

The Bryological Times

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Bryologists

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Dear IAB members,

I would like to thank all those who participated in the 2005 elections and congratulate the newly elected officers of the IAB! Now, I look forward to see you in Vienna at congress, where a great bryology program has been arranged by Wolfgang Wanek and Harald Zechmeister. The new IAB Council under the leadership of the new president, Janice Glime, will present itself at the dinner, inform you about future activities, and announce the 2005 IAB awards for excellence in bryology: the Hedwig Medal and the Hattori Prize. As announced elsewhere in this issue of the Bryological Times, the IAB dinner will take place in a traditional Viennese "Heuriger" restaurant (Weingut Diem, Kahlenbergerstrasse 1, 1190 Vienna) on 21. July, 20.00 h. Attend the dinner!

Please inform Wolfgang about your participation and buy your dinner ticket at the IBC registration desk.

Rob Gradstein, President

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://bryology.org>. The Bryological Times is issued 4 times per year.

IAB NEWS

The New IAB-Council

This year, the terms were expiring for the president; one vice-president and five councillors and elections for president, vice-president, and new councillors were organized in February 2005. Retiring members were: President: S. Robbert Gradstein (Germany); Vice President: Zennoske Iwatsuki (Japan); Secretary-Treasurer: Dale Vitt (US); and councillors: Barbara Crandall-Stotler (US), Hironori Deguchi (Japan), Efrain De Luna (Mexico), Janice Glime (US), and Royce Longton (UK).

Dale Vitt, acting secretary until the IAB-meeting in Vienna, informed us of the final results for the 2005 IAB council election. You might be interested that from our total membership of about 560 members, 82 members voted (either by mail, e-mail, or FAX). The results are as follows:

President: Janice Glime
Vice President: Benito Tan
Secretary: Geert Raeymaekers
Treasurer: Blanka Shaw

Newly elected councillors are Christine Cargill, Uwe Drehwald, Terry Hedderson, Misha Ignatov and David Long. Continuing members are C. Delgado M., M. Crosby, J. Enroth, T. Hallingbäck, C. La Farge, and C. Sergio.

Dale Vitt wants to especially express his thanks to all who let their names stand for the election. The new Council will take office in Vienna. Tradition has it that the council meeting at our biennial meeting (in Vienna in July) should be attended by both outgoing and incoming council members -- (all with a vote).

Dr. Janice M. Glime, President.



The newly-elected President, Janice Glime, is a Professor of Biological Sciences at Michigan Technological University, where she teaches organismal biology, botany, plant taxonomy, and bryology. She is a self-taught bryologist who has worked with bryophyte ecology and considerations of the niche. Special interests have included stream communities and adaptations, particularly physiological adaptations, but she has also looked at the role of bryophytes in boreal and conifer forests, the role of *Sphagnum* in nitrogen cycling in regeneration Jack pine forest, niche parameters in geothermal communities, and niche characteristics of epiphytes. She has been a council member of the IAB and of the American Bryological and Lichenological Association, US treasurer for the Journal of the Hattori Botanical Lab, and is currently manager of Bryonet.

Dr. Benito Tan, Vice-President.

Dr. Benito C. Tan got his Ph D degree in Botany from the University of British Columbia in Vancouver, Canada, in 1981, specializing in Bryology. He has held a teaching job at the University of the



Philippines at Los Banos for many years, a herbarium position at the New York Botanical Gardens Herbarium from 1988-1990, appointed as a Research Associate in Bryology at the Farlow Herbarium of Harvard University from 1990-1996, before moving to his present teaching position at the National University of Singapore. He is most interested in the study of Malesian and Asiatic moss taxonomy, systematics, evolution and biogeography. He also served for a number of years as the Chairman of the IAB Committee on Tropical Bryology, and currently a member of the IAB Committee on endangered Bryophytes and Conservation.

Dr. Blanka Shaw (Buryová), Treasurer.

I received my Ph.D. degree in Botany (Morphological and genetic variation in the genus *Philonotis*) under the direction of Dr. Jiri Vana at Charles University, Prague, Czech Republic. While completing my graduate research, I worked at the Department of Taxonomy and Biosystematics, Institute of Botany ASCR in Pruhonice. In 2004 I moved to Durham, North Carolina, United States, and took a position as Data Manager in the Duke University Cryptogamic Herbarium. My research interests include systematics of bryophytes; bryophyte floristics and ecology in montane, alpine, wetland, and hyperoceanic ecosystems. I have done extensive fieldwork in glacial cirques of the Central European Sudetes Mountains. My other field experiences include the British Isles, Alps, Carpathians, Scandinavia, Alaska, and southeastern USA. I have been serving as Secretary for the Bryological and Lichenological Section of the Czech Botanical Society, and Editor of the bulletin Bryonora since 2003.



Dr. Geert Raeymaekers, Secretary .

My interest in bryology started during my research in fen ecosystems in the Netherlands, after which I worked at the National Botanical Garden of Belgium and set-up the Flemish Bryological Working Group. I completed my PhD in 1986 with Dr. Janice M. Glime (Michigan Technological University) studying the eco-physiological effects of acidic precipitation on the boreal moss *Pleurozium schreberi*. I have been working during the



past 15 years as consultant/botanist for the European Commission. This involvement with EU-institutions allowed me to successfully lobby with the European Council for the Conservation of Bryophytes for the inclusion of bryophytes in the EU-Habitats Directive and to obtain a grant to prepare in collaboration with Rob Gradstein, Steve Churchill and Noris Salazar Allen, the Guide to the Bryophytes of Tropical America. Since 2003, I have been editor of the IAB-newsletter, the Bryological Times and will continue this during the next years.

Dr. David Long, Councillor



David Long is senior bryologist at the Royal Botanic Garden, Edinburgh, Scotland. Current bryological research includes taxonomy and phylogeny of Marchantiales, especially Aytoniaceae

and the genus *Asterella* along with research student Daniela Shill who is monographing *Mannia*. Other projects include taxonomic and floristic research on Sino-Himalayan bryophytes, which has involved extensive bryological exploration in Nepal, Sikkim, Bhutan and China. The current focus is a bryophyte survey of the Gaoligong Shan mountain range, Yunnan, part of a 5-

year biodiversity inventory in collaboration with American bryologist James Shevock and many Chinese and American biologists. Work on bryophytes in Scotland includes conservation assessments of rare species, field surveys and increasingly DNA barcoding and population genetics of disjunct liverworts. He is actively involved with the British Bryological Society and served as President in 2002 and 2003, and teaches Bryology to masters students at the University of Edinburgh

Dr. D. Christine Cargill, Councillor

I am the Curator of the Cryptogam Herbarium here in Canberra since 2001 after completing my PhD with Dr Ray Stotler and Dr Barbara Crandall-Stotler in the USA. We are part of the Australian National Herbarium (CANB), which is housed in two separate buildings, and fortunately for me, our building is located in the beautiful Australian National Botanic Gardens. I can say that I have worked on all three groups within the bryophytes, beginning with the moss species *Hypnodendron vitiense* and *H. spininervium* for my Honours year, then moving onto the liverwort genus *Fossombronia*. I worked as a research assistant to the late Dr George A. M. Scott, later continuing on with the group for my PhD. I am presently working on the hornworts, with the aim of completing a revision for Australia and a revision of the classification of the group in conjunction with colleagues Karen Renzaglia, Joel Duff and Juan Carlos Villarreal from the US as well as continuing work with *Fossombronia*.

IAB Conference Vienna 2005:

Programme of the IAB meeting in Vienna, 18-23 July 2005

The 16th meeting of the International Association of Bryologists will take place 18 - 23 July 2005 at the International Botanical Congress in Vienna, Austria Congress Center. The exciting program includes four symposia (arranged by the general congress committee), a bryological dinner with announcement of prizes and medals, and a 4-days fieldtrip into the Alps.

Congress registration, fees, location, accommodation, etc., see <http://www.ibr2005.ac.at>. In Hotel Nordbahn 30 rooms have been reserved for bryologists ([hotel reservation](#)).

Local secretary of the bryology program is Dr. Wolfgang Wanek, (wolfgang.wanek@univie.ac.at) or w_wanek@gmx.at

Bryological activities:

Tuesday 19. July, 16.30—18.30 h.: Symposium “Ecophysiology of Bryophytes”

Organizers: Gerhard Zotz, Wolfgang Wanek

Keynote speaker: Michael C. F. Proctor

Topics will include new insights in the molecular mechanisms of desiccation tolerance (in comparison to desiccation tolerant vascular plants), comparative studies in hormone physiology of bryophytes and vascular plants,

the physiological basis of habitat selection, and the implications of global change on the role of bryophytes in selected ecosystems.

Wednesday 20. July, 16.30-18.30 h: IAB Council meeting

Thursday 21. July, 13.30—16.00 h.: Symposium “Population Dynamics of Bryophytes at the Local Scale”

Organizer: Dale H. Vitt, Katherine Freg

Keynote speaker: Dale Vitt

Topics include dispersal and establishment dynamics of bryophytes, environmental limiting factors, competition, and historical and stochastic events. Understanding the factors that control the local scale population distribution and structure are important in forestry management, rare species ecology, and in understanding patterning of plant diversity on the landscape scale.

Thursday 21. July, 20.00 h: IAB dinner

Friday 22. July, 13.30—16.00 h.: Symposium “New Developments in Cellular and Molecular Biology of Bryophytes”

Organizer: Ralf Reski

Keynote speaker: Ralph Reski

The moss *Physcomitrella patens* and other species of mosses are increasingly used as model systems to address basic botanical questions at the cellular and the molecular level. A project to sequence the whole genome of *Physcomitrella* is underway. Topics include cell and chloroplast division in mosses, gene regulation by light and hormones, and metabolic processes.

Friday 22. July, 16.30—18.30 h: Symposium “Bryophyte Phylogeny based on Molecular Evidence”

Organizer: [Jonathan Shaw](#)

Keynote speaker: Karen S. Renzaglia

Topics include 1. relationships among the bryophyte divisions, 2. hornwort phylogeny, 3. liverwort phylogeny,

4. moss phylogeny, 5. generic relationships within a selected family, 6. phylogeography of widespread “bryophytes”.

