The Bryological Times

Number 126 November 2008

Newsletter of the International Association of Bryologists

CONTENT

Dear bryologists,

This newsletter kicks off with an update of the next IAB World Congress in South Africa. The dates have now been agreed (16-20 August 2009) and Terry Hedderson, who has taken the lead to organize this congress, will put more information on the IAB website as this becomes available.

The IAB is also looking for active members to edit the newsletter or take up the position of president or council members and candidates for the council!

Finally, we invite especially the younger bryologists to submit proposals for the Stanley M. Green Award.

Geert Raeymaekers

IAB

ISSN 0253-473

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.

IAB NEWS

The IAB World Congress 2009 in South Africa: an update

The dates for our South Africa meeting have been set for 16-20 August 2009. Participants should arrive on 15 August. This is a change from the tentative dates announced earlier because those dates were in conflict with the start of school in many northern hemisphere universities. Terry Hedderson will be making a full, detailed announcement soon, but informed me that he is constructing a draft scientific programme with the following major themes.

African Bryology
Bryophyte Biology (A general session)
Evolutionary Community Ecology
Conservation Biology
Phylogeny & Systematics
Phylogeography & Biogeography

We will keep you informed through Bryonet and the IAB-website

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: G. Raeymaekers (chairperson), Blanka Shaw (Treasurer) and Johannes Enroth. One or 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 are

- Interdisciplinary and collaborative research;
- 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: johannes.enroth@helsinki.fi
Secretary: Geert.Raeymaekers@skynet.be

Application deadline: 31 March 2009

The IAB seeks new candidates and active collaborators

New president and council members

The IAB is seeking candidates to serve the association for the next 4 years as at the IAB meeting in South Africa 2009 the term for the following offices expires:

President: Janice Glime

2nd vice president: Ben Tan
5 Councillors: Christine Cargill, Uwe Drehwald, Terry Hedderson, Misha Ignatov and David Long.

Rob Gradstein will leave as past president and will automatically be replaced by Janice Glime.

The president has appointed an election committee consisting of Lars Söderström, Norway (Chair), Karen Renzaglia, USA and Hironori Deguchi, Japan.

We would like to have suggestions for candidates that can fill the above-mentioned positions. Please send the name to the chair Dr. Lars Söderström.

There is no need to ask the persons before (we can do that) but indicate if you already have asked.

For the committee
Lars Söderström
lars.soderstrom@bio.ntnu.no

IAB seeks support for the Bryological Times

We are looking for a new editor for the Bryological Times. If you are interested, or would like to nominate someone, please contact me: jmglime@mtu.edu.

Janice M. Glime
jmglime@mtu.edu

Please contact me (jmglime@mtu.edu) with cc to Geert Raeymaekers (Geert.Raeymaekers@skynet.be)

PERSONAL NEWS

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!

Mr. Henry Mwangi Muchura has defended his M.Sc. thesis on Bryodiversity of Mt. Marsabit, Kenya and Mist trapping ability of bryophytes.

Ms. Sarah Mekesa Wekesa has received a fellowship from BRYOLAT project to work on her M.Sc. project on: A comparison of bryophytes, pteridophytes and vascular plant diversity and distribution along an altitudinal gradient on Mt. Kenya, Kenya.

FIELD NEWS

Post IAB-2007 conference field trip to the Cameron Highlands

This is a report of the field trip to Cameron Highlands, 28-30th July, after the IAB Conference in Kuala Lumpur 2007. Cameron Highlands is a highland region located at the central mountain range in the Malay Peninsula about 150 km north of Kuala Lumpur, Malaysia. The trip attracted 21 participants. Angela Newton, Anna Mezaka, Annika Jagerbrand & daughter (Elin), Beate Engler, Cao Tong, Chang Ying, Claudine Ah-Peng, Elena Reiner Drehwald & Uwe Drehwald, Guntis Brumelis, Masanobu Higuchi, Michael Ignatov, Mihoko Uzawa, Ron Porley, Sha Wei, Tatsuwo Furuki, Tomas Hallingbäck, Tomotsugu Arikawa, Ye Wen, Zhang Li and Zhang Yuan Ming were present for all the trip. Mr. Yong Kien Thai was a leader and acted as "local secretary" with the help of Mr. Low Yee Wen, Ms Lee Gaik Ee and five drivers.

Long and winding road- Saturday 28 July

We shared five cars and departed Crystal Crown Hotel at 9 am. Our cars went the North-South Expressway north. We took lunch at Tapah rest and service area on

the express way around 11 am. We exited from the North-South Express way at Tapah Interchange and then proceeded via route 59 to Cameron Highlands. The road from Tapah to Cameron Highlands is paved, but is narrow and has a lot of sharp bends.

On our way to the first town, Ringlet, we dropped in at Lata Iskandar (Iskandar Waterfall, 4.19 degrees N; 101.193 degrees E, ca. 430 m above sea level) around noon for taking a rest. Souvenir shops were located at both sides of the road. Here seems to be one of the famous tourist resorts. Some members reached the upper part of a waterfall by climbing stairs on the left bank of a waterfall. The mosses which we could see here were not many, but *Mniomalia sublimbata* was the best find.

Via Ringlet and Tanah Rata, our cars arrived in Brinchang (4.29 degrees N; 101.23 degrees E, ca. 1,520 m above sea level) around 2 pm and we checked in the hotel, "Country Lodge". In Cameron Highlands the hiking trails are improved, which are called "Trail" or "Path" with number. At 3 pm we visited "Trail 4" connecting Parit Falls (4.28 degrees N; 101.23 degrees E, ca. 1,430 m above sea level) to the Forestry Department, and walked along the trail in pine tree forest as well as evergreen forest. We returned to the hotel at 6 pm. Although the shower was met on the way, it was a pleasant hike.

We had dinner at the restaurant in Brinchang. The main dish was steamboats, which is one of the popular dishes in East Asia. In this time the ingredients included sliced meat, vegetables, mushrooms, tofu, seafood and noodles. I didn't think about taking this in summer, even in the tropics, since it is usually eaten in winter in Japan. Anyway it was delicious and nice for a cool highlands night. After dinner most of the participants went out in the town. In Brinchang the night market is open every Saturday. The size of the market was rather large and sold all kinds of vegetables, flowers, fruits and other products of the highlands. Although the place got really crowded, we enjoyed walking and shopping. I was satisfied with the taste of the durian.

Cool on the Hill - Sunday 29 July

Since the weather in Cameron Highlands was cooler than that of Kuala Lumpur, we could feel comfortable and relax. In the morning we took a group photo in front of the hotel. We left the hotel at 9:30 am for Mt. Brinchang (Gunung Brinchang), where was a highlight in the trip. On our way to Mt. Brinchang we parked the cars on the hilltop near a tea garden. Cameron Highlands is home to many tea plantations, and tea is one of the special products here. The view of the tea garden was beautiful and splendid, although it was not natural.

We started by visiting the mossy forest of Mt. Irau (4.31 degrees N; 101.22 degrees E, ca. 1,920 m above sea level). The forest is located on the ridge and had a rich flora of epiphytes. Giant *Dicranoloma blumei* was found on tree trunks and *Schistochila acuminata* on fallen logs in the forest. Along the road on most of the ridge from Mt. Irau to Mt. Brinchang, abundant *Jackiella javanica* and scattered *Leucobryum javanicum* were seen on soil cliffs at roadside. We could observe many bryophyte species growing on various kinds of substrates.

We arrived at the summit of Mt. Brinchang at 12:30 pm and took lunch. Mt. Brinchang (2032 m above sea level) is the highest mountain in Malaysia where its summit can be reached by road. The road was probably built to access the telecommunication tower at the top of the mountain. The summit area was being crowded with many tourists on that day. *Hypnum plumaeforme* was growing abundantly on soil along the road. It may be introduced recently by visitors. The view from a summit will be wonderful if it is fine, but regrettably it was cloudy and the view was not in sight.

