

The Bryological Times

Number 107

October 2002

Newsletter of the International Association of Bryologists

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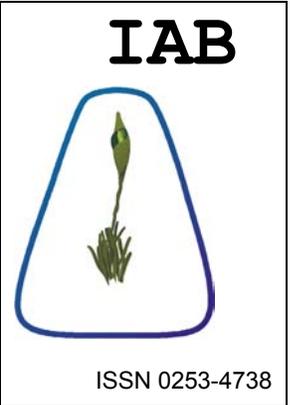
In 2003, the IAB-World Conference in Bryology will be our most important event. May I therefore draw your attention to the conference website, which has been specifically set up for this event?

I have also started with a “Personalia” section: this section is offered to allow IAB-members to announce career changes, graduate degrees obtained, grants or awards collections received, important expeditions which you plan to organise and so on.

And finally, as there is no regional editor for Europe, I wonder which active, young bryologist would like to take up this job?

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MEETING REPORT

Third International Symposium on the Biology of *Sphagnum*, Uppsala – Trondheim 2002

Report by Line Rochefort and Harri Vasander

The first international symposium on the biology of *Sphagnum* was held in Exeter, England and the second one in USA (New Jersey)- Canada (Québec) in 1996. In Québec, the honour of organising the third symposium was given to the prominent Uppsala-Trondheim research groups in Scandinavia. The main organisers in Sweden were Håkan Rydin, Sebastian Sundberg and Urban Gunnarsson and in Norway Kjell Ivar Flatberg, Karen Thingsgaard and Sigurd Såstad. Besides them, there were many others who made this symposium a very well organised and special event. We want to thank the organisers on behalf of all the participants: 42 on the excursion and 53 'indoors'. Here follows a short diary of the excursion and some notes on the 'indoor part' of the symposium.

August 12th

After all the hassle that most people had to go through with the travelling, it was refreshing to land at a peaceful old wooden manor house in Sweden. Thanks to the Swedish organising team for choosing such a relaxing place just on the outskirts of Uppsala. We had the pleasure to be welcomed in Sweden by Hugo Sjörs, who chattily told us, accompanied by a glass of blueberry wine, stories about his expeditions all around the world.

August 13th

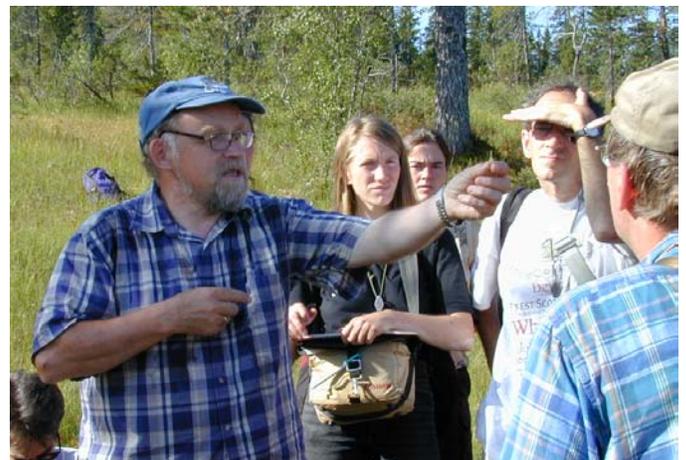
On the first day, two well-studied mires were visited: Ryggmossen, a concentric bog with no open pools and typical for SE Sweden with low precipitation, and Kulflyten, a somewhat excentrically domed bog with pools and bare peat hollows. Bare peat hollow is the latest suggestion from Dicky Clymo in terminology to replace mud-bottom as mud has usually a connotation with mineral soil. The unexpected on that day was the weather. We were all instructed to bring warm garments including gloves, scarf and toque as well as to be well provided with rain gear but instead we experienced a hot humid day where we all wondered if our suitcases were not all too heavy for no use! Fortunately for us, and the mires, we had a nice shower just when discussing the carbon fluxes of pools and peat hollows. On both mires we were trying hard to distinguish the species as well as male and female plants of the *Cuspidata* section: *S. angustifolium*, *S. fallax*, *S. cuspidatum*, *S. majus* ssp. *norvegicum*, *S. balticum* and *S. viride*.

Håkan Rydin started our series of evening lessons by telling about the climate and vegetation zonation in Sweden.

August 14th

The savour of the day was the observation of swallow-holes (sink holes) at Skattlösbergs Stormosse. Hugo Sjörs made an in-depth study of this peatland in 1944-45 and Urban Gunnarsson resurveyed it in 1994-95. For several of us, it was interesting to see *S. wulfianum* forming hummocks. While we continued to identify the different *Cuspidata* species as on the day before, we also found some other interesting but difficult pairs such as *S. palustre* and *S. centrale* and *S. inundatum* and *S. subsecundum*.

With a nice bright sun and much drier weather than yesterday, it was pleasant to have tea, coffee, and home-made bread and cheese at a 'fäbod', a transhumance farm of which only few remain active in Sweden today. In the evening, we had a nice introductory talk on the diversity and floristic inventory of the peatlands in Sweden given by Michael Löfroth. It was very impressive to see the potential of floristic analyses that could be done with the 30 000 vegetation relevés done so far.



Kjell Flatberg demonstrating *Sphagnum* field characteristics during the IAB-field excursion.

August 15th

As we moved towards the border of Norway, the altitude slowly rose to ca 500 m a.s.l. and we reached the middle boreal zone of Sweden. In this region, the organisers took us to a very nice nature reserve, Flickran mire, a 300 ha mire complex, which has the particularity to include steep mire slopes and numerous flarks. Certainly, for several of us, this was the first encounter with sloping mires. Here we got acquainted with *S. angermanicum*, which is suspected to be increasing in abundance in Sweden. On the shallower parts of the fen, large cushions of *S. compactum* could be observed. We also became acquainted with the brown forms of *S. girgensohnii*. By climbing up an old twisted pine, Harri Vasander demonstrated how to take good pictures of a fen with flarks. His technique was soon followed by the fittest!

That afternoon, we visited an extreme rich fen, Movallsflon, in the Jämtland province. For a change, we focused on brown mosses, although there was good discussion about useful field characters for separating *S. russowii* from *S. warnstorffii*. Here is one that you will not find in an identification book: *S. warnstorffii* has its pendant branches closely appressed to the stem whereas the ones of *S. russowii* will first reach out and then further downward along the stem also be appressed. As a compensation for all this mire trampling, everybody appreciated the clean accommodation, quiet places and very nice evening meals in Sweden. That evening we could enjoy tasty deer and moose stroganoff, accompanied by *Rubus chamaemorus* and *Vaccinium vitis-idea* berries. It was just delicious!

August 16th

During the morning, we visited Klockamyren, a very nice mire complex besides the lake Ånn. It had an ombrotrophic and a minerotrophic part even with some rich-fen vegetation. Peat was being eroded near the shore of the lake and we spent a lot of time making paleoecological studies and speculating about the causes of this erosion. However, most of the time was spent in identifying the different red species of the *Acutifolia* section: *S. rubellum*, *S. capillifolium*, *S. russowii* – even some other more exotic species names were quietly mentioned!

The scenery had become mountainous by this point, and we could see even some snow on the mountain slopes. These areas were also covered by huge sloping fens.

During the afternoon we visited Visjövalen, a nice sloping fen. The main troublesome peat mosses there were of the *Subsecunda* section: *S. subsecundum*, *S. contortum*, and *S. platyphyllum*. Some other interesting species included *Loeskygnum badium*, *Scorpidium cossonii*, *Sphagnum subnitens* ssp. *subnitens* as well as the very rare and yellow-flowered *Pedicularis oederi*.

After a short break at the border village, we crossed the Swedish-Norwegian border; unnoticed by most of the

participants as the bus did not even slow down! Soon we came to the seashore and had accommodation in Levanger, a small town on the edge of a fjord. That evening, Asbjørn Moen gave a comprehensive presentation of the vegetation zones, sections and ecological regions of Norway. He also clarified the mire terminology and mire-conservation issues in Norway.