Sunday 24 – Thursday 28 July 2005: Bryological field trip “Mires and Bryophytes of the Central Alps”

Fieldtrip leaders: G. M. Steiner, Harald G. Zechmeister, Robert Krisai

Excursion to a wide range of wetlands inhabited by a interesting range of bryophyte species in the Central Alps of Austria, mainly the area of Tamsweg, Styria. On the last day there will be a field trip to the Gollinger waterfall with some rare species (e.g. *Brotherella lorentziana*).

Heurigen – the best choice for a Viennese IAB-conference dinner

The IAB dinner will take place in a traditional Viennese winehouse (“Heuriger” Weingut Diem, Kahlenbergerstrasse 1, 1190 Vienna) on 21. July, 20.00 h. Preregistration by email to wolfgang.wanek@univie.ac.at is greatly acknowledged. Please register for the IAB dinner at the IBC 2005 registration desk where the vouchers will be available for € 25. This includes a traditional Austrian Heurigen buffet plus three drinks.

Post-conference bryological excursion**Bogs and Bryophytes in the Central Alps of Austria: 24-28 July 2005.**

Trip departs: University Centre, Althanstrasse 14 (main entrance), 8:00; Trip returns: Vienna, c. 19:00

Limited to 20 participants. Cost: **415 Euro**. **The fee** includes: accommodation, breakfast, dinner, travel, lunch on 24 July; Not included: field lunches. Location: Salzburg / Lungau / Tamsweg area.

24 July (Sunday): 8:00: Travel by small buses to Tamsweg (Vienna – Bruck/Mur – Leoben – Judenburg – Scheifling – Murau Tamsweg. Afternoon: Excursion to the valley bog “Saumoos” in the Mur Valley; walk on the site. Features: Intact bog vegetation, peat-cut regeneration, management problems.

25 July (Monday): Bog landscape of the “Ueberling”; 5–6 hours walk; field lunch. Features: The most outstanding bog concentration in the Eastern Alps with boreo-continental bog and vegetation types and a great variety of peat mosses; restoration of a sloping fen.

26 July (Tuesday): Bog landscape of the “Sauerfelder Wald”; short walks and drives between mire visits; field lunch. Features: Intact fens and transitional mires, Grey Alder carrs.

27 July (Wednesday): Mire landscape of the “Schwarzenberg”; 5–6 hours walk; field lunch. Features: Sloping fens, bogs and transitional mires.

28 July (Thursday): Departure to Vienna Route: Tamsweg – Tauernpass – Radstadt – Schladming – visit to a condensation bog in Schladming-Untertal – Radstadt – Golling) – field lunch – visit of the Golling Waterfall with outstanding moss species, e.g., *Brotherella lorentziana* — Salzburg (possibility to leave the excursion after 15:00)

Necessary equipment: Rubber boots, waterproof clothes, hand lens

Trip leaders are Dr. Gert Michael STEINER (Institute of Ecology and Conservation Biology of the University of Vienna, gert.michael.steiner@univie.ac.at) and Dr. Harald ZECHMEISTER (Institute of Ecology and Conservation Biology of the University of Vienna, harald.zechmeister@univie.ac.at), Dr. Robert KRISAI (Institute of Botany of the University of Salzburg, robert.krisai@sbg.ac.at).

Contact: Harald ZECHMEISTER (see above)

Accommodation

For those still looking for accommodation in Vienna, here is a list of some good budget hotels.

Hotel Klimt (<http://klimt-hotel.at>): ca 50 €/pers.

Hotel Walzerstadt (<http://www.walzerstadt.at>): ca 50€/pers.

Hotel Kaiserpark (<http://www.Kaiserpark.at>): ca 75 €/pers.

PERSONAL NEWS

The editor greatly welcomes contributions from bryologists to this column!

Dr. Ming-Jou Lai of the Department of Landscape Architecture of the Tunghai University (Taiwan) has completed the first year work of the national biodiversity project entitled "Bryoflora of Taiwan". The bryoflora of Taiwan consists of 200 species in 27 families and 71 genera. In total, 20 moss families and 7 liverwort families are studied, some of these in collaboration with Dr. Cao Tong (Grimmiaceae,) and Dr. Jaakko Hyvönen (Ptychomitriaceae); Dr. Lai has recently collaborated with the bryologists of Plants of Thailand Research Unit, Department of Botany, Chulalongkorn University, Bangkok on a project "Investigations on the Bryophyte Biodiversity of Thong Pha Phun National Park, Thailand". E-mail: drlailib@ms21.hinet.net

Mary Puterbaugh is Associate Professor of Biology at Pitt-Bradford (Bradford, PA USA), an entirely undergraduate, regional campus of the University of Pittsburgh. Together with her students, she has been studying the relationship between *Frullania eboracensis* and bdelloid rotifers. The broad objectives of this research are to understand the evolutionary ecology of plant-animal interactions in general, assuming that bryophyte-animal interactions can provide valuable contributions toward this goal. The short-term goal is to try to compare plant growth of lab-grown plants with and without rotifers. This latter project is funded entirely by internal funds from Pitt-Bradford, including a stipend for a student researcher Tomann Best who will begin her work in June. Dr. Puterbaugh welcomes discussion and information from bryologists and others on their understanding of interactions between bryophytes and other species and their advice on growing bryophytes and culturing rotifers. E-mail: mnp1@exchange.upb.pitt.edu

Beatriz Itten, PhD Student at the Institute for Systematic Botany (University of Zürich, Switzerland) researches the population biology and genetic diversity of *Sphagnum fimbriatum*: a red list species in Switzerland. Her advisor is Dr. Edwin Urmi and co-advisor is Prof. Jakob Schneller. The research was funded until the end of 2004 by the Erziehungs Direktion des Kantons Bern (Education Direction of the Canton Bern), Switzerland. *Sphagnum fimbriatum* is a monoecious species, which frequently develops sporophytes, presumably by self-fertilisation. It has a bipolar distribution, is widespread throughout the northern Temperate Zone and in cool regions of the Southern Hemisphere, but in Switzerland is rare and the populations are isolated. Analysis of genetic diversity in European populations has been done with RAPD markers. All the Swiss populations known were sampled (nine in total). Additionally, three Swedish

populations, two from Hungary and four from Austria were included in the study. The results obtained so far show high levels of genetic diversity within populations (64.87% of the variation) but no clear correlation between genetic diversity and population size. There is also no correlation between geographical and genetic distances in the Swiss populations. Theory predicts small diploid populations show random genetic drift and with a high rate of inbreeding suffer under inbreeding depression; both lead to a decreasing genetic diversity. That seems not to be the case of *S. fimbriatum*. It is possible that mutations and gene flow (through spore migration) act as stronger evolutionary forces than drift, increasing the amount of genetic diversity in small populations. The role of inbreeding depression in bryophytes is still not known so far as I can see. The next step of this study includes the analysis of South American populations to be compared with the European ones.

Henk Groth is a Ph. D. student working in the Department of Systematic Botany at the University of Göttingen, Germany, under the direction of Dr. Jochen Heinrichs. He is currently working on a molecular phylogeny of Plagiochilaceae based on worldwide taxon sampling, using nuclear and chloroplast markers and including analyses of biogeographical evolution of this largely neotropical liverwort family. He is about to finish his thesis in autumn 2005. The project is funded by the German Research Foundation (HE 3584-1). Several papers on this project have already been published. For a full bibliography please consult the homepage of the department www.sysbot.uni-goettingen.de . E-mail: hgroth@uni-goettingen.de

Nicole Mandl is a Ph.D. student working under the direction of Prof. Robbert Gradstein and Dr. Harrie Sipman in the Department of Systematic Botany at the University of Göttingen, Germany. She is studying the terrestrial and epiphytic diversity of bryophytes and lichens in upper montane forests of Southern Ecuador in relation to soil, climate and vegetation structure. These forests are very rich in species of bryophytes and lichens, including rare and endemic ones. Her research is carried out in the framework of an interdisciplinary research program on the ecology of the tropical montane forests of Ecuador funded by the German Research Foundation (DFG). For a detailed description of this research program you may visit the website, www.bergregenwald.de (text in German, English, and Spanish). E-mail: nmandl@uni-goettingen.de

RESEARCH NEWS

Activities in Tropical Bryology at the Eszterházy College, Eger, Hungary (EGR) during 2004-2005

Similarly to previous years the tropical research continued, both by the members of the Research Group for Bryology of the Hungarian Academy of Sciences and those of the Department of Botany. Gabriella Kis prepared a new type catalogue of the overseas bryological collections of EGR, Andrea Sass-Gyarmati continued her investigations on Ptychanthoid Lejeuneaceae in the Indian Ocean and Australasian-Pacific area and describing *Archilejeunea madagascariensis* from Madagascar, *Caudalejeunea streimannii* from Vanuatu and a new *Lopholejeunea* species from the Fiji Islands. Ricardo Rico completed his type studies within his PhD work on the Venezuelan representatives of Aneuraceae and published an account on the liverwort flora of the Venezuelan side of Roraima tepui together with Tamás Pócs, who with his wife Sarolta have worked for three months with on hepatic collection of East African Herbarium, Nairobi, as volunteers. In the meantime made extensive collections together with the staff of the National Museum of Kenya and of Nairobi

University, visiting mostly arid areas of Kenya and discovered, as new to Africa, *Didymodon revolutus* and *Syntrichia amphidiacea*, along many species new to the country or to East Africa. Then in August they took part together with Andrea Sass-Gyarmati and prof. Tuba in a study trip investigating the bryophytes and cyanobacterium mats of the inselbergs in Tanzania, later collected in Madagascar, where *Diplasiolejeunea ranomafanae* was discovered, as new to science. Finally the Pócses went to Western Australia collecting Frullania and other liverworts and to study the cryptobiotic crusts in the Australian semidesert areas. Within this trip, among others, a *Nephelolejeunea* species was collected, which proved to be new to science.

Recently, between 28 February and 23 April both bryological teams visited the Venezuelan Andes with zoologists to study together the correlation between the bryophyte-lichen cover of montane forests and páramos with the invertebrate fauna living in them.



Research funding opportunity for European natural history scientists

Europe's foremost natural history institutions invite scientists based in European member and associated states to visit and access their collections and analytical facilities.

Twenty institutions, including museums and botanical gardens, have joined together to form **SYNTHESYS**. The ambition is to create a single 'virtual' museum service consisting of many physical collections and analytical facilities, together with integrated databases of information about those collections. Main beneficiaries are the European research communities in the biosciences and geosciences, and particularly those researchers with an interest in biodiversity.

