

# The Bryological Times

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Newsletter of the International Association of Bryologists

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The International Association of Bryologists (IAB) is an organisation open for all interested in bryophytes. For membership, contact Geert Raeymaekers or Blanka Shaw. Visit the IAB web site: <http://bryology.org> for further information. The Bryological Times is issued 3 to 4 times per year.

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Dear bryologists,

As your new president, I would like to thank the former president, Rob Gradstein, and all the council members who over the past years worked hard to encourage international collaboration among bryologists, to organize the IAB-meetings, and to disseminate bryological information. The IAB Council met in Vienna last August, during which it decided not to increase the membership fee and to offer students a one-year free membership. One of my priorities is to further improve our communication by expanding our website so that it can function as an information hub to the wide range of non-bryologists that need bryological information in education, conservation, and other applied sciences. Then, as the next IAB meetings will take place in Kuala Lumpur, Malaysia (2007) and Capetown, South Africa (2009), I hope that these can be an opportunity to encourage new members from Asia and Africa to join the IAB.

Many more agencies, at least in the USA, are taking an interest in bryophytes. IAB needs to be at the forefront in providing both expertise and education for these groups. I have invited several people to develop specific websites for educational purposes and I would welcome volunteers to develop the text for educational and otherwise useful web pages and to provide images that we may use. These can be sent to me <jmglime@mtu.edu> or directly to Uwe Drehwald, our webmaster <uwe@drehwald.info>. I would also welcome interactive taxonomic keys that can be placed on the web, especially for the less known parts of the world where comprehensive flora volumes do not exist. Your suggestion for web needs and IAB activities are always welcome.

Janice M. Glime  
IAB President

IAB



**VISIT THE WEBSITE OF THE IAB**

**[HTTP://BRYOLOGY.ORG](http://bryology.org)**

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## **OBITUARY**

### **Zane B. Carothers (1924 – 2005)**



Zane Carothers, a pioneer in ultrastructural bryophyte spermatogenesis, died February 3, 2005. He was well known as a plant anatomist/electron microscopist and published numerous critical papers on comparative studies of spermatozooids and on the details of spermatogenesis in bryophytes. While most of his contributions centered on blepharoplast structure in the spermatid of thalloid liverworts, his studies also included several hornworts, leafy liverworts and mosses. His publications included an I.A.B. contribution, with his colleague Ann Rushing, on the comparative morphology of the bryophyte blepharoplast (*Advances in Bryology* 3: 95-135, 1988). He co-authored, with J. G. Duckett and C.

C. J. Miller, the chapter "Gametogenesis" in R. M. Schuster's 'New Manual of Bryology, Vol. 1: 232-275,' published by the Hattori Botanical Laboratory, Nichinan (Japan) in 1983. A complete chronological list of the bryophyte publications of Zane Carothers can be found in a necrology published in the *Bryologist* (R. E. Stotler et al., *Bryologist* 108: 298-300. 2005).

A Zane B. Carothers Memorial Fund has been established at the Montgomery Botanical Center in Coral Gables, Florida, U.S.A. There were several reasons for this decision, not the least of which was that Zane was fascinated by cycad sperm and M.B.C. is dedicated to cycad research. For more information about this fund, contact Ann Rushing <Ann\_Rushing@baylor.edu>.

RAYMOND E. STOTLER, Department of Plant Biology, Southern Illinois University, Carbondale, IL 62901-6509 U.S.A. The New IAB-Council

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## **IAB NEWS**

### **IAB Conference Vienna 2005: report of the Ecophysiology Symposium.**

The IBC provided Gerhard Zotz (Basel) and Wolfgang Wanek (Vienna) the possibility to organize a symposium on the **Ecophysiology of bryophytes**. The key note was given by Michael C. F. Proctor (Exeter) who elegantly described the many different ways and the scale dependency of how bryophytes adapted to life on land and how they learned to cope with the major environmental constraints, lack of water and excess of water, as opposed to higher plants. Cornelis A. M. Hooijmaijers (Auckland) reported on the possible protective role and composition of an accessory pigment in desiccation tolerance in two colour morphs of a leafy liverwort. A related theme was covered by Maria Arróniz-Crespo (Logrono), the response of an aquatic liverwort to natural gradients in UV and the function of UV-absorbing compounds in its strategy of adaptation. The power of an

integral canopy model to study 'eco'physiological tradeoffs in architecture, incorporating canopy roughness to scale the main C and H<sub>2</sub>O related processes in mosses, was demonstrated by Steven K. Rice (New York), while Mari Tobias (Tartu) nicely demonstrated the many kinds of acclimations of mosses to within-canopy light gradients and how the light gradients are shaped by the canopy architecture. A detailed study on seasonal variations in storage substances and their localisation in bryophyte tissues was then presented by Belén Estébanez-Pérez (Madrid) to resolve the problem of selective predation by slugs of young moss sporophytes.

Wolfgang Wanek: [wwanek@pflaphy.pph.univie.ac.at](mailto:wwanek@pflaphy.pph.univie.ac.at)

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### **IAB-Council meeting report, Vienna 2005**

The IAB Council met at the IBC 2005 conference and IAB symposium on the 20<sup>th</sup> of July, 2005. It was an important conference at which the outgoing council handed on the torch to the new council. Rob Gradstein, outgoing president, welcomed the new council members. The other outgoing members are Dale Vitt (who was secretary/treasurer of the society between 1987 and 2005!), Barbara Crandall-Stotler, Efrain de

Luna, Royce Longton, Hironori Deguchi, and Zen Iwatsuki. The new president, Janice Glime, and the new council were already presented in last issue of the *Bryological Times* ( 116, June 2005)

- The current membership of the IAB is 573, a 2% increase since 2004. Whereas most members are from Europe and North America, there is a

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serious lack of African and S-American members.

- The IAB-membership is kept informed through three channels. (1) Bryonet: Janice Glime reported that there are currently 754 members from 46 countries; she archives the messages in monthly files and most are archived per topic. Janice Glime discourages people to send attached files as many Bryonet members have only limited space mailboxes. (2) The IAB Website. Uwe Drehwald reported that currently only 10% of the space is used, so there is sufficient space available for more information. The IAB-website will be further developed over the next year. (3) Geert Raeymaekers reported that since the last meeting in Venezuela (2004), five newsletters have been published. As copying and mailing costs are very expensive, the BT will from now on only be available through the IAB website with user ID and password. Members who still want to receive the BT by regular mail will have to cover to copying and mailing costs of 10 USD.
- T. Hallingback reported the results of a questionnaire to assess the bryoflora conservation in various regions worldwide. (a copy of the report can be obtained from T. Hallingback)
- The next IAB meeting will take place between 20 and 28 July 2007 and will be organized by Prof. Dr. Haji of the University of Malaya). The Council also decided to hold the 2009 meeting in

South Africa and the 2011 meeting will take place during the IBC 2011 in Melbourne, Australia.

- As the IAB published in the past the "Advances in Bryology" to provide bryologists articles with the state of the art on bryological research, Dale Vitt will examine the possibilities to create a series of "reviews in bryology" to target the non-bryologist and to support bryological education.
- The Council decided to leave dues at \$11.00 (US) for the next two years and to revisit dues structure in 2007. Students are offered a one-year free membership. However, as indicated above, members wishing to receive the BT by regular mail should pay an additional amount of 10 USD.

