

The Bryological Times

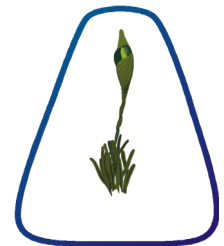
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JUNE-JULY 2011

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IAB



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ISSUE 133

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Editor's Note

Welcome to July 2011. Here in Roanoke, the weather has been very hot, humid, and full of thunderstorms. As we dodge the rain, we are excited to learn about what the bryological world has been doing. This issue is full of news from societies, workshops, book reviews, and

tips of the trade. Enjoy as you read along.

As always, *The Bryological Times* is always looking for submissions. Please send us the latest information that should be spread to the bryological community. Tell us what your lab is doing, grant successes, and of course keep us up-to-date on what your country's society

By DorothyBelle Poli

may be doing. We need you to help make *The Bryological Times* a success.

If you notice that your part of the world is not represented, please let me know at poli@roanoke.edu and I will try to remedy that situation right away.

Now, go and make the most of this issue! Enjoy your summer.

SPECIAL POINTS OF INTEREST:

- Many book reviews
- Websites that keep us up-to-date are announced
- Workshops and meetings
- Tips, Tools, and Techniques

FUNGI, LICHEN AND BRYOPHYTE WORKSHOP IN PANAMA

By Noris Salazar Allen

A five day workshop (14 -18 March) on fungi, lichens and bryophytes was held at the Department of Botany of the University of Panama. It included a one-day field trip to Parque Nacional Altos de Campana. The workshop was organized by Noris Salazar Allen and professors of the Department of Botany jointly with personnel of The Field Museum in Chicago (F), USA. Lectures

and laboratory sessions were given by Sabine Huhndorf (F), Julieta Carranza (University of Costa Rica) on fungi; Robert Lücking (F), Thorsten Lumbsch (F) and graduate

student Matt Nielsen (F) on lichens; Matthew von Konrat (F) and Gregorio Dauphin (Technologic University of Costa Rica) on liverworts, and by Noris on mosses. The lectures covered aspects of the morphology, evolution, sys-

tematics and ecology of these organisms, multivariate methods in ecological work, the preparation and uses of interactive keys, and the uses of electronic devices and Web

sites related to the groups under study. Sixteen students attended the seminar; among these, two from Guatemala and three from the University of Chiriquí (UNACHI). Also, Mervin E. Pérez (Guatemala), who recently finished his Mas-

ters with Inés Sastre De Jesús in Puerto Rico, and Master student in Plant Biology, Eyvar Rodríguez (UNACHI) gave talks on their graduate research in bryology. The workshop was partially financed by grants from NSF and the Caterpillar Company to instructors from the Field Museum and

the Colegio de Biólogos (Association of Biologists) of Panama.



Book Review: Nova Hedwigia Beiheft 138 and 139

by Johannes Enroth

Frey, W. (ed) 2010: Bryophyte systematics, phytodiversity, phytosociology and ecology. Festschrift in honour of Professor Dr. Harald Kürschner. Nova Hedwigia Beiheft 138: 1–333. Paperback, ISBN 978-3-443-51060-2. Price € 139.00, www.borntraeger-cramer.de/9783443510602

Kürschner, H. & Frey, W. 2011: Liverworts, mosses and hornworts of Southwest Asia. Marchantiophyta, Bryophyta, Anthocerotophyta. Nova Hedwigia Beiheft 139: 1–240. Paperback, ISBN 978-3-443-51061-9. Price € 108.00, www.borntraeger-cramer.de/9783443510619

Beiheft 138

I am sure Prof. Harald Kürschner's name is known to every bryologist; so significant and manifold are his contributions to the field. The Beiheft 138 of Nova Hedwigia is dedicated to him on the occasion of his 60th birthday that took place last year. The contents of the volume reflect the many-sidedness of Prof. Kürschner's research, being divided under the headings Systematics (eight papers), Phytodiversity (nine papers), Phytosociology (three papers), and Ecology (three papers).

The editor Prof. Frey has written a tribute to Kürschner, introducing his academic career and numerous research projects, many of which have focused on Southwest Asia. It is followed by a list of publications which, if I counted correctly, contains a stunning 241 titles in about 33 years, making an average of 7.3 papers per year!

Since the content list is available in the above URL-address, I do not cite every paper here, but rather present an overview of the topics and some of the main results. The first paper in the Systematics-section aptly describes a new moss genus from Brazil, *Kuerschneria*, based on *Rhacocar-*

pus laevigatus. The following paper revises the European species (five) of *Oxystegus* based on the nuclear ITS region. ITS is also employed in the third paper, which shows that *Palustrisella pluristratosa* is a synonym of *P. falcata*. In the next paper, the phytogeographic significance of *Forsstroemia remotifolia* (comb. nov.) is discussed, and the last moss taxonomic contribution is a morphometric analysis of the five species of *Gymnostomiella*. The Systematics-section further contains three papers that focus on the liverwort family Lejeuneaceae, especially its African taxa. A report from Gabon describes the new species *Ceratolejeunea kuerschneri* and further records 20 species previously unknown from the country. This is followed by a paper describing three new species in *Lejeunea* (one from Kenya, two from Madagascar). The last paper discusses *Lejeunea* subg. *Nanolejeunea*.

In the Phytodiversity-section, four of the papers report new taxa for various countries or areas in the Mediterranean region. The flora of Greece gains 28 species, and that of Montenegro is expanded by 23 taxa. Two papers deal with the Orthotrichaceae; 19 species are recorded as new for the NE part of Turkey, and *Zygodon forsteri* is reported as new for the country (and SW Asia). Have you heard of the Selvagens Islands? I certainly hadn't, but now I know they are located between Madeira and the Canary Islands and have no less and no more than 16 bryophytes recorded so far. A checklist of the Gymnomitriaceae in the Sino-Himalayan region contains 23 species and five genera. The Pottiaceae are well represented in this volume; for example, 41 (!) species are reported for the first time from Pakistan. In the other side of the world, Isla Navarino is one of the southernmost islands of

Chile. It has 157 species of mosses reported so far, and an identification key plus a checklist of them are provided. This section is concluded with the first records of *Kurzia setiformis* and *Anastrophyllum involutifolium* from Île Amsterdam in the southern Indian Ocean, both records being remarkable range extensions for the two species.

The three papers in the Phytosociology-section are based on the Braun-Blanquet-system. The first one examines the phytogeographical composition of the trunk-epiphytic bryophyte communities in Ecuador, being the seventh paper in a series of papers. Nine phytogeographic elements are represented in the communities, the relative proportions of the elements changing with altitude. The second paper is a contribution to the bryosociology of the small island of Linnosa between Africa and Sicily. Four associations are reported as new for the island. The third paper describes a new association, *Fissidento adianthoidis* – *Dichelymetum capillacei*, from the SW of France.

The final section, Ecology, has three quite different papers. The first one surveys the genus *Porella* in Madeira, especially the influence of various environmental factors on the distribution of the species and their morphology. The second paper should be of wide interest also outside of strict bryology, as it studies the diversity of epiphytic bryophytes under different land-use types in the tropical America (Bolivia, Ecuador, Costa Rica) and in Indonesia (Sulawesi). Both the species loss and turnover were the greatest between natural forests and young fallows and cocoa plantations, being respectively 65–80 % and 75 %. temperate moss species.

Continued on page 21

Australian National Botanic Gardens: Lichens Website

The Australian National Botanic Gardens (<http://www.anbg.gov.au/gardens/>) and the Friends of the Gardens (<http://www.friendsanbg.org.au/>) will be officially launching the Australian Lichen website, the third in a series on cryptogams (fungi: <http://www.anbg.gov.au/fungi> and bryophytes: <http://www.anbg.gov.au/bryophyte/>).

The website was funded by the Friends of the Australian Natio-

nal Botanic Gardens enabling us to contract Heino Lepp [an associate of the Australian National Herbarium, Centre for Australian National Biodiversity Research (<http://www.anbg.gov.au/cpbr/>) and resident mycologist] to create the content of the website, including text and photos.

Heino was also responsible for both the fungi and bryophyte websites.

World renowned lichenologist Emeritus Professor Jack Elix provided expert technical advice on all of the written content.

So please take a look at this great resource which is aimed at informing an interested public on one of our important cryptogam groups, the lichens: www.anbg.gov.au/lichen

Gesneriaceae of South China 华南苦苣苔科植物

This book is the product of a program of research that began in 1993. It covers more than 85% of the species of southern China and over 65% of the species known from China as a whole. 304 species (including varieties) and 32 new species temporarily unpublished in the journal covered in the book are new to science, 55 genera covered in the book, one of these, *Litostigma* Y.G.WEI, Fang Wen & M.Muller, is a new genus that represents an important link between basal and advanced lineages of the large subfamily Cyrtandroideae (now Didymocarpoideae). This is an indication of the botanical significance of this area of limestone karst in South China, which continues to yield important surprises, and whose limited botanical exploration to date makes it undoubted that it will continue to do so into the future.