The co-operating institutions are organized in 11 national Taxonomic Facilities (TAFs). As one important element, the project comprises a visiting researcher programme. It enables European scientists to access more than 337 million specimens housed in the partners' collections, state-of-the-art equipment, and internationally renowned

expertise, and provides training and supervision in relevant fields. The institutions also collaborate in network activities aiming to improve the coordination, accessibility and high-standard preservation of natural history collections.

The SYNTHESYS visiting researcher programme covers costs for research and accommodation whilst based at the institution, plus international travel costs, and offers a per diem to contribute towards living costs during short visits (maximum of 60 working days) at one or more TAF.

Please visit www.synthesys.info for full details on how to apply for funding including a list of all SYNTHESYS partners and their facilities, applicant eligibility criteria, and the application form.

The next deadline will be Friday 16 September 2005.

Further calls will be arranged at approximately 6-month intervals until 2008.

COUNTRY REPORTS

Bryological news from Estonia

Bryological working groups

Estonia is a small country in the north-eastern part of Europe, rich of forests and bogs – a paradise for bryologists, as already mentioned in the 19th Century by Edmund Russow - the most famous bryologist of Estonian origin.

Despite the fact that the history of bryological investigations in Estonia dates back to the 18th Century, it has remained a speciality for a few people up to recent times. The number of people involved in bryology is small and they are divided between different institutions. Studies on species richness and factors affecting that in grassland and forest communities, as well as investigations on growth biology and monitoring of rare species are carried out at the Institute of Botany and Ecology, Tartu University. At the Institute of Ecology, Tallinn University, mainly diversity of peatland communities, the role of bryophytes there and peat-mosses ecology are studied. Bryofloristical works are carried out at the Estonian Nature Museum. The main task of all institutes is to train young bryologists. Two bachelor theses on peatland bryophyte communities and two student research works about epiphytic bryophytes were defended in 2004. Two postgraduate students from TU are currently studying bryophyte species richness and spore banks on coastal meadows and dry alvars.

Collections and species lists

The majority of bryological collections are kept in the four herbaria of Estonia, with total amount of ca 100 000 specimens. Since 2004 the state program of collections has begun with the compilation of databases. The first step for bryological collections was to compile lists of species occurring in different herbaria. Since March 2005 the lists at homepages of each herbarium are available at

the Estonian bryological homepage (<http://www.botany.ut.ee/bruoloogia/>).

The updated list of Estonian bryophytes and the list of Estonian bryological publications since 1778 are available at the same address. During the last year seven bryophyte species new for Estonia were recorded and for 47 rare species new localities were found. At the moment 551 species belong to the list – 2 species of hornworts, 126 of hepatics and 423 of mosses. Four recently found species – *Cephaloziella elasticha*, *Lophozia laxa*, *Lophozia ascendens* and *Dicranum humilis* – belong to the European Red Data Book of Bryophytes, so the amount of species rare across Europe has grown up to 36 species in Estonia.

Bryological events

A lecture course in bryology was started at the Tartu University at 1993 and since then the number of people interested in bryology has been increased gradually. Since the first field trip for hobby-bryologists in 1998 all Estonian moss-lovers have spent one weekend in springtime at different places around Estonia to explore the world of bryophytes. We have followed Edmund Russow's tracks on Käsmu Peninsula where he had described several *Sphagnum* species new for the world. In 2004 we studied spring fen and alvar bryophyte diversity at Muhu Island. This spring the South-Estonian primeval forests and mires are in focus.

Once a year the newsletter of Estonian hobby-bryologists *Samblasõber* (e.g. Friend of mosses) appears. In every number we try to introduce other similar organisations from different countries. Invited researchers are clarifying some topic with wider interest and amateur bryologists can share their own experiences in bryology. The list of most interesting findings and new publications are included, and the events of the year are documented. Numbers of our newsletter (in Estonian) are available at our homepage (see above for the address).

CONSERVATION COLUMN

New Candidates for the IAB/IUCN World Red List of Bryophytes

Tomas Hallingbäck, Ben Tan, and Jiri Vana

Since the year 2000, several new species names have been suggested to the IAB Committee on Endangered Bryophytes for additions to the World Red List of Endangered Bryophytes. However, no species has hitherto been added officially to the 2000's Red List. This is mainly because we have wanted the assessment process to be thorough and careful, so that we can avoid adding species to the list, which do not really qualify.

To date, we have better knowledge on the distribution and ecology of many bryophytes. We therefore believe that the time has come to take the next step and assess if these candidates can be accepted and approved by the

IAB Standing Committee for Endangered Bryophytes and the IUCN Bryophyte Specialist Group (International Union of Conservation of Nature).

At the same time, we have also received suggestions of a few species on the 2000's red list that should be removed from the Red List, or at least down-graded into a less endangered category based on new information.

To initiate the revision process, we are publishing these additional candidates here, and we welcome comments from all of you. The list of species nominees for addition, or deletion, will need specially the feedback from authorities and specialists who have the up-to-date

information and relevant knowledge regarding these species, and we are therefore very thankful for any responses that we will receive.

We hope that you send us your comments, criticisms and contributions, so that we will be able to present an improved list later, taking into account all available knowledge. We are keen to have your participation in a constructive discussion. This discussion is important, since the entries below may be taxa whose current global range and distribution are still insufficiently known. Some species may occur safely in "naturally protected" sites or habitats away from any obvious interference from human activities. Other taxa can simply be overlooked in the past, and may not be particularly rare. Also, some members on the list represent relatively recently described new species, whose total range and status will need time to document.

As before, the selection of the most endangered bryophyte species should be based on the following criteria:

- 1) the species is considered to be threatened on a world-wide scale;
- 2) the species is confined to more or less threatened habitats;
- 3) the species has a limited distribution; and,
- 4) not presumed to be overlooked or under-collected; and,
- 5) the taxonomy of the species should not be dubious or controversial.

Please send your comments to either one of us: Tomas Hallingbäck, Swedish University of Agricultural Sciences, P.O. Box 7007, SE-750 07 Uppsala, SWEDEN (email: tomas.hallingback@artdata.slu.se); Dr. Benito C Tan, School of Biological Sciences, National Univ. of Singapore, Singapore; 119260, SINGAPORE (email: dbsbct@nus.edu.sg); Professor Jiri Vana, Department of Botany, Charles University, Benátská 2, CS-128 01, Praha 2, CZECH REPUBLIC (email: vana@natur.cuni.cz).

The current Global Red List can be found on <http://rmbn.nus.edu.sg/worldbryo/BryoList.html> or at <http://www.artdata.slu.se/quest/SSCBryo/WorldBryo.htm>

Taxa suggested to be REMOVED from the Global Red List:

Dactylolejeunea acutifolia - conspecific with *Lejeunea paucidentata* (J. Hattori 89: 37, 2000);
Orthotrichum scanicum Grönv. – it is shown today to be widespread in South Europe (prof. Ricardo Garilleti, pers. comm.).

Taxa nominated for additions to the list of 2005's IAB and IUCN Global Red List of most endangered bryophyte species:

HEPATICAE & ANTHOCEROTAE

Cephalantholejeunea temnanthoides (R.M.Schust.) R.M.Schust.
Cheilolejeunea gaoi R. L. Zhu, M. L. So & Grolle
Cololejeunea filicis (Herzog) Piippo
Cololejeunea pluridentata Wu & Lou
Cystolejeunea lineata (Lehm. & Lindenb.) Evans.
Dendroceros canaliculatus Pagan
Drepanolejeunea spinosa Herz.
Frullania sergiae Sim-Sim et al.
Frullania tubercularis Hattori & P.J. Lin.
Leptolejeunea truncatifolia Steph.
Megaceros aenigmaticus Schuster
Metzgeria maegdefraui Kuwahara.
Notothylas galapagensis Howe
Pictolejeunea picta (Gott. ex Steph.) Grolle.
Porella obtusiloba Hatt.
Riccia alatospora O.H.Volk & Perold
Schistochila macrodonta W.E.Nichols.
Trichocoleopsis tsinlingensis Chen ex M. X. Zhang

MUSCI

Andreaea morrisonensis Noguchi
Anomodon dentatus Gao Chien
Buxbaumia punctata Chen Pan-chieh & Li Xing-jiang
Cyrtopodendron vieillardii (C. Müller in Beschereille) Fleischer in Brotherus
Distichophyllum meizhiaie B. C. Tan & Lin Pan-juan
Fissidens appalachensis Zander
Fissidens beccarii (Hampe) Brotherus
Fissidens geijskesii Florschütz
Franciella spiridentoides Thériot
Gradsteinia andicola Ochyra
Grimmia maiuense H.C.Greven
Grimmia ochyriana J.Munoz
Helicoblepharum daltoniaceum (Hampe) Brotherus
Horikawaea redfeanii B. C. Tan & Lin Pan-juan
Hypnodontopsis mexicana (Thériot) H. Robinson
Hypnum shensianum Ando
Lepidopilum angustifrons Hampe
Leptodictyum kurdicum (Schiffner) Brotherus
Leucodon morrisonensis Noguchi
Macromitrium fortunatii Cardot & Thériot in Thériot
Microdus sinensis Herzog
Miyabea rotundifolia Cardot
Oreoweisia setschwanica Brotherus
Orthomitrium tuberculatum Lewinsky-Haapasaari & Crosby
Orthotrichum shevockii Lewinsky-Haapasaari & Norris
Orthotrichum spjutii Norris & Vitt
Polytrichadelphus abriaquiae (C. Müller) Jaeger
Pseudochorisodontium mamillosum (C. Gao & Z.-W. Ao) C. Gao, Vitt, X. Fu & T. Cao
Pseudopterobryum tenuicuspis Brotherus
Pterobryum excelsum C. Müller
Rhodobryum laxelimbatum (Hampe ex Ochi) Iwatsuki & T. Koponen
Spiridens camusii Thériot
Symphyodon yuennanensis Brotherus
Takakia lepidozoides Hattori & H. Inoue
Triquetrella californica (Lesquereux) Grout
Zygodon forsteri (Dickson ex Withering) Mitten

LITERATURE COLUMN

Flora Neotropica Monograph: Amblystegiaceae (Musci).

