

# The Bryological Times

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Newsletter of the International Association of Bryologists

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Dear bryologists!

HAPPY NEW YEAR!

I am pleased that so many you bryologists from several countries have joined that society. Particularly young bryologists are now encouraged to apply for the Stanley Greene Award that the IAB will provide – see next page. At the Symposium in Kuala Lumpur, new IAB-Council members will be appointed and during the next month or so, a ballot will be sent out by email to collect your votes. So, please watch you email boxes.

Geert Raeymaekers

IAB



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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## IAB NEWS

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### Stanley W. Greene Award: call for proposals

The objective of this award, which is named after Stanley W. Greene (one of the founding fathers of the International Associations of Bryologists and initiator of the Bryological Times), is to contribute to the growth of bryology as a research area of international stature.

The IAB Council has decided to provide support for a few grants for a total of 3500 USD and invites IAB-members to submit applications for the Stanley Greene Awards. The following IAB Grant Committee has been appointed by the president: Bernard Goffinet (chairperson), G. Raeymaekers (Secretary), Blanka Shaw (Treasurer) and two other members will be added later.

The Stanley Greene Grant:

- Provides direct assistance to carry out research in a priority-research area
- Is given on the basis of the merit of the proposal
- Should not support personnel costs

Priority criteria:

- Interdisciplinary and collaborative research proposals;
- Seed money in exploring new areas of research;
- Travel to attend international meetings, to obtain training, to research laboratories, to areas of environmental concern;

- Purchase of research equipment, books, and supplies.

Young investigators of third-world countries are especially encouraged to apply.

Eligibility: only IAB-members can receive the S.W. Greene Award.

Interested researchers are invited to send:

- a two-page application including the title, full name and coordinates (address, email, ...), description of the project, its significance to bryology;
- a one-page list of the expenditures (items and expected costs) that the grant support will be used for;
- a one-page curriculum vitae, including the names of two persons who could write letters of support.

Applications should be submitted as pdf files to the chairperson and the secretary.

Chairperson: [goffinet@uconn.edu](mailto:goffinet@uconn.edu)

Secretary: [Geert.Raeymaekers@scarlet.be](mailto:Geert.Raeymaekers@scarlet.be)

Application deadline: 31 March 2007

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### Election of new IAB-Council

Following our IAB-constitution, the term for half the IAB Council is ending and five new council members plus one vice-president therefore need to be elected in 2007. During the summer 2006 a nominations committee consisting of William R. Buck, Niels Klazenga, and Lars Hedenäs was appointed by our current IAB President, Janice Glime. Lars Hedenäs, who chairs the nominations committee for a new IAB Council, published a call for candidate members in the last Bryological Times (n°120, October 20067).

I would like to draw your attention that the forms to cast your vote will be sent out by email early 2007. Please watch your mail. The acting council is presently deciding who should be in charge of the counting of the votes and how this will be organised.

Geert Raeymaekers  
Secretary IAB

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## OBITUARY

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### Noriwo Takaki (1915 – 2006)

Noriwo Takaki, a taxonomist of Japanese mosses, died February 1, 2006. He is well known as the discoverer of the famous moss, Takakia. He was borne in 1915 in Kumamoto-ken, southern Japan. He learned bryology from Dr. Kyuichi Sakurai when he was a student at Tokyo Bunrika University. He had been a member of the board of administration of the Hattori Botanical Laboratory for a long time. He was the first president of the Bryological Society of Japan, which was established in 1972.

He was much interested in moss taxonomy, and received his doctoral degree by his thesis "Researches on the Brachytheciaceae of Japan and adjacent areas" (J. Hattori Botanical Laboratory, Nos. 14-16, 1955-1956). He published about 250 papers in bryology. These include important papers on Asiatic Dicranaceae, such as revision of Japanese



Trematodon (1962), Dicranum (1964), Dicranoloma (1966), Campylopus (1967), Campylopodia (1973), etc.

In Aug. 1956, Prof. Takaki collected a curious little plant, similar to a bryophyte, in rock crevices near the ridge-top of Mt. Gaki, 2,600 m. alt., central Japan, and he sent the specimen to Dr. Hattori. This was the first specimen of Takakia which Dr. Hattori ever saw.

He has been much interested in nature and all kinds of wild plants. As a professor in botany at the Nagoya University, he paid much attention to nature conservation.

Zen Iwatsuki, Hattori Botanical Laboratory, Okazaki Branch, 10-3 Mutsuna-shin-machi, Okazaki-shi, Aichi-ken 444-0846, Japan.

Email: zen@rhythm.ocn.ne.jp

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## PERSONAL NEWS

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**The editor would like to thank all people that sent in information about their bryological activities.**

**Have you taken up another position, received a grant, started a research project, moved office?**

**The best way to inform the other IAB-members is by spreading the news through BRYONET and the Bryological Times.**

**Please do send your personal news to the editor!**

### New IAB members present themselves

#### **Mylène Marchand-Roy**

Mylène Marchand-Roy is an agronomist, who graduated in December 2005. In summer 2006, she joined the Peatland Ecology Research Group headed by Line Rochefort of Université Laval (Québec, Canada). Under the supervision of Dr. Line Rochefort and Dr. Gilles Gauthier (Biology Department of Université Laval), she is now pursuing a Master degree. Her project aims to explore the impact of the Greater Snow Goose on freshwater wetlands at Bylot

Island, Nunavut, Canada, a High Arctic site. With a long-term fertilization experiment (5 years), she will study the turnover of nutrients in these wetlands, which are covered, with a dense carpet of brown mosses in order to better understand the trophic relationships between the geese and their feeding habitat. She is thus interested in the physiology of mosses and their interactions with the vascular plants sharing the same environment.

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Contact: Mylène Marchand-Roy, Phytology Department, Université Laval, Québec, Canada. Email: [mylenemarchandroy@yahoo.ca](mailto:mylenemarchandroy@yahoo.ca)

#### **Dale A. Kruse**

I must confess my knowledge of bryophytes is at best limited; however, my interest and enthusiasm is not. Currently, I am doctoral student at Texas A & M University working with an entirely different group of organisms; the Juncaceae (rush) family. My doctoral research focuses on species boundaries within the *Juncus effusus* complex from a worldwide perspective. The interest in bryophytes was launched as result of field work over the past few years. While in the field, I began collecting bryophyte specimens occasionally just out of general inquiry. As you might expect, this has progressed to the point where I make collections of these taxa whenever, and wherever, I happen to be working in the field. Collections are primarily in the southeast United States but I have made collections as far away as the United Kingdom and Mexico. Identifications at this point depend on the cooperation of several trained bryologist who have most graciously offered their services. As time permits I hope to steadily overcome this knowledge deficit on my part, and repay their kindness. I am also a member of the American Bryological and Lichenological Society and the British Bryological Society in addition to the IAB.

Contact: Dale A. Kruse, S. M. Tracy Herbarium (TAES), **E-mail:** [dakruse@tamu.edu](mailto:dakruse@tamu.edu)

#### **Nagore García Medina**

In June 2005 I got my degree in Environmental Sciences (Universidad Autónoma de Madrid, Spain). Now I am a PhD student in the same University. My research is focused on epiphytic bryophytes, under the supervision of Drs. F. Lara and V. Mazimpaka, and am now working on the diversity, community structure and succession of epiphytic bryophytes growing in *Quercus* forests in the Iberian Peninsula. My interests also include taxonomy, biogeography, ecology and ecophysiology of bryophytes.

Contact: Nagore García Medina

#### **Rémy Pouliot**

For my masters thesis, which I obtained at Laval University (Quebec City) under Line Rochefort and Gilles Gauthier's supervision, I studied how Greater Snow Geese (*Chen caerulescens atlantica*) contribute to the fertilization of the moss layer of polygon fens of Bylot Island, Canada. I am presently preparing my doctoral thesis on the structure initiation in boreal peatlands (hummock-hollow gradient). I investigate how abiotic (nutrient status, water level) and biotic factors (interaction between *Sphagnum* and vascular plants) contribute to the initiation of these hollow-hummock gradients. Also Line Rochefort supervises

this research. My fieldwork takes place in formerly degraded bogs (cut away peat layer), where peat formation has been re-initialised following restoration. By comparing sites that have been restored various years ago, I'm able to follow the initiation and evolution of the micro-topography of these gradients. Additionally, I compare restored with pristine raised bogs.