As outgoing president, Rob Gradstein is still a member of the IAB-Executive Committee, which is further made up by the president, Janice Glime, the secretary and treasurer, Geert Raeymaekers and Blanka Shaw, and two vice presidents, Claudio Delgadillo and Benito Tan.

Geert Raeymaekers

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## **IBC 2005 Post-conference bryological excursion**

### **Bogs and Bryophytes in the Central Alps of Austria: 24-28 July 2005.**

After the IBC 2005 in Vienna, Gert Michael Steiner and Robert Kirsai organised a wonderful bryological excursion to the "Bogs and bryophytes in the Central Alps of Austria." Herald Zachmeister, who also prepared the excursion could not accompany us.

The excursion took place between the 24<sup>th</sup> and the 28<sup>th</sup> of July 2005 and was attended by 15 participants from 11 countries. We left for the Allgau area, one of the areas with the highest concentration of bogs and fens in Austria and an area where Gert has been actively involved in the protection and restoration of bogs and fens. On the way to the Allgau, we had a short stop at the Gollinger Waterfall, where we spotted very rare species on dead wood and calcareous rocks such as *Brotherella lorenziana*, more common species as *Hookeria lucens* and several *Lophozia* species as e.g. *Lophozia incisa* and *L. wenzelii*. On the way to Tamsweg, Gert really wanted to show us the very peculiar "condensation mire" at Schladming. Here, along the Untertal, a continuous carpet of *Sphagnum capillifolium* has developed on a steep scree of boulders of larger and smaller sizes. Unique air currents maintain the right conditions for a

peatmoss carpet: during the summer cold air leaves the scree at the lower part and cools the scree surface, whereas during winter relatively warm air leaves the scree at the upper part and aspirates cool air inside the scree.



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It was late when we arrived at the Gasthof Knappenwirt in Tamsweg, clearly a place where many botanists already had experienced the Austrian hospitality. From here in the center of the Allgäu, we had one-day excursions to the range of bogs and fens of this part of the Central Alps.

One entire day was spent in the Überling mires of the Lower Tauern. Here, the former Mur glacier formed parallel to the side moraines, terraces with shallow depressions in which mires developed. We found typical boreal species as *Betula nana*, *Trientalis europaea* and *Sphagnum fuscum*. We also visited the Gstreikel Moos, a complex of mountain pine bogs, transitional mires and a large quaking fen area.

That evening, we had a copious dinner during which Vicky Krommer introduced us to the "art of Knödel" making!

The next days several other interesting mire complexes were programmed, such as e.g. the "Saumoos;" the Lüdlehutmoor or the Dürreneck-See Moor. The "Saumoos" became degraded when by the end of the 19<sup>th</sup> century a railroad connected this area to the main cities. Hence, farmers shifted from arable to pasture land and litter demand in the stables increased; at first forest litter was used, which was then replaced with peatmoss litter. This destroyed the hydrology, which is now being restored. Here we found good *Sphagnum subnitens*, with its typical salmon-colour. The next stop was the Dürreneck-See Moor, a large paludification mire, surrounded by sloping fens and near pristine spruce forests. We finished the visit of the Allgauer mires with a short stop at the "Seetaler See." In the past this area was used to transport timber, but after a dam was constructed this part of the valley evolved into a large quaking fen with several small sedges.



The excursion focused the mire types of Central Alps, the restoration experiments and efforts of Gert Steiner's team of the University of Vienna, the WWF and the local forest authorities. Yet, Gert and his team gave us all the possible opportunities to explore all plants (and in particular the *Carex* species for Marsia Waterway and Martin Lechowicz) of this part of the Alps. We all enjoyed the pleasant informal conversations in the evenings and the wonderful traditional food and beer.

Thanks to the organizers for this unique field experience.

The excursion was further attended by: Rob Gradstein, Ana Séneca, Lars Söderstrom, Christoph Dobes, Urban Gunnarsson, Geert Raeymaekers, Olga Galanina and Wynne Miles.

For the Überling Ramsar mire sites, consult also the Ramsar Data Base at:  
<http://www.wetlands.org/rsdb/>

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## New Bryological Times' country contacts

The editor is pleased to announce two new country contacts for the USA and Canada. You may be contacted by either Matt or Michael to contribute to the the Bryological Times. Or take the initiative yourself and report to the country contacts any relevant bryological news.

### Matt von Konrat

Matt Von Konrat is Collections Manager of bryophytes and pteridophytes at the Field Museum, Chicago, U.S.A and works closely with Curator, Dr. John J. Engel. Von Konrat assumed his present position in 2001 after completing his Ph.D from the University of Auckland, New Zealand. His research interests include the conservation and systematics of liverworts, with a primary focus on the large liverwort genus *Frullania*. His interests also extend to the use of multimedia tools to aid plant identification

and promote dissemination of knowledge to a broader audience, including for educational use. Matt can be reached at [mvonkonrat@fieldmuseum.org](mailto:mvonkonrat@fieldmuseum.org).

### Michael Simpson

Is nearing the end of his PhD at the University of Alberta under the supervision of Dr. Mark Dale. His research focusses on secondary succession in forest floor bryophyte communities in boreal white spruce forests in Alberta. Michael is also interested in plant community ecology in general, conservation and other environmental issues, and bioethics. While living in England, he completed a Masters degree focussing on the philosophy and sociology of ecological science. In his spare time, Michael enjoys writing about topics as diverse as bryology and TV and film. He can be reached at [michael.simpson@ualberta.ca](mailto:michael.simpson@ualberta.ca) or at 1-403 837 6747 and his web page:  
[www.ualberta.ca/~mjs14/mjshome.h](http://www.ualberta.ca/~mjs14/mjshome.h)



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## **PERSONAL NEWS**

**The editor greatly welcomes contributions from bryologists to this column!**

**Kathrin Feldberg** is a Ph.D. student working under the direction of Dr. Jochen Heinrichs in the Department of Systematic Botany at the University of Göttingen, Germany. She is currently working on molecular phylogenies of *Herbertus* and *Syzygiella/Jamesoniella*. The project also includes a taxonomic revision of *Herbertus* and *Syzygiella* for Flora Neotropica, as well as investigations on the phylogenetic biogeography of both genera. Kathrin is interested in achieving recently collected exchange material of both genera to be included in the molecular investigation. E-Mail: kfeldbe2@uni-goettingen.de.

**Jörn Hentschel** 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, Dr. Harald Schneider and Prof. Dr. Robbert Gradstein. He is currently working on a molecular phylogeny of Frullaniaceae based on worldwide taxon sampling, using nuclear and chloroplast markers. Based on the molecular phylogeny, the biogeographical

evolution of this large liverwort family with cosmopolitan distribution will be explored using divergence time estimates and the fossil record. A further objective of this study is the reconstruction of the diversification of the Porellales. This project is funded by the German Research Foundation (DFG grant HE 3584 / 2 to JH, HS and SRG). E-Mail: jhentsc@uni-goettingen.de.