Hedenäs, L. 2003: *Amblystegiaceae (Musci)*. — *Flora Neotropica Monograph 89*: i–iv, 1–107, + 1 p. with photo and biography of the author. 48 figures. Hard cover. ISSN 0071-5794. ISBN 0-89327-442-9. Price US \$ 30,00 (discount price US \$ 25).

This monograph treats the moss family Amblystegiaceae in the neotropical area, which the Organization for Flora Neotropica has defined as the lands between the Tropic of Cancer and Tropic of Capricorn. However, the distribution maps show localities south of the latter, especially in Brazil, but only a few specimens are cited from countries such as Argentina and Chile, and none from Paraguay. The inclusion of these countries, and Uruguay, would probably not have increased the number of taxa (20 genera and 42 species) but they would have caused some extra revisional work. This can be concluded by comparing the present work with Greene's (1986) "Conspectus". The species included are not tropical at all, but boreal to temperate, and, accordingly, in the Neotropics occur at higher altitudes in the Andes especially in the Colombian–Venezuelan area, Mexican and Guatemalan highlands, and on Hispaniola.

The book begins with "Contents" listing the treated genera. A complete synopsis of genera and species is placed after the list of "Cited literature" and before the "Index of scientific names". "Contents" is followed by "Abstracts" in English and in Spanish. "Introduction" cites Hedenäs' many papers on the Amblystegiaceae and related families. About 1300 specimens were studied for this monograph. In the chapter "Morphology and anatomy" the structures that are of special interest in the practical identification work are shortly discussed. The chapter "Phylogeny and evolution" is a useful review of the latest opinions of the delimitation of the family Amblystegiaceae, and a summary of Hedenäs' own studies of the family. Hedenäs' circumscription of the family is wide, including taxa such as *Calliergonella*, which is sometimes placed in the Hypnaceae, and *Anacamptodon*. Hedenäs mentions the many changes in the generic concepts proposed recently, and which actually were initiated by the Finnish bryologist, R. Tuomikoski (Tuomikoski & Koponen 1979). I enjoyed reading Hedenäs' statement: "These changes are based both on new evidence from morphological and anatomical characters and on phylogenetic reasoning or analyses. Rather than being based on similarities in vegetative leaf orientation and shape, or costa development, the taxonomic treatment adopted here is based on all evidence available". This seems to explain why the genus *Amblystegium* is here treated in a wide sense, including *Hygroamblystegium* and *Serpoleskea*. Even the habitat ecology is used as a supporting evidence of generic delimitation, a non-morphological character often omitted but sometimes useful (see Steere 1947).

The discussion in the chapter "Distribution" and in the Figures 1 and 2 show clearly that the Amblystegiaceae are mostly absent in the true tropics, below the altitudes of 1000 m in Brazil, and in the Andes they occur at the altitudes corresponding to warm-temperate, temperate,

and boreal conditions. The "Systematic treatment" begins with the description of the family followed by a very useful Table 1 giving easily visible character states of neotropical Amblystegiaceae. The key to the neotropical genera of Amblystegiaceae is next. The key runs fluently, and is nearly solely based on gametophytic characters, endostome characters are mentioned only in separating *Amblystegium radicale* from *Campyliadelphus*, and *Anacamptodon* from *Amblystegium*. Each generic treatment contains a list of generic synonyms, description, distribution, and, when necessary, discussion on useful characters in critical cases, and a key to the species. The specific treatments include the history of the valid epithet and lists of synonyms, which are carefully done, citing the types and previous lectotypifications. The distributions are given as maps and habitat ecology is listed. "Notes" give additional nomenclatural information. All species are not illustrated, but most specific treatments include a list of illustrations published by other authors. The list of specimens examined is followed by discussion on the distribution, on previous reports from the area, and on how the species can be separated from its closest relatives. One species, *Amblystegium pseudosubtile*, is described as new, and one new combination, *Vittia bartlettii*, is made.

The last chapter "Doubtful names and excluded taxa" includes a partial revision of the poorly understood *Mittenothamnium reduncum*, with new synonymies, description, distribution and ecology, nomenclatural note, a selection of specimens studied, and a discussion.

This is a well-prepared monograph, useful not only in the Neotropics but anywhere where species of Amblystegiaceae occur, and I can recommend it to any bryologist. What is missing are the lists of new synonyms (1 generic, 30 specific) and lectotypifications (14), which might have been marked in the "Index". Since the chapter "Methods" is lacking, it is not clear, if all the synonymized taxa were reported previously from the Flora Neotropica area. Some new synonyms cite specimens from Patagonia and other areas outside the study area. And why, in the index, dots are after the non-abbreviated author names? And what does the abbreviation [n.v.] mean? [n.v. = non vidi = not seen; *editor*]. The price is tolerable for a hard-bound book.

Cited literature

Greene, D. M. 1986: A conspectus of the mosses of Antarctica, South Georgia, the Falkland Islands and southern South America. — 314 pp., The British Antarctic Survey, Cambridge.

Tuomikoski, R. & Koponen, T. 1979: On the generic taxonomy of *Calliergon* and *Drepanocladus* (Musci, Amblystegiaceae). — *Ann. Bot. Fennici* 16: 213–227.

Steere, W. C. 1947: A consideration of the concept of genus in Musci. — *Bryologist* 50: 247–258.

Timo Koponen

Ulota, a novel

There is a little-known Ulster novel that is entirely devoted to botany, a gentle romance, very moral in tone, and the botanical theme is not phanerogamous but cryptogamous. What's more, the novel was written by an amateur botanist, and has a botanical title—the ultimate piece of botanical literature, perhaps?

Ulota by the Revd William Rutledge Megaw, B.A., M.R.I.A. (1885-1953) is a rare little volume, published in 1934 by The Quota Press, Belfast. It is most infrequently seen in antiquarian booksellers' catalogues; I think the only time I have noticed a copy listed during the past 15 years or so was the occasion when, for £5, I acquired my own copy.

Megaw was a minister in the Presbyterian Church, and after his retirement in 1950 he went to live at Portstewart, County Derry, on the north coast of Ulster where his 'most intensive' botanical work was done. He used to botanise for mosses and flowering plants at almost any opportunity. Apart from a year's study at Princeton University in New Jersey and a visit during 1927 to his sister who lived in South Africa, Megaw did not travel outside Ireland and Britain. He was a keen gardener, a 'true Ulsterman', and author of several books—a volume of addresses given to children in church, *Caragloon* (a collection of Ulster stories which I have not seen), and *Ulota*.

Ulota was described in Megaw's obituary (*Irish naturalists' journal* 11 (1954): 181-183), as 'a kind of propaganda for his hobby of moss-hunting'. I've read it several times, because, like some other books, it simply intrigues me. It opens with this disclaimer:

"ULOTA. The names of the men and women, whose words weave this story, are purely fictitious. The cottage and Slievetara exist only in the imagination of the writer. The cult, however, is as real as *Ulota* and its kindred; and so fact and fiction are intertwined."

It is a brief novel, 202 small pages printed in large type, yet *Ulota* is crammed with botanical gems, and the key to these is the second edition of *Flora of the north-east of Ireland* published in 1938 also by The Quota Press; R.L. Praeger prepared the material on flowering plants, vascular cryptogams and charophytes, while the section on mosses and liverworts was compiled by Megaw.

I will quote a couple of examples. Describing a botanical excursion on a windy January day near the coast, the narrator recounted:

"When we got beyond the marram grass, where Dame Nature spreads a closer carpet of fescue and moss, we sat down on the edge of an old trench to get our breath and . . . to let the lady call in her wanton locks. The trench was deep and dry, and Mary suggested that we search its sheltered sides; so we walked along in it, following its twists and turns. When we had gone some distance, Mary, who was leading, called back to me: "Guess, Ver, what I've found? You'll not believe until you see it!" And between her finger and thumb she held before my eyes a single stem of *Bryum roseum*, in fruit."

On p. 386 of the *Flora of the north-east...* is the corresponding record: "Fruiting in a trench north of the Newcastle golf-links, January, 1927: Megaw." In the novel, Megaw explained that "never before in Ireland, nor since, that we are aware of, has *roseum* been found

fruiting." I cannot say whether his wife also botanised with him and really discovered the fruits on *Bryum roseum*.

There is also a story about "our which moss,"

"...a very rare *Bryum* which we found in a swamp by the shore. It is one or other of two, so far unknown in this country. Only by its fruit can it be known definitely; so we are growing it, hoping that by autumn it will be in fruit—meanwhile, 'which' is its name!"

Again the *Flora of the north-east...* provides a clue. *Bryum calophyllum* was found by Megaw at Magilligan, County Derry, in "swampy ground near the sea," and was noted as being very rare, this was its only Irish station. Curiously the record is dated 1936, two years after *Ulota* was published!

There are frequent mentions of tin boxes (vascula!) and herbarium specimens—

"Some folk ... take photographs of interesting places they visit; I usually bring back, instead, a moss. So, I have in my herbarium a tuft from Robbie Burn's cottage, a spray from the stones of Melrose Abbey and a sprig from Thomas Moore's tree at the Meeting of the Waters. ... Pictures of the top of Helvellyn or Errigal or Snowdon or Ben Lawers, or the Katberg might look bleak; I have 'a little bit off the top' of each of them in my cabinet at the cottage!"

I have no doubt that a search of Megaw's herbarium in the Ulster Museum, Belfast, would produce the scalps of those mountains; he did collect on them!

"Dad is a veritable old scalp-hunter," Aileen broke in; "he has scalped the heads of I don't know how many mountains and actually glories in the fact!" "Why not say," interposed Mary, "that he possesses a lock from each beautiful head?" "Yes," said Oliver [the bryologist!], "life is largely a matter of our point of view; the facts are the same, but the way in which we regard them makes all the difference."

Being a "true Ulsterman", Megaw "...loved 'good crack' and as a raconteur had a fund of humorous stories of the countryside..." (For the benefit of those unfamiliar with the Irish vernacular, crack is the chat and consequently the entertainment of convivial company.) *Ulota* is certainly not a humorous novel; it's a love story, in several senses. True to form the hero falls in love with the bryologist's daughter and you just know that they will live happily ever after! It is also a tale with thinly disguised localities, a bit jumbled up but recognisable. I believe that Slievetara is partly Benevenagh in County Derry, and the surrounding fictional region is a mixture of Magilligan and Newcastle with some of Portstewart added for good measure. So, although the author was a Presbyterian minister, and says that all the places and characters are fictitious, I have no doubt there is a lot of reality and autobiography in this wee novel. No, I'm not accusing him of telling fibs, only of being a story-teller.

