INTERNATIONAL LICHENOLOGICAL NEWSLETTER

Vol. **31**, nr. 2, December 1998

Official publication of the

International Association of Lichenology

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ISSN: 0731 - 2830

INTERNATIONAL ASSOCIATION OF LICHENOLOGY

The International Association of Lichenology (I.A.L.) promotes the study and conservation of lichens. It organizes symposia, field trips, and distributes a biannual newsletter. There is a listserver which enables on-line discussion of topics of interest. Webpages devoted to lichenology are also maintained by members of the Association. People wishing to renew their membership in or become members of I.A.L. are requested to send their subscription ($20 for the biennium 1997-1998, $40 through 2000) to the Treasurers.

The **International Lichenological Newsletter** is the official publication of I.A.L. It is issued twice a year (July and December) in English. The Newsletter is also available on the Internet. The Newsletter is divided into five main sections: 1) **Association news**: official information concerning the Association, such as minutes of Council meetings, proposals of constitutional changes, new members, changes of addresses, etc. 2) **News**: information about lichenologists, institutional projects, herbaria, requests of collaboration, announcements of meetings, book reviews etc. 3) **Reports**: reports of past activities, short lectures, obituaries, short historical novelties, etc. 4) **Forum**: discussion of controversial scientific matters. It includes proposals of new themes for discussion (max. 1.5 page), and reactions to former proposals (max. 1 page). When the material exceeds the available space, the Editor will prepare a summary, on prior agreement with the contributors. 5) **Lichenology on-line**: information on Web sites devoted to Lichens. Any information intended for publication should reach the Editor on or before 15 May and 15 October for inclusion in the July and December issues, respectively.

IAL affairs are directed by an Executive Council elected during the last General Meeting. Council members elected at the IAL 3 Symposium (Salzburg, Austria, 1996) are listed below, and will serve until 2000.

I.A.L. EXECUTIVE COUNCIL 1996-2000

President: Hans-Martin Jahns, Botanical Institute, Universitätsgasse 1, D - 40225 Düsseldorf, Germany.

Vice President: Dianne Fahselt, Dept. of Plant Sciences, University of Western Ontario, London, Ontario, N6A 5B7, Canada.

Secretary: Dagmar Triebel, Botanische Staatssammlung, Menzinger Strasse 67, D-80638 München, Germany.

Treasurer: Edit Farkas, Institute of Ecology and Botany, Hungarian Academy of Sciences, H-2163 Vácrátót, Hungary.

Deputy treasurer: François Lutzoni, Center for Evolutionary and Environmental Biology, Dept. of Botany, The Field Museum of Natural History, Roosvelt Road at Lake Shore Drive, Chicago, IL 60605, USA.

Editor: Pier Luigi Nimis, Dipartimento di Biologia, Università di Trieste, Via Giorgieri 10, I-34127 Trieste, Italy.

Members-at-Large: Paula DePriest (Washington, USA), Gintaras Kantvilas (Hobart, Australia), Hiroyuki Kashiwadani (Tsukuba, Japan), Xavier Llimona (Barcelona, Spain), Bruce McCune (Corvallis, USA), Wendy Nelson (Wellington, New Zealand), Sieglinde Ott (Düsseldorf, Germany), Tiina Randlane (Tartu, Estonia), Leopoldo Sancho (Madrid, Spain), Gernot Vobis (Bariloche, Argentina), Dirk Wessels (Pietersburg, South Africa).

ASSOCIATION NEWS

Informal Meeting of IAL Members at IMC6, Jerusalem, August 27th, 1998

In the Chair: Martin Jahns, Chairperson IAL - Those present: Daniele Armaleo, Antonella Bartoli, Richard Beckett, Marcela Caceres, Chao Chung, Sharon Eversman, Margalith Galun, Jacob Garty, David Hawksworth, Natalia Ivanova, Ludger Kappen, Ilse Kranner, Robert Lücking, François Lutzoni, Vivian Miao, Pier Luigi Nimis, Sieglinde Ott, Dagmar Triebel, David Richardson, Mark Seaward, Christoph Scheidegger, Larry St. Clair.

1 - Purpose and function of the IAL - In opening, M. Jahns said he was surprised he had so little to do as chairperson of the IAL. He expressed a concern that the IAL was not involved in the activities of local lichen societies, and that the council of IAL appeared to have no function. A general view was expressed that the society needed a higher profile in the biological world.

2 - IAL as a federation of regional societies - Many present at the meeting expressed support for the suggestion that the IAL should act as a "roof" for local societies, much as the International Mycological Association does for mycologists. Advantages included avoiding the need for individual members to pay subscriptions (often with high bank charges), and that individual members could more easily present the interests of lichenologists at local meetings without necessarily being council members.

3 - *Role of the Newsletter* - M. Jahns said that, in his opinion, the Newsletter was excellent, and really served to unify members of the IAL. Some thought that the Newsletter could serve as a vehicle for publishing methods (e.g. for culturing new mycobionts), although others stressed that these must be kept brief, or suggested that, alternatively, a big web page should be maintained. P. L. Nimis recommended that the method of payment for printing costs needs to be formalized: he is currently bearing these costs himself, and will be glad to do this until the end of his mandate, but the next Editor ought to be free from financial loads.

4 - Financial situation - M. Jahns said that the financial situation of the society was currently excellent, with over US$10,000 in balance. He cautioned, however, that this would have to "run" the society for the next three years. An unfortunate aspect of the current constitution was that the accounts of the society have to be moved every four years, as the Treasurer cannot be re-elected. Apart from logistical problems, this prevented the society from being registered as a registered charity, with accompanying benefits, e.g. tax relief on donations. More generally, other possible uses of the society's funds were discussed. Realistically, it seemed unlikely that much could be done with the existing balance; for example, granting sums of money to allow students to attend conferences would rapidly delete funds.

5 - *Awards* - M. Jahns questioned the procedure for selecting candidates for the Mason Hale award, originally designed to recognise excellence in young lichenologists. Should the chairman ask for nominations, and then let council members check the curricula of those proposed? Others favoured a committee of two or three members, specialists in the field of study of the candidate, or, alternatively, former recipients of the award. Some believed candidates should be allowed to put themselves forward so that potential winners were not missed. M. Jahns felt that there was a clear need for the council to formulate a few simple rules for the Mason Hale award, and also the Acharius medal. Other suggestions were for a prize for the best presentation by a young lichenologist at IMC and IAL meetings, and a prize for the best PhD on a lichenological theme. It was felt that in practice the latter would be almost impossible to implement, because of the difficulties in determining all lichenological theses presented in a given year on a worldwide basis.

6 - *Constitution* - M Jahns again mentioned the possibilty of changing the constitution so that some members (e.g. the Treasurer) could be re-elected. There was support for this, although several expressed concern that this should not be extended to include too many office bearers. One suggestion was that the "President elect" should be a member of council before taking office. P. L. Nimis expressed his opinion against the re-election of the Editor, and strongly advocated the need for a new constitution, and M. Jahns said he would welcome firm proposals.
7 - *Suggestions for the Barcelona meeting of IAL (2000), IMC7 at Oslo (2002) and the International Botanical Congress at St Louis, USA (1999)* - M. Jahns recommended that E.Timdal should be approached to ensure a good representation of lichenologists at Oslo. D. Hawksworth felt that lichenologists needed to be careful not to appear to be "foisting" lichenology onto mycologists. He reminded those present that the International Biological Society made cash loans available for those wishing to run conferences, and suggested more use could be made of this facility. Although it was officially too late, F. Lutzoni offered to try to set up some lichenological sessions in St Louis. P. L. Nimis suggested that the next Newsletter could solicit suggestions for the IAL meeting in Barcelona; he could then pass these to the Organizing Committee. He believed more time needed to be allocated for discussion rather than formal lectures. M. Jahns indicated that it might be most appropriate if suggestions were channelled through him to the Organizing Committee at Barcelona.

Richard Beckett, Scottsville, South Africa

Treasurer's Report

The number of members paying the inscription fee is increasing steadily. About 60% of the members have paid at least until 31 December 1998. There are now US$ 8,300 in the IAL account. However, many members still have to pay for the next two years. Former members who have received issues of the Newsletter during the last two years should, of course, pay a membership fee of US$ 40 for 1997-2000. Members who joined the Association at any time during the last 2 years will receive (or have already received) all issues from 1997 (Vol.30, nr.1, 2, 1997; Vol. 31, nr. 1, 2, 1998). Please let me know if you have not received them! Lichenologists who have decided to join the Association can make a choice now. If they choose to pay in full (US$ 40 for the whole 4-year period 1997-2000), they will also receive the back issues of the Newsletter. If they choose to become members only from January 1st 1999, the membership fee is only US$ 20. New members should contact the Treasurer (or the Deputy Treasurer) to inform him. They also need to inform him if there are any changes in the data originally given. Exact data are necessary concerning name, institute, street, town, country, fax, e-mail and telephone numbers. Recently I had problems over the correct registration of some payments sent via bank transfer. The information received from the bank was insufficient for identifying the sender (e.g. US$ 45 arrived from Köln, or US$ 20 from Norway, etc.). Therefore I ask those who send their membership fee by bank transfer, to kindly inform me at the same time. Please send your membership fee by 15 February 1999! The following accounts are available:
1) Edit Farkas, Institute of Ecology and Botany, Hungarian Academy of Sciences, H-2163 Vácrátót, Hungary - cheques should be made payable to: Hungarian Foreign Trade Bank, H-1051 Budapest, Szent István tér 11, Acc. no.: 501-00047-2100-4019 MTA TUDOMANY (the account holder is the Dept. International Relations, Hungarian Academy of Sciences), please indicate that it is an "IAL membership fee for 1997-2000 (or 1999-2000)" - All fees should be paid in US$! You are kindly requested to add US$ 5 for bank charges if you send a cheque, or, in case of a bank transfer, the sender should pay all bank charges.

2) IAL dues can be also paid to: François Lutzoni, Deputy Treasurer, Center for Evolutionary and Environmental Biology, Dept. of Botany, The Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605, USA. In this case there is no bank service charge.