**Rosemary Wilson** is a Ph.D. student working under the direction of Prof. Dr. Robbert Gradstein, Dr. Jochen Heinrichs and Dr. Harald Schneider in the Department of Systematic Botany at the University of Göttingen, Germany. She is currently working on a molecular phylogeny of Lejeuneaceae using nuclear and chloroplast markers based on a worldwide taxon sampling. She plans to finish her Ph. D. in the Autumn of 2006. The project also includes studies of the genera *Bryopteris* and *Marchesinia* which encompass aspects of biogeography and character evolution. The project is funded by the German Research Foundation (DFG grant GR 1588/9 to SRG and JH). For further information please visit the homepage of the department: [www.sysbot.uni-goettingen.de](http://www.sysbot.uni-goettingen.de). E-mail: [rwilson@uni-goettingen.de](mailto:rwilson@uni-goettingen.de)

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## **RESEARCH NEWS**

### **Guide to bryophytes of sub-Saharan Africa.**

A 'Guide to bryophytes of sub-Saharan Africa' (GBA) was started some time ago, but seemed to stall with about 60% completed. In order to move forward, the existing contributions have been put together in a website to provide an opportunity for them to be reviewed (and updated if necessary), and for outstanding contributions to be completed. This has already produced results, and this note is to invite all bryologists to view and comment

on what has been produced. The website is at: [www.GBAonline.org.uk](http://www.GBAonline.org.uk)  
Please send any comments to Brian O'Shea at [brian@brianoshea.co.uk](mailto:brian@brianoshea.co.uk). We also have the opportunity to go beyond GBA by adding keys to species, which would make the website a much more useful tool, and any offers would be gratefully received.

Brian O'Shea; <http://www.brianoshea.co.uk/>

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### **Dead wood and bryophytes.**

Péter Ódor. 2003. The importance of coarse woody debris for bryophyte vegetation of semi-natural beech forests. Ph. D. thesis. Eötvös Loránd University, Budapest, Hungary. In English with English and Hungarian abstracts and summary. 135 pp. Address of author: Dept. of Plant Taxonomy and Ecology, L. Eötvös University, H-1117 Budapest, Pázmány P. stny. 1/C. The full text of the thesis is downloadable from the web site: <http://ramet.elte.hu/~ramet/staff/Op/thesis.html>

This thesis consists of five investigations concerning the bryophyte vegetation of semi-natural beech forests and the effects of coarse woody debris (CWD) on it. The bryophyte flora and vegetation of Kékes North Forest Reserve, Hungary, and the substrate specificity and interspecific relationships of the species is described. The presence of CWD not only provided habitat for dead wood inhabiting bryophytes, but also resulted in diverse epilithic bryophyte assemblages on outcrops rich in humus. The diversity of bryophytes and the quantity and

quality of CWD of the reserve were compared with five neighbouring managed stands of different ages. The bryophyte vegetation was richer in the near-natural stands, which contained larger amounts and variation of dead wood, than managed stands. The greatest difference was found in the diversity and abundance of dead wood inhabiting hepatics. The sensitivity of bryophyte and vascular vegetation investigated to the management induced stand structural differences. In the case of both organism groups the differences are more pronounced at spatial heterogeneity than species richness and diversity functions. The diversity of bryophytes is determined by the diversity and spatial pattern of potential substrate types, while vasculars are more sensitive to light conditions. The preference of bryophytes for certain decay phases in dead wood were modelled including the effects of habitat type and log size. In ravine-like forests more species are found and regionally rare epixylic species (mainly liverworts) are limited to these forests. The species were classified into

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four categories on the basis of their preference to decay phases using regression analysis: epixylics, indifferent species, wide tolerant epixylics and epiphytes. Generally the occurrence probabilities of species increase with log size, but its effect is more important in zonal stands than in ravines. Based on observed species responses a simplified scheme for bryophyte succession on dead

wood has been developed. These studies emphasise for forest managers that the diversity of bryophytes considerably depends on the quantity and quality of dead wood.

Péter Odor (email : [ope@ludens.elte.hu](mailto:ope@ludens.elte.hu))

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## Transfer of metals from the atmosphere to mosses

Sébastien Leblond reports on his multi-disciplinary study on the transfer of metals from the atmosphere to mosses (*Scleropodium purum* (Hedw.) Limpr.: monitoring in a rural area (Vouzon, France)

Owing to their morphological and physiological properties, mosses are widely used as sentinels of atmospheric metallic pollution (their lack of root system and their lack of well developed vascular system mean that atmospheric deposition is their main source of water and nutrients). However, the real value of atmospheric deposition cannot be estimated directly from moss analysis. In order to convert moss concentrations into bulk deposition rates, several parameters have to be studied (uptake and retention efficiency of an element in moss, annual increase of biomass); such was the goal of my research.

This processes' study is carried out (1) in a rural area (Vouzon, in the centre of France), far away from any pollution sources, (2) during one annual cycle (October 2001 - 2002) and (3) focuses on one moss species only: *Scleropodium purum* (Hedw.) Limpr.

At the species level, a temporal monitoring of the morphological (shoot elongation and biomass production) and physiological (chlorophyll degradation) development of the plant provided additional knowledge about *Scleropodium's* biology. A mean elongation of 2.2 cm.year<sup>-1</sup> of the main stem, and a biomass production per area of 103.7 ± 29.5 g.m<sup>-2</sup>.year<sup>-1</sup> were measured.

A characterization of the various sources of error (from sampling to analysis) has shown a low variability of moss sampling, thus validating the protocol used. Regular monitoring of the total bulk deposition and of the element concentrations in mosses made it possible to

compare the annual deposition rate with the value estimated from the mosses. For each element, a relative uptake and retention efficiency in moss has been calculated and is arranged in the following order: Mn > K > P > Ca > Hg > Mg = Zn > Cu > Li > Sr > Ba > V > Pb > Fe > Na = Al > Si, where Mn deposition is overestimated, whereas Si deposition is underestimated when using mosses.

Various mechanisms came to light during the study, which have an influence on metal concentrations in moss plants and could therefore explain the differences observed between real and estimated deposition.

(1) A specific bio-concentration of "nutrients" (Na, Mg, P, K, Ca, Mn, Cu, Zn, Sr) is observed in the youngest tissues of the plant. Internal redistribution of elements between moss segments may explain this distribution pattern.

(2) The physico-chemical state (dissolved, particulate) of an element could influence its capture by, and retention within the moss. It appears that particulate deposition is not captured as efficiently as soluble input.

(3) Temporal variations, and particularly seasonal differences, of bulk deposition rates and element concentrations in moss are significantly correlated. This means that this moss species does not integrate atmospheric deposition but rather reflects a state of equilibrium with its surrounding environment.

Sébastien Leblond. Laboratoire Interuniversitaire des Systèmes Atmosphériques, Université Paris 7 et Paris 12, UMR CNRS 7583, 61 avenue du Général de Gaulle, 94010 Créteil, France and Muséum National d'Histoire Naturelle, Equipe bryologie, USM 505, Case 39, 57 rue Cuvier, 75005 Paris, France

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## Research funding

As a result of new funding from the U.S. National Foundation's PEET Program (Partnerships for Enhancing Expertise in Taxonomy), we have support for a graduate student to work on our project dealing with systematics of the moss family, Daltoniaceae. The work will include some mixture of monographic studies, phylogenetic analyses, phylogeography, and possibly population genetics. Funding includes support for field work. The project is collaborative between Duke University (Jon Shaw) and the New York Botanical Garden (Bill Buck), but the student will be enrolled in the graduate program at Duke.

If you are interested, or if you know an enthusiastic undergraduate who is interested in pursuing graduate work in moss systematics, please contact me. Application procedures will be through Duke's graduate program; applications should be submitted in the Autumn of 2005 (deadline at the end of December), 2006 admission. Preference will be given to U.S. citizens (or permanent residents) but applications from others are welcome.