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Website : [www.cen.ulaval.ca/etudiants.html](http://www.cen.ulaval.ca/etudiants.html)

#### **Josée Landry**

I'm a graduate student in microbiology, concentration in environment, from Laval University. Currently, I am doing a master degree under the supervision of Line Rochefort, Senior Chair holder of the NSERC Industrial Research Chair in Peatland Management. The main goal of my project is to study the environmental impacts of a new peat extraction technique. I am focusing on the water quality and vegetation recovery of this wet harvesting technique compared to the current dry harvesting method. For the vegetation aspect, I am surveying the plant structure, diversity and productivity with special attention to recovery of *Sphagnum* mosses and on decomposition rate of the peatland. The model peatland is located in Pointe-Label, Quebec within the boreal forest biome.

Email: Josée Landry: [josee156@msn.com](mailto:josee156@msn.com)

#### **Tiiu Kupper**

My name is Tiiu Kupper, I am 28 years old and I live in Estonia, Tartu. I have been working closely with bryophytes for six years. My first work was about vascular plants and bryophytes in an minerotrophic fen. My Bachelor's thesis was about bryophyte and vascular plant species richness and bryophyte diaspore bank in 21 alvar grasslands in Estonia. Alvars are calcareous grasslands with thin soil on Ordovician or Silurian limestone material or on monolithic limestone rock. Alvar grasslands are distributed mainly on the islands of the Baltic Sea and in the coastal zone of Estonia, smaller areas are in Västergötland (Sweden), in Ahvenamaa (Finland) and in the St. Petersburg district, Russia. My Master's thesis will be about alvar grassland bryophytes, vascular plants and lichens in changing weather conditions; it is an experimental study including mowing, transplantation and bryophyte diaspore bank studies. My study was financed by the Estonian Science Foundation (Grant 5452). After my MS thesis I shall continue my work and I plan to start isozyme-studies on alvar-bryophytes. My supervisor is Dr. Nele Ingerpuu, Senior Research Fellow, Chair of Botany, University of Tartu. I work as a curator at the bryological department of the Natural History Museum, University of Tartu.

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## Other new IAB-members

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## Fifty years Swiss Association of Bryology and Lichenology

The year 2006 draws to a close. Only a few more days and the 50th birthday of the Swiss Association for Bryology and Lichenology (Bryolich) will be a thing of the past. Let's turn back the clock and look back on this exciting year.

The annual general assembly meeting in spring was held in Geneva. Beside excursions in the surroundings, Michelle Price and her crew introduced conservation projects taking place in the canton Geneva and Philippe Clerc provided an insight into the famous collections of the cryptogamic herbarium of the Conservatoire.

A special issue of our bulletin 'Meylania' dedicated to the association and its birthday was published in summer. Additionally a flyer informing about the aim and activities of the society was printed.

Promoting bryophytes and lichens was a main goal of Bryolich's birthday year. Therefore excursions for a broad public were organised. They were guided by members of Bryolich and took place in all cantons of the twenty six cantons of Switzerland in September. Most of them were accomplished in collaboration with

local nature groups and were announced in local newspapers. The excursions were a big success. Hundreds of interested participants enjoyed the magic world of cryptogams.

The final highlight of the birthday activities was a public exhibition entitled '2700 bryophytes and lichens next to our front door' followed by a celebration party in the botanical garden of Berne. We tried to provide a deeper insight into different aspects of bryophytes and lichens. The exhibition demonstrated the impressive diversity and beauty of these organisms. Specimens collected at home or found elsewhere could be determined together with professionals. Posters informed about actual scientific and conservation projects. Films as well as pictures of the birthday excursions were shown in a media corner. Two talks of guest speakers (Piere Luigi Nimis / Determinations – from books to mobile phones and Rüdiger Mues / Unknown world of bryophytes) were held. All day long one could see and hear children who were discovering the mysterious world of cryptogams on a specifically designed 'kids tour'.

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In the evening more than eighty friends of bryophytes and lichens joined a wonderful dinner. Surrounded by the romantic ambiance of the botanical garden and in front of the illuminated scenery of the capitol of Switzerland all participants enjoyed private

conversation and live music. During this final event of Bryolichs birthday Bruno Bagutti was elected honorary member.

Silvia Stofer, e-mail: [silvia.stofer@wsl.ch](mailto:silvia.stofer@wsl.ch)

## RESEARCH NEWS

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### Bryophytes of La Réunion

**Claudine Ah-Peng**, is a Ph.D. student in tropical Bryology at the University of La Réunion island. She is focusing her research on colonisation of bryophytes on lava flows of the Piton de la Fournaise volcano, and is also investigating the diversity and distribution of bryophytes on the island.

She benefited from a Synthesys grant to visit the National Botanical Garden of Belgium in November 2006, to work on the major collection of bryophytes from La Réunion. The main contributors to this collection are Friar Onraedt, Friar Gimalac, Theo Arts, and J.L. de Sloover. This collection is being digitized by the curatorial staff in BR lead by Herman Stieperaere; this data will be important to create a bryophyte GIS for the island at the University of Réunion, a powerful tool for conservation planning.

Presently, she is collecting all the information relating to the distribution of bryophytes in the island and she addresses access needs to La Réunion bryophyte lists from herbaria in the world.

With the supervision of her advisors Dominique Strasberg and Jacques Bardat, she also organized the stay, as visiting researcher, of Min Chuah Petiot (Kenya) in November 2005 and Terry Hedderson (South Africa) in November 2006. These two visiting researchers took part in the teaching and research at the university and made some collecting field trips.

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### Research funding opportunity for European natural history scientists

Europe's foremost natural history institutions invite scientists based in European member, candidate, 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](http://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 30 March 2007, 17.00 GMT.

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





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## Checklist of the mosses of Europe and Macaronesia

A pdf copy (506 kb) of this paper (Hill MO et. al. (2006) "An annotated checklist of the mosses of Europe and Macaronesia", *Journal of Bryology* **28**:198-267) has been posted on the website of the British Bryological Society.

The moss flora of Europe and Macaronesia comprises 278 genera, 1292 species, 46 subspecies and 118 varieties. Of the total 1292 species, 53 are confined to Macaronesia and 21 are thought to be non-native. The checklist was derived from those for the various component countries and regions. It is based on results published up to the end of 2005. Subspecies and varieties are included; hybrids are omitted. The

taxonomic hierarchy is based on one published by Goffinet & Buck in 2004. While it has been strongly influenced by results of modern molecular methods, there are still many remaining uncertainties, even at family level. Because of these uncertainties, taxonomic innovation has generally been avoided. There are four new combinations and one change of status.

Both the pdf-file and the MS Excel spreadsheet (624KB) containing the names can be downloaded from the BBS website.

The link is <http://rbg-web2.rbge.org.uk/bbs/Resources/Eurochecklist.htm>

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## Results of Search for Fossil Traits in the Genome

In the May 2006 issue of *Bryological times*, I discussed my experiments in developmental phylogenetics at the Missouri Botanical Garden that sought to uncover phylogenetically ancient morphological traits by application of various chemicals known to force expression (by opening the DNA chromatin structure) of silenced genes. At least some silencing theoretically involved epigenetic effects on DNA by cytosine methylation and histone deacetylation. If traits appeared in cultivation with these chemicals that are not known for the species, and are not clearly teratological or new mutations, then they might tentatively be assumed to be characters of recent or ancient ancestors, that is, genomic fossils of potential value in phylogenetic analysis.

As discussed in the May issue, fragments of mosses from recent herbarium collections and sampled from the wild were grown in small bottles on perlite with four treatments: distilled water, 5-aza-2'-deoxycytidine (a demethylation agent at micromole concentrations) at 10  $\mu$ M, sodium butyrate (a histone deacetylase inhibitor at millimole concentrations) at 5 mM, and the last two together (for their known synergistic property) at 10  $\mu$ M and 5 mM in same solution. Given the experimental set-up, otherwise standard sterile conditions and axenic culture were unnecessary because any positive results would clearly stand out and be the impetus for new studies with more rigorous technique.