August 17th

Today the whole day was spent at the same mire, but what a mire! Upper Forra is a 108-km² large nature reserve with an oceanic climate and is situated 400 m a.s.l. This means that we were close to the tree limit and had unobstructed views of cascading sloping mires ending in a sea of fens. With a blue sky and a temperature of 24 °C, the view was breathtaking. Here, we worked on the *Sphagnum recurvum* complex as all members of this group were seen: *S. angustifolium*, *S. flexuosum*, *S. fallax*, *S. brevifolium* and *S. isoviitae*. For several of us, all the different characters got mixed up as they were dancing in our heads by the end of the afternoon, and this might not only be due to the close relationships between these species. However, the barbecued lamb chop and the amount of red wine served during the lunch might have played tricks on the mind while trying to sort out the species. In all we had another wonderful day but were very sorry to have missed the company of Asbjørn Moen. He had to leave us as his mother passed away the previous evening. One has to know that Asbjørn's direct involvement protected Upper Forra, which was threatened by flooding as a result of dam construction for a hydro-electrical power plant. We all are really proud and grateful for your efforts to protect this magnificent area, Asbjørn, and mourn together with you.

August 18th

Again the morning was warm and sunny, and our Norwegian hosts were afraid that the mires would be too dry to see the rarest species of our trip: *S. troendelagicum*. This was going to be the day for that species!

During our way to Stortrønningen we saw nice examples of boreal rain forests with many epiphytic lichens hanging from spruce twigs. At the mire site we did succeed in finding quite good examples of *S. troendelagicum*. Only 15 localities in a radius of 50 km are known from the whole world! The species is allopolyploid with *S. tenellum* and *S. balticum* as progenitors. As the parental species exist together in many parts of the world, it seems that this species has yet to be found elsewhere or - the other explanation - that there is something special in Stortrønningen!

The afternoon was not just warm. It was hot! Apparently central Norway was experiencing its driest summer on record and today central Norway was the warmest place in Europe. This had never happened before! As we had lunch by a lake, many of us did not need to be convinced to take a dive and one did not mind the belt of aquatic plants to reach the

thoroughly refreshing water. During the afternoon, we visited a blanket bog, Momyran at Fosen peninsula. It was dry and we did not pay much attention to the *Sphagnum* flora but more to the different definitions of blanket mires.

August 19th

The day started with a refreshing ferry crossing to the island of Hitra. We followed Kjell Ivar and Karen in the forest patch and a steep sloping ravine fen. They could demonstrate all six species of the section *Sphagnum*: *S. affine*, *S. austinii*, *S. centrale*, *S. magellanicum*, *S. palustre* and *S. papillosum*. It is strange that the two species *S. affine* and *S. austinii* were kept for so long together as *S. imbricatum* although in the field they really differ both in their morphology and ecology. We had the chance to see *S. affine* and *S. centrale* adjacent to each other. This Havmyrane site was also good for discussing another past misunderstanding: the distinction between *S. auriculatum* and *S. inundatum*, formerly combined as *S. denticulatum*.

That afternoon, in the subtropical Norwegian weather, the participants searched - as mountain goats - the rocky ridges for fresh wind rather than following the guides to the dried fens

August 20th

The visit to Malmmyran mire had two goals: to see one of the largest remaining Atlantic raised ombrotrophic mire complexes and to become acquainted with *S. viride*, a close relative of *S. cuspidatum*.

Because it was again another warm and sunny day, lunch was taken by the rocky seashore to permit a dip in the water. It must be said that one couldn't resist swimming in this very clear water, not overgrown by algae, even when the water temperature was only 15-16 °C. That afternoon, we visited a small ombrotrophic mire, Straumøya. There half of the group went back swimming in the inviting sea while others investigated the wet forms of several *Sphagnum* species growing in old peat pits or along the dry peat baulks. In these extreme dry conditions, it was really difficult to distinguish the different red species of the *Acutifolia* section in the field.

During the evening we had an interesting and refreshing boat trip to the islands of Sula and Mausund. The sea was calm, as if it had an oiled surface, which, according to our captain, happened the last time in 1973. Besides seeing efficient salmon farming we also visited 'The Happy Sailor'. This pub was a good start for discussing through the night and for admiring the northern lights and full moon from the Frøya island beach.

August 21st

The small Atlantic ombrotrophic mire E of Sunde was characterised by *S. austinii* hummocks with *Racomitrium lanuginosum* as an Atlantic species. Another interesting species seen on the steep minerotrophic slope was *S. subnitens*

ssp. *ferrugineum*, which is easy to distinguish in the field when you see it.

The last site of the excursion was at Langvatnet, which has a highly humid oceanic climate reflected by the occurrence of *S. quinquefarium*, *S. rubiginosum*, *Rhytidiadelphus loreus* and *Blechnum spicant*. In the spruce forest we saw large mats of *S. rubiginosum* growing together with *S. girgensohnii*, *S. quinquefarium* and also *S. russowii*.

When the field trip ended in Trondheim, we realised that we had experienced something very special: a unique excursion to mires showing many and new species; excellent guides who could answer all our question, without getting tired; very special weather conditions, and finally colleagues sharing deep interest – almost a passion - in *Sphagnum*.

It is beyond our vocabulary and skill to express our deep gratitude to the organisers. We had an excellent field excursion guide (Thingsgaard & Flatberg 2002) as well as Kjell Ivars field colour guide (Flatberg 2002). Both will occupy a central place in our bookshelves.

August 22nd and 23rd

The 'indoors' part of the symposium consisted of 37 presentations (19 oral and 18 poster presentations). Enlightened key speeches were given by Jonathan Shaw (Duke, USA) on the 'Application of molecular evidence to the systematics of *Sphagnum*' and by Dicky Clymo (London, UK) on the 'Ecology of *Sphagnum*'. As there is a well-edited abstract publication (Såstad & Rydin 2002) we do not further present these presentations in detail. One thing worth mentioning outside the abstracts is the great seafood we had in Norway. The top in this category was the excellent symposium dinner in the restaurant 'Mermaid', a restored old wooden house beside the river.

In his concluding remarks Håkan Rydin compared the time between the *Sphagnum* symposia as an Olympiad. Research and publishing (training) is made between the symposia, 'Olympic Games' to show research results to colleagues worldwide. He pointed out the fast development of taxonomy since the second *Sphagnum* symposium. Processes behind speciation are now better understood. For ecologists it may sometimes be difficult to follow the newest taxonomical developments, which highlight the importance of voucher specimens in ecological research. For this purpose, researching joint taxonomical-ecological problems would be fruitful. As one example he mentioned the ongoing research on the speciation of *S. troendelagicum* in a very small geographical area. Why and when and how just there?

These special symposia devoted to only one genus – *Sphagnum* – gives us an excellent opportunity to meet and to communicate. We had a great time together and got very inspired although sometimes even confused by the latest developments. Dick Andrus (NY; USA), Jonathan Shaw (NC; USA) and Karen Golinski (BC, Canada) were given free hands to look for the suitable time and place for the fourth international symposium on the biology of *Sphagnum*. Timing

might be after 4-5 years and Alaska was mentioned as one probable part of the *Sphagnum* world.

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The participants of the IAB-Sphagnum Symposium field excursion

MEETING REPORT

The post IAB Conference field trip to the Nainital mountain range (India)

B.C. Tan and D. G. Long

Benito Tan and David Long sent the following report of this excursion to the Nainital mountain range. It was not inserted in the conference report, which was published in the last issue of the Bryological Times.

On the last day of the IAB World Conference on Bryology (Lucknow, India), a special final dinner was prepared at the NBRI Guest House to send off the participants who signed up for the post-conference field trip to Nainital in the NW Himalaya.

The group, departed by the overnight train from Lucknow at 9pm on a dark rainy night after a lively exchange of hugging and goodbye greetings.. In total, 15 participants from 6 countries (6 UK, 2 Norway, 2 Finland, 2 Japan, 1 Sweden, 1 Hungary and 1 China) were expertly guided by Drs Nath, Asthana, and Tewari and with Ms M.C. Nair from Kerala. After some reshuffling of bryologists and baggage between compartments, and some lively discussions (and nightcaps) we enjoyed a comfortable journey and awoke at 7.15 am in the first light of day at Lalkuan which nestles on the Gangetic plain below Nainital. A bus was waiting and soon we were speeding towards the hills through villages, past plantations of Teak (*Tectona grandis*) and scattered roadside trees of *Dalbergia sissoo*, Mango (*Mangifera indica*), Sal (*Shorea robusta*) and Simal (*Bombax ceiba*) with its showy red flowers. We crossed into the State of Uttaranchal (until recently the hilly part of Uttar Pradesh) then zigzagged uphill towards the lake land of Nainital. The vegetation changed from tropical trees and bananas to Chir Pine (*Pinus roxburghii*), Evergreen Oak (*Quercus leucotrichophora*) and Cypress (*Cupressus torulosa*) and above us we could see the majestic Deodars (*Cedrus deodara*) on the ridges emerging from a carpet of snow.