U.S. \$190, ISBN 9787807635505



Crum Bryophyte Workshop: September 22-27

by Bill Buck

The next Crum Workshop will be held on September 22-27, 2011, in Watertown, NY, so that we can visit the alvars of western New York. Bruce Gilman will be our local host. A travel agent has reserved hotel rooms and a conference room for our workshop.

If you would like to attend the workshop, you need to contact Carol Ann Zoccolillo by August 1, at carol.zoccolillo@protravelinc.com with a valid credit card to reserve your room. She can also assist you

with any other travel needs that you may have.

The price is \$85 per night + taxes

Tools, Tips, and Techniques: Microscopy

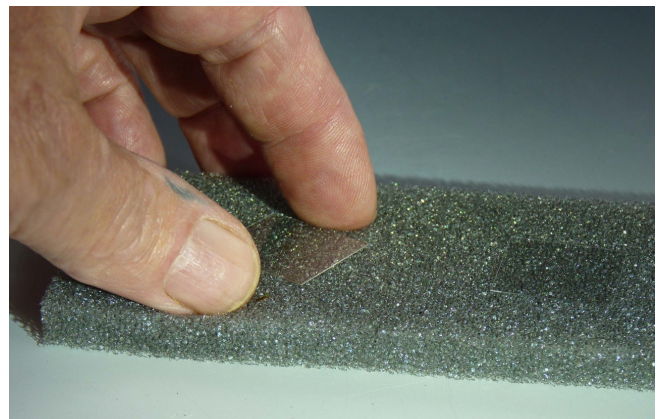
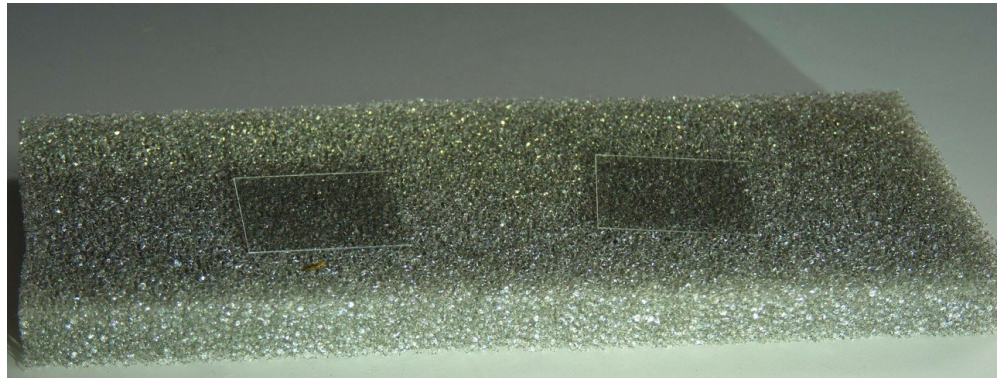
by David Wagner

Tip #1 Handling coverslips that are used repeatedly is facilitated by small piece of polyurethane foam on the lab bench. A small piece, 5 cm X 10 cm and .5 to 1 cm thick is all that is needed for two or three coverslips. Keeping the coverslips on the foam makes them easy to pick up by pressing thumb and finger into the foam on either side of the coverslip. The coverslip is then transferred to forceps for careful placement on the slide. This way coverslips are always handled by the edges or in forceps so fingerprints are avoided. When I teach a moss workshop, I distribute two slides, two coverslips, and a piece of foam for each student.

Standard microscope slides can be placed on a foam pad the same way as coverslips but I prefer to keep them flat on the lab bench. This prevents the drop of water for mounting leaves from getting tipped off. After placing the coverslip on the mount I slip the slide to the edge of the bench to put them on the compound microscope stage. Otherwise, as often as not, the water drop is not added to the slide until it is on the stage of the dissecting microscope and dissections are complete.

Tip #2 Coverslips and slides in a box

I keep my foam pad with coverslips in a wooden box, so that when I'm away from the bench for a period of time I can close the lid to keep dust off the coverslips. I have cut out a place at one end to store a small stock of coverslips and stack a similar stock of slides at the other end of the box. A reticle for measuring or counting is tucked into a slot in the foam at the top. A fresh razor blade is can be stored along the top edge. My box is not just any old cigar box, it is a box made by a craftsman. It is a way to have an article of beauty on my lab bench, something important to me as a scientist with an active aesthetic sense. (see p. 9)



BOOK REVIEW: *Compilation of Musci in Symbolae sinicae in the light of H. Handel-Mazzetti's letters to V. F. Brotherus*

Koponen, T.: *Compilation of Musci in Symbolae sinicae in the light of H. Handel-Mazzetti's letters to V. F. Brotherus*. Bryobrothera 10: 1--78. ISBN 978-952-67345-2-1 (Soft), ISSN 1235-3949. Finnish Bryological Society 2010. Available from: Bookstore Tiedekirja, Kirkkokatu 14, FI-00170 Helsinki, Finland; fax +358 9 635 017, e-mail: tiedekirja@tsv.fi. Price 40 € + postage.

Bryobrothera, the journal of the Finnish Bryological Society, has dedicated two recent volumes (the present one and Koponen 2004) to the documentation of the contributions of the great Finnish bryologist Viktor Ferdinand Brotherus to Chinese bryology. Specifically, the two volumes deal with Brotherus' work on the moss collections made by the Austrian botanist Handel-Mazzetti in Southwest China. Heinrich Freiherr von Handel-Mazzetti was an Austrian botanist of noble descent who travelled extensively in Southwest China during 1914-1918 and made large plant collections in Yunnan, Sichuan, Guizhou and Hunan provinces. His diary (Handel-Mazzetti 1927), recently translated into English and published with annotations under the title *A botanical pioneer in South West China: Experiences and impressions of an Austrian botanist during the First World War* (Winstanley 1996), contains a mine of information on the geography, flora and vegetation of the region, and is fascinating reading for anybody interested in the natural history of South West China.

Although not a bryologist by training, Handel-Mazzetti had made large collections of bryophytes and had found Brotherus, the world's leading muscologist at the time, willing to identify his mosses (about 1500 nrs.) in return for a complete set of his specimens. Brotherus started working with much vigor on Handel-Mazzetti's materials in 1923, after having completed the second and fully revised edition of his treatment of the world's mosses in *Die Natürlichen Pflanzenfamilien*. In spite of his deteriorating health due to a chronic bronchitis, Brotherus managed to finish the work and sent the final manuscript to press five years later, in late 1928, just before his death on 9 February 1929 at the age

of 79 years. The results of his work appeared in 1929 under the title "Musci" as part IV of the series "Symbolae sinicae: Botanische Ergebnisse der Expedition der Akademie der Wissenschaften in Wien nach Südwest-China 1914/1918", edited by H. Handel-Mazzetti and published by Julius Springer Verlag, Vienna. The work lists 612 species of mosses, in 217 genera, together with much additional useful information on Chinese muscology, and has been the principal publication on Chinese mosses for many decades. The number of species known from Southwest China was almost quadrupled and a wealth of new taxa, including 9 new genera and about 235 new species, were described. As shown by Cao Tong and Timo Koponen in *Bryobrothera* vol. 8 (Koponen 2004), the majority of the new genera and about 25% of the new species are still accepted today.

The historical background of Musci in *Symbolae sinicae* is explored in *Bryobrothera* vol. 10 based on an analysis of the correspondence between Handel-Mazzetti and Brotherus. The volume presents the annotated texts of 40 letters sent by Handel-Mazzetti to Brotherus and preserved in the National Library of Finland. Although covering the period 1907-1928, most letters are from the five-year period when Brotherus was working intensively on his Musci in *Symbolae sinicae*. The letters, in German but with summaries and commentaries by Koponen in English, provide insight in the making of the work. They not only contain information on the materials sent, acknowledgments of identifications received, and requests for further data, but also many detailed comments of Handel-Mazzetti on Brotherus' identifications. As explained by Koponen, Handel-Mazzetti was a man of great selfassurance and had the habit of critically (sometimes too critically...) checking the work of others, whether or not the subject was his speciality. Helped by his assistant Julius Baumgartner, who was a trained bryologist, Handel-Mazzetti carefully verified all Brotherus' names and identifications, and did not refrain from suggesting possible errors or inaccuracies. As noted by Koponen, his critical habit seems to have made Handel-Mazzetti rather

unpopular among his colleagues in Vienna where he was considered a troublesome character. Whether Brotherus was troubled by Handel-Mazzetti's comments remains unknown; a scrutiny of the letters of Brotherus sent to Handel-Mazzetti, when still available, might have been of interest!