Edit Farkas, Budapest/Vácrátót

A note from the Deputy Treasurer

I read M. Wedin's excellent report of the IAL Council meeting (The Linnean Society of London 10/1 1998) published in ILN **31**, nr. 1, page 3. The second item of this report was on IAL financing. In this section it was written "*The IAL gets at present no interest on its bank accounts, this is clearly needed and future assistant treasurers should arrange these kinds of accounts*". This should be rectified, since the IAL USA account generates interest at a rate of approximately 2.26%. This is compounded every month. This account is likely to generate nearly $100 of interest this year. The current balance of this account is $3,584.24. On the basis that IAL is a non- lucrative organization, I was able to negotiate with The First National Bank of Chicago to open a Business Savings account for IAL at no initial cost, no administrative cost, and no penalties. In other words, there was never any debts whatsoever for this account. I will gladly explore other options for higher returns. However, the risk will be higher and could involve administration fees. Nevertheless, I am quite certain that we can do much better than this. I think the final decision should be taken by the Executive Council. Please, let me know if the Council would like me to explore different financial options for a higher return on our capital. I don't think we should be waiting for the next Deputy Treasurers to implement such a policy if the Council agrees that we should move forward. I will wait for the Council's recommendation before pursuing this proposal.

François Lutzoni, Chicago

A note from the Editor

The "Privacy Law" approved last year by the Italian Parliament requires that, in order to be published, data such as addresses and telephone numbers need the written consent of the individual concerned. Thus, even parts of this Newsletter do not comply with the Italian law. I think I can manage to maintain this responsibility until the end of my mandate, but this problem should be solved in a way or another before the next Editor takes over, as such regulations apply in several countries. By the way, the same problem may affect the keepers of on-line databases; for example, from an herbarium envelope we can deduce that Mr. X and Miss Y were collecting lichens together in Tahiti at a certain date: this is just the kind of information which we are not allowed to disseminate without the consent of Mr. X and Miss Y (...the wife of the former was thinking that he was attending a congress in Siberia...).

Pier Luigi Nimis, Trieste

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NEWS

IAL4 - Barcelona 2000: Progress and Problems in Lichenology at the Turn of the Millennium – September 3rd-8th, 2000

The next IAL Congress will start in Barcelona in the evening of September, 3rd, 2000 with the registration of the participants; the scientific sessions will take place from September 4th until September 7th. The Scientific Programme is in preparation: according to a preliminary proposal it will include the following sections: A) Phylogeny and Systematics of the Mycobiont, B) Photobionts, C) Morphology and Structure, D) Ecology and Ecophysiology, E) Lichen Diversity and Biogeography, F) Lichen-dominated communities, G) Populations and thallus individuality, H) Lichenicolous Fungi. Proposed special symposia: 1) Lichen bioindication of stability and stress in ecosystems, 2) Storage and retrieval of lichen data: publications, herbaria, checklists, floras, identification keys, 3) Strategies for a sustainable use of biodiversity in relationship with lichens. Two or three pre- and post-Congress excursions will be organized in different parts of Spain (e.g. Ebro Valley and Pyrenées, Almeria and Granada, Iberian System and southern Catalonia). IAL4 will be organized by the Departament de Biologia Vegetal (Botànica), Facultat de Biologia, Universitat de Barcelona, Diagonal 645, ES-08028 Barcelona, Catalonia, Spain. President: Martin Jahns (Düsseldorf), Secretary: Xavier Llimona (Barcelona). Organizing Committee and Advisory Board: C. Ascaso (Madrid), E. Barreno (Valencia), A. R. Burgaz (Madrid), R. Carballal (Santiago de Compostela), M. Casares (Granada), A. Crespo (Madrid), J. M. Egea (Murcia), A. Gómez-Bolea (Barcelona), N. L. Hladun (Barcelona), X. Llimona (Barcelona), C. Máguas (Lisboa), E. Manrique (Madrid), L. G. Sancho (Madrid), C. Sérgio (Lisboa), F. Valladares (Madrid), C. Vicente-Córdoba (Madrid). Local Organizing Commitee: X. Llimona, N. L. Hladun, A. Gómez-Bolea, M. Barbero, P. Navarro-Rosinés and M. Giralt. Any proposal and suggestion is welcome, and should be addressed to X. Llimona at the following e-mail address: *llimona@porthos.bio.ub.es*

American Bryological and Lichenological Society (ABLS) meeting (southern Illinois, July 30th- August 1st, 1999)

The American Bryological and Lichenological Society (ABLS) will hold its annual meeting and foray in southern Illinois, just prior to the XVI International Botanical Congress in St. Louis. The International Association for Lichenology (IAL), the International Association of Bryologists (IAB), and Moss 99 Conference are co-sponsors. The meeting and field trips are being organized by Barbara Crandall-Stotler (*crandall@plant.siu.edu*), Andrew Wood (*wood@plant.siu.edu*) and Bob Egan (*egan@unomaha.edu*). Field trips are planned for the Shawnee National Forest, Giant City State Park, and Crab Orchard National Wildlife Refuge. Student members are encouraged to attend and participate in oral paper presentations for the annual *ABLS A. J. Sharp Award*. Limited student travel grants will be available. Time has been set aside for general business meetings as needed. Participants may stay in SUI dormitory housing, or at local motels. Campgrounds are available within 15 miles of Carbondale. Participants will have ample time on Sunday afternoon, August 1st, to travel to St. Louis for the opening of the XVI International Botanical Congress. Registration fee will be US$ 30.00 and will include meetings, programs, snacks, and Saturday evening dinner. Housing in the

SIU dormitories will cost US $17.15/night (double) or US$ 21.70/night (single). Local motels range from US$ 35.00/night to US$ 109.00/night. The Saturday field trip to Shawnee National Forest will cost US$20.00/person. Registration forms will be sent to ABLS members in January and posted on the ABLS web site *http://ucjeps.herb.berkeley.edu/bryolab/ABLS.html*. Feel free to contact the organizers for additional information.

Nordic Lichen Society (NLF) excursion to Finland (August 1999)

The next NLF excursion will be arranged for 1–6 August, 1999, in Kuhmo, eastern Finland. *Kuikka* (=loon), an old logging camp located 60 km east of Kuhmo near the Russian border, has been reserved for the excursion. It has recently been totally renovated by the Finnish Forest and Park Service to accommodate c. 40 people in 4–6 bed rooms. There is also a room for lectures and identification of the collected material. The *Kuikka* camp is located by a small lake and is surrounded by an almost uninhabited, but mostly managed middle boreal forest landscape. There are, however, several areas of pristine old forest in the vicinity of the camp. The largest areas are the Ulvinsalo Strict Nature Reserve (2,500 ha) to the South and Elimyssalo Nature Reserve (7,300 ha) to the North, both being part of the Finnish-Russian nature reserve network "*Friendship*", situated on both sides of the national boundary. In addition to the old forests, excursions will be made to dry heath forests with extensive cover of *Cladonia* spp. and to oligo-mesotrophic cliffs. A one-day visit to Kostomuksha State Nature Reserve just inside the Russian border is also planned. A mini-symposium: "*Conservation of the lichen flora in northern Europe*" will be held during the excursion. The estimated excursion fee will be 1,000–1,500 FIM (c. 1,400–2,100 SEK) depending on the number of participants. This fee includes accomodation, all meals, and transportation during the excursion. Kuhmo can be most easily reached by bus (1.5–2 hours) from Kajaani. There are several daily flights (1 hour) and train connections (7.5 hours) between Helsinki and Kajaani. The excursion is open to everyone interested in the boreal lichen flora. Preliminary registration should be sent to: Mikko Kuusinen, Department of Ecology and Systematics, P.O.Box 47, FIN-00014 University of Helsinki (e-mail: *mikko.kuusinen@helsinki.fi*; fax: +358-9-708-4830). Please notify if you are interested in contributing to the mini-symposium with a short (20–30 min.) presentation. All provisionally registered persons will receive a circular for final registration. More information will soon be available through internet on the NLF homepage: *http://www.helsinki.fi/kmus/lichen/2nlf.html*

Mikko Kuusinen, Helsinki

International Conference on Lichen Conservation Biology (*Licons* - Birmendsorf, Switzerland, August 30th – September 2nd, 1999)

Conservation biology has attracted increasing attention in science, government and education. However, scientific knowledge of major aspects of conservation biology of lichenised fungi is still very incomplete, which impedes the development of effective conservation strategies. Specific topics related to lichen conservation include their symbiotic way of life, the population biology of rare lichens, and lichen sensitivity to air pollution and environmental changes. *Licons* is an international conference on methodological aspects of conservation biology of lichenised fungi. Contributions on the conservation of epiphytic organisms in general (bryophytes, algae and non-lichenised fungi) as ecologically related organisms are also welcome. The following topics will be covered: 1) Habitat conservation and sustainable management, 2) Specific problems in the conservation of primeval forest lichens, 3) Conservation strategies: small-population biology and species protection, 4) Lichen Red Lists - how to apply the IUCN categories?

5) Biogeography and conservation priorities, 6) Air pollution and environmental changes. Organising Committee: Ch. Scheidegger, W. Strahm (IUCN), P. Wolseley (Lichen Specialists Group of SSC-IUCN), and K. Ammann. Papers and posters will be published. A lichenological *Tour de Suisse* will be organised from Friday, September 3rd until September 7th. Info: Ch. Scheidegger, Swiss Federal Institute for Forest, Snow and Landscape Research, CH-8903, Birmensdorf, fax: (+41) 1-739-22-15, e-mail: *scheidegger@wsl.ch*

XIII Congress of European Mycologists (Alcalá de Henares, Madrid, September 21st - 25th, 1999)

The Scientific Programme will include an opening lecture and thirty invited lectures, divided in the following sessions: Conservation, Systematics/Taxonomy, Environment, Other topics (Molecular Biology, Biotechnology, fungus-host interactions, Medical Mycology, etc.). There will be a permanent poster exhibition. Other exhibitions to be determined, depending on proposals: books, audio-visual, CDs, Internet, etc. In this respect, the Committee welcomes as many proposals as possible. Invited lectures will be selected by the Organising Committee and, if necessary, by the mycologists appointed by the latter, depending on the general interest of the subject proposed. Although the posters will be permanently shown during the Congress, at least one of the authors will be asked to be present to ensure discussion. No other activity proposed by the Organisation will take place simultaneously. The programme of parallel events includes: a welcome by the University of Alcalá, a guided tour of the old part of Alcalá de Henares, visiting the city's most representative monuments, cultural events: dances, chorus, a closing dinner in a typical restaurant in the city's outskirts. On Saturday, September 25th there will be an excursion, to show the most typical and varied vegetation that can be found in Spain's central region. The excursion will be by bus and under the direction of professors of the Plant Biology Dept. of the University of Alcalá de Henares. Info: *http://www.fgua.es/micolog.htm*