Application information is available on Duke's website: <http://www.duke.edu/>

Jon Shaw

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## COUNTRY REPORTS

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### Bryological News from China

#### Publications

The books of Flora Bryophytorum Sinicorum in Chinese consists of 12 volumes, volumes 1-8 dealing with mosses and volumes 9-12 dealing with liverworts and hornworts. Up to now, 7 volumes have been published by Science Press in Beijing. These are vol.1 Sphagnales, Andreaeales, Archidiales, Dicranales by Gao Chien (ed. in Chief) (1994); vol. 2 Fissidentales, Pottiales by Gao Chien (1996); vol. 3 Grimmiiales, Funariales, Tetrarhizales by Li Xingjiang (2000); vol. 6 Hookeriales, Hypnobryales by Wu Pan-Cheng (2002); vol. 7 Hypnobryales by Hu Ren-liang and Wang You-fang (2005); vol. 8 Hypnobryales, Buxbaumiales, Polytrichales, Takakiales by Wu Pan-cheng and Jia Yu (2004) and Vol. 9 Takakiales, Calobryales, Jungermanniales by Gao Chien (2003). Four volumes of Moss Flora of China, English Version, namely, vol. 1 Sphagnaceae—Dicranaceae by Gao Chien & M. Crosby (ed. in chief) (2001); vol. 2 Fissidentaceae—Ptychomitrium by Li Xing-jiang and M. Crosby (2001); vol. 3 Grimmiaceae—Tetrarhizaceae by Gao Chien and M. Crosby (2003) and vol. 6 Hookeriaceae—Thuidiaceae by Wu Pan-Cheng and M. Crosby (2002) have been published by Science Press (Beijing) and Missouri Botanical Garden Press (St. Louis). Book of Illustrations of Bryophytes of China by Gao Chien and Lai Ming-jou (ed. in chief), in which 1308 species, 494 genera and 118 families of Chinese bryophytes are described and illustrated (1313 pages), was published SMC Publishing Inc., Taipei (Taiwan) in Chinese in 2003.

#### Awards

The project of Studies on taxonomy and flora of Chinese bryophytes finished by Li, Xingjiang et al., Kunming Botanical Institute, Academia Sinica, received the first class award of Nature Science of Yunnan Province, China in 2002. The project of Studies of Biodiversity of Chinese bryophytes finished by Gao Chien and Cao Tong et al., Institute of Applied Ecology, Academia Sinica also received the first class award of Nature Science of Liaoning Province, China in 2004.

#### International cooperation

Dr. Guo Shuiliang under support of the Chinese government studied Chinese Orthotrichaceae at Helsinki University for a year from 2003-2004 and moved from Zhijiang Normal University to Shanghai Normal University in May of 2005 after returning from abroad. Dr. Zhangli, South-China Institute of Botany, Academia Sinica, as a post doctor is working at Southern Illinois University. Prof. Ji Mengchen, Zhijiang College of Forestry, is studying the Jiangxi bryoflora at Helsinki University under support of the Chinese government for a year in 2004-2005. Dr. Sha Wei, Qiqihaer University, as exchange visitor, is studying for a half year at Niigata University in Japan in 2005. Prof. Zhao Jiangcheng, Hebei Normal University, visited Hiroshima University in May 2005 for the study of Chinese Bryaceae. Prof. Zhao Zentain as visiting scholar is working and studying lichens at National Museum of Canada for a year in 2005-2006.

#### Meetings

Besides The special workshop on the conservation of biodiversity of Chinese bryophytes held in December of 2004 at Shanghai Normal University (Tan et al. 2005), An International Bryological Symposium for Prof. P.C. Chen Centennial Birthday will be held in Nanjing Normal University, Nanjing on 25-31 October, 2005. For more information, please contact with Dr. Jia Yu, Botanical Institute, Academia Sinica, Beijing, e-mail: yjia@ibcas.ac.cn.

#### Literature

Tan, B. C., Cao, T., Zhu, R. L. & Hallingback, T. 2005. Successful workshop on first official red list of endangered Chinese bryophytes. The Bryological Times 115: 13-15.

Cao Tong, Guo Shuiliang and Yu Jin, College of Life and Environmental Science, Shanghai Normal University, Shanghai 200234, E-mail: CT1946@263.net.cn

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## CONSERVATION COLUMN

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### IAB-IUCN Bryophyte Conservation Expert Group: proposed code of conduct for fieldwork

This code of conduct aims to create guidelines to improve and facilitate bryological field research in an ethical context. There are several reasons why such guidelines are appropriate. Field Research abroad provides opportunities to strengthen scientific collaboration between bryologists and conservation scientists/officials and allows colleagues from the field country to benefit from the gained experience and collected materials made during the field works. Besides, ownership issues, conservation issues and expression of respect for the host country have to be taken into account. Numerous

IAB-IUCN Bryophyte Conservation Expert Group countries have drawn up legislation and programmes to protect their biodiversity. When conducting research abroad, the rules and laws that apply to the protection of biodiversity in situ and the sustainable use of natural resources in the host country should be respected. Finally, there are ethical and emotional grounds to protect nature for the benefit and use by future generations.

In the following, we briefly list some legal and administrative guidelines and guiding principles of ethics



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when implementing a research project in the field in a host country.

#### I. Administrative and legal issues

1. Before collecting, obtain necessary permits and respect collection restrictions.
2. Before putting up permanent or long-term markings for studies in the field, contact the land-owner (or appropriate authorities) to obtain permits whether necessary or not.

#### II. Contact with local scientists

3. Before going to a foreign country to conduct field research or collecting, inform the local scientist or institution in the host country well beforehand of the objectives of the research through formal requests, project proposal, etc. If possible, also invite the local botanists for cooperation and make arrangements such that the field work will benefit both parties. This could include:
  - Providing training for botanists in the visited countries with little experience in your field.
  - Covering field expenses, including costs of the local collaborators who are related to the project.
  - Obtaining of research permits, arranging travel itinerary, and providing facilities for field work in the country to be visited.
  - Sending of the collected materials overseas to the visitor's institution by the local collaborating institution with a full and valid custom declaration.

#### III. During collecting and performing field experiments

4. Do not put unnecessary pressure on, or cause damage to, local plant populations, i.e. do not take more than what you need for your research and teaching, and leave enough for the populations to recover.
5. Respect conservation measures required by the host country and avoid working with threatened species unless they are the aim of the research.
6. Train your local student counterpart to identify the effects of undue removal of plants and the consequences of such practices.

#### IV. After the work

7. Material and data collected should be shared between the project collaborators in the visitor's institution and the local hosting institution. This includes:
  - Depositing named duplicates (including types) of collected material in the host country.
  - Publishing the results jointly and properly acknowledging all people who have assisted and contributed to the project.

Guidelines proposed by Lars Söderström, Benito Tan, Geert Raeymaekers, Claudio Delgadoillo, and Tomas Hallingbäck.