Symbolae sinicae was completed in seven volumes by 1937, containing treatments of all the different groups of plants and fungi, and stands as Handel-Mazzetti's magnum opus on Chinese botany. Timo Koponen's story on the making of the Musci in *Symbolae sinicae* is an insightful document on an important chapter of the history of Chinese bryology. Besides much detail on the two main personalities, Brotherus and Handel-Mazzetti, it provides some interesting biographical detail on other bryologists and botanists of those days. For all those interested in the history of Chinese musicology, these volumes are warmly recommended.

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Robbert Gradstein, *Museum National d'Histoire Naturelle*, Paris

365nm-UV-Lichen candelaris®

The Hightech magnifying glass x 10, with integrated white light and 365nm-UV-source, for Fluorescence diagnosis of crustose lichens in the field



The Story of Lichen candelaris

Which Biologist wasn't ever annoyed about bad light conditions in a summery forest or a shady rock outcrops, Emergency is the mother of invention and an illuminated magnifying glass was invented. In further final conditions the idea to integrate to the fluorescence diagnosis at crust lichens, an UV source. The development was a high challenge: The first prototype was with 115mm length too largely, too with difficulty, the UV light achievement too small and the period of operation of the battery too short. Innovative solutions and a complete new Design led in the third development phase to success: A world novelty developed:

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Erich Zimmermann

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- Battery Lifetime (DURACELL ULTRA M3, Typ CR2) @ +20°C: 1000 UV- light impulses of 4 seconds of duration! & 2000 white light impulses of 4 seconds of duration!
- Only 6mm longer and 8 gr. more heavily than the standard Lichen candelaris
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- *Lichen candelaris* is conceived for outdoor applications, The optics stuck air and waterproof together, which prevents damp and contamination, *Lichen candelaris* is splash-water close (IP67M).
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- Swiss Made, 2 year warranty
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Activate white light: Press the key. By a further press the key, the UV-Source is switched on.

Activate 365nm UV-Source: Two times short successively press the key, the UV- Source is switched on.

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Lindbergia goes Open Access!

By Nils Cronberg

As many of you may know, *Lindbergia* is a journal that publishes original research in any field of bryology, and recently also lichenology. As Editor-in-chief of *Lindbergia*, it is my pleasure, to announce that the journal from now on will be available on-line as an Open Access journal.

Thanks to economic support from the owners of *Lindbergia*, the Nordic Bryological Society and the Dutch Bryological and Lichenological Society, all published papers will be free for download from volume 34 and onwards. For the time being it will also be free for authors to publish papers in *Lindbergia*.

The scope of the journal will remain unchanged. Submitted manuscripts will be subjected to peer review and published promptly after acceptance and final editing.

Older volumes of *Lindbergia* (currently until volume 31:1) are already available on-line through JSTOR (<http://www.jstor.org/journals/01050761.html>).

Webb-address for Lindbergia is: www.lindbergia.nu

Lindbergia – A journal opposing the tracheophycentric conception of the world!

Keeping up with the IAB Blog!...Recent Posts

by Efrain De Luna

Check out the IAB blog and see some of the newer posts below...

- A new publication on the bryophytes of Québec and Labrador
- The Seattle region's coldest April on record is a boon for moss
- Lindbergia on-line
- TROPICOS as a source for bryophyte literature citations
- March ... the month of moss

IAB blog can be found online at: <http://internationalassociationofbryologists.blogspot.com/>

Free IAB-membership for students

This is just a reminder that students can join the International Association of Bryologists (IAB) free for one year. Full information is on the website <http://www.bryology.org/> under the How to Join button. The new treasurer is Jim Shevock. Send your information to:

Jim Shevock, Research Associate & Fellow, California Academy of Sciences, Botany, 55 Music Concourse Dr., Golden Gate Park, San Francisco, California 94118 USA or email him at jshevock@calacademy.org



Tips, Tools, and Techniques continued from p. 5

Tip #3: Wash bottle for specimens and slides.

It is beneficial to have a small (125 ml/4 oz) wash bottle handy on the bryological bench for first rinsing off specimens for study and then for washing off slides and coverslips for reuse. Rinsing a specimen fragment gets rid of extraneous dirt and debris that might cling to it when it is removed from its substrate. It also dilutes the wetting agent if such has been used to rehydrate a dried specimen. Washing out excess wetting agent keeps the water drop mount from running all over the slide before the coverslip is applied. The shoot is held over a small cup so the wash water is contained. I like to use a pretty, wood-fired stoneware cup, much more pleasing to the eye than the usual beaker.

Tip #4: Self-focusing foam stage for the dissecting microscope.

When working with bryophytes one is often faced with making delicate dissections of very small plants, looking for the location of sex organs or other critical parts. High magnification helps in this work but has the disadvantage of having to work with shallower depths of field as magnification level is increased. When picking down through a tiny colony with a pair of watchmaker's forceps in each hand it is easy to get out of the working plane of focus. At this point it is difficult to put one forceps down in order to turn a focusing knob without losing sight of the part being worked on. This matter caused me much frustration when I began working with liverworts, looking for underleaves or leaf insertion point as well as antheridia. The challenge was to change focus without letting go of the plant I was dissecting using both hands.

Foot controlled, electric focusing stages are available but are very expensive. My solution is to place a stack of foam pads on the stage of the dissecting scope with a cork board on top. I set the focus of the scope just at the surface of the cork board. This way I can focus on any part of a specimen by pressing down on the board with the heels of my hand while examining it with needle and forceps. It is easy to tip a specimen from side to side while keeping a particular point of interest in view and in focus even with magnification set at the highest level. Most of the time now, I never touch the focusing knob when studying specimens. I

need manipulate only the rotating objectives or the zoom knob to change magnification level.

An ancillary advantage to this system of focusing is its facility for quick examination of large hand samples. By simply setting aside the foam focusing stage, a bulk sample can be held under the

objective, examining all parts of the sample by moving it around to different parts while at the same time shifting it up and down to focus on points of interest. This is important when searching for reproductive structures that are sparse in the colony being examined.

First: The foam focusing stage. Second: dissecting with both hands while simultaneously controlling focus with the hands. Third: examining hand specimens with focusing stage held aside.



Time for Payment of IAB membership dues for calendar years 2010 & 2011

IAB remains a very loose confederation of bryologists scattered around the globe, and this in part has made tracking membership dues over time a bit elusive. Historically, many members have paid their dues through a 'regional coordinator' where funds generally remained in the country of origin. Needless to say, it is a daunting task as your Treasurer to prepare a report on the financial status of the IAB. Our records management as a society is in need of major improvement to comply with standard financial record keeping. In addition, banking regulations here in the USA where the IAB account resides have become considerably more complicated.

In an effort to begin a transition into a more systematic reporting and data collection of membership dues, the IAB Council initiated in mid 2010 the option for members to pay membership dues via **paypal**. This service to our members is basically available worldwide. The benefits to using paypal are many but primarily it is a service that is **free** to the user and paypal currently can accommodate payment in over 33 currencies into U.S. dollars. **NO CONVERSION FEES!** IAB, however, pays a small service fee on each transaction received. We added a link directly from the IAB homepage [www.bryology.org] that can either accommodate a yearly membership or payment for those who also subscribe to *Arctoa*. This introductory period on our website with paypal was something the IAB Council wanted to try out, and based on its use to date I'd say that it has been quite successful. We hope to expand the options on the homepage for using paypal in the future to include contributions to various functions and programs of the IAB and to build-up the endowment. You can use either your checking account or a credit card with paypal. It is safe, quick, efficient, and free. You will, however, need to initially create a paypal account to actually move currencies. Once your account is established you can use it in many ways. I personally use paypal for many of my bryological journal subscriptions and other purchases either from domestic and international sources. You can also use paypal directly at their website www.paypal.com. Payment to the IAB account is made via jshevock@calacademy.org. You can add payment in any amount through this website and it allows you to provide a narrative on how the funds are to be applied to the IAB.

Some members have attempted to pay for IAB services by various international checks but these are becoming impossible to actually cash in the United States. Such checks that state there are funds in an account in U.S. dollars cannot be cashed or access to these funds is denied thereby the IAB is also hit with a bank charge and does not receive payment either. So the IAB can no longer accept international checks. These checks are also likely to be expensive to members to generate with their bank so again, using paypal eliminates these bank fees to our members. However, IAB can still accept personal checks from members residing in the USA from a U.S. bank. Some members prefer to submit payment in cash (U.S. dollars only, no Euros or other currencies). Although this is acceptable, it does have some risk. So if you choose to pay by cash ensure that the bills cannot be seen through the envelope. As Treasurer, all cash payments sent to me in 2010 have arrived safely.

As a society we hope to be able to do more of our business and contact you our members through electronic means. Whenever you have a change in your email address or prefer to update your records, please send an email to the Treasurer so we can update your files. This will also ensure that you receive notices when the next issue of **The Bryological Times** is available and when we change the passwords on the website. You can also email me if you are unsure on the status of your membership. Many members pay for multiple years so it is easy to forget when the membership is again due.