After lunch we descended from the summit along "Trail 1," which was in dense forest on steep slope. Sometimes we met trees with big roots to have to struggle for passing, and the trail got muddy and slippery. The party was already stretched out in the forest. The end of the trail was situated at the edge of Brinchang town, and we were welcomed by our reliable drivers. All returned safely to the hotel at 4-5 pm.

Back in the KLIA - Monday 30 July

We departed from the hotel at 9:30 am and divided into two groups: one was visiting gardens in Tanah Rata and the other was going to Kuala Lumpur.

The field trip was successful and there was no accident. In Cameron Highlands bryophytes are abundant throughout the area. Access to this area is rather easy and hiking trails can provide bryologists with exciting sampling opportunities, although the permit is required. The 21 participants who enjoyed this field trip were from 9 countries and the number also included one from Canada, five from China, one from French Reunion, two from Germany, five from Japan, two from Latvia, one from Russia, one from Sweden and three from the UK. These excellent bryologists from different countries, marvelous biodiversity and a friendly atmosphere made this a memorable field trip for me. I appreciate help of Mr. Yong and his friends and support of Prof. Haji Mohamed as one of the participants. See you again in South Africa in 2009.

Masanobu Higuchi

RESEARCH REPORTS

BRYOLAT PROJECT

The project BRYOLAT was initiated from the University of La Reunion with funds from the French Institute of Biodiversity. The project is under the directorship of Prof. Dominique Strasberg and co-ordinated by Dr. Claudine AhPeng for three years. The project is called: Altitudinal and latitudinal gradients of bryophyte communities in the Western Indian Ocean.

Participants of Mt. Karthala fieldwork: Driver (Comoro), Dominique Strasberg (France), Juergen Kluge (Germany), Claudine AhPeng (France), Terry Hedderson (South Africa), Jacques Bardat (France), Henry M. Muchura (Kenya), Pierre Stamenoff (France), Min Chuah-Petiot (Kenya), Kamal Nourdine (Comoro), Ibrahim Yahaya (Comoro).

Participants of Piton des Neiges fieldwork : Min S. Chuah-Petiot (Kenya), Claudine AhPeng (France), Terry Hedderson (South Africa) and Jacques

BRYOLAT funds have so far covered fieldwork by BRYOLAT Team members in:

1. Reunion Island from 17th March to 4th April 2008 on Piton des Neiges.
2. Grand Comoro Island 20th May to 3rd June 2008 on Mt. Karthala.

Using the same work protocol, fieldwork was organized by Min S. Chuah-Petiot and carried out on Mt. Kenya

The study aims at documenting and assessing the diversity of bryophytes and establishing distribution patterns across altitudinal and habitat gradients. The most representative habitat types were selected and floristic inventories were conducted.

from 1st to 8th July 2008. The Mt. Kenya fieldwork was financed by the University of Nairobi with participation from BRYOLAT

Fieldwork in Madagascar is projected for 2009.

Similar fieldwork will be carried out in South Africa in 2009.

Herbarium News University of Michigan

Effective 15 September 2008, the University of Michigan Herbarium will no longer have a Curator of Bryophytes on staff to oversee this portion of our collection. While the collection will be maintained, available for visitors, and loans will be provided, we have decided that our exchange program in bryophytes will be closed. If you have any specimens already designated to be sent to MICH, we would request that they be sent elsewhere.

While we sincerely appreciate the specimens that have been sent to MICH it would be unfair to our colleagues if we continued to accept exchange with no source of material that we could use to reciprocate. As the last act, we have located a small number of duplicate specimens, many collected in Michigan that will be used to repay some debts.

Richard K. Rabeler Email: rabeler@umich.edu

THESES IN BRYOLOGY

Theses in Bryology 21

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

Ah-Peng, Claudine. 2007. Diversité, distribution et biogéographie des bryophytes des coulées de laves du Piton de la Fournaise (La Réunion). Ph.D. these, Université de La Réunion. xvi + 420 pp. In French with English abstract (on cover 4). Address of author: Faculté des Sciences et Technologies, Université de La Réunion, 15 avenue René Cassin – BP 7151, 97715 Saint-Denis messag cedex 9. E-mail: claudine.ahpeng@univ-reunion.fr.

This doctoral thesis presents data on the measurement and explanation of the diversity of bryophyte communities at different scales on the lava flows of the Piton de la Fournaise. The results confirm that bryophytes represent a major compartment of the biodiversity of Réunion with 753 recorded species. During this 3-year study 100 new records for the island were discovered as well as one species new for science, to be described as *Fissidens ah-pengae* Brugg.-Nann. The natural experimental study site of the lava flows were taken advantage of to study the bryophyte vegetation dynamic and to underline the high bryophyte species diversity along a chronosequence of six lava flows and along an altitudinal gradient on a 1986 lava flow. The diversity is dominated by Lejeuneaceae. Additionally, spatial distribution of bryophytes at a fine scale along these two gradients highlights a turn over of microhabitats and their associated bryoflora. Special attention is paid to the predominant role of the presence and availability of these microhabitats in the structuring of bryophyte communities; 26 bryophyte communities are characterized on the lava flows. The biogeographical pattern of the species on lava flows mainly reflects an African origin, followed by species with a broader distribution.

Barón López, Andrés Felipe. 2006. Aspectos fisiológicos de la tolerancia a la desecación en *Racomitrium crispipilum* (Grimmiaceae) durante la época seca en el páramo de Chingaza, Colombia. B.Sc. (licenciado) thesis, Universidad Nacional de Colombia, Bogotá. 26 pp. In Spanish. Address of author: Departamento de Biología, Universidad Nacinoal de Colombia, Bogotá, Colombia. E-mail: andres_baron@hotmail.com.

This baccalaureate thesis examined desiccation tolerance in *Racomitrium crispipilum* in a páramo in the Cordillera Oriental of Colombia. The moss could lose more than 80% of its wet weight without losing the capacity to synthesize proteins during the period of rehydration. It was indicated that proline helps to counteract the effects of desiccatin and low temperatures. The results reported in this study present evidence for the first time that this species has the ability to elevate the activities of catalase and peroxidase in response to conditions of water stress.

Benavides Duue, Juan Carlos. 2007. Competitive ability of an epilithic moss, *Thuidium tomentosum* Schimp., under different light treatments in a subtropical lower montane forest in Puerto Rico. M.S. thesis, University of Puerto Rico, Mayagüez, PR. ix + 40 pp. In English with Spanish abstract. Address of author: unknown.

This master's thesis investigated the competitive ability of *Thuidium tomentosum*, as well as the importance of its flagelliform branches and the competitive heirarchy with two epilithic bryophytes, *Ceratolejeunea cornuta* and *Leucoloma cruegerianum*. Relative growth rate of *T. tomentosum* was compared with these taxa at three levels of light and two clipping levels (with and without flagelliform branches) during a 9-month study in secondary forests in Ciales municipality in Puerto Rico. The combination of *T. tomentosum* with only one of the other species showed an effect coherent with the resource competition hypothesis, but the combination of the three species together showed a positive interaction coherent with the facilitation hypothesis. Light intensity modified the competitive ability of *T. tomentosum* with higher growth rates under full and intermediate light than in complete shade. The flagelliform branches have a role in the lateral expansion of *T. tomentosum*, but did not enhance its competitive ability. Changes in the competitive heirarchies across environmental gradients are a new approach to explain the coexistence of numerous

bryophyte species in tropical mountains. The thesis is available online at http://grad.uprm.edu/tesis/benavidesduque.pdf.

Fuselier, Linda Catherine. 2004. Maintenance of sexually dimorphic patterns of growth and reproduction in *Marchantia inflexa*. Ph.D. dissertation, University of Kentucky, Lexington, KY. X + 200 pp. In English. Address of author: King Hall, Biology Department, Minnesota State University at Moorhead, Moorhead, MN 56563. E-mail: fuselier@mnstate.edu.