Of the species surveyed and cultivated under those conditions, many dried specimens proved dead out of

the packet. The following mosses survived under cultivation in the various media described above for more than four months: *Anoetangium handelii*, *Barbula unguiculata*, *Ceratodon purpureus*, *Didymodon brachyphyllus*, *Gymnostomum calcareum*, *G. viridulum*, *Molendoa ogalalensis*, *Tortula muralis*, *Tortula truncata*, and *Trichostomum tenuirostre* var. *holtii*. This was considered a good first effort, as most specimens developed elongated stem tips, and many formed new branches. Several produced copious gemmae on arbusculate branches, but this was interpreted as a result of cultivation under constantly moist conditions. On periodic microscopic examination, none produced traits that may in any way be interpreted as deactivated fossil genes. To test the possibility of overly diluted media, all taxa were then transferred, separately, to the "stock" solutions of aza-deoxycytidine at 200  $\mu$ M and sodium butyrate at 100 mM. There was no effect with the former, and all plants died with the sodium butyrate stock solution.

It is always a challenge to find value in no results. We know to begin with that genes are silenced in mosses because the life cycle involves radical changes in morphology. It is clear from the above study, for the species studied in any case, that cytosine methylation and histone deacetylation are probably not the means by which genes are silenced, or such means are somehow protected from deactivation.

Richard H. Zander, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299 USA. Email: [richard.zander@mobot.org](mailto:richard.zander@mobot.org)

## Bryological research in Turkey

Recent thesis on bryology are presented with a short abstract to stimulate interests of foreign colleagues to Turkish Bryology. Fortunately, the number of studies dealing with the bryoflora of the country have increased significantly since 1985 (fig 1) but we are still far from complete bryoflora of Turkey.

### Doctoral dissertations (Ph.D.)

The Liverworts (Hepaticae) Flora of Western Black Sea Region (Bolu, Zonguldak, Bartın, Kastamonu)  
Dr. Tamer KEÇELİ, Email: tamerkeçeli@hotmail.com  
Kırıkkale University, Faculty of Science and Literature, Biology Department (KIRIKKALE)

	M.Sc.	Ph.D
1985-1989	1	1
1990-1994	4	3
1995-1999	4	9
2000-2006		

Fig. 1. Number of bryological dissertations (MSc and Ph.D) in Turkey.

Reports 54 liverwort (Hepaticae) taxa belonging to 25 families and 34 genera, and one hornwort (Anthocerotae) species. 18 taxa are new records for the A-2 grid square and 2 taxa are new records for the A-3 grid square according to the system of Henderson (1961), (Fig. 2).

### The Moss Flora (Musci) of Sündiken Mountains.

Dr. Filiz Birgi SAVAROĞLU, Email: fbirgi@ogu.edu.tr  
Eskişehir Osmangazi University, Fac. Art and Sciences, Biology Department (ESKİŞEHİR)

Reports a total of 83 taxa and 42 genera belonging to 21 families. 64 of these taxa were recorded as B7 grid-square system. Another 69 of these taxa reported for the first time in Eskişehir.

### Investigations on the Flora of Liverworts (Hepaticae) of Beydağları (Antalya)

Dr. Hatice ÖZENOĞLU KIREMİT, Email: Hatice\_ozenoglu@hotmail.com

Adnan Menderes University, Faculty of Education (AYDIN)

Reports 2 species belonging to 1 family of the class Anthocerotopsida and 41 species belonging to 25 families of the class Marchantiopsida of the division Bryophyta. 20 taxa were recorded as new for C-12 grid square of Turkey.

### Master thesis dissertations (MSc)

#### The Moss (Musci) Flora of Bulancak Borough of Giresun Province

Bahadır KOZ, Email: bkoz@ktu.edu.tr  
Karadeniz Technical University, Giresun Fac. Art and Sciences, Biology Department (GİRESUN)  
Reports 61 taxa of Bryophyta. 6 taxa are new for A4 grid square of Henderson system among the others.

#### The Moss Flora of Manyas Kuş Lake Environment and Erdek Kapıdağ Peninsula

Muhammet ÖREN, Email: muhammetoren@hotmail.com  
Zonguldak Karaelmas University, Fac. Art and Sciences, Biology Department (ZONGULDAK)  
Reports 79 taxa belong to 20 families and 44 genera of Bryophytes. *Isotheciumholtii* Kindb. was added as a new species for the Bryophyte Flora of Turkey. In addition 13 taxa was recorded as new for the A1 grid-square system.

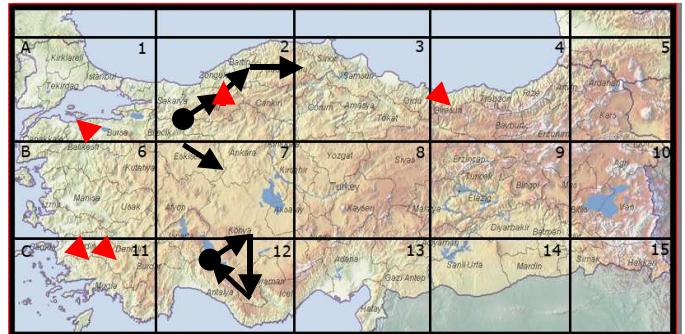


Fig. 2. Turkish grid square system (Henderson, 1961) and bryofloristically investigated area since 2003 (red arrows: MSc, black arrows: Ph.D)

### Research about Biology of *Orthotrichum sprucei* Mont. species

M. Evrim DEMİR, Email: medemir@adu.edu.tr  
Adnan Menderes University, Fac. Art and Sciences, Biology Department (AYDIN)

A population of hygrophytic moss *Orthotrichum sprucei* Mont. has been investigated *in situ* in the only distribution area in the country, Çine River



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Valley (Aydın) for about 15 months to determine the population dynamics of the species.

### **The Moss Flora of Karincali (Nazilli/Aydin) Mountain**

Mithat ÇETİN, Email: mithatster@gmail.com  
Adnan Menderes University, Fac. Art and Sciences, Biology Department (AYDIN)  
Reports 126 moss taxa belonging to 20 families and 48 genera, 8 liverworts belonging to 7 families and 8 genera and 1 hornworts. According to Henderson grid system 33 taxa have been found as new records for square C-11 among the others.

**The Moss Flora of Yenice Forests And Keltepe**  
Mevlüt ALATAŞ, Email: mevlutalatas@hotmail.com  
Zonguldak Karaelmas University, Fac. Art and Sciences, Biology Department (ZONGULDAK)  
Reports 143 taxa belong to 25 families and 71 genera of Bryophytes. In addition 16 taxa were recorded new for the A-2 grid square system.

Mesut KIRMACI and Adnan ERDAĞ. Email: mkirmaci@gmail.com

## **COUNTRY REPORTS**

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### **Country report: Australia**

The first volume on mosses for the Flora of Australia has at long last been published. Sadly, three of the main instigators of the project - Ilma Stone, George Scott, David Catcheside - did not live to see the outcome of their work. It is to be hoped that the remaining volumes dealing with mosses and also hepatics will not be as many years in the making and that, perhaps, Australia could take heed from the way the Moss Flora of North America is being prepared, with treatments made available on the Internet for public use as soon as they are edited.

Preparations are well in hand for the 9th Australian Bryological Workshop, to be held in Tasmania from 3rd to 8th December 2007 (see BT 120). All enquiries to Paddy Dalton (p.j.dalton@utas.edu.au).

Bryology, here as elsewhere, is suffering from a lack of recognition, support and teaching, but it is far from dormant.

David Meagher (University of Melbourne) is well into his doctoral studies revising *Bazzania* and related genera.

Louise Biggs (University of Western Australia) has nearly finished her PhD program and has also just completed a revised census study of mosses of the Perth region.

Emma Pharo's bryophyte ecology lab at the University of Tasmania is working in a range of spectacular Tasmanian communities, including buttongrass (see Mikayla Jones' entry in BT120). Anneka Ferguson is commencing work on cryptogamic response to fire and grazing in grassland and buttongrass.

Oliver Strutt is working on edge effects on epiphytic bryophytes inhabiting aggregated retention in clear cut forest coupes in wet sclerophyll forest.

Daniel Hodge, Jamie Toliver, and Melanie Askew are working on a series of connected projects investigating change in bryophyte abundance and diversity along a wildfire chronosequence. The sites are part of a Forestry Tasmania flagship project headed by Dr Pep Turner, and Paddy Dalton is also involved with the projects. The sites burned in 2005 are a low diversity carpet of *Marchantia*, *Funaria*, and regenerating eucalypts. The other sites (disturbed in 1967, 1934, 1898 and old growth) appear to be more similar in composition than we were expecting, but we only have preliminary data as yet.