"When asked if [*Ulota*] had made any converts to botany, Megaw would answer rather dryly, 'Very few, I fear.' " (*Irish nat. j.* 11 (1954): 183). I'm not surprised, but it is an exceptional (unique?) example of botany-in-fiction as propaganda for botanical studies.

E. Charles Nelson, Tippitiwichee Cottage, Hall Road, Outwell, Wisbech PE14 8PE

Other recent publications:

Local flora's from Poland

Stebel, A. et al. 2004. Mosses of the Polica Range (Polish Western Carpathians)

Stebel, A and Ochyra, R. 2004. Bryological studies in the Western Carpathians

Both publications are edited by Sorus, Poznan. 2004. E-mail: sorus@sorus.com.pl. The first publication lists the 264 bryophyte species and five varieties of mosses of the Polish Western Carpathians, the second is a compilation of articles on bryophytes of the region.

In the series "Pictures of Bryophytes" I did a new CD with a collection of pictures from Norway. The CD contains

Liverwort flora of Catalonia, Spain

The Institut d'Estudis Catalans has just published the "Flora dels briòfits dels Països Catalans, Volume II: Hepàtiques i Antocerotès" by Creu Casas, Montserrat Brugués, Rosa M. Cross, with the collaboration of Anna Barron, Elena Ruiz, Marta Infante and Cecília Sergio. Barcelona 2004. ISBN 84-7283-771-8. 138 p. (Price: 30€). This volume is concerned with liverworts and hornworts, and is the second volume in the work as a whole. The first volume, focusing on mosses, was published in the 2001. The studied area, situated in the Eastern of the Iberian Peninsula, includes Catalonia, the

Gathering Moss: A Natural and Cultural History of Mosses

"Gathering Moss: A Natural and Cultural History of Mosses" by Robin Wall Kimmerer (ISBN 0-87071-499-6, Paperback, \$17.95). This book won the 2005 John Burroughs Medal Award for Outstanding Natural History Writing. In "Gathering Moss," Robin Kimmerer draws on her experiences as a scientist, a mother, and a Native American to show how mosses live and how their lives intersect with ours. An engaging mix of science and personal reflection, the book invites readers to explore and learn from the elegantly simple lives of mosses. Founded and headquartered at the American Museum of Natural History, the John Burroughs Association has

Key to the Australasian liverwort and hornwort genera.

Key to the Australasian liverwort and hornwort genera by David Glenny & Bill Malcolm is the first comprehensive interactive key to the 181 genera of liverworts and hornworts known from Australia and New Zealand. Uses 90 characters to ensure accurate identification, and includes more than 1000 photographs and drawings. The latest web-integrated Lucid Player provides an easy-to-use interface, with comprehensive fact-sheets for each

'Bryobrotherella': two noteworthy bryological-history publications

In addition to the journal 'Bryobrothera', the Finnish Bryological Society also publishes its membership journal 'Bryobrotherella'. Two of its numbers might interest those of you who need to deal with the history of bryology. No. 5 includes an article: Koponen, T., & Piippo, S. 2002: Viktor Ferdinand Brotherus and his collection of letters. --

730 pictures of mainly Nordic bryophytes and 120 pictures of landscapes. Most pictures are covered by a specimen number, in an Excel table on the CD you can find information about locality and ecology of each specimen. The price of the CD is 25 Euro (include shipping). You will find 66 preview pictures and a list of all species from this CD on my homepage <http://www.milueth.de/> or direct <http://homepages.compuserve.de/milueth/moose/> E-mail Michael Lüth: milueth@compuserve.de

Valencia Region, Andorra and the Balearic Islands, comprehending a total area of 70,000 Km². This flora constitutes 281 species, representing 72% of the liverworts and hornworts cited in Spain and 45% of the cited in Europe and Macaronesia. The volume contains dichotomic keys for genera and species. For each species, there are differential morphological characteristics, data on ecology, distribution and frequency. The numerous illustrations provided are all original works. More information: <http://www.uab.es/lab-briologia/>. To order, e-mail: publicacions@iecat.net.

given this award annually since 1926 to a book that combines scientific accuracy, firsthand fieldwork, and creative natural-history writing in the U.S. Past recipients include Rachel Carson, Aldo Leopold, Barry Lopez, Gary Nabhan, and Robert Michael Pyle. Robin Kimmerer is Professor of Environmental and Forest Biology at the State University of New York College of Environmental Science and Forestry. "Gathering Moss," now in its fifth printing, is her first book. Burroughs Association press release: <http://research.amnh.org/burroughs/MedalAward.html>

genus, including a list of diagnostic characters, description, distribution, habitats and species checklist, as well as numerous photographs of macroscopic and microscopic features. Price: AU\$59.00 [excl. GST (Australian customers only), postage and handling]. Order from CBIT at <http://www.cbit.uq.edu.au/software/liverworts/>. E-mail Pat McCarthy: patrick.mccarthy@ea.gov.au

Bryobrotherella 5: 1-29. (3 euros + postage). The recent no. 8 has an article: Koponen, T. & Isoviita, P. 2005: S. O. Lindberg and his collection of letters. -- Bryobrotherella 8: 1-38. (5 euros + postage). The articles give biographies of Brotherus and Lindberg in English, and the list of their correspondents, the years of letters received,

and numbers of letters (4751 from 504 persons to Brotherus and 2600 letters from 400 persons to Lindberg). A limited amount of volumes are available

Forgotten Flora

The Forgotten Flora, an educational project featuring bryophytes, lichens and fungi, has just been launched by the Royal Botanic Gardens Melbourne, with funding from the CASS Foundation. The authors of Forgotten Flora are Dr. Josephine (Pina) Milne and Dr Teresa Lebell and the illustrations are from Anneke Veenstra-Quah. It comprises a set of ten magnificent posters and three CDs, each partially interactive. The posters are superbly designed, with clear, concise text, and unmistakable drawings and photographs. The posters are not only very attractive, but also very clearly and accurately illustrate the range of organisms presented. The poster titles include: Key to the Forgotten Flora, Taking a liking to Lichens, Bryophytes - more than just moss, Where do Forgotten Flora grow?, The whole fungus, More than mushrooms, Miniature forests and carpets, Truffles – underground treasures, Invertebrates and the Forgotten Flora and Poisonous mushrooms. Each CD (one each for bryophytes, fungi and lichens) gives a general background to the group, incorporates figures and

from Bookstore Tiedekirja, Kirkkokatu 14, FI-00170 Helsinki, Finland. Telefax + 358 9 635 017. E-mail: tiedekirja@tsv.fi

photographs that can be used in presentations, practical information on how to study each group, suggested activities and a comprehensive list of additional resources. The set of CDs and posters are an outstanding aid for teaching bryophytes, fungi and lichens, for schools, colleges and universities. They would also be a valuable asset for field studies centres, information centres in National Parks and State Forests and for designing special displays, for example school or university "open days". There are many activities designed to interest young people but which would also attract the interest of people of all ages. Although designed with the Australian environment as backdrop, much of the information will be of interest and relevance worldwide.

More details on the website: http://www.rbg.vic.gov.au/plant_science/publications/forgotten_flora. E-mail: forgottenflora@rbg.vic.gov.au

New Bryophyte Red List of Switzerland.

Schnyder, N. et al. 2004. Liste Rouge des bryophytes menacées en Suisse. Office Fédéral de l'Environnement, des forêts et du paysage. The Red List of threatened bryophytes of Switzerland lists all hornworts, liverworts and mosses known to occur in Switzerland, together with their categories of threat to the IUCN criteria. This list replaces the last edition published by Urmi in 1992 (Urmi et al. 1992). The list is prepared by the FUB-Research Group for Environmental Monitoring in collaboration with the NISM, an inventory project for bryophytes in Switzerland. Of the 1093 evaluated species and subspecies of Swiss bryophytes, 416 (38,9%) are threatened. The highest percentages of Red

List species are found in dry grasslands and places with bare soil, such as arable fields. The percentage of endangered species in wetlands is comparatively low, which can be regarded as the result of the intensive conservation work for bogs and fens. Despite this success, nutrient-poor habitats are still threatened by nutrient input from the air.

Literature: Urmi, E et al. 1992. Die gefährdeten und seltenen Moose der Schweiz – Rote Liste. EDMZ, Bern. 56 S.

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TECHNIQUES COLUMN

New Mapping Programme

Some decades ago, bryologists made fieldtrips, collected and maybe published the more interesting species in floristic papers. Complete species lists were only made for interesting localities or nature reserves. Since the last decades „mapping“ is the main activity of amateur bryologists. In the meantime, many regional mapping projects have been completed. Originally, mapping was done mostly on a grid basis with lists, in which the species were marked. Meanwhile computerization has also occupied this field and the data are stored on the computer in various database or spreadsheet programs. For this purpose, it would be desirable to provide an output of the mapping results in a map. This is, however, rarely realized. There are a few commercial solutions and many botanists or zoologist have programmed special solutions. I have tried many of these programs to see whether they could also be used for bryological purposes. They were either too complex and difficult to use, had too simple map export, were incompatible

with other data formats and did not allow export or import of data and so on. Some were too expensive (there were programs for 1500 Euros), others free and provided by federal institutions in Germany but designed for everything, birds and grasshoppers. A widely used DOS-program in Germany was provided many years ago, but needed special maps and is not now up to date. So I thought about the needs. Principally, any database program with the necessary fields for mapping is suitable, but the problem is the map export. In the Bryol. Times I have already explained how to develop maps from a database with a free GIS-program. This is sufficient but still circumstantial. There is one program called IMap, which fulfils all requirements of a map output, provided for free by the zoology dept. of the university of Leuven (Belgium), but this works only on Apple computers. It is in fact a simple GIS window, which can be connected to a database and the lat.-long fields. So I tried to find an own solution.

