmiaceae–Tetraphidaceae. 141 pp. Hard cover. Science Press (Beijing, New York) & Missouri Botanical Garden Press (St. Louis), 2003. ISBN 1-930723-18-0. Advertised price USD 85.00, further purchasing information available at: www.mobot.org/mbgpress

Receiving a new volume of this Flora is a celebration every time. This 3rd but in fact 4th published volume (vols. 1, 2 and 6 are already out) treats the families Grimmiaceae (Cao Tong, Si He, Dale H. Vitt), Ephemeraceae (Li Xing-jiang, Si He, Zhang Da-cheng), Funariaceae (Li Xing-jiang, Si He, Zhang Da-cheng), Splachnaceae (Gao Chien, Si He), *Gymnostomiella* of the Pottiaceae (Gao Chien, Si He), Splachnobryaceae (Si He, Gao Chien), Oedipodiaceae (Gao Chien, Si He), and Tetraphidaceae (Li Xing-jiang, Si He, Zhang Da-cheng). The Pottiaceae was treated in the 2nd volume, but the present one contains a description and distribution map of *Gymnostomiella longinervis*, "traditionally placed in the Splachnaceae by major Chinese floras".

Grimmiaceae takes up more than half of this book; there are six genera, the largest ones naturally being *Grimmia* with 23 species and *Racomitrium* with 22 species. Greven's (2003) brand new revision of the world's *Grimmia* species serves as an interesting comparison. I did not check every detail, but I quickly made the following observations. The *Flora* recognizes *G. obtusifolia* Gao & Cao, which Greven treats as a taxonomic synonym of *G. limprichtii*, writing "material of *G. limprichtii* has been sent to Dr. Gao [...] who confirmed the synonymy of *G. obtusifolia* with *G. limprichtii*". Obviously, recognizing *G. obtusifolia* is but an oversight by the authors. The taxon treated as *Grimmia reflexidens* in the *Flora* belongs in *Coscinodon* according to Maier (2002), as cited by Greven. However, this may not be exactly so, since there seem to be more complex typification and nomenclatural problems here; the interested reader may check p. 224 in Maier's paper.

The authors of the Grimmiaceae recognize *Schistidium* as an independent genus and list several distinguishing characters between it and *Grimmia*; I believe there is currently not much disagreement about the generic status of *Schistidium*.

In the Funariaceae *Entosthodon* is kept separate from *Funaria*, but with some reservations: "*Entosthodon* perhaps is no more than a *Funaria* with erect, symmetric capsules with a more reduced peristome". If so, then *Funaria* is a paraphyletic assemblage and *Entosthodon* a polyphyletic one, but moss taxonomy is indeed riddled with similar generic problems and solving them is certainly beyond the scope and purposes of a large-scale flora. Critical revisionary work and phylogenetic analyses is another matter altogether.

In my opinion this *Flora* as a whole is a fine example of truly international collaboration in bryology. It must be of great scientific benefit for the Chinese collaborators and the whole "global bryological family" can enjoy the results.

Johannes Enroth

References

Greven, H. C. 2003: Grimmias of the World. Backhuys Publ. BV, Leiden.

Maier, E. 2002: The genus *Grimmia* (Musci, Grimmiaceae) in the Himalaya. Candollea 57: 143–235.

Distribution patterns of liverworts in natural forest communities

Klama, H. 2002: Distribution patterns of liverworts in natural forest communities. University of Bielsko-Biala, Bielsko-Biala, Poland. xiv + 278 pp. Paperback, ISBN 83-89086-20-4. In English with a Polish summary.

The book consists of a listing of the hornwort and liverwort species recorded in the Białowieża Primeval Forest, NE Poland, with an incredible amount of information on distribution and ecology of 45 liverwort species encountered in a detailed study on the liverworts´ occurrence and habitat preferences in different forest vegetation types. The author has taken a courageous step towards filling the gap in our knowledge on the role of this too often neglected group of small but specialized forest plants.