Reaching Nainital at 9.15am on 28 January, we were greeted by a blanket of snow on the main street (The Mall). This follows the shore of Nainital Lake (about 1950m altitude), which is surrounded by steep forested hills, though the town itself is steadily sprawling upwards. The Nainital area when viewed from above is a series of ridges (up to about 2500m) and valleys, several of which contain lakes. The ridge tops also give splendid panoramas of the snowy Great Himalayan Range far to the north. Away from the town, areas of forest are well preserved, with oak on the lower slopes and Deodar above. We drove through the town to the spacious Arif Castles Hotel where we stayed for two nights. The hotel was 'under renovation' and although the bedrooms were heated and warm, 'dressing up for dinner' took on a new meaning due to the surprisingly cold weather inside and out.

Bryology began almost immediately on the first afternoon with local roadside stops at Bharapahar, Khurpatal and on the road to Bhowali. The main habitats for bryophytes were the road cuttings and walls, home to several Marchantiales including *Asterella mussuriensis*, *A. wallichiana*, two *Plagiochasma* species, *Targionia hypophylla* and a *Cyathodium*. Fragments of mossy *Quercus* / *Cupressus* forest had epiphytic species including *Leucodon secundus*, *Cryptoleptodon pluvinii*, *Herpetineuron toccoeae*, *Ptychanthus striatus*, *Meteoriopsis reclinata* and *Erythrodontium julaceum*. All of these turned out to be common in the area. Dr Tewari also showed us a fine colony of *Athalamia pinguis* on soil-covered limestone rocks and a small colony of *Stephensoniella brevipedunculata*. These and other Marchantiales were generally not at their best in January, the best season being August to October.

Next morning (29 January), we were awakened by monkeys crashing over the corrugated iron roof above our bedrooms. The snow gradually melted to give a fine sunny day. We were whisked up the municipal cable car to the Snow View ridge but urban encroachment had degraded the forest somewhat. The views fully compensated, with tantalising glimpses of distant peaks. A number of interesting finds were made, such as *Asterella khasyana* and *Reboulia hemisphaerica* on soil and *Syntrichia gemmascens* on *Quercus* bark. Ornithology became clearly established as serious competition to bryology and the area did seem to be rich in birds, perhaps migrants escaping from the cold snowy conditions higher up. The descent was on foot, down a beautifully paved red-brick path, with *Cryptomitrium himalayense* conveniently growing at eye-level.

On the third day (30 January) we spent the morning exploring the mossy oak forest on the opposite hillside above Nainital Lake, again following the roadside and exploring the shady roadside banks and walls. A good range of different genera were collected, such as *Anomodon*, *Entodon*, *Fabronia*, *Palamocladium*, *Plagiochila*, *Porella*, *Radula*, *Rhodobryum* and *Timmiella*. We did not get far into the mossy forest, however. After lunch at the hotel, and some words of thanks from Royce Longton on behalf of the overseas bryologists, most of the group packed up for the afternoon bus journey back to Kathgodam, where some boarded the train back to Lucknow, and others took the overnight sleeper to Delhi. Five bryologists stayed on for some additional field work (three British for three days and two Norwegians for two days). We moved downtown to more modest accommodation and enjoyed several excursions by taxi and on foot to more inaccessible localities, Sat Tal at 1300m in the Chir Pine zone, the mossy oak forests around Land's End and finally the north

side of the Snow View ridge at Dhobi Ghat where a spectacular ravine descends with waterfalls and deep pools. Many bryophytes of interest were seen, with Marchantiales such as *Dumortiera hirsuta* and *Wiesnerella denudata*, and many epiphytes including *Meteorium buchanani* and *Homaliiodendron*.

Benito C. Tan (Benito Tan, Department of Biological Sciences, National University of Singapore, Singapore 119260) and David Long, (Royal Botanic Garden, Inverleith Row, Edinburgh EH3 5LR, U.K., D.Long@rbge.org.uk)

MEETING REPORT

The 2002 Annual Meeting of the American Bryological and Lichenological Society

Occasionally the American Bryological and Lichenological Society meets independently of the Botanical or Mycological Society of America. This year, the Society met by itself at the University of Connecticut in Storrs, where nearly 70 researchers from North America and Europe attended its annual meeting from July 24th to the 28th, 2002. Our local representative was Bernard Goffinet, who organized the meeting, as well as solicited funds from his university to help subsidize the program. The meeting included two days of talks and three days of field trips. The conference began with two one-day field trips within Connecticut. On the first day, granitic outcrops in a typical mixed hardwood deciduous forest and a *Chamaecyparis* swamp were visited. The second day, calcareous outcrops in western Connecticut were explored. Here, the lichenologists uncovered the third reported and by far most northerly locality of *Agonimia opuntella* (Buschardt & Poelt) Vězda in North America, and the bryologists recorded *Neckera besseri* (Łobarz.)Jur., as new for Connecticut. This field excursion was followed by a workshop led by Dr. Irwin Brodo on the significance of ascus characters to lichen systematics. During that time, bryologists were taken to a seepy ridge dominated by mosses and liverworts.

On the first day of the conference proper, all participants were hosted to a welcoming breakfast by the Office of the Dean of the Graduate Schools of the University of Connecticut. Following the breakfast, when all participants were now present, the scientific program began with a presentation by Dr. Didier Schaefer from the University of Lausanne (Switzerland) who was invited to give a seminar on moss genomics, drawing attention to the advantages that the model taxon *Physcomitrella patens* offers in comparison to *Arabidopsis*. Funding for this seminar was provided through a grant from the Research Foundation of the University of Connecticut, matched by funds from the Society. Also on the first day of talks, 12 students competed for the A. J. Sharp Award for the best student oral presentation. The award went to Rebecca Yahr from Duke University for her study "The structure of symbiotic communities: Population-level patterns of association between lichen fungi and their algal photobionts." The award is accompanied by a check for \$500 and a one-year membership to the Society and subscription to

its journal, THE BRYOLOGIST. This year, the prize was supplemented by books donated by various publishers, namely Cambridge University Press (Bryophyte Biology, edited by J. Shaw & B. Goffinet), University of Michigan Herbarium (Structural Diversity of Bryophytes, by H. Crum), Yale University Press (Lichens of North America, by I. M. Brodo, S. D. Sharnoff, and S. Sharnoff), as well as Thomas Nash III, editor and publisher of the Lichens of the Sonoran Desert. These books were distributed between the student winner and runners-up. The Society is grateful to the publishers for their support in rewarding excellence in research by our students. The Society also invited Dr. Louise Lewis, from the University of Connecticut, to present, on the second day of talks, results from her studies on the phylogenetic diversity of algal crusts in desert environments, a subject of particular interest to the lichenologists. In total 27 research papers were presented during the two days of talks, with topics ranging from bryophyte phylogeny to the biology of endolithic lichens in the Sonoran Desert.

A banquet sponsored by the Office of the Dean of the College of Liberal Arts and Sciences was held on Saturday evening. On this occasion The New Botanical Garden presented, in the presence of the Senior Science Editor of Yale University Press, Jean Black, the 2002 Gleason Award for a publication making a significant contribution to plant systematics or ecology, to Dr. Irwin Brodo (Canadian Museum of Nature) and his collaborators for their book "The Lichens of North America."

On the final day of the meeting ABLs members once again headed to the field. Of particular interest was an old gravel pit and "talus" slope against a reservoir dam.

It was a very successful meeting, in large part due to the efforts of our local representative. The ABLs meeting in 2003 will be held in conjunction with the Botanical Society of America at the Mobile Convention Center in Mobile, Alabama on July 26-31, immediately after the IAB meeting in Mérida, Venezuela.

Bernard Goffinet
William R. Buck

COURSE REPORT

Tropical-Africa Bryology courses at the University of Nairobi (Kenya)

In 1999, Dr. Min S. Chuah-Petiot of the University of Nairobi initiated a series of "Tropical-Africa Bryology Courses".