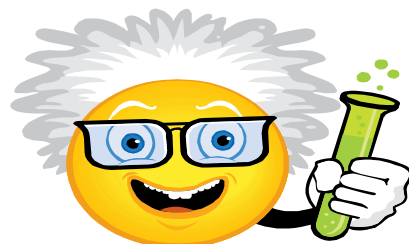
As your Treasurer, I want to thank you in advance for your patience and understanding as I learn this role and my efforts to make the IAB more accountable for its financial resources. Without accurate financial data it is nearly impossible to the IAB Council to develop a budget, plan for our symposia meetings, and other services and ensure the IAB is a financially stable institution.

Jim Shevock, IAB Treasurer

ATTENTION All Bryological Societies...

IAB would like to keep up with all of the Bryological Societies that exist. Please help report your information in *The Bryological Times* by supplying the editors with a contact for your society. Column space is available and we would love to showcase what your group is doing. Report local

meetings, field trips, grants and awards, etc. If you have a BT country contact (see the last page), please have them communicate with DB Poli at poli@roanoke.edu to ensure all contact information is up-to-date. We look forward to hearing from you! Thank you!



Stephensiella brevipedunculata rediscovered

By Anil Sharma* and Anima Langer

Stephensiella brevipedunculata Kash., monotypic Indian liverwort, belonging to Division Marchantiophyta, Class Marchantiopsida, Order Marchantiales and Family Exormothecaceae was initially instituted by Kashyap in 1914, when he collected it for the first time from Mus-sorrie and later on collected it from other parts of Western Himalayas, such as Kulu and Dulchi pass at an altitude of 2,000 to 2,400m (Kashyap, 1929). Later collections were made from different parts of Western Himalaya by various bryologists like Kanwal (1977), Srivastava (1983), Pant (1983), Pant and Tiwari (1995). Udar et al. (1983) in an attempt to assess reasons for disappearance of this prestigious hepatic undertook studies on its detailed reproductive biology. However, Pant (1983) attributed fast increasing urbanization as the main cause for the disappearance of this liverwort from Nainital area of Western Himalayas. This liverwort was considered to be endemic to Western Himalayas only (IUCN, 2000). Tan et al. 1994a, while compiling first ever red list of bryophytes included 50 species (24 mosses, 25 liverworts and 1 hornwort). Subsequently, the list included another 41 taxa, including *S. brevipedunculata*, thus increasing the number of most endangered bryophyte species worldwide to 91 (Geissler et al. 1997).

Our Findings:

Earlier this taxon was reported by Tanwir (2003), from Nurpur in district Poonch of Jammu region of J&K state. During present explorations *S. brevipedunculata* has been collected from Nurpur and its adjoining areas in Poonch district and recently in 2010 it has been collected from Banjal, Panyalag and Duggan areas of Bani in Kathua district.

Kathua District is situated at 32° 17' to 32° 55' North Latitude and 75° 70' to 76° 16' East longitude. The District is surrounded by Punjab in the S-E, Himachal Pradesh in N-E, Doda and Udhampur in North and N-W, Jammu in the West and Pakistan in the S-W. District has an area of 2651 Sq Kms. The annual rainfall is approx. 1672 mm.

Poonch is one of the remote districts of the Jammu and Kashmir State and situated on LOC (Line of Control). Poonch is situated between 33°25' to 34°01' North latitude and between 73°58' to 74°35' East longitude. It is surrounded by Kashmir Valley (Baramula, Badgam, Shopian and Kulgam Districts) in the North East, district Rajouri in the south and Pakistan Occupied Kashmir (POK) in the west. Poonch is hilly and mountainous barring few-low lying valleys. Sky touching peaks covered with shining snow and lush green surrounding present a stunning scenery.

Thalli light green, medium sized and spongy (4.0-12.0 (7.5) mm long and 2.0-4.0 (3.3) mm broad). Simple, once or twice forked, base thick, margins wavy, apex emarginate; areolae conspicuous. Thalli growing in irregular and small patches of 200-350 plants (Fig. 1 and 2 Insert here). Thalli have been collected during ending June to October from both the districts. They grow on moist soil and are partially exposed to sunlight at an altitude of 2100- 2550m in association with mosses and hepatics.

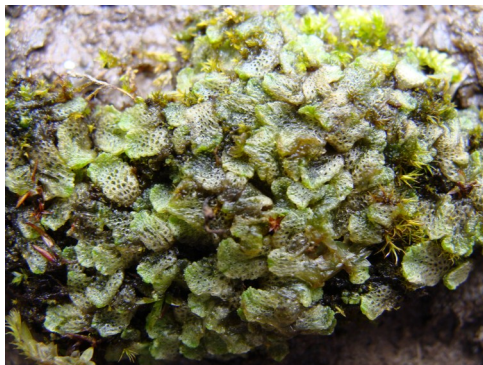


Fig. 1 and 2: Individual thalli and patch of *Stephensiella brevipedunculata* growing in association with a moss on moist soil.



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ABLS 2011: A Meeting and an Adventure!

By DB Poli

On June 20th the Poli lab embarked for Roan Mountain TN at 6 am. Roan Mountain was about a 3 hour drive from Roanoke VA and was easily done the morning the meeting started. Collogues traveled from all over the United States, many arrived the night before the meeting started. All of us enjoyed our time with the American Bryological and Lichenological Society. Adventures ranged from informative meeting talks, workshops, field trips, poster sessions, and social hours. More than anything, this year's ABLs was full of fun and unusual circumstances.

Upon arriving we started our day with an opening by the current ABLs President Karen Renzaglia and President-elect Roger Rosentreter. Due to intermittent rainy weather it was decided to move the field trip on part of the Raven Rock Trail in Roan Mountain State Park to the beginning of the meeting. Then we continued with the meeting talks at the Roan Mountain Conference Center after lunch. These talks were full of excited and informative student presentations. Topics included lichen microbiomes, lichen ecology and diversity, flora of Grand Canyon, lichens as antibiotics, and carbon balance in desert biocrust. Learning about ecology, classification, and physiology was a burst of fresh air and a pleasant invitation into the bryology and lichenology worlds. We learned that we needed to leave the Conference Center earlier than planned that day, but that did not stop the

group from enjoying what was planned. A talk on taxonomy's importance by James C. Lendemer (The City University of New York and The New York Botanical Garden) moved to an outside amphitheater, and with some cooling temperatures and refreshments, the entire experience was informative, thought provoking, and genuinely enjoyable. The day ended with snacks and social time with the group.

The next morning we all got together to travel to Beech Mountain –and the real adventures began. Our first stop was at the brand new Beech Creek Bog State Natural Area; beautiful ferns reached for the sky and guarded the area, but we pushed through mountain bog full of sphagnum, lycopods, and lichens galore. After about two hours of admiring only, no collecting at this site, we learned that one car had locked their keys in the trunk. This meant a delay and sunburn, but lots of laughing and fellowship. Many took the time to eat some lunch. The students managed to find a game of "Shoots and Ladders" and partook in lunchtime silliness. Once the tow truck operator had the situation under control, the rest of the group moved on to Elk Knob State National Area and hiked to the top of the mountain. Skies grew grey and lichens and moss grew sparse, but the gang trucked on. Upon reaching the top of

Elk Knob, a storm blew in and everyone began to return to the parking area. One student managed to go off the path and for 20 minutes the group was nervous, but alas, the moss pointed her in the right direction. The day grew late, and many of us were tired and hungry – the cabins were a nice restful place that night!

June 22 started with a little bit of confusion due to a schedule change, but continued at the Conference Center with

talks on female biased sex-ratios in bryophytes, the history of Sphagnum, and moss stomata around 9:15am. Brendan Hodkison, from Duke University, led an engaging and informative workshop on bioinformatics and phylogenetics during the lunch hours. This workshop presented the group with the latest programs and tips on how to use phylogenetic information to create a meaningful tree. The workshop group was at varying levels, but Brendan was able to put something in there for everyone. If you did not attend the workshop, a field trip that examined Roan Mountain occurred. Approximately at 3:15, everyone reassembled at the amphitheater to watch some moss movies and attend the poster session. Nine individuals presented posters on topics from physiology, floristics, and ecological surveys. Presenters were from all different bryological "worlds"; some were undergraduates, graduate students, professors, and land management professionals.



At the end of the poster session, ABLs had its business meeting in the afternoon setting sun. Weather was perfect and so was the company. At the meeting, the A.J. Sharp award was given to two graduate students this year. Kirsten Coe (Cornell University) presented a talk titled "Environmental controls on carbon balance in the desert biocrust moss *Syntrichia caninervis*" and Tatum E. Norrell (University of Florida) gave a talk titled "Sex ratio variation in the moss *Ceratodon purpureus*." Both ladies did an excellent job! Finally, Karen Renzaglia graciously passed the title of President along to Roger Rosentreter. The meeting portion of the 2011 ABLs gathering ended.