XIII Symposium of Cryptogamic Botany (Madrid, December 19th-22nd, 1999)

The Symposium, which will be held at the Universidad Complutense de Madrid, is organised jointly by the Depts. of Plant Biology of the Faculties of Biology and Pharmacy. The sessions will take place in the Faculty of Pharmacy. Beside the Universidad Complutense, the Consejería de Educación y Cultura of the Comunidad Autónoma de Madrid and the Ministerio de Educación y Cultura are acting as sponsors. *Purpose* -The Symposium will provide a forum for presentation and discussion of the latest advances in the the field of the disciplines traditionally included in *Cryptogamic Botany*. Although these scientific meetings were originally national in character, it is intended to extend participation to other European scientists, particularly those from the Mediterranean Region. The floor is also open to provide an opportunity for an ordinary meeting of the Scientific Societies related to these botanical and mycological specialities. *Program* - Papers on all aspects of Cryptogamic Botany are welcome. All papers will be presented in the form of posters. The working sessions will be complemented with invited plenary talks. *Preliminary registration form* - All those interested in attending are requested to complete a form, which should be sent to the Secretariat of the Symposium by January 31st 1999 (form available on the web site, see later). The Steering Committee would be grateful if this first announcement is circulated to as many colleagues as possible. *Symposium's Awards* - In order to improve the participation of young scientists, the Scientific Committee is proposing a special award for the best contribution presented in each section by a young researcher; only contributions whose first author is pre-

doctoral or holding a doctorate for less than two years will be considered. *Publication of contributions* - Contributions will be eventually published in a special volume of the journal *Lazaroa,* edited by the Universidad Complutense. The Scientific Commitee will act as a panel of Scientific Editors. *Languages* - Spanish and English will be the official languages of the Symposium. No simultaneous translation will be provided. *Second circular* - The second circular will be sent only to those who have pre-registered. It will specify scientific and other aspects of the meeting such as registration and fees. Specially reduced fees for students will be offered. *Steering Commitee* - President: A. Crespo; Secretaries: A. R. Burgaz and L. G. Sancho. Members: F. de Diego Calonge, E. Fuertes Lasala, T. Gallardo, E. Manrique, I. Pérez Ruzafa, M. Carmen Prada, V. J. Rico, C. V. Córdoba. *Info*: XIII Simposio de Botánica Criptogámica, Departamento de Biología Vegetal II, Facultad de Farmacia, Universidad Complutense de Madrid, 28040 Madrid, España, phone: (+34) 91 3941769, fax (+34) 91 3941774. Web site: *http://www. ucm.es/info/farmacia/XIIIscriptogamia*

Biomonitoring with lichens: good news from Italy

The Italian National Environmental Agency (ANPA) has organized a national workshop in Rome (November 16th-17th, 1998), aimed at selecting some standard methodologies for the assessment of air quality based on the use of organisms as indicators of pollution, and as accumulators of trace metals. The workshop, attended by more than 200 participants, mainly from regional or provincial Agencies concerned with air pollution monitoring, was a major success. Lichens, in particular, played a very important role. The Italian literature on lichens and air pollution consists of more than 300 articles (see *Lichenology-on-line* section), and the use of lichens is becoming routine throughout the country. The proposed standard methodologies will remain "exposed" at the Web page of ANPA (*http://sinanet.anpa.it*) for several months, in order to collect criticism and proposed amendments by the scientific community (critical notes - also written in English - by foreign colleagues who can understand Italian are most welcome). Their final publication is foreseen by the late spring of 1999. - More good news came in November: the Ministry of Research has financed a large national project on "*Cryptogams" as Bioindicators of Air Quality*, coordinated by P.L. Nimis, and involving 11 research teams in different universities. The total budget of the project is of 1.450.000.000 Italian liras (a little less than one million US$): at least for next year, Italian lichenologists will not die of starvation...

P.L. Nimis, Trieste

Personalia

Michael S. Batcher (Buskirk, USA) is working for NY State Department of Environmental Conservation on a Karner blue butterfly site in NY, mapping and describing plant communities, and providing management recommendations. They are concerned that lupine (*Lupinus perennis*), the larval food plant of the butterfly, is being hindered at this site by lichens (*Cladonia* and several others). Michael thinks that lichens may be facilitating lupine by moderating fluctuation in soil temperature and moisture. They also may shelter eggs that fall from the lupine plants following senescence. He asks for thoughts or opinions, or for literature sources on the functional relationships between lichens and herbaceous vascular plants. His address is: 1907 Buskirk - West Hoosick Rd., Buskirk, NY 12028, USA, e-mail: *mbatcher@netheaven.com*

Emiliana Bernasconi (Bariloche) has started studies on South American *Menegazzia* species. She would greatly appreciate receiving collections and/or information regarding available types of *Menegazzia* spp. She is working at: Centro Regional Universitario Bariloche, Universidad Nacional del Comahue, Bariloche, 8400 RN, Argentina, under the direction of S. Calvelo. Her e-mail is: *bernasconi@usa.net*

Charis C. Bratt (Santa Barbara, CA) will leave the Santa Barbara Museum of Natural History. The Santa Barbara Botanic Garden is welcoming her with open arms. They have gone to great lengths to make the necessary changes to accommodate her. Her herbarium has been donated to the Botanic Garden and will be maintained there. All loans that Charis has from other institutions will go to the Botanic Garden. Any loans from her herbarium should be returned to her at the Botanic Garden.

Vicent Calatayud (Valencia) in September 1998 successfully defended his Ph.D thesis *Lichens and lichenicolous fungi of siliceous rocks in the eastern Sistema Iberico and the Columbretes Islands*, prepared under the guidance of E. Barreno, against a commission composed of V. Atienza, P. Navarro-Rosinés, P. L. Nimis and V. Rico. He will pursue his studies on air pollution and lichens, and on lichens and lichenicolous fungi of the Iberian Peninsula.

Guido Benno Feige (Essen) just published a booklet on the etymology of generic names of lichens (see *New Literature* section). A red list of threatened lichens in Nordrhein-Westfalen, compiled in cooperation with **Esther Heibel** and **Bruno Mies**, will be published in spring 1999. Currently, there are two visitors from overseas in Essen: **Maria Ines Messuti** from Bariloche in Argentina is completing her Ph.D. thesis on the Pertusariales flora of southern South America, and Dr. **Dalip Kumar Upreti** from Lucknow is in Essen until the end of this year, working on the chemotaxonomy of selected crustose lichens from India. Two Ph.D. students will soon finish their theses, **Esther Heibel** on mapping of lichens in Nordrhein-Westfalen, and **Roland Guderley** on a revision of the *Lecanora subfusca* group in South America. **Thorsten Lumbsch** and **Imke Schmitt** have now established molecular work in Essen and, besides other minor projects, are mainly concerned with the phylogeny of the Agyriineae in cooperation with Mats Wedin and Heidi Döring.

Katherine A. Glew (Seattle, WA) received her Ph.D. from the University of Washington in May, 1998. Her dissertation: *Distribution and Diversity of Alpine lichens: Biotic and abiotic factors influencing Alpine lichen communities in the northeast Olympic and North Cascade Mountains* also included ordination analyses of lichen associations with vascular plants. Early last summer she travelled to British Columbia, Canada, assisting Dr. **D. McCarthy** (Brock University, Ontario, Canada) in his research on the use of lichens for dating moraines in the Canadian Rockies. In July and August she worked with Dr. **S. Eversman** (Montana State Univ.) and Dr. **C. Wetmore** (Univ. of Minnesota) in Yellowstone National Park developing a more thorough inventory of Yellowstone's lichens. This fall she served as Acting Collections Manager for the University of Washington Herbarium, concentrating on the lichen collections. This winter she will travel to the University of Bergen (Norway) for post-doctoral work with Dr. **T. Tønsberg** on the taxonomy of crustose lichens. Dr. Glew received a Norwegian-American Marshall Grant to underwrite her work in Norway. She will return to the University of Washington in the spring quarter of 1999 as a lecturer in the Biology Program.

Robert H. Hill (Harrisburg, PA) is currently working on a treatment of the lichen genus *Phlyctis* for the Lichen Flora of Eastern North America Project. He would be pleased to receive any material (worldwide) that lichenologists could share with him. Arrangements could be made for 'one-for-one' trading of the more common lichens of eastern North America in exchange for *Phlyctis* specimens. If interested in assisting in this project, please e-mail correspondences to: *enviroconsult@ mindspring.com. Phlyctis* material may be sent to: Dr. Robert J. Hill, Pennsylvania Dept. of Conservation & Natural Resources, PO Box 8552, Harrisburg, PA 17105-8552, USA.

Marcelo P. Marcelli (São Paulo) is exchanging his personal copies of the two books edited by him this year (see *New Literature* section) for any book or major works on lichen ecology or on the taxonomy of tropical and Antarctic taxa on a 1x1 basis. Any person who has duplicates of lichen books in his library, ancient, old or new, is welcome to propose an exchange. E-mail: *mmarcelli@sti.com.br.* Fax: +55-11-6191-2238.

Roger Rosentreter and **Ann DeBolt** (Boise, Idaho) visited the Galapagos Islands in February 1998, and witnessed a major die-off of the foliose epiphytic lichens due to the warm-wet El Niño weather. Many of the macrolichens had obvious fungal decay overgrowing them.

Ulrik Søchting (Copenhagen) visited Bhutan for five weeks in the spring 1998 to train local biologists in lichenology and to initiate Bhutanese studies in lichen biodiversity. Duplicates of specimens collected in the Kingdom have been deposited in Bhutan for inclusion in the forthcoming herbarium, and the material is now being identified in cooperation with various specialists. He will spend some time on Kerguelen in December 1998 together with his student **Roar Poulsen**, who will collect lichens there for three months as part of a project under the Institut Français pour la Recherche et la Technologie Polaires.

Martin Westberg (Lund) started his Ph.D. studies in Lund in November 1996, with I. Kärnefelt as supervisor. He is working on a taxonomic revision of the North American species of Candelariaceae, particularily *Candelariella*. During 1998 he has made field-trips to western North America (Baja California, Mexico and western USA: mainly California, Arizona and Colorado).