The "Tropical-Africa Bryology Courses" are an important initiative to stimulate bryology in Africa. The objectives of these courses are to provide starting African botanists with an introductory course in tropical bryology, to increase the awareness of the importance of bryological research for and in Africa and to create a network of African professional bryologists and botanists with an interest in bryology.

For these courses, professional and experienced bryologists are invited to lecture and to assist in the field excursions and laboratory sessions. During the lectures, various bryology items are taught: the morphology, biology, and classification of mosses, liverworts and hornworts, the ecology of tropical bryophytes, techniques of bryophyte collection in tropical environments, the identification of collected specimens; the management of a cryptogamic herbarium and the survey and current status of bryological exploration in Africa. Additionally, these courses initiate young bryologists to biomonitoring techniques and show them the importance of bryophytes in tropical biotopes (bryodiversity, ecology, and bryophyte conservation).

Wherever possible, these introductory courses alternate, or are integrated with, laboratory sessions or field excursions so that the participants are able to work with freshly collected material.

Participants who attended the courses came from institutions of higher learning, universities, and several of them are curators of herbaria or working in botanic gardens or in field-related projects. Participants were selected on the basis of their background in science, their current position in their workplace if any and the benefits these participants will bring to their individual institutions in addition to selecting from diverse countries from Africa. Selected non-Kenyan African participants were fully sponsored: air tickets, transport and accommodation, course fees and field trips were covered. Kenyan participants were often sponsored by their home institutions. We do not fund participants from outside Africa;

Since then, four of these courses have taken place. Dr. Chuah-Petiot provides the following report.

therefore, they have to look for alternative funding. The training courses are open to all.

Between 1999 and 2002, four courses took place and I would like to use this as an opportunity to express my sincere thanks to all the funding bodies that provided financial assistance for these courses.

The first course was held from 13th to 22nd September 1999 and was funded by the International Development Research Centre. This first course was attended by 9 participants from Tanzania, Ethiopia, Zambia and Kenya. During a field trip to the Ngong Hills (2400m), the participants experienced the various bryophyte habitats and were able to collect specimens.

Actually, in our teaching, we handle the higher plants more effectively than the lower plants. This course was therefore an opportunity to become more familiar with these plants.

Samson Gwali, Lecturer, Biodiversity and Plant Taxonomy, Department of Environmental Forestry, Masindi, Uganda

The second course was held between the 19th of June and the 1st of July 2000 and was supported by UNESCO. Nine participants came from Tanzania, Uganda and various institutions of higher learning in

Kenya. In addition to the bryological courses presented by Dr. Min S. Chuah-Petiot, attention was paid to lichenology and for this session, Dr. Vagn Alstrup from the University of Copenhagen was invited as a guest tutor. Here, again, a day-long field trip was spent in the Ngong Hills.

The third course was held between 9th and 21st July 2001 and was also generously supported by UNESCO. We received 13 participants from Benin, Uganda, Tanzania, Zambia, Zimbabwe, Malawi, Madagascar and Kenya. As in the 3rd course, Dr. Vagn Alstrup kindly prepared the lichenological courses and a similar excursion and collecting trip was organised to the Ngong Hills.

The fourth course was planned as an advanced course and focused on bryology only. This course was held between the 11th and the 22nd of March 2002. Prof. Tamás Pócs (Esterhazy College, Hungary) was the guest tutor. Participants came from Spain and Kenya. A two-day field trip to the Aberdare mountains (summit 4001m) was organised to collect bryophytes. This was a very successful excursion as two species new to science were discovered and several new records will be published for these mountains. The two new species are *Cololejeunea chuahiana* and *Microlejeunea*

nyandaruensis described by Prof. Pócs – East African Bryophytes XVIII. Two new Lejeuneaceae (Hepaticae) from the Aberdare Mountains (Kenya) in the Polish Botanical Journal 47(1): xx-xx, 2002.

The next training course (of two weeks duration) will be announced through bryonet and through our mailing list. We may (conditions permitting) organise a longer field trip for participants as we feel that practical experience is of utmost importance.

In order to illustrate the content of this course, I hereby present the agenda of the 4th and latest “Tropical-Africa Bryology Training Course”:

1st day: Arrival and registration of participants

Morning lecture: The diversity of bryophytes, life histories: alternation of generations; growth forms; ecology; substrata, climatic conditions of growth.

Afternoon laboratory: Presentation of the diversity of tropical bryophytes

2nd day:

Morning: lecture session. Systematics of acrocarpous and pleurocarpous mosses. Distribution patterns of bryophytes. Status of bryological exploration in Africa. Herbaria with important African collections. Scientists working on African cryptogams and their research activities.

Afternoon: laboratory session: Identification of freshly collected bryophytes

3rd day

Morning: lecture session. Database of African Bryophytes. Diversity, classification and identification of bryophytes

Afternoon: laboratory session. Identification of freshly collected bryophytes

4th day

Morning: lecture session. The diversity of hepaticae, life-history, classification, study of thalloid and leafy liverworts. Gametophyte and sporophyte morphology, anatomy.

Afternoon: laboratory session: Identification of freshly collected bryophytes.

5th day

Morning: lecture session: The composition of tropical bryofloras, Environmental conditions determining bryophyte distribution. Altitudinal zonation of bryophytes in tropical mountains. The evolution of bryophytes. Isolation and speciation, dispersal and disjunction. Adaptations to environmental conditions. Relics. Biodiversity and its expression.

Afternoon: laboratory session. Identification of difficult bryophyte taxa.

6th day

Free

7th and 8th day:

Field work in the Aberdare mountains

9th day:

Morning lecture: study of field collections from the Aberdares

Afternoon laboratory: study of field collections from the Aberdares

10th day: Departure of Participants

Dr. Min S. Chuah-Petiot, Botany Department, University of Nairobi, Box 14576, Nairobi 00800, Kenya. E-mail: petiot@wananchi.com

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BRYONET

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COURSE ANNOUNCEMENT

International Course: Biology of Mosses, Liverworts and Lichens January 4-11, 2003; Navarino Island, Antarctic Province, Chile

This course is co-ordinated by Dr. Bernard Goffinet (University of Connecticut, USA) and Dr. William R. Buck (New York Botanical Garden, USA) who have invited the assistance of the following Chilean and international researchers: M.Sc. Orlando Dollenz (Universidad de Magallanes), Dra. Francisca Massardo (Universidad de Magallanes), Dr. Juan Armesto (Fundación Senda Darwin, Universidad de Chile), Dr. Shaun Russell (International Centre for Protected Landscapes, UK), Dr. Ricardo Rozzi (Fundación Omora, Universidad de Magallanes).

Maximum number of students: 15 persons

Goals of the course

Much of the species diversity of cryptogams, such as bryophytes (i.e., mosses, liverworts and hornworts) and lichens, is generally considered to be found under tropical latitudes. These cryptogams may, however, represent a dominant component of ecosystems in temperate areas. In southern Chile, bryophytes and lichens compose much of the biomass in peatlands, dominate the epiphytic flora in *Nothofagus* forests, and are a diverse component of the vegetation along streams. In some areas the species diversity exceeds by a factor of ten that of vascular plants. Where they are abundant these cryptogams perform fundamental ecological functions in nutrient cycles, regulation of hydrological flows, and may play an important role as a food source and habitat for a wide range of animals, primarily invertebrates. This course will address taxonomic, ecological and conservation aspects of the non-vascular flora, with emphasis in the southern extreme of the Americas. This knowledge is relevant for the conservation of biodiversity because it permits the incorporation of this poorly known flora into the scientific understanding and the applied assessments of terrestrial ecosystems. The course is directed at advanced students and researchers interested in the austral temperate

region of South America. No previous knowledge of cryptogams or microscopy is required, but will enhance the experience.

Location

The course will be held in the small city of Puerto Williams on Isla Navarino, the southernmost inhabited island in the world. The island is located on the Beagle Channel, south of Argentinean Tierra del Fuego. Accommodation will be dormitory style housing. Habitats within walking distance of Puerto Williams include *Nothofagus* forests, Sphagnum-dominated peatlands, and alpine areas (above 600 m). Puerto Williams is primarily a Chilean military base, but a number of establishments are present which serve the families as well as passengers of cruise ships that stop there. Photographs of Isla Navarino can be seen on the web at <http://www.victory-cruises.com/Dientes.html>. A Chilean web site that will give you an idea of the weather on Isla Navarino can be found at <http://www.meteochile.cl/>.