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## LITERATURE COLUMN

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### Three reviews of recent Polish bryological publications:

#### Mosses of the Polica Range (Poland)

**Adam Stebel, Ryszard Ochyra, Leon Stuchlik & Jerzy B. Parusel: Mosses of the Polica Range (Polish Western Carpathians). 121 pp., incl. 273 distribution maps. Soft bound, ISBN 83-89949-00-8. Sorus SC, Poznań 2004 ([www.sorus.com.pl](http://www.sorus.com.pl), e-mail: [sorus@sorus.com.pl](mailto:sorus@sorus.com.pl)).**

This book is actually part of a larger bryological inventory in these Polish mountains, reported in several separate papers (cf. the next book below). This work reports a total of 264 species plus five varieties of mosses from the Polica Range in southern Poland. The study area is ca. 156 km<sup>2</sup>. The area clearly has some bryological interest, since the flora is relatively rich and nearly 60% of the species are very rare or rare, respectively recorded at 1–3 or 4–8 of the total of 153 collecting sites in the whole area.

The climate and vegetation in the study area are described in some detail. The moss flora is analysed

ecologically and the species are divided into six categories according to substrate / habitat: terrestrial, epiphytic, epixylic, epilithic, paludicolous and aquatic. The occurrence of 63 moss species in various plant communities (these named after the Braun-Blanquet - system) is also analysed and presented in a table. Protected and endangered species are also presented as a table.

The major part of the book comprises of a systematically arranged taxon list and distribution maps of the species in the study area. The species' names are accompanied with short characterisations of the habitats and substrates. Clearly, analyses such as the present book, based on careful collecting and reliable identification, are urgently needed, particularly with a view to conserving the European moss flora locally as well as regionally.

Johannes Enroth

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## Bryological studies of the Western Carpathians

Adam Stebel & Ryszard Ochyra (eds.): **Bryological studies in the Western Carpathians**. 160 pp. Soft bound, ISBN 83-87133-71-X. Sorus SC, Poznań 2004 ([www.sorus.com.pl](http://www.sorus.com.pl), e-mail: [sorus@sorus.com.pl](mailto:sorus@sorus.com.pl)).

This valuable contribution is a compilation of 15 research papers by numerous authors. The papers are in English but each has a summary in Polish. Since it would be fairly pointless to scrutinize the contents in detail, below are the paper titles. As can be seen, there are some "taxonomical case-studies" concentrating on one species or genus, and also analytical inventories of various nature reserves or ranges in the study area.

1. Threatened moss species in the Polish Carpathians in the light of a new red-list of mosses in Poland (pp. 9–28).
2. Occurrence of the moss *Buxbaumia viridis* (Bryopsida, Buxbaumiaceae) in the Tatras National Park (Poland) (pp. 29–36).
3. The moss *Buxbaumia viridis* (Bryopsida, Buxbaumiaceae) in the Czech part of the Western Carpathians – distribution and ecology. (pp. 37–44).
4. The moss genus *Codiophorus* (Bryopsida, Grimmiaceae) in the Polish Carpathians. (pp. 45–61).
5. *Hookeria lucens* (Bryopsida, Hookeriaceae) in the Polish Carpathians. (pp. 63–70).

6. A rediscovery of *Splachnum sphaericum* (Bryopsida, Splachnaceae) in the Babia Góra massif (Western Carpathians). (pp. 71–74).
7. Another locality for *Tetraplodon angustatus* (Bryopsida, Splachnaceae) in the Polish Carpathians. (pp. 75–78).
8. The highest localities of *Rhodobryum roseum* (Bryopsida, Bryaceae) in Poland. (pp. 79–82).
9. The bryophyte flora of the Madohora Nature Reserve in the Beskid Mały range (Western Carpathians). (pp. 83–100).
10. A contribution to the moss flora of the subalpine and alpine belts of the Babia Góra massif (Western Carpathians). (pp. 101–118).
11. Mosses of the Czantoria Nature Reserve in the Beskid Śląski range (Western Carpathians). (pp. 119–126).
12. A contribution to the moss flora of the Gorce (Western Carpathians). (pp. 127–134).
13. A contribution to the bryoflora of the western part of the Carpathian foothills. (135–145).
14. Preliminary studies on the epiphytic bryophytes of Bielsko-Biała town (Western Carpathians). (pp. 147–152).
15. A contribution to the bryoflora of the Western Beskidy. (pp. 153–160).

Johannes Enroth

## Bryophytes in the parks and cemeteries of Polish cities

Ewa Fudali: **Bryophyte species diversity and ecology in the parks and cemeteries of selected Polish cities**. 212 pp. Softbound, ISBN 83-89189-52-6. Agricultural University of Wrocław, 2005. Publisher's address: **Wydawnictwo Akademii Rolniczej we Wrocławiu, Ul. Sopotcka 23, PL-50-344 Wrocław, Poland**.

"Urban bryology" seems to me a somewhat neglected field of study. A closer look at this fine piece or work makes me wonder why, for there seem to be so many interesting aspects in the bryophyte life of urban areas. As the author of this book says in the Introduction: "Motivation to undertake comparative studies of the bryophytes in city parks and cemeteries was provided by the fact that our knowledge of urban bryophytes is poor and generally insufficient to formulate the general bryological characteristics of Central European cities and towns." It goes without saying that this applies not only to Central European moss and liverwort urbanites, but to those anywhere in the world. As for Europe, before this work bryophytes had been more or less well studied only in 14 cities (four in Germany, three in Poland, two in Austria, and one each in Slovakia, Belgium, Italy, Russia and Czech Republic).

Here Fudali analyses the bryophytes of six cities in Poland: Szczecin, Poznań, Wrocław, Warsaw, Lublin and Cracow. The total number of sites was 145 (51 cemeteries and 94 parks). Altogether 125 species were observed, 102 in parks and 105 in cemeteries.

The book has nine main chapters: 1) Bryophytes of urban areas – previously published works and desiderata for

future research, 2) Scope and detailed aims of the study, 3) Materials and study methods, 4) Characteristics of the investigated cities and sites, 5) General characteristics of the bryophyte flora in the parks and cemeteries studied, 6) Floristic similarity of the parks and cemeteries of the studied cities, 7) Bryophyte ecological diversity in the parks and cemeteries studied, 8) Bryophytes of parks and cemeteries and their response to the "city effect," 9) Summary of the more important results and conclusions. Some of the research is fairly traditional comparative floristics, but it is done very carefully and applying UPGMA and Euclidean distances. Chapter 5 provides analyses of the biogeography, morphology and growth form, life history strategies, and a "sociological-ecological analysis," in which the species are grouped according to their habitats (such as forests, meadows, mires, dry grasslands etc.). Chapter 7 focuses among other things on the specific microhabitats of the species and the species richness and floristic similarity of the various microhabitats, analysed with Correspondence Analysis and ANOVA. Throughout the book the results are presented as detailed tables and/or figures.

Chapter 9 summarises 13 of the most important results and conclusions. Let me try to summarise some main results in the summary: 1) The flora was relatively rich in mosses (114 species) and poor in liverworts (11 species). 75% of the species were not frequent and formed only few small turfs. 2) The number of species in individual sites varied much, but the variation did not significantly correlate with the area or biotope type of the sites. 3) A "fair degree" of microhabitat specialisation was observed, with most species occurring in no more than three

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microhabitat types of the 13 distinguished by the author. Frequent and common species were, however, recorded in most microhabitats. 4) Cemeteries were richer in epiliths, while parks were richer in forest species. 5) The cemeteries and parks that had the richest floras were generally (but not consistently) situated on the outskirts of the cities. 6) The park and cemetery floras of the studied cities were statistically significantly dissimilar. 7) Urban existence broadens the habitat and substrate amplitudes of many species.