At the National Herbarium, Melbourne, Helen Jolley has joined Pina Milne on an Australian Biological Resources Survey funded program revising Pottiaceae: Pottioideae for the Moss Flora of Australia. Other groups of the family are being revised by Graham Bell in Adelaide. Rod Seppelt is also assisting and is undertaking the task of illustrating the family for Australia and also for the New Zealand Moss Flora. Karen Beckmann and Rod Seppelt are continuing studies on *Riccia*, a genus, which is continuing to provide surprises.

Karen, with Pina Milne, are also about to launch a travelling exhibition on the "Forgotten Flora" i.e., bryophytes, fungi, lichens, that will tour the State of Victoria for two years.

At the University of Wollongong, Sharon Robertson has a group of students involved in various molecular and biochemical studies of Antarctic mosses. Laurence Clarke (PhD) is working on the population biology of *Ceratodon purpureus* using microsatellites.

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He has also used atmospheric  $^{14}\text{C}$  to age shoots of several Antarctic mosses.

Johanna Turnbull is writing up her Masters Thesis on UV-B induced DNA damage and seasonal physiological responses in three Antarctic mosses. Another Masters degree student, Neelima Sathe, is researching biochemical mechanisms of stress tolerance in *Ceratodon purpureus* and *Bryum pseudotriquetrum*.

Ellen Ryan-Colton is commencing post-graduate studies developing a State of the Environment Indicator for Antarctic moss and lichen dominated vegetation with Jane Wasley (formerly Wollongong, now Australian Antarctic Division).

In Canberra, Marilyn Ball and Marcus Schortenmeyer (Australian National University) are continuing their ecophysiological studies of mosses.

Christine Cargill, in Canberra, is still working on hornworts in the Australasian region, including molecular work on the Australasian *Megaceros* group. Chris is also attempting to culture *Treubia tasmanica*. She will soon have Melita Baum, a CSIRO Summer Studentship recipient, working on a project examining biodiversity and evolutionary relationships of the Australian members of the liverwort genus *Fossombronia* using molecular sequences.

Andi Cairns (James Cook University, Townsville) continues her survey work on the tropical bryoflora, assisted by David Meagher and Helen Ramsay.

Prof. Rod Seppelt. Email: [rod.seppelt@aad.gov.au](mailto:rod.seppelt@aad.gov.au)

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## News from El Salvador and collaboration request

From the 22-28 of July I taught a Bryology Seminar in San Salvador, El Salvador to personnel of several herbaria of this Central-American country (Herbario del Museo de Ciencias Naturales de El Salvador y los herbarios ITIC, LAGU). Also personnel from herbaria of Guatemala (BIGU) and Nicaragua (ULE), professors of the University of San Salvador and from the El Salvador Ministry of the Environment attended the seminar, together with 15 students in the seminar. The seminar is part of the activities developed under a grant by the Norwegian government to INBio to develop expertise and infrastructure for the herbaria in Central America. My research assistant at STRI, Clementina Chung, came along to help with the seminar. There were lectures in the mornings, practical work in the laboratory in the afternoons and one field trip to the Parque Nacional Montecristo (750-1000 m).

In order to prepare the lab-sessions of the seminar, I collected together with the organizer of the seminar, Lic. Eunice Echeverría of the Herbario del Museo de Ciencias Naturales (El Salvador) and his associate, Jenny Menjivar a collecting trip for to the "Puerta del Diablo" in the Parque Nacional Montecristo. At the end of the seminar a bryophyte list of the Montecristo Nacional Park was put together: we registered in total 11 families of hepatics, of which 7 thalloid families (Ayttoniaceae, Cyathodiaceae, Fossombroniaceae,

Marchantiaceae, Metzgeriaceae, Monocleaceae, Targioniaceae) and 4 foliose families (Arnelliaceae, Jubulaceae, Lejeuneaceae y Plagiochilaceae). Four collections were determined to species. As far as mosses are concerned, 16 families, 15 genera and 5 species of mosses were determined. *Cyathodium cavernarum* and *C. spruceanum* were reported for the first time for El Salvador.

Copies of the Guide to the Bryophytes of Tropical America and of the Marchantiidae were given to the herbaria of El Salvador, Guatemala, Nicaragua and Honduras as gift from the Directors office of the Smithsonian Tropical Research Institute as a contribution to developing Bryology in the area.

N. Salazar Allen is building a database of Bryophytes for El Salvador as a contribution to the knowledge of this group of plants in that country. Information on samples from El Salvador in other herbaria will be appreciated. Also N. Salazar Allen will appreciate undetermined collections from El Salvador housed in other herbaria to be sent on loan to contribute to the building of the database for that country. The collections will be determined.

Noris Salazar Allen  
Email: [SALAZAEN@si.edu](mailto:SALAZAEN@si.edu)

## Country Report: Netherlands

### Web news: Online distribution maps of bryophytes in The Netherlands

Since 1984, the Dutch Bryological and Lichenological Society (BLWG) has been collecting distribution data of bryophytes in a database. We collected over 800,000 records, including old herbarium data from NHN (Leiden, Wageningen, Amsterdam, Groningen), recent field data from trusted sources and private herbarium collections. In order to minimize identification errors, a procedure was developed to validate new data based on field experience, previously validated records and the chance that a species occurs in a certain region. Rare and critical taxa are always checked by specialists. 16 local specialists have been writing species texts accompanying the distribution maps. Using an intranet site, selected members could comment on the first drafts of texts and maps. The public part of the online atlas can be visited at [www.blwg.nl/mosatlas](http://www.blwg.nl/mosatlas) (maps of recent records only). In March 2007 a printed distribution atlas is planned to appear. We'll keep you informed about the book.

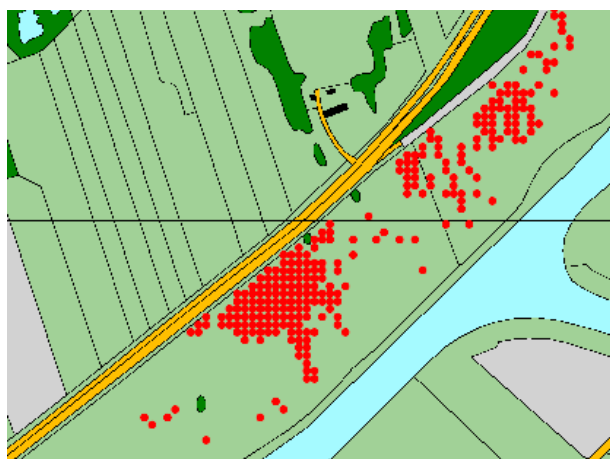
Laurens Sparrius and Bart van Tooren (editors)

### Conservation news: EU Habitat Directive & bryophytes in The Netherlands

All EU member states have to report about the status of species mentioned in annex 2, 4 and 5 of the EU Habitat Directive by the end of 2007, including certain bryophytes. Researchers have been struggling with filling in figures about things like "favourable range" and "population size", which are not easy to estimate when little data are available. Writing a national monitoring scheme is the next topic, as trend data of all species have to be reported by 2014. In 2004 and 2005, the Dutch Government asked the Bryological and Lichenological Society (BLWG) to set up a monitoring plan for all EU protected bryophyte species occurring in the country and to make according reports. We developed a monitoring scheme for *Hamatocaulis vernicosus*, which occurs at one site in the country. Presence/absence in a grid of 10 x 10 meter was used to monitor the population size. In total, 388 out of 2875 grid squares contained the species in 2004 (see map). An assessment is made every 3rd year by freelancer Melchior van Tweel. Surprisingly, in the summer of 2005 two new localities were revealed, both within a few kilometres from the first spot.

For *Orthotrichum rogeri*, a monitoring plan was not feasible as populations are usually small and short

living. Also the species of this genus are very difficult to separate in the field. BLWG produced a fact sheet with virtually all information known about its ecology and about identification issues. Bryologists are asked to submit specimens of suspicious material to the Dutch *Orthotrichum* specialist Arno van der Pluijm. When correct, the exact locality (with GPS), population size and collection date are entered into the database. We estimated the population by giving each record a life span of ten years. The species shows an increasing trend, like in neighbouring countries. A third



*Hamatocaulis vernicosus* has been mapped very precisely at its largest locality in The Netherlands at the border of Natura 2000 area De Wieden. The dots represent presence of the species in 10 x 10 meter grid cells. © Topografische Dienst Nederland, BLWG.

species, *Leucobryum glaucum*, will not be monitored as it is considered too common: hundreds of sampling points all over the country are necessary to detect significant changes. The *Orthotrichum rogeri* fact sheet can be downloaded from [www.blwg.nl/mossen/onderzoek/rapporten/tonghaarmuts\\_web.pdf](http://www.blwg.nl/mossen/onderzoek/rapporten/tonghaarmuts_web.pdf)

Laurens Sparrius

### Agenda: 3 March 2007, BLWG Symposium (Zwolle, The Netherlands)

Several presentations will be given (in Dutch) about bryological research in The Netherlands and Flanders. Also the new distribution atlas of Dutch bryophytes will be officially presented. Check [www.blwg.nl](http://www.blwg.nl) for more details or contact Dick Kerkhof ([info@blwg.nl](mailto:info@blwg.nl)), secretary of the Dutch Bryological and Lichenological Society (BLWG).