Cost

The estimated costs for international students are: US\$ 1100 (which will include materials, roundtrip tickets Santiago-Punta Arenas, Punta Arenas-Puerto Williams, lodging and basic food) plus the international ticket to Santiago, Chile (to be arranged by each student).

If you are interested in participating in the course, please contact Dra. Francisca Massardo (email: fmassardo@eudoramail.com). She is in charge of the administrative preparation of this course. Please note that places are limited because about half the students will come from Chile and Argentina.

Source: BRYONET

Kruijer, H.: Hypopterygiaceae of the world.**Blumea Suppl. 13: 1–388 (2002). Paperback, ISBN 90-71236-51-X. Advertised price 70 €.****Nationaal Herbarium Nederland, Universiteit Leiden branch, P.O. Box 9514, 2300 RA Leiden, NL****Web site: <http://nhncml.leidenuniv.nl>**

This is the first serious professional monograph of the *Hypopterygiaceae*. Kruijer recognizes seven genera and, of the ca. 160 validly published species, retains a reasonable 21. The genera are *Cyathophorum* (with seven species; including *Cyathophorella*), *Hypopterygium* (seven species), *Dendrocyathophorum* (one species), *Lopidium* (two species), *Dendrohypopterygium* (two species; a new and paraphyletic genus), *Canalohypoterygium* (one species) and *Catharomnion* (one species). Kruijer's convincing phylogenetic analysis, based on morphological data, shows that the family is monophyletic, a notion that has recently been disputed by some other researchers.

Apart from the phylogenetic analysis, this is basically a "traditional" taxonomic monograph. What strikes me is how meticulously Kruijer has carried out the work, apparently never missing a detail. The descriptions and nomenclatural considerations are accurate and the versatile, highly readable discussions reflect clarity and depth of taxonomic as well as biogeographic thought. I especially enjoyed reading Chapter 7, *Distribution and biogeography*, which, in addition to observed

facts, unavoidably contains speculative scenarios that however are always well founded and clearly elaborated.

As the high number of previously described species and extensive new synonymy implies, many of the species are morphologically very variable. Kruijer manages to convince at least me that he has succeeded to tackle the taxonomic problems inherent in such a "multidimensional" morphological space. It is no surprise that the work has taken several years to complete (most of the excellent habit sketches were drawn already in 1994–96).

It disappoints me somewhat that it is really difficult to find in Kruijer's work anything substantial to be critical of. Well, OK, the name Tangney is consistently misspelled ("Tangley"). The Netherlands has a great history in bryology and it is really comforting to know that the tradition is being carried on in such a beautiful way. Young bryologists: if you are not quite sure how to do high-quality traditional monographic taxonomy, just take this book as an example!

Johannes Enroth

Sale: Edwin B. Bartram "Mosses of Guatemala"

The Chicago Field Museum has a supply of the 1972 reprint of "Mosses of Guatemala" by Edwin B. Bartram published by the Chicago Natural History Museum in 1949 (442 pages and 190 figures). This is a comprehensive work on the moss flora of Guatemala, and includes notes on affinities of the Guatemalan flora with that of the surrounding and contributory regions. The Field Museum wishes to offer these at US\$4 per copy. Please contact Dr. Matt von Konrat if interested or require further details, e.g., the form in which we would wish to

receive payment. As a gesture of goodwill to developing nations, Dr. von Konrat is willing to discuss alternative means of payment, e.g., gift of herbarium material.

Matt von Konrat, Collections Manager (Bryophytes and Pteridophytes), Department of Botany, The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-2496, U.S.A., Phone: (312) 665-7864; Fax: 312 665-7158. Email: mvonkonrat@fieldmuseum.org

New publication on *Notothylas* of the Indian subcontinent

This new publication on the "*Notothylaceae* of India and Nepal - A Morphotaxonomic Revision" (271 pages, with 46 B&W and 4 colour plates), written by Dr D K Singh, Joint Director, Botanical Survey of India, Dehradun, has just been released. This monograph presents the result of a morphotaxonomic revision carried out on eleven species of the genus *Notothylas* Sull. from India and Nepal. The study encompasses critical comparative evaluation of morphological

and anatomical details of thallus, chloroplasts, gametangia, involucre, and the structure and organisation of capsule wall, spores and elaters. The distribution pattern of the currently recognised species of the genus in the world, and its phytogeographical significance, has also been discussed. For more information, please contact Dr D K Singh: singh_drdrk@rediffmail.com / dks_008@rediffmail.com

Register of taxonomic projects

At present there is no index of taxonomic projects (alpha-taxonomic as well as molecular systematic), of who in the world is currently working on which species, genera or families. A couple of years ago, there were the IAB directories which had this information. However, these print media are quickly outdated. Therefore, I considered filling this gap by an online service, which is perpetually updated. For this purpose, I installed a data bank on our bryology server, in which the necessary information can be added online to a data file. This allows everyone to get an overview of all ongoing monographs and revisions. This register needs no administration, since everybody has free access to this server and can post the information themselves.

To make use of this new possibility:

1. Connect to www.uni-bonn.de/bryologie/ and click logo
2. For the English version, click the British flag (bottom left side)
3. Click AG Bryology. On this page you will find "searchable databases", which you might use, too, such as the recent German bryological literature or our bryological bibliography (31.000 titles).
4. Click register of taxonomic projects. You will be connected with our data server
5. Click Register. The database will open. Unfortunately the menu of the database program is in German, but since English and German have common roots, you will

understand e.g. that "Neuer Datensatz" means new dataset. Then a data mask opens in which you may enter the necessary details. Please indicate the taxa of your study, the period of your study, your name, address and e-mail, the geographical range (e.g. E-Asia or worldwide) and checkmark the fields for taxonomic or molecular study with an upper X.

So far, there are 23 projects registered.

Further use will provide better transparency with regard to ongoing taxonomic research. However, the success of this initiative depends on the degree of participation, and therefore I encourage everyone to make use of this new facility.

Together with the membership list of the Bryological Working Group of Germany, this is the only read & write database on our server. The other data files are read-only. We can add other databases to this data server, so if anyone has data they wish to share, they can contact me. Also any other comments and suggestions for future additional "read & write databases" are appreciated.

Jan-Peter Frahm, Botanisches Institut der Universität, Meckenheimer Allee 170, D 53115 Bonn. Tel. +49(0) 228 73 21 21; Fax: +49(0) 228 73 3120/ website: www.uni-bonn.de/bryologie/

Bryological Research News from China

Cao Tong provided the following news about bryological activities in China. About 35 Chinese IAB-members are active in different fields of bryological research.

- **Publications**

Two books of Flora Bryophytorum Sinicorum, Volume 6 (*Hookeriales*, *Hypnobryales*), edited by P. C. Wu, and the Moss Flora of China, English Edition, vol.6 were published in 2002. Flora Bryophytorum Sinicorum vol. 9 edited by Gao Chien, the first of four volumes dealing with Chinese liverworts, will be published by end of this year. Flora Yunnanica vol 18 edited by Li Xinjiang, dealing with part of the mosses in Yunnan Province, Southwest China was also published recently.

- **Research Projects**

Additional to the editing work for the Flora Bryophytorum Sinicorum and the Moss Flora of China, several other research projects are taking place at this moment and are supported by the Nature Science Foundation of China (NSFC). These include: the taxonomic revision of Chinese *Brachytheciaceae* by Wang Youfang, East China Normal University, Shanghai; Effects of light and CO₂ increase on Bryophytes by Wu Yuhuan, Institute of Applied Ecology, Academia Sinica, Shenyang; and Genetic diversity of representative taxa of bryophyte genera endemic to China and East Asia by Cao Tong, Shanghai Teachers University. There are also some projects supported by local governments, such as Biological indicator value of cryptogams (bryophytes, lichens, algae and ferns) for environmental changes in Shanghai City by Cao Tong; Studies of spores of Chinese bryophytes with SEM and TEM by Yu Jing, Shanghai Teachers University and Bryoflora of Hebei by Zhao Jiancheng, Hebei Normal University, Shijiazhuang etc.

- **International cooperation**

Zhu Rui-liang, China-East Normal University, Shanghai, received a Humboldt Foundation Fellowship for post-doctoral research on *Lopholejeunea* of Asia (University of Gottingen, Germany). Zhang Chaohui of Guizhou Normal University, Guiyang, is specializing in bryophyte ecology at Reading University (U.K.). In co-operation with South Korean botanists from Korean University, Cao Tong and his colleagues at the Institute of Applied Ecology organized in August a botanical survey along the Yalu River near the border between China and North Korea. In September, Dr He Si of Missouri Botanical Garden visited the Botanical Institute of the Academia Sinica, Beijing.