This doctoral dissertation examined the roles of natural selection in maintaining sexual dimorphism in the context of impacts on bryophyte population sex ratios, using *Marchantia inflexa* as a model system. Included is an assessment of among-population variation in habitat use by the sexes, comparison of phenotypes between single-sex and both-sex populations, a field study of natural selection, and a comparison of the influence of selection on asexual and sexual fitness components. The sexes of *M. inflexa* were sexually dimorphic in investment in growth, asexual and sexual reproduction. The sexes were spatially separated in populations, but the sexes overlapped in habitat use. Populations differed in growth, asexual reproduction rates, degrees of sexual dimorphism and strength of among-trait correlations. Plants from single-sex and both-sex populations differed in investment in growth and asexual reproduction, but the two population types showed the same degree of sexual dimorphism. Thus, local environment may be more influential than the presence of the opposite sex in maintaining sexual dimorphism. Selection on sexually dimorphic traits was both sex-specific and environmentally dependent. Between-sex correlations were not significant in the greenhouse but were significant in the field. Thus, evolution and expression of sexual dimorphism in nature may be constrained by among-trait and between-sex correlations. Additionally, females incurred a cost of plasticity that males did not. Because there was a negative trade-off between sexual and asexual fitness, overall lifetime selection may result in a different picture of how the sexes experience selection. The combination of sex-specific and environment-dependent selection, and sex-specific costs to plasticity may not only maintain sexually dimorphic traits but also ensure the persistence of both sexes in a population. The dissertation is available online at http://lib.uky.edu/ETD/ukybiol2004d00154/fuselier.pdf.

Jerez Jaimes, Javier H. 2003. Composición de tardígrados en el musgo *Calymperes palisotii* Schwaegrichen sobre seis forofitos (árboles) en la Universidad de Puerto Rico, Recinto de Mayagüez. M.S. thesis, Universidad de Puerto Rico, Mayagüez, PR. xiii + 99 pp. In Spanish with English abstract. Address of author: unknown.

This master's thesis examined the influence of the phorophyte (tree) on the composition of the tardigrade communities on *Calymperes palisotii* at the Mayagüez campus of the University of Puerto Rico from February to May of 2003, spanning both the dry and rainy seasons. Two trees of each of the six phorophytes were included. Seven species of tardigrades were found, three of which are new to Puerto Rico. The ecology of the tardigrades was studied using analysis of density, distribution, species richness and diversity. Tardigrade communities from *Mangifera indica* (mango) and *Swietenia macrophylla* (mahogany) presented the highest species richness and diversity. The thesis is available online at http://grad.uprm.edu/tesis/jerezjaimes.pdf.

Kreier, Hans-Peter. 2003. Die Pilz-Assoziationen der Aneuraceae (Marchantiophyta). Diplomarbeit, Fakultät für Biologie, Eberhard-Karls Universität, Tübingen, Germany. [iii] 34 pp. In German. E-mail of author: hkreier@gwdg.de.

The results of this study confirm that *Riccardia*, like *Cryptothallus* and *Aneura* are infected with species of *Tulasnella*. Finding the same fungi in *Lobatiriccardia* would be an indication that the Aneuraceae have a more isolate position among the Metzgeriales than previously thought. Segregating the family as a distinct order could be considered. For a better understanding of the mycorrhizae in the Aneuraceae a critical study of the genus *Tulasnella* is imperative. The identification of the mycorrhizal species would facilitate the understanding of the development of the Aneuraceae-mycorrhizal association and maybe show connection to the mycorrhizae in orchids. If orchids and the Aneuraceae have the same mycorrhizal fungi, then it should be possible to inoculate orchids by using Aneuraceae. An earlier study showed inoculation of vascular plants with mycorrhizae from hepatics. Should one find liverworts that share mycorrhizal fungi with trees (like *Cryptothallus* and *Betula* or *Pinus*) then it may be possible to promote the regeneration of forests by dispersing liverworts. Given the high capacity to regenerate vegetatively and the fast growth of liverworts, this would be a cheap and effective mean of inoculation. A more detailed study of the life cycle of *Tulasnella* species would also be informative. Species of *Tulasnella* decomposing wood may, if they develop mycorrhizae, transmit compounds released from the wood to the liverwort. The species *Riccardia palmata* and *R. latifrons* which were included in this study grew on rotten wood and were well infected by mycorrhizal fungi. There are open questions even with *Riccardia*. For this study no seasonal variation could be included since all local species were gathered in the fall. However, seasonal variation is known to occur in particular with regard to the infection by endophytes. By culturing hepatics with or without the fungus one could find out the extent to which the fungus prmotes

growth of the plants. Such an experiment remains to be done in *Aneura*; so far the fungi have only been grown in culture. Finally, the phenomenon of rhizoidal bridges in a tropical *Aneura* was discovered.

Merced Alejandro, Amelia. 2004. A heterochronic sequence for the development of paraphyses in *Neckeropsis* Schimp. (Bryophyta: Neckeraceae). M.S. thesis, University of Puerto Rico, Mayagüez, PR. x + 72 pp. In English with Spanish abstract. Address of author: Herbarium, Biology Department, University of Puerto Rico-Río Piedras Campus, P.O. Box 23360, San Juan, Puerto Rico 00931-3360. E-mail: ameliamerced@yahoo.com.

This master's thesis examines the development of the leaf-like paraphyses, often referred to as ramenta, in *Neckeropsis*, with special emphasis on *N. disticha*. These structures have been variously interpreted as modified perichaetial leaves or multiseriate paraphyses. Using light microscopy and embedding and sectioning, the development of the ramenta is studied. Transitions between uniseriate and multiseriate paraphyses were documented at different times in the development of the fertilized branch. It is shown that the ramenta truly are paraphyses that develop in a heterochronic sequence similar to the heteroblastic sequence in leaf development. The thesis is available online at http://grad.uprm.edu/tesis/mercedalejandro.pdf.

Narváez-Parra, Eliana Ximena. 2003. Brioflora sobre taludes del transecto Mayagüez-Maricao (Puerto Rico). M.S. thesis, Universidad de Puerto Rico, Mayagüez, PR. xii + 115 pp. In Spanish with English abstract. Address of author: unknown.

This master's thesis examined the bryoflora on roadbanks along a transect from Mayagüez to Marico, Puerto Rico, that ranges from 15 m to 472 m. An ecological inventory was carried out at five sampling stations along the transect from February to April 2003. In May 2003 a floristic inventory was conducted at 13 sampling stations along the transect. Analysis of similarity among the stations, variance, distribution and association among species were analyzed. *Dicranella hilariana*, *Fossombronia brasiliensis*, *Lejeunea cladogyna* and *Philonotis uncinata* were the most frequent species. The thesis is available online at http://grad.uprm.edu/tesis/narvaezparra.pdf.

Rams Sánchez, Susana. 2007. Estudios briológicos sobre flora, vegetación, taxonomía y conservación en Sierra Nevada (Andalucía, S de España). Ph.D. thesis, Universidad de Murcia, Spain. [xv] 476 pp. In Spanish. Address of author: Universidad de Murcia, Facultad de Biología, Departamento de Biología Vegetal, Campus de Espinardo, 30100-Murcia, Spain. E-mail: rams@um.es.