Field trip days were the remainder of the ABLs meeting. On June 23rd, the group went to Carver Gap and Dennis Cove and on the 24th they remained in Roan Mountain State Park. ABLs would like to especially thank Gary Perlmutter from the University of North Carolina Herbarium for his organization and leadership to all of the meeting field trips. The variety of locals and habitats made the trip very fulfilling. From all that collected, admired, photographed, and learned something...thank you Gary!

European Committee for the Conservation of Bryophytes News

The Board of the ECCB (European Committee for the Conservation of Bryophytes) met recently in Zurich and agreed that a new bryophyte Red List for Europe is needed to update and replace the first version, produced in 1995. The first step towards this is a small pilot project to assess the scope of the task. It is therefore intended over the next few months to contact all the ECCB country representatives to explain in more detail the aims of the project and to ask about the current situation regarding checklists, Red Lists and bryophyte conservation generally in each European country. This will not be an onerous task for the 'country contacts', as we are at this stage simply collating existing information to determine the feasibility of a full Red List project. We are

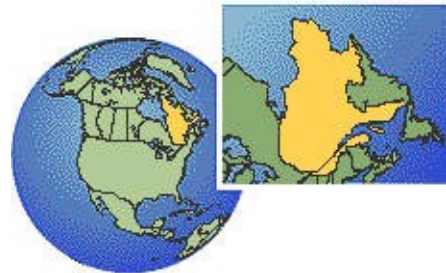
hoping to produce a short report with the results of the pilot project in November 2011, which may be used to take forward a full Red List project for Europe. Nick Hodgetts (UK) has been commissioned to produce the report, with the help of other ECCB members. To contact Nick, email nick1901@hotmail.co.uk

The meeting also decided to arrange a new conference on conservation of bryophytes in Europe and to renew the ECCB web page to increase its activities. Tomas Hallingbäck (tomas.hallingback@slu.se) was elected new chair of ECCB until the next ECCB conference.

A NEW Bryology Journal: Carnets de bryologie

Carnets de bryologie is a journal published by the Société québécoise de bryologie, aimed to promote the study of bryophytes. The journal will appear irregularly. The floristics, phytogeography, and systematics of bryophytes from Québec and Labrador are the main focus of the journal, but contributions on the bryophyte flora of Northeastern North America in general are also welcomed. Manuscripts in the fields of ecology, history, biology, conservation, technology, applied science, or other subject areas will be considered if they deal specifically with bryophytes. The

The first issue of the Carnets is available at:
<http://www.societequebecoisedebryologie.org/lescarnets.html>



TROPICOS

by Marshall Robert Crosby

The TROPICOS References database contains just over 120,000 citations, and nearly 38,000 are coded as bryophyte. The TROPICOS system has been used for about 25 years to accumulate the citations in the Recent Literature on Mosses, and later Bryophytes.

The keyword search option has recently been modified to allow the use of more than one key word. By adding bryophyte to your key word, you will eliminate items that do not pertain to bryophytes. For example, the keyword Florida returns 226 items; the keywords Florida,bryophyte returns 32 items. Lists are returned sorted by author, but by clicking on the Year column, the list will be resorted by year of publication, oldest to most recent. Click Year again, and the list will be resorted most recent to oldest. Thus one may obtain a list literature on Florida bryophytes that is easily examined for the most recently published literature. Other examples: China - 2,561 records; China,bryophyte - 1355; China,bryophyte,Mniaceae, 6. Finland, - 252; Finland,bryophyte - 220; Finland,bryophyte,Mniaceae - 1. Mniaceae - 85; Mniaceae,cytology - 4.

Notes to assist your searches:

Go to <http://www.tropicos.org/Home.aspx>

Click References in yellow bar near top of screen

Click Advanced Search in Reference Search rectangle

Enter your keywords in the Keyword rectangle, separating each with a comma

Text is not case-sensitive, so you don't need to bother shifting

Caveat: our keywording is subject to the enterers' whims; we are more precise with systematic and geographic keywords; some items keyed with bryophyte may be marginally bryophytic or not bryophytic at all due to the use of References in the early stages of development for wider subject matter.

Biographical information may be searched by entering bio- followed by the family name of the person, thus bio-hedwig.

The National Symposium of the Bryological Society of China (BSC) in 2011

The annual meeting of the Bryological Society of China will be held on 23-26 August 2011 in Urumqi, Xinjiang. The organising committee consists of Dr. Rui-Liang Zhu (president), Drs. Tong Cao, Yu Jia, Yu-Huan Wu, Li Zhang, Yuan-Ming Zhang & Jian-Cheng Zhao (vice presidents). The secretary-general is Dr. Yuan-Ming Zhang.

For more information including the field trip after the meeting, please contact the local secretary (Dr. Y. Xue, email: klbb@ms.xjb.ac.cn, tel: 86-991-7823155).

Welcome colleagues to visit Xinjiang and attend the meeting !



Country Contacts Help: Speak up for your

IAB and the Bryological Times is asking all of you to take on a leadership role to help all bryologists! Help us learn what the world's bryologists are doing by helping to communicate your country's news to DorothyBelle Poli at poli@roanoke.edu. DB is looking to learn which countries are still not represented on our back page and then would like to find people to help with those bryological "holes." Volunteer to help fill-in the world!

If your country is not listed on our list, please let DorothyBelle know. If you would be interested in being your country's contact or would like to find a replacement, again, please contact DorothyBelle today!



My-Plant.org - A new social network



Check out the latest way to communicate with the plant community : My-Plant.org. This is a facebook-like social network that has been designed and implemented by the iPlant Collaboration. Signing up is FREE and connects you to people with similar plant interests because you pick the families you want to hear about.

Bryological Theses 25

by Bill Buck

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

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/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 Jim Shevock (jshevock@calacademy.org).

Choi, Seung-Se. 2009. The Hepaticae (liverworts) flora of Mt. Deogyu in Korea. Master's thesis, Chonbuk National University. [iv] iii + 201 pp. In Korean with English abstract, tables and figure captions. Address of author: Faculty of Biological Sciences, Chonbuk National University, Jeonju, 561-756, Korea. E-mail: hepaticae@jbnu.ac.kr.

This master's thesis is a study of the hepatics of Mt. Deogyu, reaching 1614 m, on the border of Jeollabuk-do and Gyeongsangnam-do provinces (ca. 36°00'N, 127°45'E). A total of 119 taxa are reported, nine of which are new to the Korean Peninsula, *Tetralophozia filiformis*, *Herbertus buchii*, *Bazzania japonica*, *Cephaloziella hampeana*, *Jungermannia japonica*, *Marsupella alpina*, *Pedinophyllum interruptum*, *Jubula hutchinsiae* ssp. *javanica* and *Marchantia alpestris*. All taxa are described (in Korean only) and there is no key. However, all taxa have a series of very nice black and white photographs, including both aspect as well as cellular details. An additional nine species were previously known from North Korea and are here reported for South Korea.

Hespanhol, Helena Canha Pinto. 2009. Bryophytes communities from rock outcrops: ecological characterization and conservation. Ph.D. dissertation, Universidade do Porto. Xi + 143 + 37 (manuscript on Hedwigiaceae submitted to Australian Systematic Botany) pp. + Appendices II and III (7 unpaginated pages). In English with Portuguese and French abstracts. Address of author: Faculdade de Ciências da Universidade do Porto, Departamento de Biologia, 4169-007 Porto, Portugal. E-mail: helena.hespanhol@fc.up.pt.

This doctoral dissertation focuses on the characterization of the bryoflora of rock outcrops in northwestern Portugal. Quantitative surveys were performed at 100 localities over 11 areas, sampling bryophytes colonizing rock surfaces, fissures, cavities and small rock pools. In the sampling area, 128 bryophyte taxa were identified, including four new to Portugal (*Grimmia reflexidens*, *G. tergestina*, *G. torquata* and *Hedwigia striata*) and one new to science (*Grimmia horrida*). The threatened status and distribution patterns of the species were evaluated. The primary threats to these communities were identified and conservation priorities were defined. Multivariate methods, particularly ordination techniques, were used to study the composition and structure of bryophyte communities. The study confirmed that substrate type and

rock microhabitats influence and regulate bryophyte richness and communities. Threatened species tended to occur in localities with high species richness.

Kleinebecker, Till. 2007. Patterns and gradients in South Patagonian ombrotrophic peatland vegetation. Ph.D. dissertation, Universität Münster. XI + 101 pp. In English with German and Spanish summaries. Address of author: Working Group Ecosystem Research, Institute of Landscape Ecology, University of Münster, Robert-Koch-Str. 28, D-48149 Münster, Germany. E-mail: till.kleinebecker@uni-muenster.de.