- **Students**

Sun Jun and Zhang Yuanming (supervised by Cao Tong), obtained their Ph.D. degrees at the Institute of Applied Ecology in June this year. Their respective theses are "Studies of *Lophozia* in China" and "Biodiversity and Ecology of Bryophytes at Sangong River Valley, Xinjiang, Southwest China". Li Xiuqin, a student of Zhao Jiangcheng, Hebei Normal University, received her Master Degree in June with a thesis entitled "Study of Pleurcarp mosses of Hebei Province".

- **Meetings**

The first mini-conference on the most endangered bryophytes of China is planned for May 2003 in Shanghai. Benito Tan, National University of Singapore, is applying for money from the IAB to organize this meeting. The conference will be organized in collaboration with Cao Tong at Shanghai Teachers University.

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

As reported in the *Bryological Times* (99:17, 1999), the International Association of Bryologists has decided to begin a repository of bryological theses. These theses will be housed in the Library of the New York Botanical Garden. They will be available via interlibrary loan. The NYBG Library online catalogue (CATALPA) may be viewed at <http://www.nybg.org/bsci/libr/Catalog.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. Those who want to have their theses included in the "Theses in Bryology Column", but who cannot afford to send a copy of the theses can apply for financial support. Please refer to the preliminary notice (cited above) for information on financial assistance from IAB for reproduction of theses.

Câmara, Paulo Eduardo Aguiar Saraiva. 2002. Levantamento da brioflora das matas de galeria da Reserva Ecológica do IBGE, RECOR, Distrito Federal. Master's thesis, Universidade de Brasília, Brasília, Brazil. [x] 115 pp. + VI appendices (includes lists, tables, figures, photographs and glossary). In Portuguese with English abstract. Current address of author: Universidade de Brasília, UnB, Campus Universitário Darcy Ribeiro, Ala Sul, Depto. de Botânica, Brasília, DF, Brazil 70000-000. E-mail: paduu@ig.com.br.

This master's thesis is an inventory of the bryophytes in the gallery forest in the Reserva Ecológica of the Instituto Brasileiro de Geografia e Estatística, RECOR, in the capital district of Brazil, 35 km from the centre of the city of Brasília, at ca. 15°57'S, 47°53'W. It has an area of 1350 hectares and is mostly composed of cerrado vegetation. In the study, 40 mosses, 31 hepatics, and one anthocerotid were found, with 32 new to the Distrito Federal. *Tisserantiella minutissima* is cited from Brazil for only the third time. Keys to the taxa are presented, and most of the mosses are illustrated.

Gallego Morales, María Teresa. 2002. Revisión taxonómica del género *Syntrichia* Brid. (Pottiaceae, Musci) en el área circummediterránea y Macaronesia. Doctoral thesis, Universidad de Murcia, Murcia, Spain. [xii] 293 pp. In Spanish. Current address of author: Departamento de Biología Vegetal (Botánica), Facultad de Biología, Universidad de Murcia, E-30100 Murcia, Spain. E-mail address: [unknown \[probably gallego@um.es\]](mailto:unknown[probably gallego@um.es]).

This doctoral thesis examines the genus *Syntrichia* in the circum-Mediterranean area and Macaronesia, based on the study of ca. 1100 specimens. Twenty-three (23) taxa are recognized. Nomenclatural novelties proposed are *S. caninervis* var. *pseudodesertorum* and *S. subpapillosissima*; nine taxa are lectotypified; and fifteen new synonyms are provided. All species are described, illustrated photographically, and mapped. The principal characters to distinguish the taxa are mostly gametophytic, including papillosity of the laminal cells, cross-sectional anatomy of the costa, laminal cell size, curvature of the leaf margins, and the number of cell layers in the lamina.

Heinrichs, Jochen. 2002. A taxonomic revision of *Plagiochila* sect. *Hylacoetes*, sect. *Adiantoideae* and sect. *Fuscoluteae* in the Neotropics with a preliminary subdivision of neotropical Plagiochilaceae into nine lineages. Doctoral thesis, University of Göttingen, Germany. Bryophytorum Bibliotheca 58: 1-184, Appendices 1-5 (unpaginated), including 58 plates (Appendix 1). In English. Current address of author: Albrecht von Haller Institut für Pflanzenwissenschaften, Abteilung Systematische Botanik, Universität Göttingen, Untere Karspüle 2, D-37073 Göttingen, Germany. E-mail address: jheinri@gwdg.de.

This published doctoral thesis examines a derived clade within the neotropical species of *Plagiochila*. The three sections studied form a monophyletic unit, based on ITS sequence data. Members of sect. *Hylacoetes* are characterized by capsule wall epidermal cells without thickenings on the walls, and fan-shaped, terminal androecia. In its synonymy are *P.* sect. *Cucullifoliae*, *P.* sect. *Superbae*, *P.* subsect. *Macrotrichae* and the genera *Steereochila* and *Szweykowskia*. The section contains 16 species, including the newly described *P. patriciae* as well as the new combinations *P. dimorpha* var. *ecuadorica* (for the previous single species of *Steereochila*) and *P. superba* var. *macrotricha*. Section *Adiantoideae* has a capsule wall epidermis whose cells have nodulose thickened walls and simple, intercalary androecia. Within its synonymy are *P.* sect. *Cristatae*, *P.* sect. *Grandifoliae* and *P.* subsect. *Notidophylae*. Four species are embraced in the section. Section *Fuscoluteae* is characterized by species with wax over the surface of laminal cells. Synonymy includes *P.* sect. *Bursatae*, *P.* sect. *Caversiae* and *Acrobolbus* subgen. *Xenopsis*. Eight species are recognized in the section and the new combination *P. heterophylla* var. *beauverdii* is proposed. All taxa are keyed, described and illustrated.

Jones, Paul Robin. 2002. Restoration ecology of the moss component of biological soil crusts of the western Snake River plain, Idaho. Master's thesis, Boise State University, Boise, Idaho, U.S.A. vii + 63 pp. In English. Current address of author: 2141 NW North Hill Dr., Apt. A, Grants Pass, OR 97526, U.S.A. E-mail address: unknown.

Biological soil crusts are an important component of many arid and semi-arid ecosystems. Those that are predominantly composed of mosses occupy sagebrush steppe of the western Snake River plain. Invasion of this area by the exotic grass, *Bromus tectorum*, has led to alternation of native vegetation and degradation of biological soil crusts. This master's study investigated the possibility of reintroduction of mosses into these disturbed habitats, using moss fragments. *Bryum argenteum*, *Ceratodon purpureus* and *Syntrichia ruralis* were used. It was determined that moss inoculation has potential as a useful tool for restoration/ rehabilitation of sagebrush steppe.

Opisso Mejía, Jasmín Alexandra. 2001. Contribución al conocimiento de los musgos pleurocárpicos de la provincia de San Ignacio (Cajamarca). Tesis para optar el título Profesional de Biólogo con mención en Botánica. x + 112

pp. In Spanish with English abstract. E-mail address of author: <opisso@mixmail.com>.

This equivalent of a bachelor's thesis treats the 40 species of pleurocarpous mosses (in 15 families and 32 genera) known from the province of San Ignacio, department of Cajamarca in northern Peru. Collections were made from 1100 m to 2600 m. All species are keyed, described and illustrated. New to Peru are *Lindigia debilis*, *Trachypus viridulus*, *Acroporium estrellae* and *Lepidopilum cuspidans*. Twenty-five species are new to the department of Cajamarca.

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

CONSERVATION COLUMN

Editor: Tomas Hallingbäck

Invitation to participate in the IAB workshop 'Bryophyte Conservation Current Status and Future Work' 2003 July 18-19 in Mérida, Venezuela

The IAB Standing Committee for Endangered bryophytes together with the IUCN SSC Bryophyte specialist group and in co-operation with Dr. Yelitza León at the University of Los Andes, Merida, Venezuela is organizing a workshop on threatened bryophyte species and habitats called 'Bryophyte Conservation - Current Status and Future Work'.