This doctoral thesis deals with the whole massif of the Spanish Sierra Nevada and all kind of habitats for bryophytes present in it. A total area of 2200 km^2 were covered with 160 ruled squares of 1 km^2, scattered through the territory. The work consists of four large units: flora, vegetation, taxonomy and conservation. A study of the bryoflora in Sierra Nevada (Spain) indicated a total of 442 taxa: 2 hornworts, 74 liverworts and 366 mosses. Among them, 15.8% are new for this mountainous area; 10 taxa are new for the province of Almeria and 41 for Granada; *Pohlia bolanderi* is new for the European continent; *Tortella alpicola* is new for western Europe; *Hygrohypnum styriacum* and *Tortula bolanderi* are new for the Iberian peninsula; and *Bryum valparaisense* is new for peninsular Spain. A treatment of bryovegetation recognized 34 associations and 4 communities in 13 vegetation classes. The association *Polytricho juniperini-Tortuletum hoppeanae* ass. nova is described as new for acidic soils in high mountains. Taxonomic studies, combining morphological and molecular (*rps*4 and *trn*L-F) data, resulted in recognition of *Oreoweisia mulahacenii* Höhn. as *Hymenoloma mulahacenii* (Höhn.) Rams, Ros, O. Werner & Ochyra, with *Dicranoweisia intermedia* J. J. Amann being a synonym. In regard to conservation studies, the status for the bryophytes from Sierra Nevada (Spain) was determined using IUCN criteria. In particular, for the case of *Pohlia bolanderi*, an additional study on the intraspecific genetical variability has been carried out by ISSR molecular markers, that shows high values. Finally, all this information led to delimitation of important areas for bryophytes in the Spanish Sierra Nevada. Three criteria were established for it: specific richness, specific rarity and red listed species presence. Protective measures to preserve habitat quality are proposed.

Sagar, Tarja. 2007. Bryophytes of the Santa Monica Mountains. Master's thesis, California State University, Northridge. viii + 181 pp. In English. Address of author: Santa Monica Mountains National Recreation Area, 401 West Hillcrest Drive, Thousand Oaks, CA 91360. E-mail: Tarja_Sagar@nps.gov.

This master's thesis examines the bryophytes of a mountain chain in southwestern California, with a Mediterranean climate with a maritime influence on the southern and western slopes. An inventory resulted in 118 species, 3 of which were new to the state. An identification guide is presented with illustrations and notes on ecology and biogeography. After the baseline inventory, 103 mesosites were selected that promised to be rich in bryophytes or to have rare bryophytes. At each site, the microhabitat preferences of the species were contrasted in terms of substrate softness, moisture, slope and shadiness. The common 61 species were arrayed along these four niche axes, resulting in a niche graphic that allows one to distinguish ecologically between species in a guild.

Additionally, the mesosites were ordinated, and mesoenvironmental variables were overlain on the ordination. Insolation, parent rock type and distance to the coast accounted poorly for dissimilarities among sites. Topographic position as represented by elevation was somewhat better. Abundances of bryophytes by niche axes were highly correlated with site separation on the ordination. The bryoflorula of the Santa Monica Mountains was compared to that of Santa Cruz County, a macrosite of higher latitude, and to that of Mount San Jacinto, a macrosite of higher elevation. The study site had relatively few species not found in the other two areas, and seemed to have a flora that is generally intermediate between them.

Stamenoff, Pierre. 2007. Géomatique appliquée à l'analyse de la distribution des bryophytes de l'île de la Réunion: Exploitation des collections d'herbiers. Master's thesis, Université de la Réunion. 90 pp. + 4 fold-out maps. In French. Address of author: unknown.

This master's thesis uses GIS technology as applied to herbarium specimens of bryophytes on Réunion. Areas of high diversity were revealed, with mosses found to be more widely distributed than hepatics.

William R. Buck
Institute of Systematic Botany
New York Botanical Garden
Bronx, NY 10458-5126, U.S.A.
bbuck@nybg.org

BRYOLOGICAL EXHIBITION

Mountain Moss Wins Again

A new moss winner! I am delighted to announce that MOSS wins again at the Fair this year. This is the second news flash about moss because it is the second time moss takes "Best of Show." Go Green With Moss!

Moss Creations win again at the 15th Annual NC Mountain State Fair Moss is moving up in the world. Judges at the 15th Annual NC Mountain State Fair select mosses over flowers for Best of Show for the second time. Mossin' Annie's innovative creation featuring bryophytes (mosses) in a birdbath is the winner of "Best of Show" in the 2^nd session of the flower show competition this week. Last week, a "mossy" hollow log took the same top honors over all the other incredibly beautiful flower and plant entries in the 1^st portion of competition.

The "Best of Show" moss bird bath is two-tiered with textures of Dicranum, Sphagnum, Thuidium, Bryum argenteum and Leucobryum mirroring a mountain landscape. A healthy Carolina Hemlock seedling graces this moss garden along with a Renaissance fern. The "Best of Show" moss winners contrast each other – the first moss log reflecting mosses in a natural setting such as native restoration projects while the moss bird bath exemplifies mosses in a creative, yet, more formal presentation.

All mosses and native plants incorporated in these blue ribbon moss creations have been rescued from high impact areas in the region supporting responsible land stewardship with environmentally-concerned developers and property owners. To further the concept of "Going Green", all the indigenous mosses used in these award-winning displays could actually become features in a sustainable landscape for year-round green. The aesthetic and practical aspects of eco-friendly mosses offer new options in landscape designs.

The flower show at the fair is sponsored annually by the Buncombe County Master Gardener Volunteer program of the NC Cooperative Extension Service.

Annie Martin is a native of Asheville and currently lives in Brevard where her home boasts her own moss garden, which she started over eight years ago. She recently completed her certification as a Master Gardener Volunteer in Transylvania County. The WNC Agricultural Center is located across from the Asheville Regional Airport in Fletcher, NC.

Annie Martin creates unique moss dish gardens to illustrate the myriad of textures, shapes and shades of green that can be achieved featuring moss in a sustainable landscape. Mossin' Annie promotes the rescue of indigenous bryophytes and creatively uses these unique plants in public and private gardens. She shares her fascination with moss with others through public presentations and workshops.

For further information on moss, contact:

Annie Martin

mossinannie@gmail.com
Mountain Moss Enterprises
40 Holly Ridge Road
Pisgah Forest, NC 28768
+1.828.577.1321
www.mountainmoss.com

LITERATURE COLUMN

Bryophytes of Colorado

Weber, W. A. & Wittmann, R. C. 2007: Bryophytes of Colorado. Mosses, Liverworts, and Hornworts. 238 pp., 8 plates. Pilgrims Process, Inc., Santa Fe, New Mexico. Paperback, format 28 × 21 cm. Price: USD 29.95. ISBN 978-0-9790909-1-2

In contrast with Europe where the vast majority of states, numerous geographical regions and various administrative units possess descriptive floras of bryophytes of their own, similar treatments are rather infrequent in North America and so far only a number of states of the United States possess them. Thanks to the efforts of Bill Weber and Ron Wittmann Colorado is the next to join, amongst others, California, Utah, Pennsylvania, New York, Iowa, Ohio, Illinois, Michigan, West Virginia, and Florida. The present work is the crowning achievement in the bryological research of Bill Weber who has been closely associated with this state since 1946 when he started his work as an instructor in the Biology Department of the University of Colorado. Bill's botanical expertise does not need special recommendation and as a true Renaissance Man he has developed research specialties in vascular plants, ferns, lichens, bryophytes and phytogeography and his fieldwork has ranged across almost all continents. He may be especially proud to have built up in Boulder, nearly from its foundation, one of the largest North American herbaria consisting of over half a million specimens, of which 116.000 are bryophytes. Aided by Ron Wittmann, a talented amateur botanist, Bill devoted the last decade of his working life to concentrated field and herbarium work on the bryophytes of Colorado and this book presents the results of this long-term investigation. This is a much more complete version of the guide to the mosses of Colorado which was published exactly 35 years ago (Weber, 1973) which is expanded for liverworts and hornworts.