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Laurens B. Sparrius, new Bryological Times country contact for The Netherlands

Laurens B. Sparrius MSc (1976) has been since 2002 (for 1 day/week) project leader of the Dutch Bryological and Lichenological Society to update the Dutch species checklists and Red Data Books. Contrary to most other countries, the collection of species distribution and monitoring data is done by private foundations instead of (government) research institutes. His work at the BLWG encompasses coordinating gathering of distribution data by volunteers, database management, fundraising, and carrying out projects in order of local and national governments, such as mapping and monitoring species of the EU Habitat Directive, national species action plans and Red Data Books, both for lichens and bryophytes. Part of the work is done by a pool of qualified freelancers. Beside the BLWG, since 2006,

Laurens Sparrius works 4 days per week at the University of Amsterdam where he prepares his PhD, investigating vegetation and soil of drift sands, an EU protected habitat type where cryptogams dominate the vegetation. In his spare time you are likely to find him busy with lichen taxonomy at home. You can contact Laurens Sparrius at [sparrius@blwg.nl](mailto:sparrius@blwg.nl).



Laurens B. Sparrius

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## LITERATURE COLUMN

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### The Journal of the Hattori Botanical Laboratory

**No. 100 (centennial issue) of the Journal of the Hattori Botanical Laboratory was published in the beginning of September 2006. Fifty-five papers (886 pages) were published in this issue. Contents are available at our home page (<http://www7.ocn.ne.jp/~hattorib/journal.html>).**

The Board of Administration of the Hattori Botanical Laboratory recently decided that it was very difficult to continue publishing the Journal of the Hattori Botanical Laboratory, because of financial and other reasons. It is a pity to announce that this number, no. 100, will mark the final one for the Journal.

When Dr. Hattori passed away in 1992, I succeeded the editorship of this Journal. Fortunately, supported by many bryologists, I could continue publication of this Journal up to No. 100.

As an editor, I thank all bryologists who sent us their manuscripts, and also who helped us reviewing the manuscripts. I thank all members of the Editorial Board who sent me much useful advice and many suggestions. The Hattori Botanical Laboratory will continue the bryological research. Publications including the back issues of the Journal of the Hattori Botanical Laboratory are available through our home page:  
<<http://www7.ocn.ne.jp/~hattorib/journal.html>>

A CD-Rom which contains much useful information for the Hattori Journal is attached at the end of the centennial issue.

Zen Iwatsuki, Editor. Email: [zen@sun-inet.or.jp](mailto:zen@sun-inet.or.jp)

### Support for a the continuation of The Journal of the Hattori Botanical Laboratory

Many people have expressed concern over the cessation of publication of the Journal of the Hattori Botanical Laboratory. We are, indeed, examining ways that publication of the Journal can be continued with greater assurance in the future. In order to investigate a way forward, a small group (committee) has been formed to examine this possibility. The group is made up of the following: Benito Tan, Zen Iwatsuki, Rod Seppelt, Wilf Schofield, Janice Glime.

We will be examining all possible ways of continuing publication of the Hattori Journal. Yes, it has been a hard business decision made by management, but that is the way of the world. And, yes, there are always possible solutions if there is a will and a way forward.

We would welcome all and any comments and suggestions regarding the (hopeful) continuation of publication of the Journal, even in a modified form. Benito Tan has agreed to coordinate comments - that is, please send all comments initially to him (email: [dbsbct@nus.edu.sg](mailto:dbsbct@nus.edu.sg)).

Rod Seppelt. Email: [rod.seppelt@aad.gov.au](mailto:rod.seppelt@aad.gov.au)

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## A new colour illustrated Moss Flora for Nordic countries

**Bryophyta: Buxbaumia - Leucobryum / Bladmossor: Sköldmossor - blåmossor. By T. Hallingbäck et al. 2006. 28 x 23 cm. 416 pages. Illustrated throughout in colour with excellent water colours and photographs. Each species with a distribution map and an English summary. ISBN 91-88506-55-X. € 43,00 / US\$ 48.30 / DKK 280.00.**

The Encyclopaedia of the Swedish Flora and Fauna, has published the first bryophyte volume Bryophyta: Buxbaumia - Leucobryum. That volume describes all species in the families: Buxbaumiaceae, Diphysciaceae, Timmiaceae, Encalyptaceae, Funariaceae, Disceiaceae, Bryoxiphiaceae, Grimmiaceae, Ptychomitriaceae, Seligeriaceae, Archidiaceae, Fissidentaceae, Ditrichaceae, Bruchiaceae, Rhabdoweisiaceae, Schistostegaceae, Dicranaceae, Leucobryaceae occurring in the Nordic countries (including Svalbard). It contains information on morphology, ecology, nomenclature and a distribution map for each species. Each species is illustrated with colour photos of the moss leaves, cells and other characteristics important for identification. For each genus a watercolour illustration is also provided. The language is Swedish, however each species is provided with a summary in English.

The Encyclopaedia of the Swedish Flora and Fauna is the most ambitious natural history book project ever launched and will treat all known species of animals and plants from Sweden. **Until further** the volumes will also treat species from Finland, Denmark, Norway and Iceland. At the moment somewhat less than 60,000 species of organisms are known, from which more than half are insects. The series is planned to be published in about 120 volumes over the coming 20-25 years. Each volume is authored by leading experts, and the series is published with heavy subsidies from the Swedish parliament over the whole publishing period. This is the reason why the volumes can be sold at very moderate prices.

The 50,000 species which can be identified without highly advanced equipment will be described in detail, including information on distribution and biology. For

most of them, distribution maps as well as illustrations e.g. watercolours will also be provided. The groups containing the remaining 10,000 species will be presented down to a suitable taxonomic level (e.g. families), with the species presented as checklists. The text is in Swedish, but for each species, key facts (summary) will be given in English. The many high quality illustrations, distribution maps and illustrated identification keys in both Swedish and English makes the series valuable for an international audience. For many insect groups, hardly any European identification literature is available, and therefore this Encyclopaedia should especially be most important for anyone with an interest in European insects.

A great number of authors are needed to complete The Encyclopaedia of Sweden's Flora and Fauna. Texts will be written by senior scientists and other species experts. Several species groups will often be included in one volume. If an author is not a professional taxonomist, he or she will co-operate with either domestic or international taxonomic experts.

From 2007, 5 volumes are expected to be published each year until the series is completed. At this moment the following volumes are in preparation: Diptera: Syrphidae, 400 species. Bryophyta: Acaulon - Orthodontium, 250 species. Tachinidae, 400 species. Echinodermata & Hemichordata, 80 species. Basidiomycota: Cortinariaceae: Cortinarius, 320 species. Malacostraca except Amphipoda 1, 300 species. Cortinariaceae except Cortinarius, 400 species. Myxomycetes, 200 species. Aculeata: Apidae, 300 species. Coleoptera: Cerambycidae, 120 species. Tunicata: Chondrichthyes, 80 species. Coleoptera: Carabidae, 400 species. Aculeata: Formicidae & Vespidae, 300 species. Annelida: Polychaeta 1, 350 species. Psocoptera. Osteichthyes, 230 species.

If you have any problem in ordering a copy, please contact Tomas Hallingbäck.

Email: [tomas.hallingback@artdata.slu.se](mailto:tomas.hallingback@artdata.slu.se)

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## Botanical journeys of Cajander and Lindroth

**Ahti, T. & Boychuk, M.: The botanical journeys of A. K. Cajander and J. I. Lindroth to Karelia and Onega River in 1898 and 1899, with a list of their bryophyte and lichen collections. Norrlinna 14: 1-65. Botanical Museum, Finnish Museum of Natural History, 2006. Orders to: Secretary of the Botanical Museum, P.O. Box 7, FI-00014 University of Helsinki, Finland; fax: +358-9-191-24456; e-mail:**

[kasvimuseo@helsinki.fi](mailto:kasvimuseo@helsinki.fi). Price 14 € + postage c. 11 € (international mail).