This doctoral dissertation consists of three inter-related papers that address different aspects of the vegetation and ecology of ombrotrophic peatlands in southern Chile. The floristic composition, as well as the major environmental gradients and vegetation properties, such as diversity patterns, were studied. The first paper, using cluster analysis and detrended correspondence analysis, studied 381 phytosociological relevés for gradients of continentality and moisture in the peatland vegetation. Here *Sphagnum*-dominated communities were more continental, and vascular plant-dominated vegetation occupied more hyperoceanic habitats. In the second paper, ordination methods were used to analyze the bog vegetation, reflecting biogeochemical gradients at the landscape level. For 82 relevés, biogeochemical peat characteristics were determined on the basis of volumetric mixed surface samples. Both climatic and biogeochemical variables were highly correlated with the distance to the Pacific Ocean. Finally, in the third paper, using a transect crossing the southern Andes, patterns and gradients of diversity in South Patagonia ombrotrophic peat bogs were studied. Response curves illustrated clear preferences to specific conditions, such as mosses dominating at the low end of a nitrogen gradient, whereas cushion plants had their optimum at intermediate levels, and graminoids dominated at high nitrogen contents. This dissertation can be found online at http://www.uni-muenster.de/imperia/md/content/landschaftsoekologie/oekosystemforschung/pdf/diss_kleinebecker.pdf.

Zhao, Dong Ping. 2008. Studies on taxonomy and flora of Pottiaceae (Musci) in Inner Mongolia, China. Doctoral thesis, Inner Mongolia University. VI + iii + 287 pp. In Chinese with English abstract. Address of author: Department of Biology, Inner Mongolia University, Hohhot 010021, China. E-mail: topalizdp@yahoo.com.cn.

This doctoral thesis examines the Pottiaceae of Inner Mongolia, China, the largest family of mosses in that province. In total, 28 genera, 93 species and 8 varieties are reported. All taxa are keyed, and those inadequately treated in the *Flora Bryophytarum Intramongolicarum* are described and illustrated. Two genera (*Acaulon* and *Microbryum*) and nine taxa (*Acaulon triquetrum*, *Aloina hamulus*, *Crossidium aberrans*, *Didymodon hedyariiformis*, *Microbryum davallianum* var. *conicum*, *M. starckeanum*, *Pterygoneurum kozlovii*, *Syntrichia caninervis* var. *spuria* and *Tortula cernua*) are new to China. A molecular phylogeny was done for the taxa, using *rps4*. The molecular data suggest *Timmiella* is the most basal member of the family; *Aloina* is not closely related to the *Tortula* complex (including *Crossidium*); *Pseudosymblepharis*, *Weissia*, *Trichostomum* and *Tortella* are closely related and may belong in a single genus; *Syntrichia* is separate from *Tortula*; *Acaulon*, *Hilpertia* and *Microbryum* are closely related; *Didymodon* is clearly separated from *Barbula*; and *Molendoa*, *Anoetangium* and *Hymenostylium* are closely related. A bryogeographic study indicates that the Pottiaceae of Inner Mongolia are primarily of North Temperate or East Asian distribution.

News from Helsinki

by Sinikka Piippo

Many bryologists continue research on bryophytes in Helsinki, both in Botanical Museum and Department of Biosciences. Professor Sinikka Piippo is Head Curator of Cryptogamic Herbarium of Botanical Museum, mainly interested in hepatics of Western Melanesia, China, and Southeast Asia, both systematic, taxonomy and phytogeography; as well as phytogeography of Finnish hepatics. Dr. Xiaolan He, Curator of Cryptogamic herbarium, is focused on the taxonomy of Lejeuneaceae, and nowadays working mainly in phylogeny of liverworts and their adaptation to ecosystem change. Nijolė Kalinauskaitė, assistant curator in Cryptogamic Herbarium, is a hepaticologist also working as botanical artist. She is mainly focused on Lithuanian, South Ural, and Finnish bryophytes, their taxonomy, phytogeography and ecology. Dr. Sanna Laaka-Lindberg, acting curator of Cryptogamic Herbarium, has studied population processes and structure especially in epixylic hepatics, effects of forest management and restoration activities on the diversity of epixylic bryophytes, and monitored threatened bryophytes in Finland in association of Finnish Environment Institute and the Finnish committee for bryophyte conservation.

The major field of Timo Koponen, Professor Emeritus of Botany, is the taxonomy of mosses, especially the Mniaceae (s.lat.) and Philonotis, as well as Southeast Asian mosses in general. He is also expert in bryogeography. Pekka Isoviita, Professor and Head Curator Emeritus of Cryptogamic Herbarium, has studied the vegetation of raised bogs in southern Finland and the genus Sphagnum and especially their nomenclature. He is a specialist of botanical nomenclature and old bryological literature. Both are very active in bryology, Timo mainly in his home office and library ca. 80 km WEST of Helsinki in Karjalohja.

Jaakko Hyvönen, Professor of Botany is the expert of the class Polytrichopsida, and interested in classification of bryophytes. Johannes Enroth, docent and lecturer of botany is studying mainly the moss family Neckeraceae. Neil Bell, post doctoral researcher, studies the phylogeny, evolution and taxonomy of mosses, especially the class Polytrichopsida. He also retains an interest in the systematics of pleurocarpous mosses, particularly the “basal” lineages now mostly restricted to southern temperate regions and SE Asia. Dr. Hidetsugu Miwa is the expert of Conocephalum and cryptic species. Yu Sun, PhD candidate, is currently involved in the project “Diversification of liverworts – adaptation to ecosystem change in an ancient lineage” focusing on a comparative study of chloroplast genome of liverworts. Riitta Ryömä, PhD candidate, working mainly at Lammi Biological Station ca. 120 km N of Helsinki, is focused on studies on taxonomy, ecology and distribution of poorly known hepatics in Finland.

Research projects going on in the bryophyte group in Helsinki are Phylogeny of liverworts (Hepaticae), the least known

group of early land plants; The taxonomy of the family Lejeuneaceae; Diversification of liverworts - adaptation to ecosystem change in an ancient lineage; BRYOSPHERE - Phylogeny of early land plant lineages; The bryophytes of China; The bryophyte flora of Western Melanesia; The bryophyte flora of Hunan Province, China; The phytogeography of South East Asiatic bryophytes; Revision of Philonotis in SE Asia and the Pacific; Taxonomy and classification of the moss family Mniaceae (s.lat); The phytogeographical elements of hepatic flora from Northern Finland to Lithuania; The hepatic flora of South Ural; Character evolution in pleurocarpous mosses; Poorly known hepatics of Finland; and Finnish bryophyte guide and floras.

One of the largest projects, the project on the bryophyte flora of Western Melanesia started in 1981 and has till now produced 72 papers published in the “Huon Peninsula series” and 4 papers in the “Frieda series” (Koponen 1993). Along the project 82 taxa new for science, 77 new combinations, 456 new synonyms, 44 first generic records for Western Melanesia, and 231 new species records have been published. New studies on the family Sematophyllaceae (2) and the genus Cololejeunea will soon appear. The other project, Bryophyte flora of Hunan, China, has so far produced 11 taxonomic studies and many are on the way, and many reviews and one ecological study on Myxomycetes have been published in connection with the project. Bryophyte excursions were made to Hunan in 1997, 1998 and 1999, and 12000 specimens were collected.

Finnish Bryological Society was established in 1987. The purpose of the society is to improve the research in bryophytes and support the activities of researchers and amateurs in Finland. It organizes excursions and meetings, and publishes Bryobrothera and Bryobrotherella journals. The editor of Bryobrotherella is Sinikka Piippo and the editors of Bryobrothera Timo Koponen and Sinikka Piippo. Ten volumes of Bryobrothera and 14 of Bryobrotherella have been published this far. The memorial volume of Prof. Risto Tuomikoski will be the next volume to be published in Bryobrothera in 2011. Finnish-Chinese Botanical Foundation was established in 1998. The purpose of the foundation is to improve the research on bryophytes and lichens of China and support the education of young Chinese researchers. The journal Acta Bryolichenologica Asiatica was transferred to Helsinki in 2007, to be published by the Finnish-Chinese Botanical Foundation. Volume 3 was dedicated to Dr. Ming-Jou Lai, the founder of the Foundation (1949-2007). Volume 4 will appear still in 2011 with the studies on New Guinean Cololejeunea and Sematophyllaceae.



MOSS 2011

Black Forest,
Sep 11th – 16th

<http://plantco.de/MOSS2011>

The annual meeting on bryophyte research

The scientific program will consist of contributed oral and poster sessions featuring all aspects of contemporary research on bryophytes. Traditionally, most presentations are connected to the model moss *Physcomitrella patens*, but contributions dealing with other bryophytes are highly welcome.