New Literature

M. P. MARCELLI & T. AHTI (eds.), 1998 - *Recollecting Edvard August Vainio*. São Paulo. CETESB. 188p. Format 15 x 21 cm. Instituto de Botânica de São Paulo. Caixa Postal 4005. São Paulo/SP., Brazil. CEP 01061-970. US$ 30.00 plus US$ 14 (postage). - This volume is based on the field meeting and conference entitled "Re-collecting Vainio", organized by IAL at Hotel Caraça, Minas Gerais State, Brazil, on 16-22 September 1997. - Contents: Edvard August Vainio (1853-1929) (R. Alava), E. A. Vainio – life and lichenological significance (O. Vitikainen), Vainio collections – TUR-V (S. Stenroos), The Caraça History and Importance (M. P. Marcelli), E. A. Vainio and his journey to Brazil, with notes on the Cladoniaceae (T. Ahti), E. A. Vainio's contribution to the knowledge of the Parmeliaceae (T. Feuerer), Edvard Vainio and the family Lobariaceae, with special reference to the taxonomic history of *Sticta* (D. J. Galloway), Vainio and *Lobaria*, old and modern concepts (I. Yoshimura), Vainio's ideas on the classification of calicioid lichens (L. Tibell), Aspects on Vainio's Brazilian "*Étude*" with keys to its species (M. P. Marcelli).

M. P. MARCELLI & M. R. D. SEAWARD (eds.), 1998 - *Lichenology in Latin America: history, current knowledge and applications*. São Paulo. CETESB. 177p. Format 21 x 30.5 cm. Instituto de Botânica de São Paulo. Caixa Postal 4005. São Paulo/SP., Brazil. CEP 01061-970. US$ 40.00 plus US$ 14 (postage) - Contents: Lichenology in Argentina: past, present and future (S. Calvelo), History and current knowledge of Brazilian lichenology (M. P. Marcelli), A bibliography on Brazilian lichenology (M. P. Marcelli, E. C. Pereira & M. Iacomini), Lichens from northeast Brazil: studies and applications (E. C. Pereira), Lichenological investigations in Bolivia (T. Feuerer, T. Ahti & O. Vitikainen), The lichens of Chile: present knowledge and future prospects (D J. Galloway), Richard Spruce's contribution to South American cryptogamic botany (M. R. D. Seaward), The lichen family Cladoniaceae in the Neotropics (T. Ahti), Keys to genera and species of Parmeliaceae *s. lat.* from Patagonia, Tierra del Fuego and south Atlantic islands (Argentina) (S. Calvelo), *Lobaria* in Latin America: taxonomic, geographic and evolutionary aspects (I. Yoshimura), Taxonomical notes on neotropical species of *Peltigera* (O. Vitikainen), Collecting and identifying tropical pyrenocarpous lichens and ascomycetes (A. Aptroot), Culture methods and culture of selected tropical mycobionts and photobionts as exemplified by South American lichens (E. Stocker-Wörgotter), Studies on lichens and atmospheric pollution in Argentina (M. L. Pignata), Lichen species identification and distribution according to tolerance to airborne contamination in the city of Córdoba (Argentina) (C. Estrabou), Lichen secondary products and their importance in environmental studies (W. Quilhot *et al.*).

A. APTROOT, C. M. VAN HERK, H. F. DOBBEN, P. P. G. VAN DEN BOOM, A. M. BRAND & L. SPIER, 1998. - *Bedreigde en kwetsbare korstmossen in Nederland* - Buxmaumiella, 46, 101 pp. Price: f. 3 plus postage. Order from: F. van Gelder, Vossenkamp 24, 3972 VJ Driebergen, e-mail: *fm.gelder@wxs.nl* - This booklet contains a proposal for the Dutch Red List of threatened lichens, prepared on the basis of IUCN criteria. Species are assigned to six categories on the basis of a combination of rareness and decline: not threatened, susceptible, vulnerable, endangered, critical, extinct. Species in the last five of these categories are in the Red List. Out of a total flora of 695 species, 326 (47%) are on the Red List, 83 of them are considered as extinct. Threats and conservation measures are treated for 22 habitats which are important for lichens, and 48 representative species are treated in detail. The booklet is in Dutch, with a very short English abstract.

T. TØNSBERG, Y. GAUSLAA, R. HAUGAN, H. HOLIEN & E. TIMDAL, 1995 - *The threatened macrolichens of Norway*. - Sommerfeltia, 23, 258 pp. ISBN 82-7420-029-2, ISSN 0800-6865. Price: N Kroner 200. Order from: Botanical Garden and Museum, Univ. of Oslo, Trondheimsveien 23B, N-0562, Oslo 5. - A revised red-list for Norwegian macrolichens, including 69 species out of a total of 430 macrolichens known from Norway. Each species is described and discussed with respect to its ecological preferences, threats and status in Norway. Detailed distribution maps are provided for species which are known from more than 5 localities. Recommendations are given for conservation purposes. Quantity and quality of the information are high, which also makes this book interesting for an international audience.

On the occasion of the 100th anniversary of the birth of the eminent lichenologist Alfred M. Oxner (1898-1973), the UK Darwin Initiative and the European Commission sponsored an International Workshop on *Lobarion*-lichens, which was held in Kostrino (Ukraine) in May 1998, gathering together 51 participants from 15 countries. On that occasion, three booklets were published. I could not find information about their prices and exact ordering address, but you can certainly get this by contacting Dr. S. Ya. Kondratyuk, Institute of Botany, Tereshchenkivska str. 2, 252601 Kiev, MSP-1, fax (+380) 44-224-10-64, e-mail: *skondr@botan.kiev.ua*

1) S.Ya. KONDRATYUK, 1998 - *Prof. Dr. A.M. Oxner* - ISBN 966-7459-06-1, Kiev, Phytosociocentre, 64 pp - A very interesting biography of Oxner, including an assessment of his contributions to lichenology, and a catalogue of the 384 new lichen names proposed by him (new taxa and new combinations), with appropriate reference to publication and page.
2) S. Ya.KONDRATYUK, A. Ye. KHODOSOVTSEV & S.D. ZELENKO, 1998 - *The second checklist of lichen-forming, lichenicolous and allied fungi of Ukraine.* - ISBN 966-7459-07-X, Kiev, Phytosociocentre, 180 pp. - The first checklist,

published only two years ago, has been updated with 100 new taxa, plus further data on geographic distribution. This checklist, based on more than 370 papers, includes 1,331 species, 16 subspecies, and 17 varieties. Lichenicolous fungi are represented with 65 species.

3) S. Ya. KONDRATYUK & B.J. COPPINS (eds.), 1998 - Lobarion *lichens as indicators of the primeval forests of the eastern Carpathians*. - ISBN 966-7459-09-6, Kiev, Phytosociocentre, 192 pp. - This book contains 36 papers, subdivided into five chapters: 1) Invited lectures, 2) *Lobarion*-species as indicators of primeval forests in Eurasia, 3) Diversity, ecological characters and preservation of cryptogamic plants in the Carpathians, 4) Lichens as indicators of environmental exchanges (*sic!*) and their preservation, 5) Taxonomical diversity, ecological and geographical peculiarities of cryptogamic plants in various regions of Eurasia. The quality of the contributions is very variable, but the book is certainly of interest, especially for those working in lichen conservation.

M. G. GLENN, R. C. HARRIS, R. DIRIG & M. S. COLE (eds.), 1998 – Lichenographia Thomsoniana. *North American Lichenology. In Honor of John W. Thomson.* Mycotaxon LTD, Ithaca, NY ISBN 0-930845-08-0. Price: US$35. Order: Mariette Cole, 3010 West 112th Street, Bloomington, MN 55431, USA. – The book, introduced by a tribute by W. L. Culberson to the eminent American lichenologist John W. Thomson, starts with a set of 15 taxonomic studies, followed by 10 floristic accounts, covering localities throughout the continent, and, finally, by four papers on lichen ecology. Altogether, there are 50 contributors, mostly from North America. An interesting cross section of North American lichenology at the end of the century!

G. B. FEIGE, 1988 - *Etymologie der wissenschaflichen Gattungsnamen der Flechten.* Bot. Inst. & Bot. Garten Univ. Essen, 91 pp; order: to the Author, price: 15 DM. - A most welcome booklet, which explains the origins of many generic names which we use every day, often without knowing what they really mean. I am sure that this apparently simple, dictionary-like list, caused the author much work and trouble. This, however, was certainly time well-spent: now the booklet will become a small mine of surprises for several colleagues who have no or little acquaintance with Greek and Latin and/or with the history of our discipline (provided, however, that they know German...); just one example: whoever were Mr. Esuperanzio Buelli (*Buellia*), and Mr. Carlo Tonini (*Toninia*)? The booklet does not answer these questions, but it stimulates people (including me) to look for answers. Or, how many of us knew that the name *Roccella* comes from a wealthy Florentine family of the XV century called Ruccellari, that *Hypogymnia*, in Greek, means more or less "naked below", and that the name *Hymenelia* has nothing to do with the hymenium, as it means "*thin film*"? This is a small shrine of information, and a stimulus to our cultural growth.

The Editor

REPORTS

An Updated Survey of Lichenological Societies

For several years the information on national/local lichen societies, usually found on the last page of the Newsletter, was repeated from one issue to the next with almost no modification. As I had the feeling that this information was becoming dangerously outdated, I tried to update it by sending a questionnaire to each society. Here is the list of societies that answered by November 30, ordered according to the number of members. To establish a more realistic estimate of the actual pool of members interested in lichens, the total number of members of those societies which include both bryologists and lichenologists has been reduced by 40% to establish the ranking order. In the next issue of the Newsletter there will be space for those societies which still have not responded, plus a general synopsis. Societies are kindly requested to send me any relevant new information about their organization, especially concerning possible changes of contact persons, and e-mail and web page addresses.

The Editor

The British Lichen Society (BLS) - Address: Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD, UK. President: Peter D. Crittenden, Secretary: (until 9 January 1999) O. William Purvis, (address as above), phone: (+44) 0171-938-8852, fax: 0171-938-9260, e-mail: *w.purvis@nhm.ac.uk* Approximate no. of members: 590. Web page: *http://www.argonet.co.uk/users/ jmgray/.* The Society was formed in 1958 to stimulate and advance interest in all branches of lichenology. The first Society in the world entirely devoted to the study of lichens, it has many overseas as well as British members. The Society's journal, *The Lichenologist*, contains taxonomic revisions of critical groups, articles of ecological, physiological and environmental interest, including a bibliographic series on lichens and air pollution, and many other matters of interest to lichenologists throughout the world. The *Bulletin* contains more popular articles including new, rare and interesting records, and a field meetings programme. The Society welcomes membership from any persons world-wide interested in lichenology.