We would like to invite you to an international workshop that will take place in the days **before** the IAB Symposium 2003 'Structure - Dynamics Evolution'. The workshop will focus on how to better consider vulnerable bryophyte taxa, how to stop the destruction of rich bryophyte habitats and to discuss how the bryologist can contribute to the conservation of our bryophyte flora.

The workshop is intended for those interested in all aspects of bryophyte conservation, bryophyte ecology and questions related to population dynamics of rare and declining species. In order to receive the first draft program you need to make a preliminary registration.

Please send your e-mail or letter to: tomas.hallingback@artdata.slu.se or to the local organizer Dr Yelitza León yleon@gmx.net before November 1. More

detailed information will be sent after your preliminary registration.

Below is a preliminary list of topics that will be discussed:

- Red-book initiatives in Latin America, and other parts of the world.
- Educational programs on the environmental role and importance of bryophytes
- Conservation strategies in the tropics: What to save and how to re-establish species and habitats?
- Bryophytes as indicators of subtle changes in habitat and impact of forest fragmentation on bryophyte vegetation
- Ecological consequences of bryophyte disappearance (incl. harvesting) in tropical ecosystems
- Regulations, research and scientific collaboration among bryologists for the study of bryophytes in the tropics

Tomas Hallingback, Swedish University of Agricultural Sciences, Species Information Center, P O Box 7007, SE-75007 Uppsala, Sweden Email: Tomas.hallingback@artdata.slu.se

NEW AND INTERESTING RECORDS

The extraordinary hepatic *Myriocolea irrorata* rediscovered.

Rob Gradstein and Nicole Noeske report this unique find from Ecuador

On 25 September of this year we have rediscovered *Myriocolea irrorata* Spruce (Lejeuneaceae), a remarkable South American liverwort of periodically flooded river margins. The species was only known from type material from Ecuador and had not been sighted since its discovery by Richard Spruce about 150 years ago.

Myriocolea irrorata is the only species in the genus *Myriocolea* and morphologically unique: "the habit of this plant is very peculiar and unlike that of any hepatic" (Spruce, Hepaticae Amazonicae et Andinae, p. 307). The leafy shoots, hanging away from the twigs of small shrubs at the edge of the river, are robust, up to 5 cm long, and have large, undulate-crisped leaves and numerous short branches, each branch bearing a globose head of 20-60 densely clustered perianths. "Anything more alien to the aspect of a *Lejeunea* cannot well be imagined... (Spruce, l.c.).

Our material of *Myriocolea* comes from the Rio Topo, the same river where Spruce gathered the plant. The Topo is a wild and fearsome tributary of the Rio Pastaza, at the roots of the Amazon River, and its rocky margins are usually flooded

by the furiously-rushing waters, making them inaccessible for collecting. We were extremely lucky, however, to find the river very calm and water level low. *Myriocolea* was very abundant on the rocky shores and we were able to make a splendid collection of the plant. Accompanying it were other rheophytic South American liverwort treasures such as *Myriocoleopsis gymnocolea* and *Potamolejeunea* (s.l.).

We will deposit duplicates of our rich gatherings in the main Ecuadorian and other institutional herbaria with tropical liverwort collections. A paper on the unique characteristics of *Myriocolea*, including description of several previously unknown features, and the phylogenetic position, ecology and conservation status of the plant, is in preparation.

Finally, we acknowledge the invaluable help of the ornithologist and orchid specialist Lou Jost, Baños, expert on the Pastaza region, who guided us to the location of *Myriocolea*.

Rob Gradstein & Nicole Noeske, University of Goettingen, Germany.

The only actual records of *Notothylas orbicularis* in Europe

During the last weekend of September 2002, about 20 persons were creeping on their knees across the last remaining stubble-fields in the Vogelsberg region, NE of Frankfurt in Germany. They were members of the Bryological Working Group of Germany, accompanied by Tomas Hallingbäck from Sweden, who came especially to search for *Notothylas orbicularis*, the purpose of this field trip.

This species, although widespread in North America, has been found only a very few times in Europe: in upper Italy, Lower Austria, Slovakia, and in three German Länder (Bavaria, Saxony and, in 1980, in this region, Hessen). The distribution range does not make much sense, and collections of *Notothylas* in a nursery in Austria indicate that the species may not be native in Europe. In 1980, the amateur bryologist Josef Futschig found the species about a dozen times together with the European endemic *Anthoceros neesii* in Hessen within an area of about hundred square kilometres. Hessen is considered the last area where *Notothylas* may occur in Europe, as this species has not been observed elsewhere for several decades. As we know, most bryologists are curious, so

also Josef Futschig. He kept this interesting find secret, although he informed some close friends, albeit in a very discrete way. Futschig showed *Notothylas* to Ruprecht Düll



Notothylas orbicularis

the same autumn, but published the find. In 1983, however, a letter appeared in the Bryological Times n° 12, written by Futschig and addressed to Ricleff Grolle. The letter is the only German contribution in the Times. How this letter got into the Times remains a secret. As the letter was addressed to Grolle ("Lieber Herr Dr. Grolle"), I assume that Grolle forwarded the letter to the Bryological Times as he knew that Futschig kept his findings secret. In other words, the publication of the letter may have been a planned indiscretion with regard to the great importance of these findings. Maybe Stanley Greene, who's German was good enough to understand and recognize the old-fashioned style of the letter, published it out of curiosity. When Futschig died in 1984, his herbarium was given to a non-bryologist friend, who nevertheless searched the herbarium for interesting records and published these in 1987.

Futschig found *Notothylas orbicularis* again in this region the next year, but not in 1982, when the climatic conditions were apparently not optimal for ephemerals. According to my knowledge, Gottfried Schwab found this species in the area for the last time in 1993. These records remained forgotten until 2001, when my student Dietmar Quandt wanted to sequence the species for a phylogenetic tree and when I planned to organise a special inventory search for *Notothylas* in Hessen.

As it makes more fun and as it increases the probability of finding this rarity, I announced this as a special fieldtrip to the Bryological Working Group of Germany. We specifically also invited regional nature conservation organisations, something we never did before but something which should be done more to raise interest in bryophytes and bryological research. (For the same purpose, a press release was disseminated after the excursion).

The first day of the field trip was frustrating: at this elevation many of the former arable fields were converted into meadows or were already ploughed when we arrived. The remaining fields were either managed in a very intensive way (excess use of dung, herbicides or artificial fertilizer): Consequently no *Notothylas* was found on the remaining less intensively managed stubble fields, although we found lots of *Anthoceros* and *Riccia* species (*A. agrestis* and the very rare *A. neesii*; *Riccia glauca*, *R. sorocarpa*, *R. bifurca*, *R. subbifurca*, *R. warnstorffii* and also *R. ciliata*). At the dinner table, Klaus Weddeling presented 2 tiny fragments of "what could perhaps be *Notothylas*". So we decided to go with all men and women (two young ladies from Berlin) to that stubble field near the village of Wettges (450 m alt.; 50° 24' 45,4" N and 9° 19' 44,5" E) and indeed, within two hours 11 specimens of *Notothylas* were found. A part of the collected material was set aside for sequencing and for an agar culture as we have begun an ex-situ conservation programme for threatened German bryophyte species in Bonn (a programme, which also includes plants of the only record - a mat of some square centimetres - of *Dichelyma capillaceum*)

On our return from the fieldtrip, we received information through our German bryonist, that Volker Buchbender found both *A. neesii* and *Notothylas* in the Westerwald, a montane region not far from the Vogelsberg. Not only is *A. neesii* even more rare than *Notothylas*, it is also an endemic European species, which only occurs in Poland, Austria and Germany (Söderstrom et al. 2002). This species was described by Proskauer in 1959 on the basis of herbarium specimens collected by Nees around 1830 in Silesia, now Poland, and was known until 1959 only from these ancient collections.

Germany has also implications for nature –conservation. Indeed, *Notothylas* is one of the 31 bryophyte species, included in Annex II of the Habitats Directive, one of the core pieces for nature-conservation legislation in the European Union. (The Habitats Directive is a EU-legislation to implement the Bern Convention on the Conservation of European Wildlife and Natural Habitats of the European Council, which covers the entire European area). Tomas Hallingbäck told us during lunch break how bryophytes received "by chance" European protection. (The annexes of the Bern Convention were revised simultaneously with the first ECCB Conference in Uppsala, so that the ECCB could lobby for the inclusion of bryophytes in the annexes. Lichenologists were not as lucky and lichens are not included in the Convention annexes). Because of this EU-protection for *Notothylas orbicularis*, the EU-member states have to designate Special Areas of Conservation for this species and are required to maintain in these areas a "favourable state of conservation". In Germany, it is the regions (Länder), which are responsible for nature conservation policy. Thus, for the conservation of this species, the Land Hessen has to act. However, to my information, Hessen is one of the least active states in this respect (e.g. it is the only state with no bryophyte red list), despite the occurrence of *N. orbicularis* and *A. neesii*.