Colorado has long been under-represented in the bryological map of North America despite its special phytogeographical position. While it has no endemic taxa, it is a meeting point of various phytogeographical disjunct elements which give special status to this area. Of these, the most important are numerous arctic-alpine species (e.g. *Catoscopium nigritum*, *Dicranum groenlandicum*, *Didymodon asperifolius*, *Isopterygiopsis alpicola*, *Pseudocalliergon turgescens*, *Schistidium frigidum*, *Tortella arctica*, and *Voitia nivalis*) and disjunct desert-steppe bryophytes from the Mediterranean and Central Asia (e.g. *Anoectangium handeliis*, *Didymodon anserinocapitatus*, and *Jaffueliobryum rauii*). Some of them represent an ancient Tertiary disjunct pancontinental element (e.g. *Anacolia laevisphera*, *Bryoxiphium norvegicum*, *Leptodon smithii*, *Leptopterigynandrum austroalpigenum*, and *Oreas martiana*) and Andean species (e.g. *Bartramia potosica*, *Brachythecium steropoma*, *Homomallium mexicanum*, and *Pseudocrossidium replicatum*). If these elements are supplemented by Eastern American and Pacific North-west disjunct woodland species, it is clear that Colorado occupies a key position in North America and has to feature in all phytogeographical considerations of the local and global bryophyte flora.

The present book is primarily an annotated catalogue of the bryophytes of Colorado. It consists of two main parts which present accounts on mosses (part 1) and liverworts and hornworts (part 2). They are arranged in alphabetical order by families, genera and species. In total 507 species (401 mosses and 106 liverworts and hornworts) have been recorded in Colorado. This shows a remarkable increase in the number of known species when compared with the 292 moss species recorded only 35 years earlier, indicating amazing progress in the exploration of this large state which is nearly the size of Great Britain. While the moss flora has been fairly exhaustively covered (though new discoveries are still expected) the authors admit that the data for liverworts is somewhat preliminary and fieldwork should yield many additional records. This is very likely if the size of terrain and great habitat diversity are considered. It is not a classical descriptive Flora but an equivalent of what in Europe is called an 'Excursion Flora'. It comprises keys for the determination of families, genera and species and presents a brief characterization of taxa, with special emphasis on the key characters which are essential for their quick and safe identification, as well as habitat preferences. For rare and infrequent species specimens are cited. Only six species of special Colorado mosses are illustrated with fine line drawings. The author names are omitted in the main text but are given for the accepted genera and species in the catalogues at the end of the book, though for synonymous names they are still missing. A valuable point of the book is the explanation of the etymology of generic names and specific epithets.

The main part of the book is preceded by a short introduction in which the history of bryological research in Colorado and a short outline of ecology, phytogeography and conservation are presented. A brief but valuable listing of the most important features concerning the uniqueness of bryophytes is contained in this part of the book. Lastly the authors provide a good glossary, a very valuable and detailed listing of

the people associated with bryophyte names, both authors and eponyms, an exhaustive bibliography, catalogues of mosses, liverworts and hornworts with lists of synonyms that have been applied in earlier papers, as well as a separate alphabetic index of specific epithets for the main groups of bryophytes. These are accompanied by the generic names with which they are associated, but reference to pages would have been much more valuable for users.
Bryophytes of Colorado is a very important book which fills a remarkable gap in our knowledge of the distribution of these plants in North America and should stimulate future research on the bryophyte flora of the Rockies. Personally, I recommend this book as a very important source of the distributional data of mosses in this part of the continent which has always puzzled me when completing global distribution maps for various species. The authors, and especially Bill, should be congratulated on this excellent contribution to bryology and I would wish that it will soon be out-of-date through the discovery of many new additions to the moss and hepatic floras of Colorado. This is very likely if the never failing energy and enthusiasm for fieldwork of Bill Weber continue.

Ryszard Ochyra

Reference:

Weber, W. A. 1973. A guide to the mosses of Colorado. Keys and ecological notes based on field and herbarium studies. *Institute of Arctic and Alpine Research University of Colorado Occasional Paper* **6:** i–iii + 1–48.

Handbook of Mosses of the Iberian Peninsula and the Balearic Islands

Casas, C., M. Brugués, R.M. Cros & C. Sérgio. 2006. Handbook of Mosses of the Iberian Peninsula and the Balearic Islands. Illustrated keys to genera and species. Institut d'Estudis Catalans: Barcelona, Spain. 349 pp.

After the publication, in two volumes, of the bryophyte flora of the "Paisos Catalans" (comprising Catalonia, Valencian Country, the Balearic Islands, Andorra and the southeastern corner of France: see a review in The Bryological Times 119: 11-12), the same authors, together with the collaboration of Cecilia Sérgio, have recently published this badly needed book. Under the direction of Dr. Cruz Casas in one of her last exceptional bryological contributions before her decease in 2007, this book is a fruitful comprehensive study of the moss flora of the whole Iberian Peninsula and the Balearic Islands. Until now, there was no updated and complete moss flora comprising this territory. The book has benefited from the traditional collaboration between the active ladies at the Universidad Autonoma de Barcelona and the well-known Portuguese bryologist Dr. Cecilia Sérgio, that crystallized previously in many papers and the first "Red List of Bryophytes of the Iberian Peninsula" (recently updated in Lindbergia 31: 109-125, 2007). In fact, one of the main goals of this book is to consider the Iberian Peninsula as a phytogeographical unity beyond the political separation between Portugal and Spain. The area covered shows a noteworthy climate variability and a wide range of altitudes from sea levels to summits over 3000 m in the Pyrenees and Sierra Nevada, as well as a rich diversity of soil types. These circumstances produce very different and often contrasting environments, and as a consequence a rich bryoflora overall. Recognised taxa number 791, which represent 64% of the European moss flora.

This volume presents a comprehensive and well-structured synthesis of the current knowledge available on the mosses in the Iberian Peninsula and the Balearic Islands, providing information on the morphology, systematic, ecology and distribution of the almost 800 taxa included. The artificial key to genera will be familiar to European bryologists since it is similar in its conception to that from Smith's "Moss Flora of Britain and Ireland". Each genus includes a short morphological description, and then a key to species is given. After the specific name and most-used synonyms of each species, the differential characters, information to achieve a correct identification, growth form, ecology, vegetation zone and geographical distribution within the territory studied are supplied Illustrations were drawn by Anna Barrón and Iolanda Filella, and consist of 84 plates covering the species mentioned. A glossary and an index of scientific names complete the volume. Almost 20 specialist bryologists, both Spanish and international ones, have collaborated revising specimens, and samples in 14 herbaria were consulted. The book is totally written in English (revised by Roy Perry), which will make its use easier for foreign people.

This moss flora is of an elementary level, especially devised for beginners, students, general botanists, and people generally keen on bryology. It will also result useful for those professionals who wish to have a general but meticulous overview on the Iberian mosses. In this sense, it represents a practical and cheap complement to the developing project "Flora Briofítica Ibérica - Iberian Bryophyte Flora" (FBI), more specifically directed to professional bryologists and of which two volumes out of the five projected have been

already published. A new and attractive webpage of this essential reference project may be visited at http://www.florabriofiticaiberica.com/.

This book can be ordered from the Institud d'Estudis Catalans at http://einstein.uab.es/mbrugues/Comanda%20Handbook.htm.

The price is 50 € (about 75$), postage included. For members of the Sociedad Española de Briología - Spanish Bryological Society (SEB), 50% discount is offered. A real bargain.

This moss flora will be completed by a forthcoming second volume devoted to Iberian liverworts. I am looking forward it to come soon!

Javier Martinez-Abaigar, Universidad de La Rioja (Spain)
javier.martinez@unirioja.es

Cryptogamie, Bryologie dedicated to two famous women in bryology

Cryptogamie, Bryologie will publish next January 2009, a special issue (vol. 30 (1)), entirely dedicated to the memory of Creu Casas (1913-2007) and Carmela Cortini Pedrotti (1931-2007), the two famous women involved in Spanish and Italian bryology. They have played each an important role in the development of the bryological studies in their countries and in the Mediterranean region.

This issue is introduced by the biographies of Creu Casas (by Montserrat Brugues) and of Carmela Cortini Pedrotti (by Michele Aleffi), and by the last work of C. Casas (with M. Brugues, R.M. Cros, E. Ruiz and A. Barron) on the mosses of the Spanish central Pyrenees. It will include 12 contributions specially written by their Spanish and Italian students or friends. These papers deal with various topics on Spanish and Italian bryophytes.