An itinerary of the botanical journeys by the Finnish botanists A. K. Cajander and J. I. Lindroth (later Liro) to Russian Karelia and the Onega River in 1898 and 1899 has been compiled and documented from literature, manuscripts and herbarium specimens. The

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visited localities are shown on maps, and an alphabetic gazetteer also indicates their geographic location. At present the localities are situated in the Republic of Karelia or in the Arkhangel'sk, Leningrad or Vologda Regions, all within the Russian Federation. A catalogue of the moss records (193 species), liverwort records (18 species) and lichen records (68 species) by Cajander and Lindroth is presented. The first set of their collections and most of their manuscripts are

## Archive for Bryology

Archive for Bryology is a "paperless journal" which is published on the internet. It was founded in 1994 as a journal in disk and as an initiative of the International Association of Bryologists, but was not really realized due the fast and always changing developments of computer techniques. In 2003 it was modified to an internet journal, which provides bryological contributions as pdf-files. Recently it got an own URL: [www.archive-for-bryology.com](http://www.archive-for-bryology.com) The journal has an ISSN number, so that everything published on the internet is officially published and can be cited as a normal reference. There is only one exception: taxonomic changes cannot be published. This requires still the printed form. The advantage of such a kind of publication is, that every contribution can be published fast, from one day to the other; one needs not to wait a year or longer until it is printed in a journal; there is no review; the access to this journal is absolutely free, one does not need to subscribe a journal or pay anything; the contents of the journal is searched by Google, which leads you directly to the article without asking for your credit card number and paying 40\$ per paper, and the journal is worldwide accessible. These are all advantages which will make such forms of publications popular in the future. Many years ago, I

housed in the Botanical Museum, Finnish Museum of Natural History. Many species are new records for the recognized floristic provinces of East Fennoscandia. Proposals are made to improve the exact course of the biogeographic eastern boundary of Fennoscandia in light of Cajander's observations and recent geological evidence. [Abstract of the publication.]

Johannes Enroth

started the first bryological journal, which was also available on disk (Tropical Bryology), and this was the first bryological journal providing pdf files as reprints ("e-prints"). Next the German bryological newsletter "Bryologische Rundbriefe" stopped being printed and mailed, but provided on the internet. All 95 numbers can still be downloaded from the university library at Frankfurt:

<http://edocs.ub.uni-frankfurt.de/volltexte/2006/3303/>

The edition of the Archive of Bryology is another step to facilitate bryological publications. It is especially designed for contributions, which will not fit into the high ranked bryological journals and those which require a fast publication, e.g. new floristic records. For example, the latest deals with the discovery of *Phascum vlaszovii* in Central Europe.

At present, 18 contributions (mostly in German, but some also in English) can be found on this webpage. Manuscripts can be submitted to [bryologie@uni-bonn.de](mailto:bryologie@uni-bonn.de).

Jan-Peter Frahm

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## Flora of Australia Vol. 51

**Australian Biological Resources Study (Ed. P. McCarthy): Flora of Australia Vol. 51. Mosses 1. CSIRO Publishing / Australian Biological Resources Study, June 2006. 472 pp., illustrations + colour photographs. Prices: Hardback (ISBN 0643092404) AU\$ 120. Paperback (ISBN 0643092412) AU\$ 99. Available in Europe and the UK from: Eurospan, C/Turpin Distribution, Pegasus Drive, Stratton Business Park, Biggleswade, Bedfordshire SG18 8TQ, UK. E-mail: [eurospan@turpin-distribution.co.uk](mailto:eurospan@turpin-distribution.co.uk) Website: [www.eurospan.co.uk](http://www.eurospan.co.uk)**

It has been a long wait, but the first moss volume of *Flora of Australia* is now out. The mosses will be treated in three volumes, and the first volume covers the following families (arranged here according to authors to save space):

Sphagnaceae, Ambuchananiaceae (R. D. Seppelt)  
Andreaeaceae (B. M. Murray)  
Polytrichaceae (J. Hyvönen except *Dawsonia* by B. O. van Zanten)  
Gigaspermaceae, Archidiaceae, Ephemeraceae, Erpodiaceae, Mitteniaceae (I. G. Stone)  
Splachnobryaceae, Splachnaceae (B. Goffinet)  
Meesiaceae, Aulacomniaceae, Calomniaceae (G. H. Bell & D. G. Catcheside)  
Orthotrichaceae (H. P. Ramsay, D. H. Vitt & J. Lewinsky-Haapasaari)  
Bartramiaceae (S. R. Gilmore, G. H. Bell)  
Orthodontiaceae (A. J. Shaw)  
Bryaceae (J. R. Spence & H. P. Ramsay)  
Leptostomaceae (H. P. Ramsay)  
Rhizogoniaceae (S. R. Gilmore)



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Racopilaceae (B. O. van Zanten)  
Hypopterygiaceae (J. D. Kruijer)

In addition to the actual taxonomic flora, this volume contains a wealth of related information that still increases its value. Helen Ramsay provides a detailed account of the history of research on Australian mosses, including recent research. She has also written a versatile, up-to-date and agreeable introduction to mosses, dealing with their classification, structure and morphology, life history, reproductive biology, (habitat) ecology, biogeography and evolution. That is followed by an account of the fossil record of bryophytes by Gregory J. Jordan. It is otherwise comprehensive, but I wonder why the excellent review book by Oostendorp (1987) was not cited here.

The taxonomic part begins with a key to the Australian genera, based on Buck et al. (2002; reviewed in *Bryol. Times* 108). The family, genus and species descriptions are adequately detailed, considering that typographical economy is a factor in large flora publications such as this. The family and genus descriptions are accompanied with citations of relevant published major treatments of the taxa. As it should in a good scientific flora, the taxonomic synonyms of the accepted species from the flora region are also listed.

All of the species are not illustrated, which is somewhat inconvenient. However, previously published illustrations are consistently cited. The style of the illustrations is, understandably, variable, but the quality is consistently excellent or at least adequate. The long editorial process has left its mark in the arrangement of the illustrations. For example, *Leptobryum pyriforme* was transferred from Bryaceae to Meesiaceae in 2000, and it is illustrated in the same plate (page 183) as *Plagiobryum cellulare* of the Bryaceae; the genus *Plagiobryum* is treated on page 322. I spotted one clear mistake: figure 32 on page 246 should represent *Aulacomnium palustre*, but it is certainly not that species; the leaf areolation is much too different, even if the species is highly variable.

The distribution maps near the end of the book are a very useful tweak. They also clearly show where the moss diversity in Australia is concentrated: from

Tasmania and SE mainland along the E coast to NE parts of the continent. Most of the other parts are more or less blank; this is obvious in the dry and hot central parts, where mainly some Bryaceae, of the taxa treated in this volume, are able to thrive. An introductory chapter on the moss-related natural history of Australia would have been useful to explain and give background to the distinct bryogeographic patterns.

New taxa, combinations and lectotypifications are collected in an Appendix. That is followed by a comprehensive Glossary and a list of the abbreviations and contractions.

Somewhat ironically, the long delay from submission of manuscripts to actual publication also has its advantages. The taxonomy in this part of the flora is now up-to-date; if it had been published almost ten years ago (which was approximately the original plan if I understood correctly), it would largely be outdated already. An example of the up-to-date taxonomy is the family Bryaceae, in which the traditionally very wide and heterogeneous genera have been split into smaller ones, such as *Ochiobryum*, *Gemmabryum*, *Ptychostomum* and *Rosulabryum*.

The publication of this first part of the moss flora is certainly a milestone, and not only in Australian bryology. Its significance to the wider international scientific community is not diminished by the slight technical flaws or inconveniences. After all, one of the few large continents on this planet is now being covered bryologically.

Johannes Enroth

#### References

Buck, W. R., Vitt, D. H. & Malcolm, W. M. 2002: Key to the genera of Australian mosses. *Flora of Australia Suppl. Ser.*, 14: 1–120.

Oostendorp, C. 1987: The bryophytes of the Palaeozoic and Mesozoic. *Bryophytorum Bibl.* 34: 1–112.