I am very impressed by Ewa Fudali's meticulous and valuable work. She ends the book by listing some as yet

unanswered questions, some of which require considerably more material and data to reach any reliable generalisations. This book was an eye-opener to me and it shows how much remains to be done right on the other side of the stone wall that, as I am writing this, stands between me and the urban bryophytes of the city of Helsinki. "Hey undergraduate students, I have these great ideas for MSc-theses, what do you say about this..., no, no mosquitoes or snakes, just beautiful bryophytes out there..."

Johannes Enroth

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## Göttingen Symposium Proceedings.

The Proceedings of the Second International Symposium on the Molecular Systematics of Bryophytes (Bryophylogeny 2004), Göttingen, 10-12 September 2004, have been published in TAXON 24 (2): 291-388, May 2005, and are available in the form of a reprinted volume, bound in an attractive color jacket.

This volume was for sale during the International Botanical Congress in Vienna at the stand of TAXON-IAPT, at the price of 15 EURO. In addition, copies can be ordered by mail at the price of about 20 EURO, depending on mailing costs which will be added to the net price. Send your orders to: sysbot@uni-goettingen.de

The volume contains an Introduction by S. R. Gradstein & J. Heinrichs and the following 10 scientific papers:

- Groth-Malonek M. & V. Knoop: Bryophytes and other land plants: the mitochondrial perspective.  
Crandall-Stotler B., L. Forrest & R. E. Stotler: Evolutionary trends in the simple thalloid liverworts (Metzgeriidae).  
Heinrichs J., M. Lindner, S. R. Gradstein, H. Groth, V. Buchbinder, N. Solga & E. Fischer: Origin and subdivision of *Plagiochila* in tropical Africa based on

- evidence from nuclear and chloroplast DNA sequences and morphology.  
Jankowiak K., K. Buczkowska & Z. Szwejkowska-Kulińska: Successful extraction of DNA from 100-year-old herbarium specimens of the liverwort *Bazzania trilobata*.  
Shaw A. J., C. J. Cox & B. Goffinet: Global patterns of moss diversity: taxonomic and molecular inferences.  
Goffinet B., N. J. Wickett, A. J. Shaw & C. J. Cox: Phylogenetic significance of the *rpo4* loss in the chloroplast genome of mosses.  
Ros, R. M., O. Werner & M. Grundmann: Phylogenetic relationships of the Trichostomoideae (Pottiaceae) based on nrITS sequences.  
Vanderpoorten A., M. S. Ignatov, S. Huttunen. & B. Goffinet: Molecular and morphological recircumscription of *Brachytheciastrum* (Brachytheciaceae).  
Stech M. & D. Wagner: Molecular relationships, biogeography, and evolution of Gondwanan *Campylopus* species.  
Jankowiak K., A. Rybarczyk, R. Wyatt, L. Odrzykoski, A. Pacak & Z. Szwejkowska-Kulińska: Organellar inheritance in the allopolyploid moss *Rhizomnium pseudopunctatum*.

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## Moss flora of Italy

Following the publication of the first volume of the *Flora dei Muschi d'Italia* (Flora of the Mosses of Italy) (2001), now the second volume, dedicated to the second part of the Bryopsida class (pleurocarp mosses), is being issued. The volume covers 242 species and 38 varieties, attributed to 81 genera and 22 families belonging to the second part of the Bryopsida class.

Compared to the *Check-list of the Mosses of Italy* (Cortini Pedrotti, 2001), this new volume contains some species of pleurocarp mosses that are new for Italy (*Hygrohypnum eugyrium*, *Hygrohypnum polare*, *Plagiothecium latebricola*, *Thamnobryum neckeroides*, and *Warnstorfia trichophylla*), as well as two new species for Europe (*Helicodontium capillare* and *Sematophyllum adnatum*), on the basis of recent reports.

The taxonomical framework adopted is based, as much as possible, on the characters of the gametophyte and

the sporophyte. For each family, the keys of the genera, the species, and sometimes also the subfamilies and of the intraspecific taxa. The description of each species delineates synonymy, diagnosis, ecology, frequency, etymology of the name, and in some cases, notes.

The abbreviation of author's names is in keeping with Crosby (1992).

As in the first volume, frequency is based on the presence of each species in the 20 regions of Italy according to the *New Check-list of the Mosses of Italy* (Cortini Pedrotti, 2001) and is indicated with the following attributes: rare (though present in 1-3 regions), fairly rare (present in 4-6 regions), not very common (present in 7-9 regions), fairly common (present in 10-13 regions), and common (present in 14-20 regions).

For distribution in Italy, readers are referred to the *Check-list*; however, when entities are reported for just one site,

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the exact location and the bibliographic citation are also reported.

The iconography includes 109 figures illustrating all the species, and often the varieties; the drawings, executed on the basis of Italian samples, were done by Marco Mogetta of Camerino.

Publication of this second volume completes the *Flora dei Muschi d'Italia* (Flora of the Mosses of Italy), a work on taxonomy, iconography, and flora that summarizes all the current knowledge about the moss species present in Italy. It will facilitate new studies in the chorology,

ecology, and biogeography of the bryological flora of Italy as well as that of the entire Mediterranean basin, including environmental aspects.

This synthesis of Italian bryological knowledge, the first to be brought to completion in Italy, is the result of a long and complex process of research that has made it possible to know the biodiversity of the mosses in Italy.

Michele Aleffi

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## Bryophytes of Wayanad in Western Ghats

The Bryophytes of Wayanad in Western Ghats " by Manju C. Nair, K.P. Rajesh & P.V. Madhusoodanan and with a foreword by Dr. Virendra Nath (National Botanical Research Institute- NBRI).

The Western Ghats of India is one of the Global Biodiversity hotspots well known for its rich biodiversity. It is equally rich in bryophytes also; however, the documentation is far from complete. The present book is the first in the series to document its rich bryo-wealth.

It is the result of extensive explorations on the bryophytes of Wayanad, the mountainous district in the Western Ghats of Kerala, notable for its unique geographical location with varied topography and associated habitat diversity supporting unique assemblage of biodiversity. Except for the coast and backwaters, almost all habitat types of South India, from low altitude to the high altitude grasslands and shola forests occur in Wayanad, which forms the major part of the Nilgiri Biosphere Reserve. It is also notable, being a transition zone in the Western Ghats, where the comparatively drier northern forest meets the wetter southern forests.

This book contains illustrative accounts of more than 170 bryophytes belonging to 105 genera and 47 families including two new species \*viz., *Trichostomum wayanadensis*\*\* \*Manju \*et al.\* and *Amphidium gangulii* et al.\* Seven species and one variety are new distribution

records to India, 31 species and one variety are new records to Peninsular India and 43 are new records to Kerala State.

Easy to follow keys and descriptions of family, genus and species are provided, supported with more than 160 figures and 200 photographs. Each species is treated in detail with the updated scientific name, important synonyms relevant to the Indian context and taxonomic description. Its macro and microhabitat details, Indian as well as global distribution and details of the voucher specimens are also given.

As commented by Dr. Virendra Nath in the foreword to the book, this book could be used as an "identification manual for the bryophytes of South India at large."

The book is published by Malabar Natural History Society (MNHS), Calicut, India, a non-profit organisation dedicated to nature education, research and conservation of biodiversity.

For copies and payment details contact Dr. KP Rajesh: \*Email: kprajesh.botany@gmail.com

Price: US\$ 100/- plus postage\*. Hard bound; (A4), i -iv + 284 pages; over 200 colour photographs in 14 plates, 1 map; over 160 B&W illustrations.