American Bryological and Lichenological Society, Inc. (ABLS) - Address: Department of Biology MSN 3E1, George Mason University, 4400 University Drive, Fairfax, Virginia 22030-4422, USA. President: Brent D. Mishler. Contact: James D. Lawrey (Secretary-Treasurer, see address of the Society), phone: (+01)-703-993-1059, fax: (+01)-703-993-1046, e-mail: *jlawrey@gmu.edu.* Year of foundation: 1898 (first issue of *The Bryologist*). Approximate number of members: 700. Web page: *http://ucjeps.berkeley.edu/bryolab/ABLS.html* - This is one of the oldest botanical organizations of the USA, devoted to the scientific study of bryophytes and lichen-forming fungi. Membership is open to all persons (professionals and amateurs) with interest in these organisms. The Society holds annual meetings and field-trips, generally on university campuses, in June or August. The Society publishes and distributes a quarterly journal, *The Bryologist,* which includes articles on all aspects of the biology of byophytes and lichens, lists of current literature with world-wide coverage, book reviews, etc. Information about *The Bryologist* can be seen on-line at *http://www.devonian. ualberta.ca/bryologist.* The Society also sponsors specimen exchanges, so members can acquire identified specimens from all parts of the world. In 1984, the Society began publication of an information bulletin, *Evansia*, to make available articles of interest primarily to amateurs, including those dealing with techniques of identification, floristics of North American localities, preliminary research results, etc. Information concerning membership or subscription to one of the Society's journals can be obtained by writing the Secretary-Treasurer, or visiting the web page of the Society.

Società Lichenologica Italiana (SLI) - Address: c/o Museo Regionale di Scienze Naturali di Torino, v. Giolitti, 36, I – 10125 Torino, Italy, phone: (+039) 011-4323052 President: Paolo Modenesi, Istituto Botanico "Hanbury", Università di Genova, C.so Dogali 1/c I-16123 Genova, phone: (+039) 010-2099-373/2099-392, fax: 010-2099-377, e-mail: *serrato@csita.unige.it.* Contact Person: Giovanni Caniglia

(Secretary), Dipartimento di Biologia, Viale Giuseppe Colombo, 3, I-35121 Padova, phone: (+039) 049-8276-239, fax: 8276-230, e-mail: *caniglia@civ.bio.unipd.it.* The Web page (*http://www.lrcser.it/~sli,* webmaster: D. Isocrono: *debiso@bioveg.unito.it)* includes, among other things, an index to the *Notiziario*, and a survey of Italian lichenological literature. Founded in 1987, the SLI presently has 326 members, whose main interests can be grouped into four main categories: a) scientific research, b) use of lichens in teaching (primary and secondary schools), c) use of lichens as biomonitors of air pollution, d) problems related with lichens and monuments. The Society publishes a yearly bullettin: *Notiziario della Società Lichenologica Italiana* (in Italian), organizes every year a general meeting, several symposia, at least four lichenological courses and a major excursion in different parts of Italy, and sponsors a prize for the best thesis of lichenological content. Yearly subscription price: Lit. 30.000 (ordinary members), Lit. 15.000 (students).

Bryologisch-lichenologische Arbeitsgemeinschaft für Mitteleuropa (BLAM) - Address: c/o Roman Türk, University of Salzburg, Dept. of Plant Physiology, Hellbrunnerstrasse 34, A-5020 Salzburg, Austria. President: Roman Türk (address as above), phone: (+043)-(0)662-8044-5588, fax: 0043-(0)662 8044 619, e-mail: *roman.tuerk@sbg.ac.at* - Contact person (Treasurer): Volker John, Kaiserslauterer Str. 86, D-67098 Bad Dürkheim, Germany; phone: (+49) 06322 67919, e-mail: *106370.1063@compuserve.com.* Founded in 1968, the Society has presently c. 400 members from 28 countries. The Society publishes a Bullettin: *Aktuelle Lichenologische Mitteilungen* (in German), and a scientific Journal, *Herzogia,* and organizes symposia, meetings and excursions.

Nordic Lichen Society (Nordisk Lichenologisk Förening, NLF). - Address: c/o Heidmarsson, Institute of Systematic Botany, Villavägen 6, S-752 36 Uppsala, Sweden. President: Orvo Vitikainen. Contact person: Ulrik Søchting, Department of Mycology, Botanical Institute, Ø. Farimagsgade 2D, DK-1353 Copenhagen, Denmark; phone: (+45) 35 32 23 13, fax: 35 32 23 21, e-mail: *ulriks@bot.ku.dk.* Founded in 1975, the Society presently has 230 members. Web page: *http://www.helsinki.fi/kmus/lichen/2nlf.html.* The main purpose of the Society is to work for increased interest in lichenology in the Nordic countries: Denmark, Finland, Iceland, Norway and Sweden. Excursions are arranged every second year in one of the Nordic countries. Last excursion was in the summer 1997 to Iceland, the next one will take place in Finland in the summer 1999. Membership is open to all individuals interested in Nordic lichenology. Membership is personal, and costs SEK 300 for 1998-1999 or SEK 600 for 1998-2001. Members of the Society receive *Graphis Scripta*, which is published twice a year, and includes papers pertinent to Nordic lichenology, and information from NLF.

Dutch Bryological & Lichenological Society - Address: c/o Bart van Tooren, Venuslaan 2, 3721 VG Bilthoven, The Netherlands; phone: 030-2210613, e-mail *tooren.Leeuwen@hetnet.nl* - President: H. F. van Dobben. - Founded in 1946, this Society presently includes 320 members. Homepage: *http://start.at/mossen*: the home page is being built now, and contains mainly information about the bryological part of the Society. However, much relevant information can be found about membership, relevant addresses etc. The Society organises several excursions and meetings. The journal is *Buxbaumiella*, which appears three times a year. It contains reports of excursions, as well as other relevant information about bryophytes and lichens in the Netherlands. Almost all members are volunteers, since very few professional lichenologists and bryologists are left in the Netherlands. Hence, the Society is the central organization for all those with bryological or lichenological interest in the Netherlands.

Northwest Lichen Guild (USA, Northwest) - Address: c/o Department of Botany & Plant Pathology, Cordley 2082, Oregon State University, Corvallis, Oregon 97331-2902 USA, fax: (+1) 541-737-3573, phone: (+1) 541-737-1741. Keeper of the Mailing List: Sherry Pittam (address as above, e-mail: *pittams@bcc.orst.edu*), institutional contact: Bruce McCune (address as above, e-mail: *mccuneb@bcc.orst.edu*). Founded in 1990, presently with ca. 150 members, the Northwest Lichen Guild was formed to facilitate communication, meetings, and field trips among lichenologists interested in the Pacific Northwest. It is composed of both amateurs and professionals, and its organization is unusual in that there are no membership fees or officers. There is an occasional newsletter; which in the future will be distributed only to e-mail addresses, because the Society has no dues and no budget. There is an annual meeting in conjunction with the Northwest Scientific Association (location varies), usually in mid to late March, and there are also talks about ongoing or completed research, a workshop on a particular topic, genus, or area, field trips, and evening socializing.

Association Française de Lichénologie (AFL) - Address: c/o Serge Deruelle, 5 Square du Vimeu F-78310 Maurepas, France. President (1998-2002): Juliette Asta, Centre de Biologie Alpine, Université Joseph Fourier Grenoble 1, BP 53 X, F-38041 Grenoble, France. Cedex; phone: 04-76514600 poste 3623, fax: 04-76514463, e-mail: *jasta@ujf-grenoble.fr.* Contact person: Jean-Claude Boissiere, Laboratoire de Biologie Végétale, Route de la Tour Denecourt, F-77300 Fontainebleau, France. phone: 10-64223740. - Founded in 1976, the Society has presently 140 members. A Web page is under construction by Chantal van Haluwyn. The Society organizes yearly some lichenological trips in France or in foreign countries (that of 1999 will be in Corsica). A Bulletin (*Bulletin d'Informations de l' Association Française de Lichénologie*) is published twice a year. A session of determination is organized in February or March by J.C. Boissière in his laboratory at Fontainebleau. Annual subscription price: 150F.

California Lichen Society (CALS). - Address: 362 Scenic Ave., Santa Rosa, CA. 95407, USA. President: Judy Robertson (address as above), e-mail: *JKSRR@aol.com*, phone: (+1) 707-584-8099. Founded in 1994, it presently includes 135 members. Web site: *http://ucjeps.herb.berkeley.edu/rlmoe/cals.html.* - Through field trips, workshops, a traveling reference collection and publication of a semiannual (summer and winter) *CALS Bulletin*, the California Lichen Society seeks to promote the appreciation, conservation, and study of lichens. The focus is on California, but the interests include the entire western part of the North American Continent. CALS welcomes amateur and advanced lichenologist in these pursuits.

Svensk Lichenologisk Förening (SLF) - Address: c/o Lars Arvidsson (president), Göteborgs Stadsmuseum, Norra Hamngatan, 12, SE-411 14 Göteborg, Sweden. Secretary: Magnus Wadstein, Eken, Hulta, SE-585 96 Linköping, Sweden. Established in 1992, this Society has c. 100 members. The subscription fee is 50 SEK/year.

Association Suisse de Bryologie et Lichénologie, - (Schweizerische Vereinigung für Bryologie und Lichenologie, Swiss Association of Bryology and Lichenology) - Address: Conservatoire et Jardin Botaniques, case postale 60, 1 Ch. de l'Impératrice, CH-1292 Chambésy/GE, Switzerland. President: Philippe Clerc, (address as above), fax: 022-418-51-01, phone: 022-418 51 28, e-mail: *clerc@cjb.unige.ch.* - Founded in 1956, the Society presently includes 208 members. A Web page is planned for 1999. The main aims of the Society are: 1) to improve the public knowledge about lichens and bryophytes, and to contribute in protecting species and habitats, 2) to promote bryological and lichenological research and education in Switzerland. The Society organizes excursions and other events (seminars, workshops, etc.), and publishes a

newsletter: *Meylania*.