The task was enormous, and although the author says to have taken only the first step (p. 9), the pieces of information collected could certainly have filled more than one publication. In chapter II. *Aims of the study* the author puts forward nine (!) specific questions, which he attempts to find answers for. This describes well how large the gap in the knowledge is, but also how wide is the scope of the work. Unfortunately, here is also the pitfall of the work: The immense amount of information is not easy to absorb, and the numerous figures and tables containing the detailed data are difficult to work out. However, the lists of Figures and Tables (pp. ix–xiv) make it a little easier to look for some particular pieces of information e.g. on a given species.

The data are analyzed by using six index types, each containing 5 to 18 index types. Only the floristic similarity in comparisons between habitats is calculated by a well-known formula (Sørensen). I guess that the indices are

useful in crystallizing the large numbers of different variables in descriptions of the localities, habitats and substrates, but I must say that the numerous indices are laborious to wade through. Another difficult part of the work is the terms used. The terminology is, however, carefully explained. The use of some terms quite in the centre of this work, such as ”substrate”, ”locality” and ”habitat” cause trouble for a reader like me from a somewhat different vegetation scientific context than the Braun-Blanquet–school. This problem may, of course, be just that of the reader, but since I found it disturbing in many cases, it should be mentioned in this review.

The excellent treatment of wide spectrum of ecological variables in the context of various substrates (here: the material on which a species is growing) and microhabitats of the whole liverwort flora encountered in the study area includes also observations on the frequency of the reproductive modes (sexual or other) and breeding systems (monoicous vs. dioicous). Although not otherwise quantified, the mere frequencies of sporophyte-producing or gemmiparous colonies give important information rarely reported so far. Also, the observed variation in abundance and niche width (i.e. ecological amplitude) between different forest vegetation types (or associations) gives inspiring insights into liverwort ecology.

As one could expect, a range of conclusions could be drawn from this quantity of data: In chapter VII. *Summary of the more important results and conclusions* the author gives 40 separate notes with the main points, and a paragraph with a list of topics he considers in need of attention in future studies. Some of the conclusions are quite obvious for a reader familiar with forest liverworts, for instance, that the liverwort species richness is connected to fertility and moisture of the site. Others, like the observed variation in the species' ecological amplitude in connection to vegetation type, fertility and moisture, are finely put forward, even though the phenomenon as such is perhaps not anything new under the sun. As a conclusion, I would recommend this book for those interested in forest ecology as a source of better knowledge on the role of the liverworts as a so far neglected group of forest organisms, and especially for anyone interested in forest liverworts as a group or in the individual species. Although some effort will be needed to digest all the information in this massive work, I have no doubts that it is worth the effort.

Sanna Laaka-Lindberg

Grimmias of the world.

Greven, H. C.: *Grimmias* of the world. 247 pp., 93 pp. with line drawings + CD-ROM with colour photographs. Hardbound, ISBN 90-5782-127-3. Published by and available from Backhuys Publishers BV, P.O. Box 321, 2300 AH Leiden, The Netherlands; fax +31(0)71 517 0208; e-mail backhuys@backhuys.com; www.backhuys.com. Price: 48,00 $.

Henk Greven has been working towards this book for some 15 years, an impressive time span in anybody's life. A major revision of the European species of *Grimmia* was published by him eight years ago (Greven 1995). He now recognizes a total of 93 species in *Grimmia*, four of which are here described as new to science. The species are arranged in an alphabetical order after regional identification keys, and each species is illustrated in line drawings.

Apparently Greven has a narrower species concept than the other *Grimmia*-expert Jesús Muñoz, since Muñoz & Pando (2000) recognized only 71 species. For example, the first species in Greven's book is *G. abyssinica*, which Muñoz & Pando treat as a synonym of *G. fuscolutea*. Under the discussion of the former name, Greven lists several differences between the two species, mainly in the sporophyte. While my understanding of the infraspecific variation in *Grimmia* is limited to say the least, I found Greven's species concept, as expressed in his discussions under some superficially very similar species, mostly quite convincing and they are clearly based on very meticulous observation.