Dr. PV Madhusoodanan, Botany Department, Calicut University, Kerala, INDIA, <http://pvmadhu.tripod.com>

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### Note from the editor:

In the BT 116 of June 2005 (pg. 10), I included under the title "Ulota, a novel ..." a review by E. Charles Nelson of this novel by the Rev. William Rutledge Megaw. The review had not been sent by Charles Nelson. He pointed out to me that this article was previously published in the BSBI News. I did

not realize at the time I published the review in the BT that it had been published elsewhere. I apologise for not having contacted Charles Nelson or the BSBI News editor and for not having checked the source of this article.

## TECHNIQUES COLUMN

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### Bryophyte Interactive keys: a new initiative

Bryophyte Interactive keys: a new initiative — We are announcing a new initiative in developing online interactive keys for bryophytes. This is a collaborative effort between Discover Life (<http://www.discoverlife.org>) and The Field Museum. Briefly, the keys include scientific names, including synonyms, character-state attributes used in identification, illustrations/images of character-states, and links to images and information about each taxon. The great advantages of interactive keys are that they are non-linear and not dichotomous like most conventional keys. A benefit of an interactive key is that it allows users to take advantage of characters that are actually associated with the specimen in hand, and do not rely on characters proscribed by a printed key. This is especially useful in bryophytes when we often may only have sterile or fragmented material. They allow users to examine characters with multiple states and also specify characters in any order, skipping those that they can't answer for whatever reason. Characters and associated character-states can also be displayed visually, eliminating confusion of terms. It must be noted that interactive keys and other electronic media should be viewed as only offering an additional tool and users should always consult original or authoritative sources.

Discover Life — The mission of Discover Life is to assemble and share knowledge about nature in order to improve education, health, agriculture, economic development, and conservation throughout the world. Discover Life provides Web tools to assemble, process, and share text and images on species. These tools help users to identify, report, database, and map information using most browsers. They are designed to integrate data from numerous sources, require minimal training or technical knowledge to use, and are available to everyone with Web access for free.

Discover Life and its partners — Discover Life, under the auspices of The Polistes Foundation, currently has servers at the University of Georgia and Missouri Botanical Garden. The Polistes Foundation is a non-profit think tank whose team of advisors includes world leaders in science, education, conservation, and technology. Advisors include Peter Raven, Edward Wilson, Stephen Hubbell, and John Pickering, who co-founded The Polistes Foundation and began the Website [www.discoverlife.org](http://www.discoverlife.org) to support this project and serve as a general portal to natural history information. Discover Life has a global network of numerous partners that include among others Missouri Botanical Garden, All Species Foundation, The Great Smoky Mountains National Park's All Taxa Biodiversity Inventory, Harvard University's Museum of Comparative Zoology and Peabody Museum, the Smithsonian Tropical Research Institute, and The Field Museum.

Portal to all living things — Discover Life attempts to provide a portal to all living things - the world's flora and fauna, including birds, mammal, amphibians, and of course plants! Taxonomy, natural history, distribution, abundance, interactive keys and ecology are summarized for each group. The section on plants (<http://www.discoverlife.org/nh/tx/Plantae/>), which is organized by Robert Magill & Kay Yatskievych (Missouri Botanical Garden), is divided into major groups; Matt von

Konrat (The Field Museum) is helping spearhead Bryophytes (<http://www.discoverlife.org/nh/tx/Plantae/Bryophyta/>).

We hope this information is useful in education, science and resource management and enjoyable to non-specialists.

Features — In addition to the interactive keys and checklists, users are able to access a range of information, including species pages with descriptions, images, distribution, phylogeny, references, and linking URL's from elsewhere, e.g., species pages or images that have already been developed. These offer a powerful means for verification of identifications. There is also an automatic link to TROPICOS MOST at the Missouri Botanical Gardens (current information on bryophyte nomenclature). Maps can also be built and displayed using the Global Mapper, developed in partnership with Topozone.com. This includes 1:1,000,000 scale maps of the world, topographic maps of the United States, and aerial photographs of 89% of the United States. The Global Map Browser allows users to build and display world maps and then overlay data, such as plant distributions from Missouri Botanical Garden's database. From the maps one is also able to retrieve herbarium label data. The key also offers other features enabling you to compare characters between species, identifying all taxa with a specific character-state, and so on. In my case (the *Frullania* key), I hope that it may help facilitate regional and global taxonomic and systematic studies of the genus, and provide us with an online resource and ease of communication.

Technology — Discover Life showcases state-of-the-art technical solutions and uses server-side technology to gather and share information over the Web. Its 20q and other software modules are licensed from The Polistes Corporation at no cost. They provide the power behind the IDnature guides (interactive keys), Global Mapper, and other tools on Discover Life. Other partners provide images, data, and Web services that 20q integrates together. In October, 2004, they served over 1,045,000 pages and images to approximately 40,000 users.

Constructing online identification keys — Construction of interactive keys is a simple process, involving the assembly of a checklist (vetted by a taxonomic expert for the group/country/region); linking taxon names to images, maps, and other information on Discover Life, in our partners' databases, and on other Websites; and assigning character-state attributes to taxa to create an interactive key. Data can either be imported from a text file or one can enter data using Web forms. Both processes are simple. Keys can also be constructed starting with an Excel spreadsheet or similar formats of the species and their character-states. 20q software also includes tools to process images and add them to guides and species pages, which are accessed through the checklists. Very little training is required and no Photoshop experience is necessary. A comprehensive help menu to guide new users is available — both in building and using the identification keys - although use of guides is very intuitive and simple. Two keys are presently under construction: *Frullania* Species Worldwide and Liverwort Genera of the World. At present the *Frullania* key is only partially functional for New Zealand, Australia (Tasmania), U.S.A., Japan, New Caledonia, Great Britain and Ireland,

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South Africa, Portugal and Macronesia, and the Falkland Islands.

Contacts — We are encouraging the bryological community to contact Matt von Konrat ([mvonkonrat@fieldmuseum.org](mailto:mvonkonrat@fieldmuseum.org)) should they wish to develop interactive keys for their study organisms. You can also contact Dr. John Pickering directly at [pick@discoverlife.org](mailto:pick@discoverlife.org). If interested in this project please

contact us and we would be very happy to help coordinate this effort. It is important to note that participants can retain total control of their own keys, thus allowing you to update any aspect of your online key, or many of the other features offered at [www.discoverlife.org](http://www.discoverlife.org). Alternatively, participants may contact us, and we can make the changes you desire.

Matt von Konrat. Email: [mvonkonrat@fieldmuseum.org](mailto:mvonkonrat@fieldmuseum.org)

## MEETINGS

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### Report of the 34th Annual Meeting of Bryological Society of Japan

The 34th Annual Meeting of the Bryological Society of Japan was held on 26-28 August 2005 in Echizen-cho, Fukui Prefecture with 69 participants. The staffs of the Fukui Botanical Garden warmly welcomed the participants and took care of the meeting through the term, which was favorably proceeded according to the program. The program and the events are summarized as follows.

August 26 (Friday): council meeting.

Council meeting was held on August 26 at the Taicho-nomori Hotel where all participants stayed together during the meeting. The hotel is situated in the countryside and is furnished with hot springs. I had no doubt the meeting would succeed.