Due to the lack of satisfying existing solutions, an amateur botanist and chemist at the university of Bonn, Rolf Sievers, had developed his own database program with map window, So I asked him to help to develop a map window for a Filemaker database and to connect this map by a script. And this is how it looks like:

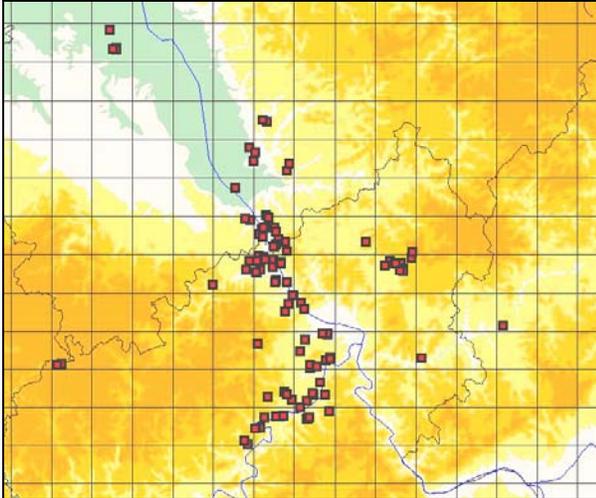


Fig. 1. Screen shot of the programme FLORKART

Basis is a runtime version of the database program "Filemaker". This means that the database was developed within Filemaker and has been compiled. This allows to run this application without buying Filemaker. The database has the common fields for a recording program such a species, annotation, country, county, locality, habitat, elevation, grid, collector, date, latitude and longitude and in addition three more fields, which can be used for special purposes. The species field opens into a pull down list with all bryophyte species of Germany. In this way a consistent nomenclature is guaranteed, without typing errors or synonyms, which would restrict the facility to filter for species. After having clicked the species, the red list values for the federal states of Germany are automatically displayed on screen. Once the data for a locality are entered, a button "duplicate" is clicked which duplicates the record and a new species is clicked. This facilitates the input of dozens of species from the same locality in short time. If a specimen shall be deposited in the herbarium, a button "print" can be clicked and an A4 sheet is printed with the herbarium data, which can be folded into a convolute. By this way, the operation of the program is extremely easy and fast. I have tried many other programs,

but was always not much satisfied with the complexity of these programs.

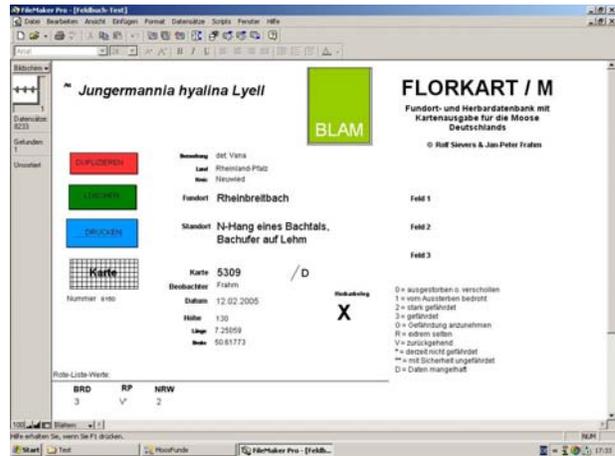


Fig. 2. Map output of the programme FLORKART

By pressing the button "map", a map window opens with a colour map of Germany, which shows the dots of all records. By filtering the database for a species, the records for a single species are displayed. Also combined filter operation are possible, e.g. with time periods, collectors pp.

The map can be zoomed to various scales. Printouts are possible by screenshots, which are loaded into a graphics program.

The distribution is generated by geographical coordinates, which seems to be the most appropriate method. Today, geographical coordinates can be taken from a GPS, or (in Germany) taken from digital maps on CD in the computer. This allows you to give the exact locality of rare or endangered species as exact as just a few meters, which makes more sense than giving a grid reference. (In Germany, the map grid is a large as 121 square kilometres...).

The next step will be to combine the GPS-signal with a Pocket PC, in which a species is clicked in a list and the coordinates are automatically added.

The Filemaker database can be compiled in either English, German, Dutch, Swedish, Italian or Spanish. The map window can be filled with any (georeferenced) base map. Therefore it would be possible to use this program in many countries. The layout can be designed for many purposes, and also the database structure can be adapted to special needs. The program called "FLORKART" will be introduced at the next meeting of the Bryological and Lichenological Working Group of Central Europe together with a lichen- version and will be available at a price of 50 Euro to cover the costs of developing the software and the programming.

COURSES

Eagle Hill seminars

Peatland environments, vegetation and development: 5-11 June 2005

Climate and landscape requirements for peatland development, peat accumulation and effects on wetland hydrology and chemistry, peatland types and plant communities, plant adaptations to peatland environments and nutrient regimes, lab and field studies. Dr. Ronald B. Davis, Prof. Emeritus, U. Maine. Research and teaching on forests, lakes, and wetlands of Maine and elsewhere for 45 years, with extensive ecological and paleoecological publication. Special interest in bog and fen hydrogeomorphic variation, distribution, and vegetation.

Bryophytes and bryophyte ecology 26 June – 2 July.

Learning about bryophytes from ecological viewpoint through field studies of bryophyte communities of coniferous and deciduous forests, bogs, and shoreline; review of field and lab identifications, methods of community analysis; project on Sphagnum-dominated bogs. Dr. Nancy G. Slack - Prof., The Sage Colleges (NY) is well-known for her publications on

bryophyte ecology, bogs and fens, epiphytes and species diversity.

Bryophytes and lichens for naturalists. 14-20 August

Introductory level seminar for people involved in natural history inventory, interpretation, and teaching; review of structure, life histories, ecology; major taxa, habitat preferences, collection and study techniques; building confidence for personal studies; no prior experience assumed. Dr. Fred Olday - Instructor, College of the Atlantic (ME), including courses on bryophytes and lichens; former research horticulturist for Maine wild lowbush blueberry industry.

For additional information contact; office@eaglehill.us [mailto:office@eaglehill.us]

MEETINGS

Conservation Ecology of Cryptogams: From theory to management

We would like to invite participants to the conference Conservation Ecology of Cryptogams, 22-26, November 2005. The conference is arranged as the final activity of BRYOPLANET, the Bryophyte Population and Landscape Analysis Network (www.eg.umu.se/bryoplanet). This network has been financed by the Nordic Research Board (www.nordforsk.org) since 2001 and over the years arranged a number of courses and workshops. Our aims have been to provide a platform for interaction among bryophyte ecologists from the Nordic and Baltic States and to offer training to PhD-students. The network has however maintained extensive contacts with scientists also outside the region.

Background

Traditionally conservation efforts have been directed to charismatic vertebrate species. However, recently there has been a growing awareness that in species rich groups as bryophytes, lichens, algae and fungi many species face serious threats. These threats include the full range from change in the physical environment due to climate change and pollution to the effects of habitat loss and fragmentation. This has motivated increased research on cryptogams in many ecosystems. It is thus timely to bring together researchers and discuss the lessons learned so far. Further, it is important for cryptogam ecologists to be updated on recent theoretical advancement in conservation ecology. The development of powerful tools to analyze the viability of populations and the inclusion of spatial considerations at the landscape level has strongly improved the link between ecological theory and conservation.

During the last decade new management practices have been implemented combining biodiversity protection with current land-use with the goal to obtain long-term sustainability. Nature conservation authorities have also

included the threats to cryptogam species as motives for both practical conservation and development of conservation strategies and policies. It is thus highly important to provide input to the research community from practitioners and policy-makers on the most stressing questions that they are struggling with.

Thus, the goal of the conference is to put cryptogam ecology into to the context of ongoing theoretical development in ecology and to explore the links between these lines of research and their application in applied conservation. Hopefully the conference will not only be an important summary of the state of the art, but also an opportunity to get a clearer view of the missing parts in the puzzle.

Invited speakers are Lars-Olof Björn (Department of Cell and Organism Biology, Lund University, Sweden), Anders Dahlberg (Swedish Species Information Centre, Uppsala, Sweden), Thomas Hallingbäck (Swedish Species Information Centre, Uppsala), Dan Luoma (Department of Forest Science, Oregon State University, USA), Mikko Kuusinen (Finnish Ministry of Environment, Helsinki, Finland), Bruce McCune (Department of Botany and Plant Pathology, Oregon State University, USA), Atte Moilanen (Metapopulation Research Group, University of Helsinki, Finland), Emma Pharo (School of Geography and Environmental Studies, University of Tasmania, Hobart, Australia), Christoph Scheidegger (Swiss Federal Institute for Forest, Snow and Landscape Research, Birmensdorf, Switzerland) and Jogeir Stokland (Norwegian Institute of Land Inventory, Oslo, Norway).

Sessions: Our aim is to cover research on bryophytes, lichens, algae and fungi in different ecosystems. Research on the level of population genetics, populations, communities or landscapes are welcome within all sessions. Each of the

following session will include key note presentations: Theory and biology, Threats, Evaluation and conservation efforts, Conservation and management.

Publication of proceedings: Initial contacts have been made with the journal Biological Conservation with the aim to produce a special issue of the journal devoted to the topic of the conference. Final decision is not yet made and depend on the number of potential contributions.

Venue: The conference will be held at Bispgården, a small village in SE Jämtland, close to the geographical mid point in Sweden (<http://www.ragundakonferens.com>). The conference centre has a long history as a forestry school,

dating back to the 1890's. The facilities are today used for various meetings and conferences. The place is newly renovated, fully equipped with video projectors, computer labs with Internet access and with nice accommodation and good food.

Transportation will be arranged from Sundsvall located 85 km from Bispgården. Sundsvall is easily reached either by plane or by the fast train connection from Stockholm/Arlanda.

Registration

Please send a preliminary registration to kristoffer.hylander@emg.umu.se

The 2005 ABLs meeting

The 2005 ABLs meeting will be held in Austin, Texas, from August 13-17. Abstracts for papers and posters were due on April 1. The "Call for ABSTRACTS" can be found at [http://www.botany.org/newsite/reporting/Call_for_Abstracts_\(2005\).pdf](http://www.botany.org/newsite/reporting/Call_for_Abstracts_(2005).pdf)

The general website is BOTANY 2005 [<http://www.botanyconference.org>] and you can register there

as well. There will be an all-day bryophyte and lichen field trip on Sunday August 14 led by Ann Rushing and Bob Egan and an ABLs breakfast Monday the 15th. Graduate students please note that travel funds are available for those presenting papers, as well as the opportunity to win the \$500 Sharp Award for the best paper presentation.