The species ”descriptions” are somewhat telegraphic, in fact just lists of up to 13 key characters. Yet they, together with the illustrations, are sufficient for the purposes of such a descriptive treatment; Greven has not attempted a more analytical approach and does not present a phylogenetic analysis, for example. He ”prefers a main division into three groups”, *Gasterogrimmia, Guembelia* and *Rhabdogrimmia* and refrains from providing a more detailed division into sections or so.

I find two minor deficiencies in this generally very valuable contribution. Apart from the type material, the author does not cite any examined herbarium specimens; just a couple of representative specimens for each species would have been enough. The other, and more inconvenient, flaw is the lack of more detailed data of the species' distributions. They are given as ”As. 2, 3, 5. Eur” and so on, but no countries are mentioned. This is the part of the book that could have been improved with relatively little effort, since Greven must have a good database of the species' distributions by countries.

The CD-ROM that can be read with AcrobatReader is a fine and useful complement to this book. The 152 colour photos display the species in their natural habitats,and quite a few variable species are represented by more than one photo.

References

Greven, H. C. 1995: *Grimmia* Hedw. (Grimmiaceae, Musci) in Europe. – Backhuys Publ., Leiden.

Muñoz, J. & Pando, F. 2000: A World Synopsis of the Genus *Grimmia* (Musci, Grimmiaceae). – Monogr. Syst. Bot. Missouri Bot. Garden 83: 1–133

Johannes Enroth

Guide to the Plants of Central French Guiana

William R. Buck . Guide to the Plants of Central French Guiana. Part 3. Mosses. Memoirs of The New York Botanical Garden Volume 76, part 3

This modern moss florula of the lowland tropical rain forest (and emergent mossy-summited mountains) of Central French Guiana is a complementary volume to those of Mori et al. on the vascular plants. It is based primarily on the critical collections of the author, made by repeatedly visiting the area over a 10-year period. Over 150 species in 62 genera and 22 families are keyed, described, and illustrated. A number of newly found mosses are described as new to science. Although technically a florula of only a 133,600 hectare tract of land, it should be useful throughout much of the lowland Guianas. It is one of very few fully illustrated moss floras for anywhere in South America. The author is among the most experienced field bryologists in the Americas, having collected mosses in seven South American countries as well as elsewhere in the neotropics.

Shipping and handling: (USA $6.00 + 5% of subtotal; outside USA $7.00 + 6% of subtotal). Prepayment required, U.S. currency only, check drawn on a U.S. bank, American Express, MasterCard, Visa.

2003, ISBN: 0-89327-447-X (Hardcover), 167 pages, Order No. MEM 76(3): Price: $38.00

Send all orders to:The New York Botanical Garden Press, 200th Street & Kazimiroff Boulevard, Bronx, New York 10458-5126 U.S.A., (718) 817-8721 * fax (718) 817-8842, nybgpress@nybg.org * www.nybg.org,

William R. Buck

Manual of Tropical Bryology

Tropical Bryology ,Volume 23. 2003

It may be of interest also to non-subscribers of Tropical Bryology that Volume 23 consists of a "Manual of Tropical Bryology" of 196 pages. The manual was developed from course scripts on this subject and includes chapters on diversity of tropical bryophytes, origin and age of tropical bryophytes, morphological adaptations to the rain forest habitat, ecology, ecophysiology, bryosociology, phytogeography, bioindication and conservation of tropical bryophytes. In an appendix, instructions are given for bryological work in the tropics, such as collecting, herbarium management, identification, taxonomic revisions, compiling checklists, methodology of relevé studies, use of computers in the field and photographing in the field. Finally, this volume includes a comprehensive bibliography on tropical bryology (about 450 citations on 20 pages)
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For those not subscribing to Tropical Bryology, a limited number of copies is available for 18,00 Euro. A CD-ROM version is available at half the price.

Jan-Peter Frahm

The Iberian Bryophyte Flora

The first fascicules of the Iberian Bryophyte Flora have been published and are available from Sociedad Española de Briología (SEB).