Early registration deadline: June 15th

Preliminary Program

Sunday Sep 11th

Bus shuttles from Freiburg main station to venue (Herzogenhorn, 1400mtrs)
Welcome reception

Monday Sep 12th

Oral and poster sessions
Optional Rothaus brewery visit with Black Forest snack

Tuesday Sep 13th

Oral and poster sessions
Optional conference dinner with cable car ride

Wednesday Sep 14th

Oral and poster sessions
End of conference, bus shuttles to Freiburg main station

Thursday Sep 15th

Optional guided "Historix" Freiburg tour

MOSS 2011 is organized by Plantco.de e.V. (Freiburg, Germany) and supported by the Freiburg Initiative for Systems Biology (FRISYS), the German Botanical Society / Section Physiology and Molecular Biology (DBG) and the Freiburg Institute for Advanced Studies (FRIAS). Support by the companies shown below is gratefully acknowledged.



More Book Reviews....

Zhang, L. et al. (eds.) 2010: *Flora Briófitas de Macau, Bryophyte Flora of Macao*. 360 pp., line drawings, color photographs. Hardback, ISBN 979-99937-00-22-6.

Zhang, L. et al. (eds.) 2009: *Checklist of Macao Bryophytes*. 86 pp. Paperback, ISBN 979-99937-0-013-4.

Zhang, L. 2009: *The Miniature Angels in the Plant Kingdom. An Introduction to Bryophytes*. 105 pp., illustrated. Paperback, ISBN 979-99937-0-012-7.

All volumes published by Department of Gardens and Green Areas, Civic and Municipal Affairs Bureau of Macao Special Administrative Region. Inquiries: zhangli@szum.gov.cn or zhangli@graduate.hku.hk

Flora and checklist

Macao is a small special administrative region of China, located at the coast of the Guangdong Province. Considering its area, just 29.5 km² and the low elevation, it is not surprising that the bryophyte flora is not very rich. There are 103 species known from Macao, of which 27 are liverworts, 72 mosses and four hornworts. The current volume is a comprehensive treatise of the bryoflora. The Forewords and Preface are in Portuguese, English and Chinese, but the flora itself is entirely in Chinese.

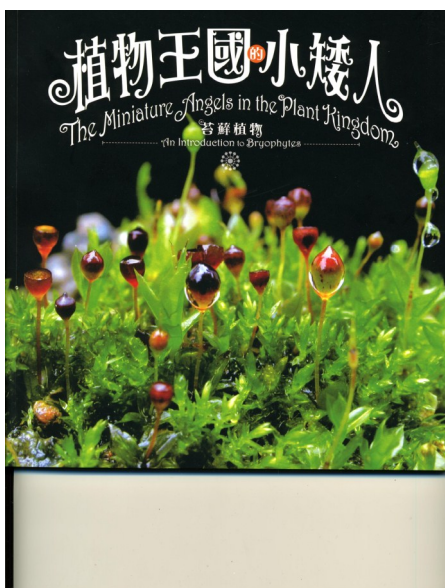
There are no identification keys, which is mildly disappointing. On the other hand the book is amply illustrated. Nearly all of the species are represented by very good photographs, many taken in the field and in most cases there are also close-ups and micrographs, and excellent line drawings. In fact many of the “bryophotos” are among the best I have ever seen, just admirable. I can easily imagine that pictures like this can raise interest towards bryophytes in people who are hardly aware they exist.

In the Preface there is a table containing eleven Chinese provinces, their areas in square kilometres, and the numbers of bryophyte species. Hunan is said to have

343 bryophytes, but in fact the number is 464 (Enroth & Koponen 2003, *Hikobia* 14: 79–86). There may be small problems with the identities of some taxa, such as *Plagiomnium vesicatum* and *Philonotis turneriana*, but in general the taxa appear to be correctly identified. All in all, this a very valuable contribution and a beautiful book.

Prior to this book the author Li Zhang et al. published a checklist of the same 103 taxa treated in the flora. Both publications have the same systematic arrangement of taxa, so the checklist does not follow the usual (and practical) alphabetical order of names. The checklist gives for each species the known distribution in Macao (citing actual specimens) and the general distribution in Chinese and English.

Together these two volumes represent a remarkable achievement, especially considering the statement in the Preface of the checklist: “If we look back three years ago, we will find that we knew almost nothing of Macao’s bryophytes”.



“Miniature Angels”

If you have ever wondered how to write and compile popularizing books about bryophytes, have a look at this book and follow the example! The front sleeve motivates the publication of the book as follows: “This book is about the basic

By Johannes Enroth

knowledge of bryophytes. The book was published as a bilingual edition (Chinese and English), and the content is rich with concise text, generous illustration, and immaculate design. It should be a good reference for students, teachers and nature lovers. The readers may experience the beauty of nature through it, and arouse their enthusiasm of observing, caring and protecting our nature”.

The book has three main parts: 1) Getting to know bryophytes, 2) How to recognize bryophytes, and 3) Diversity and conservation of bryophytes in China. In the first part we learn how to tell bryophytes from some superficially similar organisms such as lichens, small ferns and green algae. The structure, life cycle and asexual reproduction are introduced by words and pictures. The “importance” of bryophytes is also briefly explained under headings like “Pioneering plants”, “Maintaining water balance”, “Gardening”, and “Medicinal value”. Next to the latter heading, there is a photo of *Rhodobryum giganteum*, with the text “A famous herb for heart disease”.

In the second main part we learn how to observe and collect bryophytes and how to properly label the specimens. The third part focuses on the diversity, conservation and threats to bryophytes in China. This part and the whole book end with lists of suggested further readings and internet resources.

Needless to say, good pictures are essential in a book like this. And oh boy, the photos are just delicious! There are habit pictures, close-ups and micrographs. The photoplate of different asexual propagules on the pages 56 and 57 deserves special mentioning. A small and concise book, yet a treasure trove of fascinatingly presented information! Get it if you can!

Johannes Enroth

Book Review: Bryophyte Ecology and Climate Change

by Sanna Laaka-Lindberg

Zoltán Tuba, Nancy G. Slack & Lloyd R. Stark (eds.): Bryophyte Ecology and Climate Change. Cambridge University Press 2011. 506 pp. ISBN 978-0-521-76763-7 Hardback, 85€ (US\$ 140.00), ISBN 978-0-521-75777-5 Paperback, 35€ (US\$ 60.00). Information on this title: www.cambridge.org/9780521767637

The different phenomena connected to the changes in atmospheric and climatic conditions as consequences of the fast global climatic change have been in the focus of a lively debate in various media around the world. The topic of the book is therefore very much up-to-date, and after reading it, a worried question arises: if the scientists and specialists, indeed, know this much about bryophytes, a small part of the Earth's biodiversity as a whole, why hasn't this information reached the ears or eyes of political decision-makers who rule the world's economy, industries and practices controlling e.g. the CO₂ emissions?

The contents of the book do, however, partly explain this. The book as a whole is most interesting with a wide range of approaches and views to the ecophysiology, distribution and reactions of individual bryophyte species. However, many of the articles are, as scientific texts unfortunately often tend to be from the decision-makers' point of view, too complicated, too introvert talk comprehensible only to colleagues sharing the same peculiar interests with the authors. This does not mean those articles and studies are of low scientific quality; on the contrary, such studies are often of the highest scientific standard. They just don't reach those minds which should understand and internalize the message.

As an ordinary reader, I first became saddened that I didn't have a chance to personally meet professor Zoltán Tuba, who was one of the editors and contributors of the book until his death. From the necrology and introductory chapters one can sense high respect and admiring to the skills, knowledge and personality of this eminent scientist. Even without a personal contact, the book brings out a noteworthy scientist whose initiatives and contributions lay the foundations for publishing a book like this. The book's dedication to professor Tuba is a most appropriate way to respect his wide and profound scientific expertise.

The subjects of the book are divided in eight parts from introductory chapters to conclusions. This structure is like in a textbook, which purpose this book obviously can well serve. In Part I, the two introductory Chapters 1 and 2 (The Ecological Value of Bryophytes as Indicators of Climate Change by Nancy G. Slack and Bryophyte Physiological Processes in a Changing Climate: an Overview by Zoltán Tuba) could, in my opinion, have been combined into one, since the contents seemed disturbingly overlapping even though there was an effort to emphasize somewhat different aspects. The same was a little disturbing also in Part II Ecophysiology, especially in Chapters 3 and 4 (Climatic responses and Limits of Bryophytes: Comparisons and Contrastas with Vascular Plants by Michael Proctor, and Effects of Elevated Air CO₂ Concentration on Bryophytes: a review by Zoltán Tuba and coauthors). Chapter 5 (Seasonal and Inter-annual Variability of Light and UV Acclimation in Mosses by Niina M. Lappalainen and coauthors) was among the best articles as far as clarity and readability are concerned. To this top group belongs also Chapter 6 Ecological and Physiological Effects of Changing Climate on Aquatic Bryophytes by Janice M. Glime.

Parts III–VI are divided on environmental basis: from Aquatic (Part III) to Deserts and Tropical (Part IV) to Arctic, Antarctic and Alpine (Part V) environments, and finally to Peatlands (Part VI) with emphasis on studies on ecosystems dominated by Sphagnum. This arrangement makes it easy to follow the line of thought and also makes the volume more useful as a reference book. To a reader like me, the description of situations in environments most far-away and unfamiliar were extremely educating, but also the acute threats to those environments most familiar to me provided many new perspectives.