Australasian Association for Lichenology - Address: Box 320, Nelson, New Zealand. Contact Person: W. M. Malcolm (address as above), phone & fax: (+64) 3 545 1660. Founded in 1974, the Society presently has ca. 50-60 members. Its main aim is to promote all aspects of the study of lichens in Australasia, and the interchange of information

Sociedad Española de Liquenologia (SEL) - Address: c/o Departament de Biologia Vegetal (Unitat de Botanica), Facultat de Biologia, Universitat de Barcelona, Av. Diagonal 645, 08020 - Barcelona, Spain. President: Ana Crespo (Madrid). Contact Person (Secretary): Leopoldo G. Sancho, phone: (+34) 91-3941771 Fax: 91-3941774, Dpto. Biologia Vegetal II, Fac. de Farmacia, Universidad Complutense, 28040 – Madrid, Spain, e-mail: *acrespo@eucmax.sim.ucm.es* - Founded in 1988, the SEL has 54 members, most of whom are people trained in biology and working as teachers in Spanish universities and secondary schools. Very few of them work on the staff of research institutes. An internal bulletin, *Clementeana*, is published yearly, which mainly includes news on Spanish lichenology, personalia, books reviews, lists of new publications on Spanish lichens, and also some keys intended to be included later in the "*Flora Liquenologica Iberica*". Keys of *Pertusaria, Ochrolechia, Peltigera*, etc. have been already published to be tested by SEL members. The members meet yearly, in the National Symposium of Cryptogamic Botany (every two years), and in the biannual forays organized by SEL in incompletely explored regions of Spain.

Grupo Latino Americano de Liquenólogos (GLAL) - Address: Centro Regional Universitario Bariloche, Universidad Nacional del Comahue, Bariloche- 8400 - Río Negro, Argentina; phone (+54) 944-23374 or 28505, fax: 62215 or 22111, e-mail: *scalvelo@crub.uncoma.edu.ar.* Contact person: Susana Calvelo (address as above). Established in 1994, this group has c. 40 members. It is not a formal Society but is a *crowd* of Latin-American people interested in lichenology that gets together to solve common problems. GLAL meetings and general assembly are biennial, and are organized by the elected GLAL representative. During the meetings scientific lichenological presentations related with lichens from Latin America are given. The next meeting will be in Bariloche (Argentina), tentative date: november 1999. No membership fee is charged.

Grupo Brasileiro de Liquenólogos (GBL) – Address: c/o Marcelo P. Marcelli (coordinator), Instituto de Botânica, Seção de Micologia e Liquenologia, Caixa Postal 4005, São Paulo - SP, Brazil. 01061-970. Fax: (+55)-11-6191-2238, phone: (+55)-11-5584-6304 (institute), 218-5209 (home), e-mail: *mmarcelli@sti.com.br.* Established in 1996, this informal group of 27 lichenologists (incl. 15 students) has the aim of promoting joint work by exchanging facilities and expertise. It publishes an internal *Boletim*, and organizes a biannual meeting with seminars and courses.

Lichen Section, Societas Mycologica Fennica. - Address: Botanical Museum (Lichenology), P.O. Box 47, FIN-00014 Univ. Helsinki, Finland. Chairman and contact person: Teuvo Ahti (address as above), phone: (+358) 9 7084782, fax: (+358) 9 7084830 e-mail: *teuvo.ahti@helsinki.fi* Established in 1985, this is a rather informal group which primarily organizes annual field meetings, which have 20-30 participants. No official membership of the Lichen Section recognized.

Eastern Lichen Network. (USA, East) - This is a group of c. 25 amateurs and professionals who are connected via the internet. Marian Glenn serves as the co-ordinator and contact person. Her e-mail address is: *glennmar@shu.edu,* fax: (+1) 973-761-9772. The group was started in 1993, and has, as a long term goal, the drafting of a lichen flora of Eastern North America. The first three genera of the project appear as part of *Lichenographia Thomsoniana* (see *New Literature* section), edited by four members of the Eastern Lichen Network.

Club of Turkish Lichenologists - Address: c/o Dr. Aysen Türk, Anadolu University, Dept. of Biology, TR-26470 Eskisehir, Turkey. President: Aysen Türk (address as above); phone: 0.222.3350580/ 3411/5168, e-mail: *aturk@vm.baum.anadolu.edu.tr* Contact person (secretary): Attila Yildiz, Ankara University, Dept. of Biology, TR-06100 Besevler-Tandogan/Ankara, phone: 3122126720, fax: 3122232395 e-mail: *ayildiz@science.ankara.edu.tr.* Just founded in 1998, the club includes ca. 20 members.

Slovak Botanical Society - Lichenological Working Group - Address: Slovak Botanical Society, Institute of Botany, Slovak Academy of Sciences, Dubravska cesta, 14 842 23 Bratislava, Slovakia. President: Olga Erdelska, Lichenology-contact person: Anna Guttova, phone: 07-59412501, fax: 07-54771948, e-mail: *botugutt@savba.savba.sk* - The Botanical Society was founded in 1955, as Czechoslovak Botanical Society, and in 1966 it was given the present name; it includes 423 members, only a few of whom are lichenologists. Membership in the lichenological group is free (see IAL Newsletter 29-1: 1996: 15). Web page: *http:// nic.savba.sk/sav/inst/botu/sbs/ index.html.*

Progress in Molecular Studies of Lichens (Graz, August 11th-15th, 1998)

The first symposium on *Progress in Molecular Studies of Lichens* was held at the University of Graz in August 1998. About 50 participants from all over the world took the opportunity to exchange their ideas and experiences. As molecular techniques are becoming important tools in lichenology, such a symposium was very timely. The program was split into different sections: talk sessions, discussion fora, laboratory seminars, an excursion and a poster show. In talk sessions *young* lichenologists especially had the opportunity to present a paper on their research progress. Very different topics were treated: e.g. algae, group I Introns, studies on populations and phylogenetic research. From several talks on phylogenetic studies, we learnt a lot about recent advancements combining studies of morphological, chemical and molecular data, e.g. in the genus *Peltigera*, infragenetic relationships in *Caloplaca*, the position of sterile *Normandina pulchella,* and others. The systematic position of other sterile lichens e.g. *Siphula* species or of *Lecanora demissa* were also discussed. Population studies demonstrated for e.g. *Lobaria* will be important for questions concerning conservation of species in the future. The discussion fora, supervised by well-known specialists, were somewhat dominated by contributions from the American participants with their enormous knowledge. For me, and I believe for everyone, these fora have been highly informative, they helped to solve current problems in practical work and gave a lot of hints for trouble shouting. During the laboratory seminars, experienced colleagues presented new improvements in DNA isolation or amplification, and an application of confocal laser scanning microscopy. The organisers M. Grube, M. Wedin, P. Blanz and their assistants did an excellent job, and have to be thanked. Hopefully, this event initiates subsequent symposia on this topic in the future.

Thomas Kasalicky, München

Lichenologists in Israel (IMC6, Jerusalem, August 23rd-28th, 1998)

The sixth International Mycological Congress (IMC6) was hosted by Professor Margalith Galun (President of the Organizing Committee) in the fascinating city of Jerusalem from August 23rd until August 28th, 1998. Presentations by lichenologists were in several formats, including plenary lectures, symposia dedicated exclusively to lichenology, and general mycological symposia and poster sessions. The contribution of molecular biology to mycology was emphasized at this meeting, as was shown by the double helix DNA

molecule that was an integral part of the official emblem of the Congress. Presentations in lichenology spanned a broad array of topics from biodiversity and conservation issues to ecology, physiology, evolutionary biology and genetics. What follows is a short résumé of the oral presentations by lichenologists at IMC6.

There were four plenary sessions. Two of them were given by lichenologists. D. Hawksworth presented a broad overview of recent efforts to study biodiversity of fungi (both lichenized and non-lichenized). He highlighted the impressive increase in the number of lichenicolous fungal species described in recent years. He commented on the different approaches used to assess fungal biodiversity. The contribution of cyanobacteria in lichens to nutrient cycling, the use of diagnostic lichen species to evaluate forest continuity, and the current exploration by industry of genes in lichens without the need for using axenic cultures, were among the lichenological topics presented to a broad mycological audience. D. Richardson gave the last plenary lecture of the Congress. He eloquently guided the audience through the intricate nature of the different types of symbiotic interactions found in lichens. He emphasized the parasitic side of lichen symbioses (*war in the world of lichens*) by showing examples of what he interpreted as *algal slaves*, *exploiters of two kingdoms*, *alien invaders*, *niche seekers*, and *takeover specialists*. Two Congress symposia were entirely dedicated to lichenology. J. Garty and M. Galun were the convenors of the symposium entitled *Biodiversity and Ecological Significance of Lichens*. M. Seaward demonstrated the drastic impact of lichen colonization on artifacts, exemplified by an exposed fresco in Italy; he illustrated the current technique used to remove lichens in a first step toward the restoration of such antique artifacts; he also pointed out the caveats of such a technique and the lack of solutions for long-term restoration and prevention of future colonization. L. St. Clair, in collaboration with K. Anderson and T. Garcia, summarized the data available on pollutant fluctuations along the heavily populated Wasatch front of North Central Utah, USA, and its impact on local lichen communities. G. Insarov and I. Insarova proposed a new approach to biodiversity monitoring of lichens called TDI (Trend Detection Index) to detect global climate trends. It was reported that this index performed better than traditional diversity indices and its resolution appears sufficient in view of a global warming of 2.5°C predicted for the end of the next century. S. Eversman guided us through the complex lichen flora, from prairies to peaks, of the spectacular state of Montana, USA. As always, I. Kranner gave a clear and in-depth presentation on the interplay of mechanisms lichens have to scavenge free radicals that are formed during desiccation. This time she focussed on the role of the antioxidant glutathione, which, in addition to scavenging free radicals, is likely to be involved in the thiol-disulphide cycle that protects protein-thiol groups from auto-oxidation resulting from desiccation. C. Scheidegger gave the closing presentation. Cristoph brought us to the forefront of conservation biology by describing the impressive national inventory system of epiphytic lichens he and his team have established in Switzerland. He demonstrated the complexity of determining the conservation status of lichens, as well as the need for quantitative data of high quality and appropriate statistical analyses that integrate environmental stochasticity. Based on small populations of *Lobaria pulmonaria* and Monte Carlo simulations of the effects of deterministic forces, as well as demographic and environmental events on populations, it was shown that at least 15 colonized trees are needed for long term persistence of epiphytic species. Innovative strategies for increasing population size were presented.