Michele ALEFFI - Prof. Carmela Cortini Pedrotti (1931-2007)
Montserrat BRUGUES- Creu Casas (1913-2007)

Felisa PUCHE & Fernando BOISSET - On the occurrence of Riella affinis M. Howe & Underwood (Marchantiophyta, Sphaerocarpales) in the Sahara Desert (Africa)
Javier MARTINEZ-ABAIGAR, Saul OTERO, Rafael TOMAS & Encarnacion NUNEZ-OLIVERA - Effects of enhanced ultraviolet radiation on six aquatic bryophytes
Patxi HERAS PEREZ, Marta INFANTE SANCHEZ & Manu IZAGUIRRE LACOSTE - On the use of mosses in the building of a XVth century ship in Northern Spain
Rosa LO GIUDICE & Giuseppe BONANNO - Bioaccumulation of heavy metals in mosses and soils on the Etna Volcano and the Iblei Mountains (Eastern Sicily)
Maria Giovanna DIA & Patrizia CAMPISI - New or interesting records to the moss flora of Italy
Marta PUGLISI & Maria PRIVITERA - Outlines of the bryophyte vegetation of the Circeo National Park (Central Italy)
Alicia EDERRA & Ana VILLAROYA- One hundred and twenty years of bryological history in Vertizarana Valley (Navarra, North Spain)
Francisco LARA, Ricardo GARILLETI, Rafael MEDINA & Vicente MAZIMPAKA - A new key to the genus Orthotrichum in Europe and the Mediterranean Region
Creu CASAS, Montserrat BRUGUES, Rosa M. CROS, Elena RUIZ & Ana BARRON - Checklist of Mosses of the Spanish Central Pyrenees
Rosa Maria CROS & Katarzyna BUCZKOWSKA - Conocephalum salebrosum (Marchantiopsida) new to Spain
Juana Maria Gonzalez-Mancebo, Jairo Pati, Olaf WERNER, Rosalina Maria de Almaida Gabriel and Rosa Maria ROS - Distribution patterns of Leucodon species in Macaronesia, with special reference to the Canary Islands
Michele Aleffi, Marko Sabovljevic, Roberta Tacchi - The bryophyte flora of the Gargano Promontory (Apulia, Southeastern Italy)
Annalena COGONI, Antonio SCRUGLI, Francesca FLORE, Pierluigi CORTIS & Michele ALEFFI - The bryophyte flora of the Asinara Island (northwest Sardinia, Italy)

Bryologists from these and other countries are invited to purchase this issue (ca 190 p.), at a price of 30 euros

The orders should be sent to: ADAC-Cryptogamie CP 39, F-57 rue Cuvier 75231 Paris Cedex 05 (France)

Michele ALEFFI
E-mail: michele.aleffi@unicam.it

An illustrated key to the Racomitrioideae

I have published (posted) an illustrated key to the Racomitrioideae of Oregon on the web site of the Oregon State University Herbarium:
http://oregonstate.edu/dept/botany/herbarium/racoweb/ARACKEY.htm

It covers the four genera of Racomitrium s.l. as treated by Ochyra and Bednarek-Ochyra in the first part of mosses in the Flora of North America (vol. 27, part 1, of FNA). The key also covers all species presently known from California and most of those from Washington state. The key has been written with vegetative characters as the primary characters in each lead, with reproductive structures being secondary, so that sterile material can be identified. I recommend printing out the first part, the Introduction and Explanation, for detailed instructions on the use of the key and a discussion of the group.

This is a standard dichotomous key formatted for web browser navigation. Each page in this key is a couplet with two contrasting leads. The picture above the lead illustrates the primary character. The moss green button at the left of the lead links to the next couplet or to a species page. Each species page gives pertinent synonyms, diagnostic characters and hints for differentiating look alikes, habitat and distribution, additional illustrations, and comments.

All pictures on the key pages and the species pages are thumbnails, low-resolution versions of the images for rapid downloading. Click on a thumbnail to see a larger image. These higher resolution images may be larger than your screen depending on your browser settings. They have been saved at 1000 pixels high to retain reasonably good resolution. Use your back arrow, "Show the previous page," to return to the page on which the thumbnail was located. All images used in the key are repeated on the appropriate species page. Most species pages have many additional illustrations, over 170 photomicrographs are incorporated into this document.

At the top of every key page there is a line of breadcrumbs. This is a series of links to the leads in each couplet taken to arrive at this page. It is a shorthand record of choices made. You can go back to any step in the keying process by clicking on the appropriate phrase in the breadcrumb trail. Clicking on the first breadcrumb will take you back to the start of the key.

The web key works best with a fast, broadband connection; otherwise the full resolution photomicrographs will be slow to load. An alternative to using an internet connection to the web based version is installing the key on your hard drive from a CD, which I'll provide to anybody in the U.S. for a donation to cover costs of copying and mailing (say, $5).

I want to give my sincere thanks to Aaron Liston, Director of the O.S.U. Herbarium, for posting this key. I would appreciate receiving critical comments on this document.

David Wagner, Ph.D.
davidwagner@mac.com

Annotated species list of Mosses from Sardinia

By Jan-Peter Frahm, Michael Lueth and Huub Van Melick. A list of all bryophytes reported from Sardinia is presented. It is based on recent checklists and completed by records made by the authors during a short fieldtrip in May, 2008. Bryum barnesii, B. caespiticium var. imbricatum (B. kunzei), B. mildeanum, Encalypta trachymitria, B. elegans, Fissidens celticus, F. curvatus, F. taxifolius var. pallidicaulis, Grimmia dissimulata, G. meridionalis, Heterocladium dimorphum, Octodiceras fontanus, Orthotrichum pallens, O. striatum, Phascum leptophyllum, Plagiomnium elatum, Pogonatum aloides var. minimum and Racomitrium elongatum are reported as new to Sardinia. Claopodium whippleanum is new to Italy.
The publication (in German) can be downloaded free of charge from www.archive-for-bryology.com

Jan-Peter Frahm
www.bryologie.uni-bonn.de

Bryophyte flora of Malta

Since it gets more and more difficult to publish floristic papers in the current bryological journals, a bryophyte flora of the Maltese Islands has been published in the Archive of Bryology vol. 29. It is the first checklist of bryophytes from Malta and Gozo compiled from the literature, completed by references and the results of a bryological fieldtrip in spring 2008, which add seven species to the bryoflora of Malta.

Jan-Peter Frahm
www.bryologie.uni-bonn.de

The publication can be downloaded, free of charge, from: www.archive-for-bryology.com

Everybody is invited to contribute papers to this archive, which has the advantage that these are published over night and everybody on the world has free access to it.

Liverworts of New England

Liverworts of New England: A Guide for the Amateur Naturalist, by Mary S. G. Lincoln.
This lavishly illustrated book (more than 100 color photos, more than 200 line drawings and maps) is a book for those who are beginning to look at the fascinating, diverse world of liverworts and hornworts. In explanations that neither intimidate nor oversimplify, the author describes the nearly 200 species in 62 genera found in diverse habitats throughout the six New England states. The emphasis is on features that can be seen with a hand lens, thus allowing the curious naturalist without a compound microscope to study these small plants, in all their complexity, diversity, and beauty. The author describes the plants in clear terms, and the book includes a glossary for less experienced users and simple keys for the identification of common species.

ISBN: 978-0-89327-478-8; Price: US $45 (plus shipping and handling); Publisher: The New York Botanical Garden Press, Hardcover: 162 pages; over 100 full-color photographs, 200 black-and-white drawings, and distribution maps

Ordering information: Phone: 718.817.8721 (Mon-Fri, 9 a.m. to 5 p.m. EST)
Web orders: Shop our amazon.com store

COURSES AND WORKSHOPS

Workshop on loess mosses

The workshop focuses on loess mosses and will take place between 26 and 29 March 2009 in Kaiserstuhl near Freiburg (Germany). Basic knowledge of German is essential as most presentations (and announcement below) are in German. Please register before 15 January 2009 by informing Michael Lueth (see email below), who will provide details to register. The registration fee is 30 €.