Fascicle 0: Aloina (16 pages)
Fascicle 1: Weissia, Astomum and Trichostomum (24 pages)
Fascicle 3: Syntrichia (31 pages)

Each fascicle at a price of 10 euros (10 U.S.$).

If interested, please contact Patxi Heras for further detail: Museo de Ciencias Naturales de Alava, C/ Fra. de las Siervas de Jesús 24, 01001 Vitoria (Spain), E-mail: bazzania@arrakis.es

W.B. Schofield's "Introduction to Bryology" is still available

This richly illustrated textbook provides a comprehensive introduction to the structure, evolution and interrelationhips of the bryophytes.

This book was published in 1985 by Macmillan Publishing Company, but is now available from the Blackburn Press. Blackburn Press is dedicated to keeping in print and available for purchase scholarly book titles, which large publishers have lost interest in and have declared "out-of-print."

To order, please contact: The Blackburn Press, P.O. Box 287 Caldwell, New Jersey 07006, USA. (Fax; 973 228 7077 or go to the website: www.blackburnpress.com

G.Raeymaekers

WEB-NEWS

The new website of the British Bryological Society

The BBS website has undergone a metamorphosis. The old web site was nearly 7 years old, a particularly extended life in internet terms. The BBS-website has now been redesigned to make it more enticing to the casual visitor and more user friendly. Whilst it still caters mainly for those with an interest in UK regional bryology, there are a number of new pages and features that should be of interest to others, and further new pages will be added in the future. There is an image gallery to which submissions are invited for 'bryophyte of the month' and to launch the new site Angela Newton has announced a competition for the best bryological limerick or haiku verse, so we are expecting a flood of entries.

The links page has been completely overhauled and updated. Thank you very much to all those people who responded to my request for information about their sites, and we look forward to your visit at http://www.britishbryologicalsociety.org.uk/

Jonathan Sleath, BBS website manager: E-mail: jonathan.sleath@btinternet.com

Bryophyte Flora of North America

Volumes 27, 28 and 29 of the Flora of North America concern the bryophytes and treatments are being placed on the Bryophyte Flora of North America Web site as they finish the review and editing process.
Bryonetters interested in progress to date can visit the Web site at: http://ridgwaydb.mobot.org/bfna/bfnamenu.htm

Recent postings are summarized at:
http://ridgwaydb.mobot.org/bfna/posting.htm
The main summary list of treatments finished is at: http://ridgwaydb.mobot.org/bfna/summary.htm

Source Bryonet

FOR SALE

Bryophyte Publications at discount price.

The New York Botanical Garden Press presently sells 28 of its bryophyte publications at a discount price, with very significant reductions. The sale includes publications of "Flora Neotropica" and the "North American Flora". Also for sale are:

Gradstein, S.R. et al. 2001. Guide to the Bryophytes of Tropical America. Memoirs of the NY Botanical Garden, volume 86: 585 pgs. Price: 75 USD / Discount price 30 USD

Buck, W.R. 1988. Pleurocarpous mosses of the West Indies. Memoirs of the NY Botanical Garden, volume 82: 400 pgs. Price: 49 USD / Discount price 20 USD

Crum, H. and P. Eckel (Ed. A.J. Sharp). 1993. The Moss Flora of Mexico. Memoirs of the NY Botanical Garden, volume 69: 400 pgs. Price: 195 USD / Discount price 50 USD

Spruce, R. 1884-1885. Hepaticae of the Amazon and of the Andes of Peru and Ecuador. (reprint of 1984 with a new introduction and index – with updated nomenclature by B. Thiers). Price: 34 USD / Discount price 5 USD.

For shipping and handling add 6 USD + 5% of subtotal (USA) and 7 USD + 6% of subtotal (outside USA)

For a complete list and more information visit the web site of the NYBG Press: www.nybg.org or contact nybgpress@nybg.org

HISTORICAL DOCUMENTS

"Moss and Askim"

In August 1967 I attended the Annual Meeting of the Nordic Bryological Society. It took place on the island of Stord in Hordaland, Norway. Not until recently have I found time to look closer at what I collected during the excursions. Among the bryophytes I found some photographs. Some of us met already in Oslo in order to take the train to Bergen. To our immense surprise we realized that the local authorities had decided to facilitate our gathering with two special signposts. There we were looking for the station and suddenly we were helped in a very unexpected way. You may think that "ASKIM" is rather casual English, but h-dropping is a common English habit and shows real familiarity with the language. We could only consider ourselves honoured by such courtesy and informality.