The confirmed occurrence of *Notothylas orbicularis* in Apparently, in 2001 the regional Ministry of Environment asked a botanist to survey *Notothylas* in Hessen (but in vain), and now another botanist is doing the job, apparently with better results. This find is proof that our regional bryological working group can play an important role here and that it should be more consulted by the Länder authorities to assist in the inventorying work and the draw-up of management plans for threatened bryophyte species".

The measures to conserve *Notothylas* should involve both "in situ" and "ex situ" conservation. And for "in situ" conservation, the Länder authorities should designate the areas to protect this species and should collaborate with the farming community to establish a network of extensively managed arable fields to protect it. Most importantly, extensive farming (or traditional methods of agriculture, avoiding over-fertilization or use excessive use of herbicides) is the key to the protection of this endangered species. The EU LIFE-Nature fund or the Rural Development Plans can be approached to provide the financial support to protect this species.

In Hessen, the conservation of *Notothylas orbicularis* may be a model for the conservation of threatened arable-land flora in Europe and of a change in farming policy for the conservation of non-flowering plant species

Bibliography. Söderstrom, L. E. Urmi and J. Vana. 2002. Distribution of Hepaticae and Anthocertoae in Europe and Macaronesia. *Lindbergia* 27:3-47

Jan-Peter Frahm (Email: Frahm@uni-bonn.de)



Searching for *Notothylas orbicularis* in the stubble field near the village of Wettges, Hessen, Germany.

VACANCY

The Department of Biology at **Southwest Missouri State University** invites applications for a tenure-track position in **Plant Systematics** at the level of **Assistant Professor**. Requirements for the job include a Ph.D. with a specialty in plant systematics and a record of peer-reviewed publication. Primary duties include teaching courses in general biology and introductory and advanced courses in plant taxonomy and systematics, curation of the Ozarks Regional Herbarium (SMS; <http://biology.smsu.edu/herbarium/>), student advisement, research and publication, and involvement with the graduate (master's) program. Salary will be commensurate with experience. The **starting date is 11 August 2003**. SMSU (<http://www.smsu.edu>) is the second largest public university in Missouri, with a total enrolment of over 18,000. The Biology

Department (<http://biology.smsu.edu>) currently has 18 full-time faculty, approximately 425 undergraduate majors, and a strong research-based Master's program with a steady population of about 40 students.

Applicants should submit a letter of application specifying teaching interests and philosophy, research interests, a curriculum vita, copies of transcripts, and three letters of reference to: Dr. John Heywood, Chair, Plant Systematics Search Committee, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095. Telephone: (417)836-5149. Fax: (417)836-4204. E-mail: jsh029f@smsu.edu. **Review of applications will begin 1 December 2002.**

Source: BRYONET

IAB-NEWS

IAB WORLD CONFERENCE MERIDA 2003

Now there is a web address available for the XV World Congress in Bryology. Mérida 2003: www.merida-2003.com
The organisers would like to invite students to participate in their student session. If interested please write directly to Dr. Jan-Peter Frahm e-mail frahm@uni-bonn.de

STANLEY GREENE RESEARCH AWARD

The Stanley Greene Research Awards, given biannually, provide funds for travel in order to increase research capabilities and develop new international linkages. Please send your application by e-mail to Dale Vitt, chair of committee, e-mail address: dvitt@plant.siu.edu

Include:

- Brief statement of travel objectives;
- Dates of travel
- Why this travel is important for your research

Travel to international meetings is eligible in this program.

Application deadline: May 1, 2003. Travel must be completed between July 1, 2003 and January 1, 2005.

PERSONALIA

Prof. Tamás Pócs, elected to be an ordinary member of the Hungarian Academy of Sciences in May 2001, gave his inaugural address at the Academy on the 15th of October 2002, entitled: "The cryptobiotic crust and its role in the terrestrial ecosystems."

Prof. Dr. Coa Tong moved to Shanghai in September of 2001. His new address is: College of Life and Environmental Science, Shanghai Teachers University, Shanghai 200234; Email: CT1946@263.net.cn

Richard Zander and **Patricia Eckel** have transferred the Flora of North America Center for Bryophytes from the Buffalo Museum of Science, Buffalo, New York, to the Missouri Botanical Garden, St. Louis, Missouri, USA. The support of Bob Magill and Marshall Crosby in facilitating this move is much appreciated. Both Richard and Patricia act as members of the Bryology Group there, working on the bryophyte volumes for the Flora of North America and doing research. Their new email addresses are richard.zander@mobot.org and patricia.eckel@mobot.org.

IAB: CALL FOR NOMINATIONS

The I.A.B. will elect 1 vice president and 5 council members for 4 years terms to replace those officers whose terms expire.

Vice President to replace: Schofield

Councillors to replace: Buck, Cao, Frahm, Ignatov, and Seppelt

[Councillors who continue until 2005: Crandall-Stotler, Deguchi, De Luna, Glime, and Longton]

Please send the names of members that you would like to nominate for these positions to the chair of the elections committee:

Dr. R. Stotler, Dept. of Plant Biology, S.I.U., Carbondale, IL 62901-6509, USA, e-mail: stotler@plant.siu.edu

fax: 618-453-3441.

Nominations will close December 31, 2002.

Elections Committee:

S. R. Gradstein

R. E. Stotler, Chair

D. H. Vitt

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

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Geert Raeymaekers, Ecosystems LTD, Brussels

UPCOMING MEETINGS

2002

November 16-17. BBS Workshop “Arable Bryophytes”.

Contact Dr. Ron Porley. Email Ron.Porley@english-Nature.org.uk.

2003

April 10-15. Spring field Meeting of the British Bryological Society: Norfolk/Suffolk (East Anglia).

Contact the local secretary, Richard Fisk, 1 Paradise Row, Ringsfield, Beccles, Suffolk, NR34 8LQ. Tel. 01502 714968; email: richardjisk@onetel.net.uk. For more information: website: <http://www.rbge.org.uk/bbs/bbs.htm>

July 7-14: Summer field Meeting of the British Bryological Society: Kindrogan, Perthshire.

This meeting will be based at the Scottish Field Studies Centre at Kindrogan. It is hoped to tie in the meeting with a workshop on *Schistidium* run by Hans Blom. Contact the local secretary, Martin Robinson, Dalreoch Farm, Enochdhu, Blairgowrie, Perthshire, PH10 7PF; e-mail: mcr@dalreoch.fsnet.co.uk. For more information: website: <http://www.rbge.org.uk/bbs/bbs.htm>

July 26-31: Annual meeting of the American Bryological and Lichenological Society together with the annual meeting of the Botanical Society of America in Mobile, Alabama.

The ABLS is soliciting proposals for symposia to be held at the meeting. Please use the on-line submission forms for these on the Botany 2003 web site (<http://www.botany2003.org>).

July 23-27 15th. IAB World Conference on Bryology, Merida, Venezuela.

Registration and information, see the conference website: www.merida-2003.com. For the workshop "The Bryophyte Conservation – Current Status and Future Work" on **18-19 July**, consult the website: <http://www.artdata.slu.se/guest/SSCBryo/SSCBryo.html>

August 17-23. Fourth International Symbiosis Society Congress.

As several bryological groups are working on cyanobacterial symbioses, David Richardson announces that the Fourth International Symbiosis Society Congress will be held between at Saint-Mary's University, Halifax, Nova Scotia, Canada. Contact: D. Richardson Tel.: 902-420-5493, Fax: 902-420-5261, e-mail david.Richardson@stmarys.ca <http://people.bu.edu/dzook/>

2005

International Botanical Congress in Vienna, with meeting of the IAB.

2007

IAB meeting in Kuala Lumpur, Malaysia. Contact the local organizers: Dr. Haji Mohamed and Dr. Amru N. Boyce, Fac. of Science, University of Malaysia, Kuala Lumpur 50603, email: haji@biology.um.edu.ma