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## Bryophytes of the Laurisilva of Madeira

**The Bryophytes of the Laurisilva of Madeira. Guide to some species. This is a bilingual field guide, which includes 64 selected bryophyte species that can be found on the main habitats of the Madeiran Laurisilva.**

Due to its particular geographic, climatic and insular characteristics, Madeira Archipelago comprises an important floristic diversity. Its main forest formation,

the Laurisilva, is considered to be a relict of the forests of the Tertiary period that dominated southern Europe and northern Africa millions of years ago. Nowadays, in this Archipelago, the Laurisilva is restricted to Madeira Island where it covers an area of approximately 15,000 hectares, equivalent to 20% of the island. Here it is situated essentially on the northern coast, between 300 and 1300 m, and in some

locations of difficult access on the southern coast, between 700 and 1500 m. The Laurisilva is considered a living relict with a great biodiversity that includes exclusive species, resembling a true Living Laboratory.

About 540 bryophyte taxa are considered to be present in Madeira Archipelago. Of these, 70% correspond to mosses and 30% to liverworts and hornworts. Approximately 31 taxa are endemic to Macaronesia, including 15 taxa exclusive to Madeira. The laurel forest also hosts a rich and diverse bryoflora which covers large surfaces of soil, banks, rocks and tree trunks. In this forest, about 80% of the Madeira endemics can be found. Some of them are very rare, such as the mosses *Echinodium setigerum*, *Fissidens nobreganus* and *Thamnobryum fernandesii* which are exclusive to Madeira Island.

Completed and ongoing research projects, involving various national and foreign institutions and researchers, have contributed to a deeper understanding of the relationships between the species and their habitats in the Laurel forest. These understandings have led to the development of effective management measures of the natural resources, allowing their sustainable use and protection.

Most of the Madeiran Laurisilva is included in the Natural Park of Madeira and is protected by regional,

national and international legislation. It is a priority habitat, under the Habitats Directive, it has been designated a Natura 2000 Network Site, and in 1999 it was recognized as world Natural Heritage by UNESCO.



This technical-scientific publication, with 104 pages, is appropriate for the public in general, for botanists, naturalists, and professors. It includes some introductory notes, a photograph and a description of each of the species as well as a final glossary. Its main objective is to divulge the actual knowledge about the Bryoflora of the

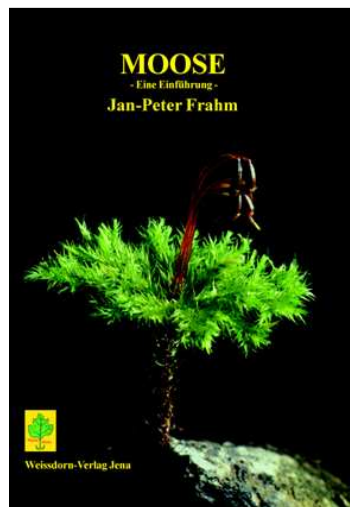
Madeiran Laurisilva, contributing also to enhance the conservation of this Natural Heritage. This book by the authors: Susana Fontinha, Manuela Sim-Sim and Carlos Lobo, is an edition of the Regional Secretary of Environment and Natural Resources- Service of the Natural Park of Madeira and the Foundation of the Faculty of Sciences / Centre of Ecology and Plant Biology, Lisbon University). The book results from a joint project of several Portuguese institutions, as the University of Lisbon (Sciences Faculty), the Madeira Natural Park and the Madeira Botanical Garden and was project was supported by the Portuguese Science and Technology Foundation.

Manuela Sim-sim. Email: [mmsim-sim@fc.ul.pt](mailto:mmsim-sim@fc.ul.pt)

## Introduction to bryophytes

**Jan-Peter Frahm (2006): Moose - Eine Einführung - 237 S., 266 colour photographs. Softcover (149 x 210 mm). Weissdorn-Verlag Jena (ISBN 3-936055-53-X). Price: 17,90 € (approx. 20\$) plus postage.**

The book (in German) will give interested readers an introduction to bryology. It is therefore not written in the classic academic style but a bit cooler and covers topics such as bryophytes in arts, advantage of herbaria, curiosities (mossballs, mutants), survival tricks (allelopathy, carnivory, defence against animals), dispersal (tropical mosses in Europe, bryophytes from overseas, extinct species), bryophytes and climate change, bryophytes as antibiotics, as indicators of environmental quality, living fossils, the



bryoflora of the amber forest, moss gardening, beside more common topics such as history of bryology, species diversity, what are bryophytes, how do they differ from other plants, how are they classified, and ecology of bryophytes by habitats (aquatic bryophytes, epiphytes, heavy metal bryophytes, desert bryophytes, bryophytes in the cities and many more).

The book was stimulated by many of my students who argued that I should write down all the stories about bryophytes I was telling during seminars and fieldtrips, which had no chance to get in a usual textbook such my Biologie der Moose (2001). Thanks are due to the publisher, who had undergone the risk to publish this book, and for a very fair price as compared to other books with 266 colour photographs. It is a very special book concerning style

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and contents and possibly one of the last printed general books on bryophytes.

Orders can be directed by mail to [weissdorn-verlag@t-online.de](mailto:weissdorn-verlag@t-online.de) or online <<http://www.weissdorn-verlag.de/>>

[www.weissdorn-verlag.de](http://www.weissdorn-verlag.de). Colleagues from overseas can pay by PayPal without charges. Credit cards are not accepted.

Jan-Peter Frahm

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## Spore morphology

**Zhang Yu-long and Wu Peng-cheng. Spore Morphology of Chinese Bryophytes. Published in 2006. Size: 210x285mm, hardback; 339 pages, with 178 plates. Price: US\$50.00**

This book describes 83 families, 177 genera and about 270 species of the spores of the bryophytes observed. In the present monograph, the representative families, genera and species of China are introduced, and the main characters of families and genera, the spore morphological description, ecological habitat and geographical distribution of each species are also introduced. As well, 178 plates of light microscope and

scanning electron microscope pictures are included. Most of the pictures are published to science for the first time.

In the system of this book, Takakiopsida is for the first time treated as an independent Class, which is the most primitive one, parallel with Hepaticae, Anthocerotae and Musci. In Chinese, with Latin names and Latin names index.

To order, see website:  
<http://www.hceis.com/book.asp?id=4758>

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## WEB NEWS

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### Perspective Oriented Guide for the Identification of North American Moss Genera

**Diane Lucas and I would like to announce the availability of our "Perspective Oriented Guide for the Identification of North American Moss Genera" at the following website:**  
<http://www.life.uiuc.edu/moss-guide/>

It may be easily downloaded (~80 pages) in its entirety as a msWord file (380 KB), a PDF file (480 KB), or as 16 individual files. It is, however, not a "stand-alone" product, and should be used in conjunction with an appropriate flora and illustrated glossary.

The goal of the Guide is to create a user-friendly identification system for intermediate level students and naturalists that emphasizes perspective on the characters used in the identification of mosses, and the logical structure underlying the total system. It is meant to be a teaching tool in addition to functioning in a practical way to allow generic identification.

The mosses are sorted into smaller Groups where all of the members included in a single Group are defined by one to three major characteristics. The system uses a number of character options found in nature, rather than relying exclusively on dichotomous couplets as in traditional keys.

To the maximum extent possible, the order in which characters are used adheres to the following guidelines: obvious or unique characters will come first, and subtle, inconspicuous ones last. Characters visible to the naked eye will come first, followed sequentially by characters visible in the hand lens, in the dissecting microscope, and lastly in the compound microscope. Characters relating to sexual condition, sporophytes, habitat, or substrate are used only as a last resort, in that they are often not available for many months of the year, or because suitable data were not recorded when the collections were made.

The Guide is simple enough in internal structure to allow the user to correct, modify or customize it with relative ease. We view it as a work "in progress", i.e., very much like open-source software, and would hope that other bryologists would help us in improving and expanding it. In particular, it can be downsized to smaller geographical or political regions by eliminating appropriate taxa.

As "Regional" versions, e.g., Diane's version for New England and New York, become available, they will be included in an Appendix. The system could also be modified without undue strain for use elsewhere in the world, particularly in the Northern Hemisphere.