Nancy Slack, President-Elect, ABLs

The Blomquist Bryological Foray

The Blomquist Bryological Foray will be held October 14-16 in southwestern North Carolina in the Panthertown Valley area of the Appalachian Mountains. Cottages have been reserved at the Highlands Biological Station with prices posted at the Station's website: <http://www.wcu.edu/hbs/>.

For further information, please contact Molly McMullen, Cryptogamic Herbarium, Department of Biology, Box 90338, Duke University, Durham NC, 27708-0338, USA. Telephone: (919) 660-7300; e-mail mmcm@duke.edu.

XV Cryptogamic Botany Symposium, Madrid

This is to announce that the 2nd circular for the XV Cryptogamic Botany Symposium to be held in Bilbao (Spain) next September 21st-24th, 2005, is already accessible at the webpage (see under <http://www.ehu.es/SimposioBotanica>). This meeting is organised every two years (the last one was held in the University of Murcia, 2003) to discuss progress in the subjects of Algology, Mycology, Lichenology, Bryology and Pteridology. Participation from all countries will be most welcome.

Inscriptions for the Symposium will be opened until early September, but normal fee will be charged only until April 30th (230 euros; 140 euros for students), and from then on an additional charge of 20 euros will be applied. Deadline for accepting presentations is June 15th and these can be oral or poster. Please, check the website for further information. Patxi Heras & Marta Infante. E-mail: bazzania@arrakis.es

WEB NEWS

Checklist of Australian liverworts & hornworts

An up-to-date checklist of Australian liverworts and hornworts is now available online at http://www.anbg.gov.au/abrs/liverwortlist/liverworts_intro.html

Patrick M. McCarthy, Email: patrick.mccarthy@ea.gov.au

Briolatina

Briolatina is the bulletin of The Latin American Bryological Society (SLB). It is published electronically at <http://www.briolat.org>. Currently, Briolatina 52 (March 2005) is available including news and bibliography about bryologists and bryophytes.

THESES IN BRYOLOGY

Theses in Bryology 14

As reported in a previous issue of *The Bryological Times* (99: 17. 1999), the International Association of Bryologists has decided to begin a repository of bryological theses. These theses are being housed in the Library of The New York Botanical Garden. They are available via interlibrary loan. The NYBG Library online catalog (CATALPA) may be viewed at: <http://librisc.nybg.org/screens/opacmenu.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.

Bell, Neil. 1999. Generic limits in the Polytrichaceae: A study of *Polytrichum* and *Polytrichastrum* using molecular phylogenetic and electron microscopic techniques. M.S. thesis, University of Edinburgh, Edinburgh, Scotland. 114 pp. In English. Address of author: Plant Biology (Biocenter 3), P.O. Box 65, FIN-00014 University of Helsinki, Finland. E-mail: neil.bell@helsinki.fi.

This master's thesis examined the Polytrichaceae to see if molecular and SEM data would support current taxonomic interpretations. Using *trnL*, it was found that neither *Polytrichastrum* nor *Polytrichum* (sensu G. L. Smith) represent monophyletic groups. Furthermore, it appears as if *Pogonatum* is firmly rooted within *Polytrichum* sensu lato. The characters of the epiphragm and peristome that have been used to separate *Polytrichastrum* from *Polytrichum* under the light microscope are not discrete using electron microscopy. It is tentatively proposed to merge *Polytrichastrum* and *Pogonatum* into *Polytrichum* until a more robust phylogeny is available.

Bell, Neil Elliot. 2003. Phylogeny and character evolution in the Rhizogoniaceae and related pleurocarpous mosses. Ph.D. thesis, University of Reading, Reading, England. XVI + 239 + cxvii pp. In English. Address of author: Plant Biology (Biocenter 3), P.O. Box 65, FIN-00014 University of Helsinki, Finland. E-mail: neil.bell@helsinki.fi.

In this doctoral thesis, molecular sequence data from the chloroplast and mitochondrial genomes, and selected morphological characters, were used to investigate phylogeny in pleurocarpous mosses outside of the Hypnanae using cladistic techniques under both parsimony and likelihood optimality criteria. The taxa in the Rhizogoniaceae were shown to comprise the major part of a paraphyletic grade out of which the higher pleurocarps have arisen. This clade is provisionally termed the "hypnodendroid pleurocarps" and contains taxa currently placed in the Hypnodendraceae, Pterobryellaceae, Spiridentaceae, Racopilaceae and Cyrtopodaceae. *Aulacomnium* is resolved as sister to *Mesochaete* and *Calomnion* is sister to *Cryptopodium*. Investigations of selected morphological problems within the "basal" pleurocarps resulted in the development of a formula to express modular branching architecture in mosses, insights into the phylogenetic value of peristomial characters and vegetative propagules, and a reinterpretation of an Upper Cretaceous fossil in Burmese amber that could potentially represent an extinct taxon having an ancestral position within the rhizogoniaceous grade.

Belland, René Jean. 1981. Ecology and phytogeography of the mosses of the Bonne Bay region, western Newfoundland. Master's thesis, Memorial University of

Newfoundland, St. John's, Newfoundland, Canada. In English. xii + 133 pp. Address of author: Devonian Botanic Garden, University of Alberta, Edmonton, Alberta, Canada T6G 2E1. E-mail: rbelland@ualberta.ca. For this master's thesis, the moss flora of the Bonne Bay region of western Newfoundland, Canada, was investigated at 54 sites. These sites represented two physiographic regions, the coastal plain and the highlands, and four rock types, calcareous, mafic, ultramafic and acidic. Five lithophysographic regions combining rock type and physiography are defined. A total of 261 moss species (in 112 genera) are known from the region and comprise about 60% of the known moss flora for all of Newfoundland. Ten taxa are newly reported from the island province.

Belland, René J. 1984. The disjunct bryophyte element of the Gulf of St. Lawrence region: Glacial and postglacial dispersal and migrational histories. Ph.D. thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. xvii + 269 pp. Address of author: Devonian Botanic Garden, University of Alberta, Edmonton, Alberta, Canada T6G 2E1. E-mail: rbelland@ualberta.ca.

This doctoral thesis examines the bryoflora of the Gulf of St. Lawrence region of eastern Canada. The flora consists of 698 species. Of these, 267 (38%) are disjunct to this region from western North America, eastern Asia, or Europe. The Gulf of St. Lawrence and eastern North American distributions of the disjuncts were analyzed and their possible migrational and dispersal histories during and after the last glaciation (Wisconsin) examined. The disjuncts fell into 22 subelements supporting five migrational/dispersal histories or combinations of these: (1) migration from the south, (2) migration from the north, (3) migration from the west, (4) survival in refugia, and (5) introduction by man.

Brassard, Guy R. 1970. The mosses of northern Ellesmere Island: floristics and bryogeography. Ph.D. thesis, University of Ottawa, Ottawa, Canada. In English with English and French abstracts. xii + 246 pp. Address of author: 1270 Alloway Crescent, Ottawa, Ontario, K1K 3Z1 Canada. E-mail: gbrassar@nrcan.gc.ca.

This doctoral thesis presents a comprehensive revision of northern Ellesmere Island, Canada, mosses, based on extensive field studies and examination of previous collections. A total of 150 mosses are reported from the area. The bryogeography of the Queen Elizabeth Islands is considered. The results indicate that studies on the geographical distributions of arctic mosses, when combined with similar studies on vascular plants, provide data vital to a complete understanding of the glacial history of the Canadian High Arctic. Botanical evidence strongly supports the hypothesis that there existed a refugium on northern Ellesmere Island at least during the Wisconsin Glaciation.

Bridgland, James Parsons. 1986. The flora and vegetation of Cape Herschel, Ellesmere Island, N.W.T. Master's thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. xi + 149 pp. Address of author: unknown.

This master's thesis found at Cape Herschel, a small peninsula on the oceanic coast of eastern Ellesmere Island in northern Canada, a flora of 68 species of vascular plants, 121 species of mosses, and 44 species of lichens. Field typification of seven vegetation types were tested with cluster analysis and the seven types were divided into eleven plant communities. Diagnostic species were identified for each community using species constancy and mean abundance in each cluster. Environmental factors determining the distribution of plant communities at Cape Herschel were tested with direct gradient analysis and with topographic analysis. Moisture, snowcover, and substrate texture have the greatest influence, in that order, on the distribution of vegetation types at Cape Herschel. Altitude and aspect were also found to control the distribution of vegetation.

De Gezelle, Jillian Marie. 2003. The contribution of the *Porella/Nostoc* association to the nitrogen budget of an Oregon old-growth forest. Bachelor of Arts Thesis, Reed College, Portland, OR, U.S.A. [vii] 32 pp. In English. Address of author: 34-27 32nd St., 2nd floor, Astoria, NY 11106. E-mail: idegezelle@aol.com.

In this bachelor's thesis, the symbiosis of one of the most common epiphytic hepatics in the Pacific Northwest, *Porella navicularis*, and the cyanobacterial colonies of *Nostoc* that it harbours are investigated in terms of the contribution of fixed nitrogen in an old-growth stand of *Pseudotsuga menziesii* in the Mt. Hood National Forest. The forest was found to contain an average of at least 69.8 kg/hectare of *P. navicularis*. Acetylene reduction was highest at times of the year having a combination of seasonally high precipitation levels and mild temperatures. It dropped significantly in the summer and winter months due to dehydration caused by freezing in the winter and drought conditions in the summer. A yearly contribution of 0.015 kg N/hectare by the *Porella/Nostoc* association was estimated for the region, but that amount is suspected to be an underestimate.

Favreau, Marc. 1987. Phytogeography of the bryophytes of sugar maple forests in Gaspé Peninsula, Québec. Master's thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English with English and French abstracts. ix + 105 pp. Address of author: unknown.

This master's thesis examined the bryophytes in the Gaspé Peninsula of Québec, Canada, that grow in forests dominated by *Acer saccharum*. These forests occur as discrete patches within the predominant coniferous forest, and form a northern limit of the North American Deciduous Forest Biome. Field studies revealed that the bryophyte vegetation is similar to that of more continuous sugar maple forests located in southernmost Québec. The flora included 96 mosses and 18 liverworts. Four North American distribution groups were defined. Although the bryoflora is typical for the biome, the habitat harbours a large number of species of boreal affinity.