The second symposium restricted to lichenology, convened by D. Armaleo and F. Lutzoni, was entitled *Molecular Approaches to Lichen Symbiosis*. This was the first symposium ever to focus on the discovery of genetic mechanisms associated with lichen symbiotic interactions. F. Cervone, in collaboration with G. De Lorenzo, D. Armaleo, A. Bartoli, S. Munzi and Th. Friedl, used what is known of the molecular genetics of the

plant-pathogen interaction system to target specific genes of the recognition systems between lichen symbionts. Their strategy consists of using antibodies and cloned genes as probes to detect polygalacturonases (cell wall-degrading enzymes produced by plant pathogenic fungi) in the mycobiont and polygalacturonase-inhibiting proteins (PGIP: plant-derived cell wall proteins specialized for recognition of non-self molecules) in the photobiont. V. Miao gave an update on her challenging work to clone polyketide synthase (PKS) genes from lichens. She described her cloning scheme consisting of amplifying a portion of the genes encoding the ketosynthase domain and using these amplified products from lichen PKS genes as probes to screen genomic libraries of lichen DNA. The complete genes pulled from genomic libraries can than be transferred into cultivable laboratory strains of fungi where new structures can be generated through recombination or complementation. G. Murtagh, in collaboration with P. S. Dyer and P. Crittenden, gave a fascinating talk on their study designed to reveal the breeding system (homo- versus heterothallism) of *Graphis scripta* and *Phaeographis dendritica*. Using genetic markers generated with RAPDs they looked for DNA polymorphisms in monospore cultures derived from single ascoma. They also compared the genetic variation among progeny derived from neighbouring ascomata and thalli. Their results pointed toward homothallism as the best explanation for the patterns of variation they detected. (Interestingly, evidence from S. Zoller's population genetic study of *Lobaria pulmonaria*, in collaboration with C. Scheidegger and F. Lutzoni - presented at the University of Graz's workshop entitled *Progress in Molecular Studies of Lichens* - suggested that heterothallism was most likely the breeding system for this foliose species). F. Lutzoni presented a new approach called "evolutionary screening" to identify target genes potentially forming an integral part of the lichen symbiosis. By reconstructing the phylogeny of closely related lichenized and non-lichenized fungal species, consequences and physiological stresses associated with transitions to a lichen state can be revealed. It was shown that genes involved in phenotypic plasticity/broad ecological amplitude, low fungal virulence/high photobiont infection resistance, desiccation and sun irradiation tolerance/efficient DNA repair mechanisms, and DNA methylation should be included in genetic studies aimed at understanding the underlying genetic mechanisms essential to lichen symbioses. D. Armaleo, in collaboration with V. Mobley, used restriction enzymes in combination with Southern analysis to demonstrate that the DNA methylation level of *Cladonia grayi* varies tremendously, ranging from high levels when in a symbiotic state to very low levels when in axenic culture. It was also shown that regulatory sequences of genes could be differentially methylated compared to their coding regions, implying that methylation could be a major regulatory factor of gene expression necessary to maintain a lichen symbiotic interaction.

In the symposium entitled *Fungi, Including Lichens, in Extreme Environments*, half of the presentations focussed on lichens. This symposium was convened by E. Imre Friedmann and L. Kappen. The first presentation was by Kappen, who introduced the symposium and explained the context for convening the selected speakers. Given the exceptional ecological success of the lichen symbiosis, Kappen pointed out how little we know about almost every aspect of the lichen symbiosis. He also identified several topics in lichenology that deserve to be considered for future research. The second presentation, by B. Schroeter, was entitled *Adaptation to lichens to low temperatures in the Antarctic*. He reported that photosynthesis was detectable at temperatures as low as -20°C and that lichens can be metabolically active throughout the year even in such harsh conditions. E. Imre Friedmann and R. Ocampo-Friedmann described the nature of cryptoendolithic lichens as one where sexual reproduction is suppressed and as a community which may include, in addition to parasymbiotic fungi, other non-lichenized fungi, algae, cyanobacteria, and heterotrophic bacteria. R. Lücking presented the results of his exhaustive study on adaptations of foliicolous lichens for survival on their ephemerous

substrates. He explored the contribution of several abiotic factors in different rain forest compartments (canopy versus understory) and found that foliicolous lichens are most abundant in the understory, corticolous lichens in the canopy. He also compared morphological features such as apothecial disc color, thallus color, and ascospore variation associated with shady versus exposed understory foliicolous lichens. R. Lücking was also an invited speaker at a general symposium on fungal diversity and distribution. By recording the lichen diversity on palm leaves of different ages on the same individual he could show that with time lichen diversity reaches a maximum followed by a decrease in diversity due to competition. In the symposium entitled *Diagnostic Tools in Fungal Identification* convened by P. L. Nimis, G. Rambold had the opportunity to present to the mycological community at large the advantages of using the DELTA system.

Other important and exciting events also took place during the IMC6 Congress. P. L. Nimis was elected to the Executive Committee of the International Mycological Association. The IAL Executive Council met during this Congress and all IAL members were invited to participate. The minutes of this meeting are published as part of this issue of ILN. Finally, there were several spontaneous field excursions that were organized by several lichenologists under the generous guidance of Jacob Garty. The exceptional lichen flora of Israel was certainly full of extraordinary surprises.

François Lutzoni, Chicago

Errata corrige

At page 7 of vol. 31, 1, under the title *Discontinued Journal,* the publishing house of *Excerpta Botanica* was misspelled: the correct name is: Gustav Fischer. Furthermore, this journal was active from 1959 until 1998, and not until 1988.

FORUM

Conservation biology: A challenge for lichenologists?

Conservation biology has attracted increasing attention in science, government and education. During the past ten years the public awareness of the present biodiversity crisis has shifted from a few flagship species towards general biodiversity. How far has lichenological research been influenced by this shift? In the recent "*Encyclopedia of Ecology and Environmental Management*" (Calow P., ed., Oxford, Blackwell, 1998), D. A. Falk gives a remarkable definition of conservation biology: "*Conservation biology is an emerging, interdisciplinary field that seeks to establish a scientific basis for the conservation and management of populations, communities and ecosystems. At the same time, conservation biology draws on the empirical observations and results of land management practices as a primary source of information and insight. Consequently, conservation biology may be thought of as the interface between ecology and allied disciplines on one hand, and the practice of conservation management on the other*". Almost every word of the above definition is a challenge to lichenologists because so little information on lichen ecology is available: In this discussion we would like to draw attention to gaps in our knowledge and especially, to stimulate further research in this discipline. - In earlier decades lichenologists developed a broad range of methodologies for environmental monitoring. Methods for assessing environmental health, from air pollution to forest continuity, made use of selected indicator species and indices based on

presence or absence of these species. These methods were widely discussed and implemented, but the underlying concept of sensitive species is often disputed. In other areas of mainstream ecology there has been a move away from indicator species towards diversity, indices but lichenologists have only incompletely switched to these new concepts, often with the excuse that major groups were still incompletely known. Although this excuse is still valid in under-recorded areas of the world, the recent increase in excellent monographs of lichen groups that were formerly difficult to determine has altered this, so that assessing lichen diversity is now feasible at least in temperate and boreal zones of Eurasia and North America, and in Australasia for macrolichens. Can lichenologists now contribute to future biodiversity assessments? Only then will general conservation priorities be able to include lichens, the *rustici pauperrimi* (Linné).

Lichen hot spots and habitat protection: If we cannot identify all species in large areas of the world can we identify lichen hot spots? In Sweden all forest areas are required to have both environmental and productive goals since 1993. This has led to renewed interest in identifying key habitats in forest biotopes with high conservation values. Key habitats are defined by associated species in a number of groups including lichens, fungi and invertebrates, and are then targeted for further survey for Red Data Book species or others of high conservation priority. This approach also incorporates management objectives and practices, so will provide a basis for management decisions to protect the habitats of these species. Habitat protection for lichens has often consisted of a conserve (i.e. veteran trees) and do-nothing approach. But protection alone cannot permit long term conservation of target species. It does not account for the population dynamics of the target species, of the associated community or of environmental changes that may be occurring on smaller or larger scales in the protected area. Conservation of lichens urgently needs further study of both lichen habitats and lichen populations. Specific management practices associated with target species and communities also need to be conserved. This will require further development as well as communication to both the scientific community and to conservation managers.

Species conservation: Lichens have an advantage over many other organisms in that they frequently reproduce vegetatively, and successful rescue actions with thallus fragments and vegetative diaspores have shown that reintroduction and augmentation of lichen populations is practicable. However, these experiments have not been successful so far with crustose, umbilicate and fruticose species with a primary holdfast. Further research is needed to extend the methods to these growth forms.

Lichen ecology: Probably the greatest gap in our knowledge is in the population biology of conservation-dependent species. So far very little is known about "life table analyses" of lichens, although this information is required to specify the conservation status according to the present IUCN Red-List categories. Although it is not possible to undertake these studies for a wide range of taxa, a careful selection of key taxa representing a range of ecological strategies could contribute enormously to estimations of minimum viable population sizes for a great number of taxa and to an understanding of their life cycles. But many of us hesitate to start a project on life cycles on lichen thalli that may live to a great age, or where there may be a problem to identify a single individual. So how can we estimate age or survivorship? For the epiphytic species the measure of the tree age and the life table of the tree species can contribute to a reasonable estimation of the life table of the epiphytic lichen species. Recently, this type of study contributed to the estimation of a minimum viable population size of *Lobaria pulmonaria* in a mountain forest. Augmenting or reintroducing conservation-dependent populations could also profit from ecophysiological research. This discipline has already contributed to the understanding of the poikilohydric life style of lichens and attracted a wide interest of biologists. Direct contributions to conservation biology could include the definition and localisation of the ideal habitat for *in-situ* or *ex-situ* conservation programmes.