In der Oberrheinebene bei Freiburg liegt der Kaiserstuhl, ein Vulkan aus dem Terier und der Tuniberg, eine aus der Absenkung des Rheingrabens übriggebliebene Kalkscholle. Im Quartär wurden die beiden Berggruppen mit hernawehendem Löß überdeckt.
Auf den Lößböden gedeiht ein sehr guter Wein, aber auch eine ganz eigene Moosflora. Da viele der Arten mediteranen Ursprungs sind, handelt es sich häufig um Winterannuelle, die im frühen Frühjahr fruchten. Man findet hier Arten wie Acaulon triquetrum, Crossidium crassinerve, C. aberrans, Dicranella howei, Didymodon acutus, D. cordatus, Pottia bryoides, P. intermedia, P. lanceolata, Phascum curvicolle, Pterygoneurum ovatum, P. lamellatum, P. subsessile, Tortula brevissima, T. vahliana und andere. Diese Arten sind hier nicht selten und bieten eine schöne Gelegenheit für das Studium der Moosflora auf Löß.

Wir sind in einem Hotel in Bötzingen am Kaiserstuhl untergebracht. (Die Halbpension kostet 46 Euro pro Person im Doppelzimmer.) Von hier können wir direkt Exkursionen in die Gebiete durchführen. Am Samstag haben wir einen Kursraum mit Mikroskope an der Uni Freiburg, wo wir die gesammelten Arten gemeinsam bestimmen. Das ganze wird durch ein kleines Rahmenprogramm, wie eine Weinprobe am Kaiserstuhl und eine Stadtführung durch Freiburg, abgerundet.

Die Teilnehmerzahl ist auf 25 begrenzt. Der Anmeldeschluß ist der 15. Januar, bzw. so lange noch Plätze vorhanden sind. Die ersten Anmeldungen liegen bereits vor. Weitere Informationen und das ausführliche Programm gibt es bei der Rubrik "Aktuelles" unter:

http://www.milueth.de/Moose/

Anmeldungen sind zu richten an mail@milueth.de
Die Anmeldung ist gültig, wenn die Tagungsgebühr von 30 Euro überwiesen wurde. Kontodaten werden nach der Anmeldung zugeschickt.

Die Unterkunft ist selbst zu buchen bei: Familie Fischer, Tel 07663 / 9446-0, Fax –99, Hotel Zur Krone, Gottenheimer Str. 1, 79268 Bötzingen

Michael Lueth
www.milueth.de
email: mail@milueth.de

SO BE FREE 14 in Central Sierra Nevada, USA

The Fourteenth Annual Spring Outing, botanical Excursion, Foray, Retreat, and Escape to the Environment! Founded in 1996, SO BE FREE is a series of West Coast forays started by the Bryolab at UC Berkeley, but open to all botanists (but we also encourage experts on other groups to come along and smell the liverworts. In addition to seeing interesting wild areas and learning new plants, important goals for SO BE FREE include keeping West Coast bryologists (and friends) in touch with each other and teaching beginners. For glimpses of the past outings, consult the SO BE FREE web site:
http://ucjeps.berkeley.edu/bryolab/trips/sobefree.php

The 2009 SO BE FREE takes place from Tuesday to Friday (24-27th March, 2009) in the lower elevations of the Central Sierra Nevada near Oakhurst, California. The area offers great sites for montane coniferous forest, oak woodland with rocky outcrops, chaparral, and gorges of all sizes cut through granite by swiftly flow waters.

We will be based at Calvin Crest Conference Center, near Oakhurst, California (not far from the south entrance of Yosemite National Park, which will not visit during the Foray but a good choice for a tourist trip before or afterwards). Fresno airport is ~60 miles (1 hour and 20 minutes) away.

Registrations and deposits are due by 15 December 2008 (and housing will be reserved on a first-come, first-served basis). All registration is being handled by Paul Wilson, so please do not contact Calvin Crest directly.

More information, and the registration form due Dec. 15th, 2008 is available here:
http://ucjeps.berkeley.edu/bryolab/trips/sobefree.php

Contact: Paul Wilson, Department of Biology, California State University, Northridge, Northridge, CA 91330-8303, email: paul.wilson@csun.edu - phone 818-677-2937

The 2009 Crum Workshop

Plans are well underway for the 2009 Crum Workshop. The workshop will be held on May 26-31, 2009. These are somewhat different days than usual, being a Tuesday to a Sunday, but this is what works for the facilities. We will meet at the Darling Marine Center near Walpole, Maine (http://www.dmc.maine.edu <http://www.dmc.maine.edu/>). Our local organizer is Pat Ledlie (ledlie@ledlie.com). There is a choice of accommodations. You can either stay in a dormitory or in a private cabin. The dormitory offers an option for either single or double rooms. The double rooms each have two sets of bunk beds in them (but only the lower bunks would be used). In the dormitory the bathroom facilities are in the hall and are shared. The cost is ca. $380/person in double occupancy and $75 more for a single room. The cabins can sleep two to four people and have a private bathroom and a kitchenette. The cost for the cabin at double occupancy is the same as the dorm, ca. $380/person, or $455 for a cabin as a single. Both the dorm and cabins provide linens and towels. The costs listed above include lodging, food, insurance and lab fees. This is a state facility and requires insurance. Pat Ledlie has contacted the same company that insures the Joselyn Botanical Society field meetings and it will cost $351 for the group for the 5 days or about $20/person (included in price above). The station will provide all our meals, including box lunches and afternoon snacks. Included is even a lobster dinner (after all, you are on the coast of Maine). Alison Dibble (adibble@earthlink.net) is organizing the field trips. Currently we have arranged for a full day trip to Vinalhaven Island, a Nature Conservancy site. Alison also is arranging for a couple of half-day, calcareous sites. We probably will also collect one day at the Darling Marine Center, which owns more than 100 acres.

There are good laboratory facilities, with plenty of electrical outlets. As usual, every participant is expected to bring his or her own microscope. The

laboratory does have a compound microscope with a digital display so that the whole group can see a slide at once.

The deadline for registration is March 15. However, do not send any money at this time. We'll let you know when you need to pay. At a later date we'll also ask for any dietary preferences.

Contact Pat Ledlie (ledlie@ledlie.com) and let her know your housing preferences. Please copy me (bbuck@nybg.org) on all correspondence.

We look forward to seeing you in coastal Maine in the spring.

William R. Buck
e-mail: bbuck@nybg.org

WEB NEWS

Index Hepaticarum is available online

I am pleased to announce that Index Hepaticarum is available online through the website of Conservatoire et Jardin botaniques (G) as the Index Hepaticarun Names Database on the following link:
http://www.ville-ge.ch/musinfo/bd/cjb/hepatic/index.php

Index Hepaticarum, a list of all specific and infra-specific hornwort and liverwort names published between the effective dates of 01.01.1853 and 31.12.1973, was started at G in the 1950's by the then curator of bryophytes Charles Bonner. The aim of the project was to collate together all published hornwort and liverwort names and make these available to the scientific community to facilitate systematic research on these two groups of plants. Upon Bonner's death it was decided that the project Index Hepaticarum would remain based at G with Patricia Geissler and Helene Bischler responsible for editing the second editions of the original Index Hepaticarum series with P. Geissler at G responsible for running the project database. A total of 13 volumes of Index Hepaticarum have been published to date and the final two volumes in this series are currently in preparation at G.