August 27 (Saturday): award winners' lectures, general lectures, posters, general meeting, banquet.

The Award for young bryologists settled at the 33<sup>rd</sup> meeting was given to Tomotsugu Arikawa, Masaki Shimamura and Hiromi Tsubota for their recent studies. Congratulations! They presented lectures respectively: "Looking for the point of connection between 'traditional taxonomy' and 'molecular phylogenetics' on mosses" by Arikawa, "Diversity of cell division system in bryophytes" by Shimamura and "Perspective in the molecular phylogenetic studies on bryophytes: Past, present and future with my private views" by Tsubota. Ten lectures and five posters were presented from the various fields of bryology covering molecular phylogeny, physiology, ecology, taxonomy, flora, terminology

and applied bryology. The abstracts (in Japanese) can be available in the Bryological Research, vol. 9, no. 1 (2005). General meeting included reports from council, changes of the Society's rules, etc. The members of the executive committee for 2006-2007 were decided as follows. President: Jiro Hasegawa, secretary: Hiroyuki Akiyama, treasurer: Tomio Yamaguchi, auditor: Hiroshi Doei, editor: Tatsuwo Furuki. Bon courage! The banquet was begun by opening speeches of Hironori Deguchi, president of the society, and Takanobu Seki, mayor of Echizen-cho. We enjoyed sashimi, buckwheat noodles, etc., special products of the place, and talking.

August 28 (Sunday): field excursion.

The participants moved by chartered buses and private cars to "Naka-ikemi-shicchi," lowland marsh situated at the seashore of the Japan Sea, Tsuruga-shi. Takao Wakasugi, director of the Fukui Botanical Garden, requested that we would cooperate to make a species list of bryophytes for conservation. No problem. We pleasantly observed plants in the field and took lunch in fresh air.

The next meeting (the 35th) will be held on 25-27 August 2006 at the Minami Kyushu University, Takanabe-cho, Miyazaki Prefecture.

Masanobu Higuchi, e-mail: [higuchi@kahaku.go.jp](mailto:higuchi@kahaku.go.jp)

The Bryological Society of Japan: <http://sc1.cc.kochi-u.ac.jp/~bryosoc/>

## WEB NEWS

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### Fremontia on line

The special issue of *Fremontia* (a journal of the California Native Plant Society) on Bryophytes has been put online in low-resolution form at: [http://www.cnps.org/publications/fremontia/Fremontia\\_Vol\\_31-No3.pdf](http://www.cnps.org/publications/fremontia/Fremontia_Vol_31-No3.pdf). If you want a hard copy, complete with the wonderful high-resolution photos by expert bryophyte photographer Martin Hutten, it is quite inexpensive, and CNPS printed some extra to sell.

This issue is \$8.00 and you can send checks or your Mastercard or Visa number to: Christina Neifer, California Native Plant Society, 2707 K St. Ste. 1, Sacramento, CA 95816

Please include a note stating that you are requesting a copy of this particular *Fremontia*. [Volume 31 #3 of the *Fremontia*, a special issue on Bryophytes.].

Brent Mishler: E-mail: [bmishler@calmail.berkeley.edu](mailto:bmishler@calmail.berkeley.edu)



### Reprint of picture book of bryophytes of Germany

Because of many who have expressed interest, there will be a reprint of "Bildatlas der Moose Deutschlands" (Picturebook of Bryophytes of Germany): Fascicle 1 Grimmiaceae and Fascicle 2 Polytrichaceae, Dicranaceae and Mniaceae in October. In these books are picture plates of each species occurring in Germany with photographs from habit, habitus, macroscopic and microscopic details.

More information can be found on my homepage under:  
<http://homepages.compuserve.de/milueth/moose/bildatlas/atlas.htm>

The price for Fascicle 1 (64 plates) is 41 Euro and for Fascicle 2 (127 plates) is 76 Euro. Please add 5 Euro

postage. Payments are possible by remittance to a bank account, cash, cheques drawn on a German bank (plus € 3.-- bank charges) or PayPal. Remittance, just possible from a country with Euro currency, to: Michael Lüth, Sparkasse Freiburg, BLZ 680 501 01, Kt.Nr. 1824405, Int.Bank Account Nr.: DE16 6805 0101 0002 7533 93, SWIFT-BIC.: FRSPDE66XXX. Cheques (drawn on a German bank) or cash money sent in a letter to the address above. Paypal at the email address: [milueth@compuserve.de](mailto:milueth@compuserve.de)

To order: Michael Lüth, Emmendinger Str. 32, D-79106 Freiburg, Germany, e-mail: [milueth@compuserve.de](mailto:milueth@compuserve.de)

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### BBS-Amblystegiaceae workshop

Jonathan Sleath reported that, following a weekend taxonomic workshop for the BBS on the group of species traditionally assigned to the Amblystegiaceae, Lars Hedenas made many of his slides available. There are 66 slides, which deal mainly with the species known to occur in the UK, and are well illustrated with photomicrographs to demonstrate the important taxonomic characters.

<http://rbg-web2.rbge.org.uk/bbs/Resources/Amblystegiaceae/amblystegiaceae.htm>

Jonathan Sleath  
BBS Website Manager

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**COUNTRY CONTACTS FOR BRYOLOGICAL TIMES**

| <b>Country</b>    | <b>Name</b>                     | <b>E-mail address</b>                         |
|-------------------|---------------------------------|---|
| Australia         | Rod Seppelt                     | Rod.Seppelt@aad.gov.au                        |
| Belgium           | Herman Stieperaere              | herman@br.fgov.be                             |
| Canada            | René Belland<br>Michael Simpson | Rene.belland@ualberta.ca<br>mjs14@ualberta.ca |
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#### **UPCOMING MEETINGS**

##### **2005**

**November 21 - 25.** BRYOPLANET organizes its final conference on "Conservation Ecology of Cryptogams." Information: [kristoffer.hylander@emg.umu.se](mailto:kristoffer.hylander@emg.umu.se) or [www.emg.umu.se/bryoplanet](http://www.emg.umu.se/bryoplanet).

##### **2006**

**April 6 – 10:** BBS Spring field meeting: Straffordshire. Contact: Martin Godfrey: [marinandrosie@AOL.com](mailto:marinandrosie@AOL.com)

**March 11:** Annual Lecture day organised by the BLWG (Dutch Bryological and Lichenological Society. See [www.blwg.nl](http://www.blwg.nl)

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

**July 1 13:** BBS Summer field meeting. East Sutherland and Orkney. Contact Mark Lowley (East Sutherland) at [m.lawley@virgin.net](mailto:m.lawley@virgin.net) or Rosemary McCance (Orkney) at [armccance@beeb.net](mailto:armccance@beeb.net)

**July 28 – August 3:** ABLs-Meeting. Chico, California. Info at: [www.abls.org](http://www.abls.org)

**Sept. 8 – 9:** Annual general meeting and Biological Symposium, Hatfield, Herfordshire. Contact. Drs. M.A.S. Burton at [m.a.Burton@herts.ac.uk](mailto:m.a.Burton@herts.ac.uk)

##### **2007**

**July 20-28 IAB meeting in Kuala Lumpur, Malaysia.** Contact the local organizers: Dr. Haji Mohamed and Dr. Amru N. Boyce, Fac. of Science, University of Malaya, Kuala Lumpur 50603

**ABLS meeting:** Xalapa, Mexico. See [www.abls.org](http://www.abls.org)