Fife, Allan James. 1975. The effects of atmospheric fluoride pollution on bryophyte communities of ombrotrophic bogs at Long Harbour, Newfoundland. Bachelor's thesis, Acadia University, Wolfville, Nova

Scotia, Canada. In English. vi + 71 pp. Address of author: Landcare Research New Zealand Limited, P.O. Box 69, Lincoln 8152, Lincoln, New Zealand. E-mail: fifea@landcare.cri.nz.

This undergraduate thesis described the ecological effects of atmospheric fluoride pollution on bryophyte communities of boreal ombrotrophic peatlands at Long Harbour on the Avalon Peninsula, Newfoundland, Canada. The objective of the study was to determine qualitatively and quantitatively the effects of the pollution gradient on bryophyte community structure. Percentage cover value and percentage frequency statistics were used to make inferences concerning the vitality and competitive ability of species. Changes in species richness and abundance were stressed.

Hancock, James A. 1973. The distribution, ecology, and life history of *Buxbaumia aphylla* Hedw. in Newfoundland. Master's thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. vii + 104 pp. Address of author: unknown.

This master's study found 75 localities in southeastern Newfoundland, Canada, for *Buxbaumia aphylla*. They were mostly in open *Kalmia* heaths on this, acid (pH 5) humus. The species' density, associated plant species, and fire succession were recorded at some sites where the species was particularly abundant. The mineral element content of plant tissues and substrate were analyzed and represent the first data for bryophyte sporophytes. Almost all elements found in gametophytes were found in the sporophyte of *B. aphylla*. Permanent plots enabled observations to be made on annual production of sporophytes and on their development and maturation. Sudden frosts often resulted in high mortality of capsules. The new sporophytes appear in mid-September and mature the following June. Spore dispersal is in mid-June. Protonemata of *B. aphylla* were maintained in culture and although no sex organs were produced, possible asexual propagula were observed. It appears as if the protonemata of *B. aphylla* are perennial and produce new sporophytes each September.

Hedderson, Terry A. 1984. The presence and importance of the northern moss element in northernmost Newfoundland. B.S. (Honours) thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. ix + 83 pp. Address of author: University of Cape Town, Private Bag, Rondebosch 7701, Western Cape Province, South Africa. E-mail: thedders@egs.uct.ac.za.

This undergraduate thesis reports that there are 34 species that have northern distributions in Newfoundland, Canada, and 32 of these occur in the northernmost part of the island where they show a high degree of edaphic specificity. This northern element is mostly restricted to the coastal tundra and does not occur in forest habitats or in ultramafic barrens. The distribution patterns of these northern elements is documented. It is possible that northernmost Newfoundland has been a refugium for these high-arctic mosses.

Hedderson, Terry Albert. 1987. The mosses of Terra Nova National Park, eastern Newfoundland; a bryofloristic analysis and interpretation. Master's thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. x + 131 pp. Address of author: University of Cape Town, Private Bag, Rondebosch 7701, Western Cape Province, South Africa. E-mail: thedders@egs.uct.ac.za.

This master's thesis looks at the moss flora of Terra Nova National Park. A total of 210 species are reported. Of these, 82% are widespread in Newfoundland. A small number (4 species) appear to belong to a previously unrecognized northeastern element of the Newfoundland flora. The majority of the flora (ca. 71%) is of boreal affinity. Habitat preference of the flora is analyzed as well as the dispersal patterns of the species.

Jägerbrand, Annika Karin. 2005. Subarctic bryophyte ecology: phenotypic variation and responses to simulated environmental change. Ph.D. dissertation, Göteborg University, Göteborg, Sweden. In English with Swedish abstract. 34 pp. + 6 papers (details below). Address of author: Botanical Institute, Plant Ecology, Box 461, Göteborg University, S-405 30 Göteborg, Sweden. E-mail: annika.jagerbrand@botany.gu.se.

In this doctoral dissertation, the author describes the patterns of species richness and vegetative performance between two vegetation types to reveal any unfavourable effects of a thick moss carpet, and to what extent the phenotypic variation in two circumpolar bryophytes, *Hylocomium splendens* and *Racomitrium lanuginosum*, vary at different spatial scales. Furthermore, at a subarctic-alpine site, she examined how a simulated environmental change (increased temperature and/or nutrient availability) may affect the bryophytes, the cryptogamic diversity, and the plant communities. Because the cover of shrubs and trees in subarctic ecosystems are predicted to increase in response to climatic warming, the author also studied the effects of shade on the two bryophytes. Most of the field work was carried out in Iceland, and some in northern Sweden. As a result of the data, the author speculates that climatic change is already altering the plant communities in northern Sweden.

Kumar, G. V. 2002. Mosses of Shervaroys: A taxonomic and ecological study. Ph.D. thesis, Bharathidasan University, Tiruchirappalli, India. In English. 128 + 12 pp. + 74 colour figures (unpaged). Address of author: Department of Plant Science, Bharathidasan University, Tiruchirappalli – 620024, Tamil Nadu, India. E-mail: not known.

This doctoral thesis records 69 species in 41 genera of mosses from Shervaroys, an important hill range in Tamil Nadu, Eastern Ghats. The species are keyed, described, and illustrated photographically. Of these, 27 are newly recorded for South India. The study revealed that mosses are useful as bioindicators of degraded habitats in Shervaroys.

Mitchell, Gregory E. 1975. Bryophyte ecology of three stream gorges in western Newfoundland. B.S. (Honours) thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. vii + 79 pp. Address of author: unknown.

This master's thesis examined bryophyte frequency and cover along transects within three stream gorges in western Newfoundland, Canada, showing some relationship with certain edaphic, climatic, and tree canopy factors. The three

transects were perpendicular to the streams and traversed the stream beds and banks. The environmental factors investigated at each meter along these transects included soil pH, soil temperature, LFH layer depth, nature of the substratum, tree canopy, snow cover, and precipitation. Bryophytes were sampled every half meter. Two of the sites were in typical boreal forest and one was in a deciduous forest. Light regime and its associated factors (temperature and humidity) seemed to have a greater effect on the bryophyte vegetation than did most other factors that were investigated.

Vitt, Dale Hadley. 1970. The family Orthotrichaceae (Musci) in North America, north of Mexico. Ph.D. dissertation, University of Michigan, Ann Arbor, MI, U.S.A. In English. xii + 462 pp. Address of author: Department of Plant Biology, Southern Illinois University, Carbondale, IL 62901-6509, U.S.A. E-mail: dvitt@plant.siu.edu.

This doctoral dissertation treats the Orthotrichaceae of the United States and Canada, recognizing 65 taxa in eight genera. The largest genus, *Orthotrichum*, was published as volume one of Bryophytorum Bibliotheca. Also treated are *Uloa*, *Zygodon*, *Drummondia*, *Macromitrium*, *Groutiella*, *Macrocoma* and *Schlotheimia*. Each taxon is treated by a complete list of synonym, a taxonomic diagnosis, and a description of the habitat and distribution. The species are fully illustrated and mapped.

Weber, David P. 1976. The bryophytes of Cataracts Provincial Park, Newfoundland. Master's thesis, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. In English. viii + 85 pp. Address of author: unknown.

This master's thesis examined the bryoflora of a provincial park on the Avalon Peninsula of Newfoundland, Canada, and its vicinity. The area investigated included forests, bog, heath, and a narrow river gorge with waterfalls. Each bryophyte habitat is fully described and includes an annotated list of species. Within ca. 13 hectares, 121 species of mosses and 63 species of liverworts were found.

Zündorf, Hans-Joachim. 1986. Die Laubmoose Cubas, eine pflanzengeographische Analyse. Ph.D. dissertation, Friedrich-Schiller-Universität, Jena, Germany. In German. 90 pp. + 29 Taf. + 137 pp. Anhang. Address of author: Herbarium Haussknecht, Institut für Spezielle Botanik der Friedrich-Schiller-Universität Jena, Schlossgasse, D-07737 Jena, Germany. E-mail: H.J.Zuendorf@uni-jena.de.

This doctoral thesis examines the previously published records of the Cuban moss flora. On this basis, 380 moss species are recognized, in 147 genera and 43 families. For each species, the distribution within Cuba is provided. For the species, global distribution patterns are provided. An extensive appendix provides a documented checklist of the mosses of Cuba.

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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

2005

June 26 - July 2. Bryophytes and Bryophyte Ecology. At the Humboldt Field Research Institute, Steuben, Maine Learning about bryophytes from ecological viewpoint through field studies of bryophyte communities of coniferous and deciduous forests, bogs, and shoreline; review of field and lab identifications, methods of community analysis; project on Sphagnum-dominated bogs. Instructor: Dr. Nancy G. Slack, Russel Sage College, NY. For more information, contact the Humboldt Institute. e-mail: office@eaglehill.us. website: <http://www.eaglehill.us>

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).

July 23 – 26: MOSS 2005 meeting organized by Prof David Cove. The meeting is likely to feature the first look at the draft genome sequence of *Physcomitrella*. Web address: <http://biology4.wustl.edu/moss/moss2005/>

August 12 – 17: American Bryological and Lichenological Society will meet at the Austin Hilton, Texas as part of Botany 2005, the annual meeting of the Botanical Society of America.

August 14 – 20. Bryophytes and Lichens for Naturalists Emphases. At the Humboldt Field Research Institute, Steuben, Maine. Introductory course for people involved in natural history inventory, interpretation, and teaching. Instructor: Dr. Fred Olday (College of the Atlantic, ME). For more information, contact the Humboldt Institute. e-mail: office@eaglehill.us. website: <http://www.eaglehill.us>

August 26 - 28. Bryological Society of Japan. The 34th Annual Meeting. Fukui General Botanic Garden, Fukui. Information & registration: a-koukyou@town.echizen.fukui.jp

September 16 - 18. The 30th Andrews Foray at the Delaware Water Gap National Recreation Area, northeast Pennsylvania. Information & registration: <http://www.cs.rpi.edu/~ingallsr/andrewsforay.html> or Bill Olson at bolson@maserconsulting.com

September 18 – 22. British Bryological Society. Annual General Meeting and Symposium. Bangor, Wales. Information: consult website of the BBS

2006

April 28 – 30. Blomquist Bryological Foray. Contact person: Molly McMullen, Cryptogamic Herbarium, Department of Biology, Box 90338, Duke University, Durham NC,

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