Malcolm Sargent. Email: [malcolms@life.uiuc.edu](mailto:malcolms@life.uiuc.edu)

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## Plagiochilaceae – molecular phenology

Henk Groth of Göttingen University obtained in 2005 his PhD and informs that his PhD thesis with the title "Molecular phylogeny and morphological reconstructions of Plagiochilaceae (Jungermanniopsida) with hypotheses on biogeography and divergence times" has finally been published electronically in the library of the University of Göttingen. It can be downloaded as PDF-file using the following link(s):

[resolver.sub.uni-goettingen.de/purl/?webdoc-1319](http://resolver.sub.uni-goettingen.de/purl/?webdoc-1319)  
or:  
<http://webdoc.sub.gwdg.de/diss/2006/groth/>

The first link should be used if you wish to cite the thesis.

The manuscript has become fairly large (about 10 Mb), so make sure you are using a fast internet connection for downloading.

If you face any problems with the download, please contact either the library via the website ([www.sub.uni-goettingen.de](http://www.sub.uni-goettingen.de)) or Henk Groth.

Dr. Henk Groth  
Karl-Grueneklee-Str. 1  
37077 Goettingen

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## COURSES AND WORKSHOPS

### 2007 Blomquist Foray

The 2007 Blomquist Foray will be held at the Solon-Dixon Forestry and Education Center located in south Alabama and run by Auburn University. You can view their website at

<http://www.sfws.auburn.edu/Facilities/DixonCenter/Default.htm>.

The meeting will take place from Friday 13 to Sunday 15 April. The Solon-Dixon Forestry and Education Center. Field trips will take place to various habitats on the 5300 acre preserve around the centre. Habitats onsite range from sand ridges dominated by pines and oaks, to cypress wetlands, so there should be something for everyone! The Solon-Dixon Center has dorms and full cafeteria service available onsite. If you prefer to stay at a hotel or other accommodations, we can provide additional information.

There is a registration fee of \$5.00 per person to cover our miscellaneous administrative costs.

All registration fees and room reservation fees for the Station are due by January 1st, 2007. Please make checks payable to Duke University, and send them to Blanka Shaw at the Cryptogamic Herbarium,

Department of Biology, Box 90338, Duke University, Durham NC, 27708-0338.

You should book your room reservations directly with Teresa Cannon (phone: 334-222-7779; e-mail: [cannotj@auburn.edu](mailto:cannotj@auburn.edu)) at the Solon-Dixon Center. The cost is \$75, which covers two nights accommodation plus four meals (3 meals on Saturday and breakfast on Sunday). You can send your check (to Teresa) after you make your reservations; the Solon-Dixon Center does NOT accept credit cards.

The mailing address for Teresa Cannon is: 12130 Dixon Center Road, Andalusia, AL 36420.

Additional information about the Foray will be posted on the website of the Duke University Herbarium, <http://biology.duke.edu/herbarium/bforay.html>. If you have any questions, please contact Blanka (919-660-7308; [blanka@duke.edu](mailto:blanka@duke.edu)) or Jon Shaw (919-660-7344; [shaw@duke.edu](mailto:shaw@duke.edu)). We will send additional information as the date for the foray approaches.

Email: Jonathan Shaw, [shaw@duke.edu](mailto:shaw@duke.edu)

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## THESES IN BRYOLOGY 17

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://opac.nybg.org:211/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

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information on financial assistance from IAB for reproduction of theses. The current IAB Treasurer is Blanka Shaw (blanka@duke.edu).

**Aponte, Angélica. 2003. Revisión del género *Polytrichadelphus* (Müll. Hal.) Mitt. (Polytrichaceae: Musci) para Colombia. Tesis para título de Biología, Universidad Nacional de Colombia, Bogotá D.C., Colombia. In Spanish with English abstract. [vi] iii + 121 pp. Address of author: c/o Dr. Enrique Forero, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Apartado 7495, Bogotá, D.C., Colombia. E-mail: [anaponte@lycos.com](mailto:anaponte@lycos.com).**

Five species of *Polytrichadelphus* are recognized for Colombia: *P. aristatus*, *P. ciliatus*, *P. giganteus*, *P. longisetus* and *P. purpureus*. They are distributed mainly in cloud forest and páramo vegetation. A numerical taxonomic study of the genus was carried out. Cluster analyses with the unweighted pair group method using arithmetic averages as well as ordination methods were used to establish phenetic relationships among species. A key to the Colombian species is provided, as well as descriptions, distribution (with

maps), ecology, general observations and specimens examined. Treatments are also provided for two doubtful species, *P. abriaquiae* and *P. valenciae*.

**Hax, Neva P. 2006. Monograph of the genus *Bryoxiphium* (Bryoxiphiaceae, Bryopsida). Master of Science thesis, University of Connecticut, Storrs, CT. In English. 45 pp. Address of author: 65 Greenough Street, Apt. 1, Brookline, MA 02445, U.S.A. E-mail: [neva.hax@gmail.com](mailto:neva.hax@gmail.com).**

This master's thesis is the first comprehensive revision of *Bryoxiphium* in half a century. Five species and infraspecific taxa were previously recognized in the genus. The taxa were allopatric and differed by minor morphological variations. These putative diagnostic characters, however, were found to vary extensively within populations and even among leaves on single stem. The inconsistency of morphological characters makes it impossible to recognize different populations as distinct species; consequently *Bryoxiphium* is retained as a single, albeit variable, species, *B. norvegicum*.

William R. Buck. Email: [bbuck@nybg.org](mailto:bbuck@nybg.org)

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## Books for sale

We have pleasure in notifying you that we have on stock the following publication:

Halina Bednarek-Ochyra. A taxonomic monograph of the moss genus *Codriophorus* P. Beauv. (Grimmiaceae). Cracow 2006; 276 pages; 106 fig., format: A4 (20,5 × 29,5 cm), Price: 45,00 EUR (porto included), ISBN: 83-89648-40-7. Publisher: W. Szafer Institute of Botany, Polish Academy of Sciences, Lubicz 46, PL-31-512 Cracow, Poland.

R. Ochyra, J. Zarnowiec, H., Bednarek-Ochyra. 2003. Census Catalogue of Polish Mosses. ISBN: 83-85444-84-X.; pp. 372; Institute of Botany of the Polish Academy of Sciences; this book is available at 35,00 EUR per one copy (without postage).

Halina Bednarek-Ochyra, Jiri Vana, Ryszard Ochyra & Ronald I. Lewis Smith. 2000. The Liverwort Flora of Antarctica. XVI + 236 + [2] pp., 96 figs. (including 18 colour photographs), 6 tables. Polish

Academy of Sciences, Institute of Botany, Cracow. ISBN 83-85444-74-2. Price: 44,00 EUR (handling and postage).

R. Schumacker & J. Vána. 2005. Identification keys of the liverworts and hornworts of Europe and Macaronesia. Distribution and Status. (Second, fully revised and updated edition). Format: A4 (21 × 29 cm); pp. 210; ISBN: 83-89949-11-3; price: 50,00 EUR per one copy (with postage).

Payment should be done by remittance to our bank account - Bank Polska Kasa Opieki S.A. I Oddzia, Kraków no. 11124014311978000010475443; ul. Rynek Gówny 31; Kraków; Poland; (SWIFT code: PKOPPLPW) or credit cards.

IB Publisher Polish Academy of Sciences, W. Szafer, Institute of Botany, Ul. Lubicz 46, 31-512 Krakow-Poland.

Email: [ed-office@ib-pan.krakow.pl](mailto:ed-office@ib-pan.krakow.pl)

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**Production:** Geert Raeymaekers, Ecosystems LTD

**UPCOMING MEETINGS**

**2007**

**March 9 – 11:** BBS Bryophyte Ecology Group Spring Workshop. Preston Montford. See BBS website at <http://www.britishbryologicalsociety.org.uk/> for more details

**April 12-18:** BBS Spring field meeting, Northamptonshire. Contact: [BBSspring2007@googlemail.com](mailto:BBSspring2007@googlemail.com) or see BBS website (see above) for more details

**July 7 – 14** (tbc) BBS Summer field meeting. Mull. See BBS website for more details.

**July 23-27 IAB meeting in Kuala Lumpur, Malaysia.** See this issue of the BT 120, page 2). Organizers: Dr. H. Mohamed and Dr. Amru N. Boyce, Fac. of Science, University of Malaya, Kuala Lumpur 50603

**August 12-16: ABLs meeting:** Xalapa, Mexico. See [www.abls.org](http://www.abls.org)

**September 29-30:** BBS Annual general meeting and paper-reading session. Liverpool. See BBS website for details.