Reported by Dr. Gillis Een. E-mail: gillis.een@nrm.se

On the photograph you see, from left to right, E. von Krusenstjerna, J. Dickson, A. Crundwell and E. Nyholm

IAB-NEWS

IAB: New Vice-President and Councillors

Thanks to all who kindly allowed their names to stand for Vice-President and Councillor offices in IAB. Abel Kinser, Judge of the Election, has provided the following information: the following (councilors arranged alphabetically) have been elected:

Vice-President: Claudio Delgadillo M. (Mexico)

Councillors: Marshall Crosby (U.S.A.), Johannes Enroth (Finland), Tomas Hallingbäck (Sweden), Catherine La Farge (Canada), and Cecilia Sergio (Portugal). Congratulations to

our new officers. These officers shall begin their term of office at the Merida meeting in January 2004.

The Bryological Times, founded in 1980 by S.W. Greene (1928-1989) is a newsletter published for the *International Association of Bryologists*. Items for publication in The Bryological Times are to be sent to the Editors or Regional Editors, except for those for the regular columns, which may go direct to the column editors.

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UPCOMING MEETINGS

2003

September 29 - October 3: ASBS Conference '150 years'. The annual conference of the Australian Systematic Botany Society (ASBS), Melbourne to celebrate at the National Herbarium of Victoria. Special session on bryophyte systematics on 3 October. Further information: www.anbg.gov.au/asba

Sept. 5 – 7. BBS Annual General Meeting and Symposium. Queen Mary, University of London. Info: http://193.62.154.38:bbs.htm

September 6 and 7: "Molecular Systematics of Bryophytes: Progress, Problems, and Perspectives" Missouri Botanical Garden, St-Louis, USA. Conference organized by Bernard Goffinet (University of Connecticut) and Robert Magill (Missouri Botanical Garden) and co-sponsored by the Deep Gene Research Coordination Network. Visit the web-page http://www.eeb.uconn.edu/MSB/. This conference is immediately followed by Moss 2003: Recent Advances in Genetics, Molecular Biology and Development, which is co-sponsored by the Missouri Botanical Garden and Washington University in St.- Louis.

September 19 – 21: "The 28th annual Andrews foray" in NW Connecticut and organized by Juan Sanchez. Visit the website http://www.eeb.uconn.edu/andrewsforay/.

Sept. 25 – 27: 1st Austrian Bryological Workshop. Information: www.pph.univie.ac.at/bryo/tagung or contact harald.Zechmeister@univie.ac.at

October 4 – 8: VIIth Australasian Bryophyte Workshop. Associated with the ASBS conference (see above), this workshop will be held at Mt Baw Baw, approximately 2.5 hours drive from Melbourne.

2004

January 12-17. IAB World Conference on Bryology and Conservaton Workshop. Merida, Venezuela.

July 31 – August 5: The 2004 ABLS meeting, Snowbird, Utah. The meeting will include field trips for bryologists and lichenologists. For suggestions for symposia, workshops, and field trips, please contact Nancy Slack (email: slackn@sage.edu) and include "Snowbird" in subject line.

2005

July 18 – 23: Bryology at the 2005 International Botanical Congress in Vienna. In 2005 the International Association of Bryologists will meet at the XVII International Botanical Congress, which takes place 18-23 July 2005 in Vienna. For information,, contact Wolfgang Wanek. wolfgang.wanek@univie.ac.at).

2007

IAB meeting in Kuala Lumpur, Malaysia. Contact the local organizers: Dr. Haji Mohamed and Dr. Amru N. Boyce, Fac. of Science, University of Malaysia, Kuala Lumpur 50603, email: haji@biology.u