Exceptional to this book, as compared to most textbooks with similar arrangement and emphasis on reviews on wide range of literature on the topics, are the original publications presented in the Chapters in Part IV (Chapter 8 Responses of a Biological Crust Moss to Increased Monsoon Precipitation and Nitrogen Deposition in the Mojave Desert by Lloyd R. Stark and coauthors, Chapter 9 Ecology of Bryophytes in Mojave Desert Biological Soil Crusts: Effects of Elevated CO₂ on Sex Expression, Stress Tolerance, and Productivity in the Moss *Syntrichia caninervis* Mitt. by John C. Brinda and coauthors, and Chapter 10 Responses of Epiphytic Bryophyte Communities to Simulated Climate Change in the Tropics by Jorge Jácome and coauthors), and in Part V (Chapter 12 Alpine Bryophytes as Indicators for Climate Change: a Case Study from the Austrian Alps by Daniela Hohenwallner and coauthors). As an experienced textbook reader I found the inclusion of original studies inspirational and instructive. The results often discussed as generalizations on the basis of reviews may be based on only very few case-studies with a limited number of taxa and small geographic area. With original studies included the textbook one gets a better understanding of the limitations of generalizations and of their relevance to theoretical debates.

In Part VII Changes in Bryophyte Distribution with Climate Change: Data and Models in Chapters 17–22 the effects of climate change on bryophyte species distributions are discussed on the basis of evidence from the past (Chapter 17 The Role of Bryophyte Paleoecology in Quaternary Climate Reconstruction by Gusztáv Jakab and Pál Sümegei), from recent monitoring data (Chapter 21 Modeling the Distribution of *Sematophyllum substrumulosum* (Hampe) E. Britton as a Signal of Climatic Changes in Europe by Cecília Sérgio and coauthors) and of modeling studies (Chapter 22 Modeling Bryophyte Productivity Across Gradients of Water Availability Using Canopy Form-Function Relationships by Steven K. Rice and coauthors). These chapters are accompanied by – may I say – a bit more practise-oriented studies analyzing existing data on detected changes in countries with good records of the species distributions. As the reasons behind the present climate change are considered to be human-induced changes in the atmospheric CO₂ levels, ozone depletion etc., Chapter 17 appeared to me as the number one among the articles in this book. The multidisciplinary approach with such illustrative reminders of the ferocious history of Europe really spiced up this soup (read: book).

(continued on next page)

Book Review: Bryophyte Ecology...continued from p. 19

In the last Part (VIII) the two Chapters draw conclusions based on the texts in the previous parts, with reference to more general discussion on climate change problematics. The many suggestions for future lines of studies illustrate that bryophyte ecology still on the 21st century is a relatively large white spot in the map of the discipline, even though focus has in some countries been directed to bryophyte studies in addition to more vigorous projects on e.g. vascular plants and vegetation. A bit more self-criticism could have made the conclusions even stronger: yes, we all -- as specialists in this group of organisms -- agree that bryophytes are at least somewhat difficult, and we all know that only with education, information and courageous funding-proposals we might serve the bryoecology for the future. There obviously is still a lot to do regarding especially the serious potential threats to individual species and bryophyte habitats, shifts in distributions and, most worryingly, changes in such bryophyte-dominated habitats as peatlands with their important ecosystem services, as the climate change is all over the globe.

Sanna Laaka-Lindberg

Botanical Museum, University of Helsinki

Moss & Lichen in Shell Falls, Wyoming

submitted by Alton Dooley, Jr. (Virginia Museum of Natural History)



BOOK Review: Beiheft continued...from p. 3

The recovery of the bryophyte diversity after clear-cutting may take more than 100 years. The final paper in the volume is a study of the frequency and effectiveness of vegetative reproduction in six temperate moss species.

This volume is certainly an impressive collection of significant contributions. My only negative comment is that the English language in many of the papers, although always understandable, would have deserved closer attention.

Beiheft 139

This volume is actually a flora, the undertitle being "A systematic treatise on liverworts, mosses and hornworts with keys to genera and species occurring in Afghanistan, Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sinai Peninsula, Syria, Turkey, United Arab Emirates and Yemen (incl. Socotra Island)". Both authors have considerable experience in this region, as becomes clear from the extensive literature list. Some of the contents have been published previously, but that does not mean this volume is just a compilation of data already known. It is much more.

The region covered (essentially As 5 of Index Muscorum) is geologically, climatically and geographically varied, but it contains huge expanses of dryish steppes and deserts. This is of course reflected in the flora, which according to the back cover text has a total of 1193 taxa (according to the Abstract, 1182 taxa). 959 (according to the Abstract, 948) of those are mosses, and I counted from the key (running 33

pages long!) that 198 of them belong in the Pottiaceae and 69 in the Grimmiaceae, so those families with numerous species adapted to arid climates make up more than ¼ of the flora. However, even those tough-hardy species cannot thrive anywhere. Indeed, the only two countries in the world with not a single recorded bryophyte are in this area: Bahrain and Qatar. On the other side, the bryophyte-richest countries in the region are Turkey (934 spp.) and Iran (498 spp.). The authors however emphasize that "the great differences in phytodiversity between neighboring countries such as Israel, Jordan and Syria are not real and mainly a result of different collecting activities and 'man-power'".

Identification keys, supported by illustrations of some representative taxa or important structures utilized in the keys, are in the core of this book and render it such a significant contribution. The first key is to the supra-familial taxa down to the subclass level (orders are not employed). A conspectus of classification is provided for each division. Under the divisions, the keys follow the taxonomic hierarchy so finally species or infraspecific taxa are keyed out. Aside the keys there are taxonomic notes and notes on some excluded or doubtful taxa.

Although the keys are not easy to use for laymen (are they ever?) they should indeed, at least with some professional guidance, render identification much easier and thus more rewarding than before. As this was the very aim of this volume, we can only thank the authors for the major undertaking that fills a large gap in the literature.

Johannes Enroth

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Don't let this space be ignored! Drop us a note and let us know what your part of the world is doing. ALL things bryological are wanted. Keep us posted on your latest grants, projects, or who is in your lab. Send us the latest news from your local societies. Announce a website or a new book. Send us a review of a new book.

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it.

Got an idea for *The Bryological Times*? Email DorothyBelle a to see what she says...your editor loves having submissions from all of you. Contact her at poli@roanoke.edu today!

FREE SPACE WANTS YOUR BRYOLOGY INFORMATION!

Computers and Bryophytes: Look Here



In collaboration with the University of La Réunion, the National Botanical Conservatory of the Mascarenes is glad to launch its **new website dedicated to the bryophytes of Réunion**: <http://bryophyte.cbnm.org/>

The website hosts a taxonomical index of the bryophyte species present on the island, for each species inquired, the taxonomy and distribution map on the island are provided.

The aim of the website is to provide information on the bryophytes of Réunion to the public (scholars, students, amateur botanists)

and professionals (bryologists, biodiversity managers...) with the aim of promoting the study of bryophytes on the island.

The website also provides information concerning bryophyte exploration in La Réunion, conservation of bryophytes on the island, tropical bryology workshops for local botanists (National Park, Botanical conservatory), and a photograph gallery.

The website will continue to be updated with taxonomic changes and additions. If you publish any taxonomic work including taxa present in Réunion, we will be pleased to receive a copy of your article to keep this website updated.

Presently the language used is French but we hope to translate this website into English in the coming months.

If you wish to contribute to or comment on this website please contact Dr. Claudine Ah-Peng (claudine.ahpeng@gmail.com).

“Checklist of the bryophytes of India” A checklist of the bryophytes of India has been posted in the internet. It has 126 pages but only 526 kB and can be downloaded from any part of the world for free from www.archive-for-bryology.com. It is by Divya Dandotiya, H. Govindaparyari, Shantanu Suman and Prem L. Uniyal from the Department of Botany, University of Delhi 110007. Please also note the previous volumes of the Archive, since the contents is more of local European interest, as well as a new "Special Volumes Series".



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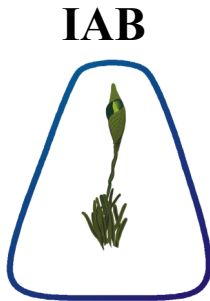
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IAB is on the Web:
<http://bryology.org>



The International Association of Bryologists (IAB) is an organization open for all interested in bryophytes. For membership contact Jim Shevock at

jshevock@calacademy.org. Visit the IAB website: <http://bryology.org> for further information or to pay using PayPal.

The Bryological Times was founded in 1980 by S. W. Greene (1928-1989) as a newsletter published for the IAB. Items for publication in The Bryological Times are to be sent to the Editors, Regional Editors, or to the Column Editors. The newsletter is issued 3 to 4 times per year.

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