Index Hepaticarum as it stands today, the reference for liverwort and hornwort nomenclature, was an international collaboration greatly facilitated by the IAB. The project was assisted extensively in the collation and verification of data by the larger bryological community: H. Bischler, J. J. Engel, S. R. Gradstein, P. Geissler, R. Grolle, A. J. Harrington, S. Hattori, H. Inoue, S. Jovet, Y. Kuwahara, D. Lamy, D. Long, H. A. Miller, T. Pócs, G. A. M. Scott, R. E. Stotler, J. Vana, D. A. J. Vogelpoel, S. Willi-Bonner, K. Yamada, G. Zijlstra.

The Index Hepaticarum Names Database contains over 30'000 entries and its strength lies in the provision of publication, basionym and brief type data for the older names of hornworts and liverworts published between the effective publication dates 1853-1973. Names published after 1973 were collated at F by Dr. J.J. Engel and have been published as a series of Index Hepaticarum supplements in TAXON and more recently by Crosby & Engel (2006) as the Index of Hepatics 1974-2000 by The Hattori Botanical Laboratory.

In the Index Hepaticarum Names Database the search fields are presently written in French (to be provided in English in the near future) but here is a brief summary of the search process in the meantime:

From the menu bar at the top of the page choose "Recherche". On this page you can enter the generic name in the search field "saisie le nom de genre ici" and the epithet can be entered in the search field "saisie le non d'espèce ici". A search can be performed by genus only, by species epithet only or for a particular name by using the two fields combined. You can add partial names followed by a "%" sign to capture all data under the shortened entry, i.e. "Jungerman%" would pull all entries for Jungermannia, Jungermanniopsis and Jungermannites.

The presentation of our data still needs a bit of work (upcoming!) but the data is there for you to use now in its electronic format. I would greatly appreciate any corrections that you may have regarding the data, especially as I would like the Index Hepaticarum Names Database to be as accurate as possible for those names published during the time period with which it is concerned.

I thank everyone who has assisted with this project both in the past and more recently, especially Anne Streiff who worked hard on correcting for data of names A-Jubula and on standardising the database (authorities by Brummitt & Powell for example), and I hope that Index Hepaticarum will be useful to you all in its new electronic format.

Michelle Price Email: michelle.price@ville-ge.ch

Upcoming projects linked to the Index Hepaticarum Names Database (IHNB): 1) Addition of scanned type images from the bryophyte collection of G to associated names in IHNB
2) Scanning of the Icones of Stephani with a link to associated names in IHNB

IAB Directory online

Efrain DeLuna has put the IAB directory online http://www.filogenetica.org/IABmembership/directory.htm

Please check it, using the same password as for the Bryological Times.

If you have a change in keywords or areas of interest, you can inform Efrain directly (efrain.deluna@inecol.edu.mx).

For any other corrections (address, email, your name), please inform Blanka Shaw <blanka@duke.edu>.

Cryptogram website of the Australian National Botanic Garden

The Australian National Botanic Garden recently launched its new cryptogam website.

The website is sponsored by the Friends of the Botanic Gardens, who were able to contract our honorary associate and resident mycologist Heino Lepp to compliment our other cryptogam website on the fungi (http://www.anbg.gov.au/fungi/index.html) with a bryophyte website.

Heino developed both websites, providing the text, diagrams, and many of the photos. It is aimed at both the public, interested amateurs and professionals alike.

Please check it out and any feedback welcome. Please send feedback to me rather than the whole of bryonet unless of interest to all.

http://www.anbg.gov.au/bryophyte/index.html
Dr. D. Christine Cargill
email: christine.cargill@environment.gov.au

Country contacts

What are country contacts? During the several years that I edited the Bryological Times, I have tried to increase contributions for this newsletter and therefore contacted a number of people to act as country contacts for the Bryological Times. The role of these country contacts is to gather information on issues that can be of interest for the wider bryological community and hence worthwhile for publication in the Bryological Times.

Some of these country contacts are also actively involved in other IAB-affairs. However, the system of country contacts was set up the purpose of this newsletter!
May I ask country contacts, who are no longer able or in a position to contribute to the Bryological Times to contact me (and if possible to suggest a new country contact)?

Geert Raeymaekers

Country	Name	E-mail address
Austria	Harald Zechmeister	harald.zechmeister@univie.ac.at
Australia	Rod Seppelt	Rod.Seppelt@aad.gov.au
Belgium	Herman Stieperaere	herman@br.fgov.be
Canada	René Belland Michael Simpson	Rene.belland@ualberta.ca mjs14@ualberta.ca
China	Cao Tong	CT1946@263.net
Colombia	Jaime M. Uribe	juribem@ciencias.unal.edu.co
Czech Republic	Jiri Vana	vana@natur.cuni.cz
Estonia	Kai Vellak	kvellak@ut.ee
Finland	Viivi Virtanen	viivi.virtanen@helsinki.fi
France	Denis Lamy	lamy@mnhn.fr
Germany	Volker Buchbender	Volker.buchbender@planet-interkom.de
Hungary	Tamás Pócs	colura@chello.hu
India	Virendra Nath	drvirendranath2001@rediffmail.com
Japan	Tomio Yamaguchi	yamatom@hiroshima-u.ac.jp

Kenya	Min S. Chuah-Pétiot	petiot@wananchi.com
Lithuania	Ilona Jukonieme	Ilonet@botanika.lt
Malaysia	Benito Tan	Dbsbct@nus.ed.sg
Netherlands	Laurens Sparrius	sparrius@blwg.nl
Norway	Kristian Hassel	Kristian.Hassel@bio.ntnu.no
Panama	Noris Salazar Allen	SALAZARN@si.edu
Poland	Ryszard Ochyra	Ryszard.Ochyra@ib-pan.krakow.pl
Spain	Javier Martinez-Abaigar	javier.martinez@daa.unirioja.es
Slovakia	Jiri Vana	vana@natur.cuni.cz
Sweden	Tomas Hallingbäck	Tomas.Hallingback@ArtData.slu.se
Switzerland	Michelle Price	Michelle.price@cjb.ville-ge.ch mjprice_cjb@yahoo.co.uk
Turkey	Mesut Kirmaci	mkirmaci@adu.edu.tr
USA	Matt von Konrat	mvonkonrat@fieldmuseum.org
USA – Puerto Rico	Ines Sastre-De Jesus	I_sastre@rumac.upr.clu.edu
Venezuela	Yelitza Leon	yeltleon@.ula.ve.

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

Editor
Geert Raeymaekers, Kroonlaan 272, 1050 Brussels, Belgium.
E-mail: Geert.Raeymaekers@skynet.be

Column Editors
Conservation Column: Tomas Hallingbäck, Swedish Species Information Centre, Swedish University of Agricultural Sciences, P.O. Box 7007, SE-750 07 Uppsala, Sweden, Fax: +46 18 67 34 80. E-mail: Tomas.Hallingback@ArtData.slu.se

Literature Column: Johannes Enroth, Dept. Ecol. & System., P.O. Box 7, FIN-0014 University of Helsinki, Finland, Fax: + 358 9 191 8656. E-mail: Johannes.enroth@helsinki.fi

Theses in Bryology: William R. Buck, Institute of Systematic Botany, NY Botanical Garden, Bronx, NY 10458-5126, U.S.A. E-mail: bbuck@nybg.org .

Tropical Bryology Column: Tamás Pócs, Eszterházy Teacher's College, Dept. of Botany, Eger, Pf. 43, H—3301, Hungary. E-mail: colura@ektf.hu

Production: Geert Raeymaekers, Brussels

UPCOMING MEETINGS

2009

March 24-27: So be Free 14. Central Sierra Nevada, USA. Contact: Paul.Wison@csun.edu.
March 26-29. Workshop on loess mosses, Germany. Contact: mail@lueth.de
April 29 – 3 May: excursion Dutch Bryological Society, Northern French coastal area. www.blwg.nl
May 26-31: The 2009 Crum Workshop. Walpole, Maine. Contact: bbuck@nybg.org
September 23 – 26: XVII Symposio de Botanica Criptogamica, Tomar, Portugal. Contact: criptogamica@fc.ul.pt
Aug 16-20. South Africa. IAB World Congress. See the IAB-website