Lichen taxonomy: The taxonomic structure of lichen diversity as reflected in modern revisions includes a very low degree of endemism, and taxa previously reported from one part of the world are later found on another continent. Because national conservation bodies set priorities for endemic taxa, lichens do not usually receive high national awareness. One of the few examples where a lichen plays a key role in planning forest management is *Erioderma pedicellatum*. Since the species went extinct in Europe recently (Tønsberg, personal communication) Newfoundland now has international responsibility for this species and therefore is making reasonable efforts to protect *Erioderma pedicellatum* and its habitat. Many other species, are endangered in more than just one country but receive considerably less attention because of their wide geographical distribution. Does the present taxonomy really reflect the genetic structure of these species? This is a challenge for modern taxonomy where molecular methods are probably a powerful tool to detect a geographic pattern in an otherwise uniform taxon. If subspecies could be distinguished, such infraspecific taxa would merit a high conservation priority and more effective national conservation measures could be taken. Red Data Books: To make conservation management effective, lichenologists must document our present knowledge of the conservation status and of effective conservation measures to a broader public. Many national and regional Red Data Books are available; some of them merit a critical update regarding methods and sources of data used. National conservation authorities need modern Red Data Books based on recent floristical observations and taking into consideration the actual IUCN Red Data Book categories. However, the methodological problems related with national inventories for rare species should not be underestimated and a Red Data Book needs very careful planning and effective adaptation to related inventories in order to optimise the information gained from field surveys. On an international level a first step was the publication of a preliminary global red list of lichens compiled by G. Thor (*http://www.dha.slu.se/guest/global3.htm*). *Erioderma pedicellatum* is on this list, which helped enormously in convincing national bodies of the importance and conservation needs of this lichen species. However, we believe that more direct information about threats and conservation measures for lichens is needed. We propose that a "Status Survey and Conservation Action Plan" should be made for epiphytic lichenised fungi. The IUCN/Species Survival Commission Action plan series assesses the conservation status of species and their habitats, and specifies conservation priorities. The series is one of the world's most authoritative sources of species conservation information available to nature resource managers, conservationists and government officials around the world. A lot more work and international co-operation in lichen conservation biology will have to be done before a future edition of the *Encyclopedia of Ecology and Environmental Management* will eventually mention lichenised fungi somewhere on the 805 pages...

Christoph Scheidegger, Birmensdorf and Pat Wolseley, London

Thank you, Christoph and Pat for your comprehensive contribution. As you pointed out, lichen diversity assessments have recently been carried out in numerous countries or are in preparation. These - either as checklists, catalogues, or floras - are without doubts essential approaches towards a conservation biology of lichens. The preparation of Red Lists is a next step. Interestingly, Red Lists of different countries differ significantly by their included number of species. For example, the current Red List of Germany (Wirth, V. *et al.* 1996. *Rote Liste der Flechten (Lichenes) der Bundesrepublik Deutschland.* Schr.-R. f. Vegetationskde. 28: 307-368) includes 1036 species, which is c. 61% of the total number of lichen species in Germany. A similar percentage will be presented in the forthcoming Austrian Red List (Hafellner, pers. comm.). On the other hand, much less of the lichen flora is included in the Red Lists of the British Isles (177 species= 11%) or Sweden (238 species= c. 12%) (Church J. M. *et al.*, Red data books of Britain and

Ireland: lichens. Volume 1: Britain. Joint Nature Conservation Committee, Petersborough., 1996, 84 pp. - Aronsson M. *et al., Rödlistade växter i Sverige.* ArtDatabanken. Uppsala, 1995, 272 pp.). What are the reasons for these differences? There are certainly several answers to this question (e.g. lichenicolous fungi included or not, not all species of the known flora analysed, differences in numbers of available habitats, and many more). However, to be scientifically sound, the consistent use of international standards in Red Lists, such as the IUCN categories, is demanded. Red Lists of lichens must become uniform at an international scale if they are intended as a serious tool in conservation management.

Martin Grube, Graz

Conservation biology and lichens: Red Lists need to be consistent? Additional comments supporting Martin Grube's comment on Red Lists. - The consistency in Red Lists needs to be in the criteria for the listing which has two major considerations. One is rarity and the second is the "degree of threat to the species". So far most lichenologists have focused on the rarity issue. However, the magnitude (high or low) and the immediacy (imminent or non-imminent) of the threat is of greater importance! For example, a rare alpine lichen may have little threat to its habitat while a rare epiphytic lichen growing in a forested habitat may have an imminent high magnitude of threat. The threat in the forest may be due to commercial logging and natural forest fires, wind blow, or forest decline from air pollution. Some habitats are more threatened than others. Therefore, the degree of threat needs to be considered when setting criteria for a consistent system of rating.

Roger Rosentreter, Boise, Idaho

I have been recently involved in lichen conservation, and found the task really challenging, especially because I could not use some of the criteria applied to other organisms; e. g. vascular plants. There is an obvious need to modify or (re-?) define these criteria, and to present the modifications to national conservation organizations. The results of conservation measures are often conditioned by the reproductive biology of the organisms. Unfortunately, no "seed bank" is available for lichens, and the reproduction by vegetative diaspores is absent in many lichen species. However, despite these and other shortcomings, I do agree that the subject needs an urgent attention, even if the results can only be regarded as preliminary. I would like to pose to this Forum the following questions for stimulating a little and well-due discussion on the subject: 1) When initiating lichen conservation in small regions, we are often required to evaluate the quantity and quality of the existing lichen populations, especially in fragile ecosystems, for establishing a preliminary Red List. In many cases it is very difficult to apply IUCN categories to these species, since we do not know if there has been a reduction in the population due to the lack of previous studies, besides the difficulty of counting individuals. 2) How do we apply IUCN categories when the total floristic knowledge of the area is below 50%? It would be desirable to obtain new data, but this can even aggravate the problem for rare species in endangered habitats. 3) How do we avoid including only the least collected and rare species? 4) Do you think it would be necessary to weigh or better evaluate an endangered habitat on the basis of its vascular plants, since the presence/absence of epiphytic communities often is a direct result of the impact on vascular vegetation? 5) Why do we not assume that a rare species is automatically also an endangered one? I believe there is a need to accommodate the IUCN categories to the above circumstances, and to establish new criteria to compile local Red Lists for lichens, similar to those developed for the "Preliminary Global Red List": the species included there often have little relevance at local level.

Violeta Atienza, Valencia

Additional comments on Violeta Atienza's contribution - 1, 2, 3) Lack of information is a major problem for lichen conservation. We must make decisions with the information available, and be prepared to change our decisions as new information is gathered. The form of reproduction is critical to evaluating a species potential for re-establishment in disturbed habitats. 4) The occupied and potential habitat and the individual species ecology needs to be evaluated when determining rarity and threats to a given taxon. 5) Rare species may not be endangered, but may just occur rarely due to their restricted habitat requirements. They are not endangered until their habitat is threatened or endangered by some action. Geographic scale was also discussed by Atienza, and is a major consideration when evaluating endangered species for a given area. One possible means to address this is to assign different rating at different geographic scales. For example, a common coastally influenced moisture preferring species, *Pilophorus acicularis* is not rare globally, and is given a global rank of G-5 (on a 1-5 scale) by the Natural Heritage Programs in North America. This ranking system was developed by The Nature Conservancy and is employed by the Natural Heritage programs in North America. But in the state of Idaho, USA, *Pilophorus acicularis* is only known from a single locality in northern Idaho, in an area known for its occurrence of coastal disjunct vascular plant species, and it is given a State rank of S-1 (on a 1-5 scale). This geographic scale provides an appropriate means of local and regional protection for significant species. One other factor which we as supporters of lichen conservation need to consider is that these lists become ineffective if they are not focused or understandable to the public. This means that the lists need to be realistic in: a) the number of taxa considered; b) they need to be simple if there are more than one category; c) and the Latin names may need to be grouped by guilds (e.g. forest epiphytes, forage lichens, nitrogen-fixing lichens, or ground steppe lichens), or d) by local vernacular names. For example ask yourself: is this red list reasonable to commercial logging companies and to the public? Or does the list include over half of the lichens that occur in the State and therefore, the logging company will ignore the list as unreasonable? Can the public understand what is on the list? Or are they just unfamiliar Latin names? Somehow the list needs to relate to the public (e.g. forage lichens, a term for the Alectoriod growth form lichens in trees which are eaten by wildlife, such as elk, deer, and flying squirrels; at least locally in North America where hunting deer and other animals is popular, the term «forage» is associated with food for animals, and therefore the public can understand that these are lichens eaten by animals and they support protecting them, since they support protecting animals!). Also I would suggest that lichens should be included, and their protection management be similar to vascular plants, since there is often an organized system established to address and protect vascular plant habitats.

Roger Rosentreter, Boise, Idaho

Phytogeography of lichens (continuation of the Forum started in ILN 31, 1)

In our recent study (Goward & Ahti, J. Hattori Bot. Lab., 82, 1997), we have examined the western North American distributions of 84 taxa and chemotypes of *Cladinae* and *Cladoniae* occurring at temperate and boreal latitudes. We propose six broad conclusions, some of which may be of general interest to students of phytogeography: 1) Western North America's richest assemblage of *Cladina* and *Cladonia*, with between 76 and 78 taxa, occurs in British Columbia between 52°N and 56°N, in a region covered by glacial ice until roughly 13,000 to 10,000 years ago. 2) South of 52°N, species diversity declines dramatically, with a loss of between three and five taxa per degree of latitude. 3) With the exception of those species able to persist in nunataks at alpine elevations, or under arctic conditions to the north of the ice, or again in small, periglacial refugia along the west

coast, most of British Columbia's Cladoniaceae must have passed the Pleistocene south of the Cordilleran Icesheet. 4) Floristic and chemical diversity in the Cladoniaceae are greater in humid than in arid regions, and at lower, forested elevations than at upper, alpine elevations. Many species can therefore be assumed to require habitats subject to only relatively brief periods of desiccation. 5) Given that many Cladoniaceae probably passed the Pleistocene south of the Cordilleran Icesheet, the absence of numerous species from all or most of Washington, Oregon, and California must reflect climatic changes in this region since deglaciation. An increase in summer moisture deficits is assumed to be largely responsible for this trend. 6) Though a majority of the Cladoniaceae are probably now at distributional equilibrium, a few species - e.g. *Cladina stellaris* and *C. trassii* - appear still to be extending their ranges southward from refugia north of the Cordilleran Icesheet.

Teuvo Ahti, Helsinki and Trevor Goward, Vancouver

LICHENOLOGY-ON-LINE

New and interesting Websites

An Online-Database of Ascomycete Literature – 'DALI' has been installed on the web internet server of Botanische Staatssammlung München and is accessible via *http://dbsys.botanik.biologie.uni-muenchen.de/botsamml/mycology/dali/home.html* It contains references which pertain systematic and taxonomic studies of ascomycetes. Within that, it primarily deals with the Lecanorales, Leotiales, and the ecological group of lichenicolous fungi, but includes references to pyrenocarpous and mitosporic fungi as well. The database also provides access to information about molecular data, relevant to ascomycete systematics. The literature is classified according to eight categories (a–h) with taxonomic, biological and methodological aspects, keywords are not yet included. The current database contains more than 4,000 records and has just a little overlap with the online-database of *Recent Literature on Lichens* by R. S. Egan and T. L. Esslinger, located at the web server of Oslo herbarium. The maximum number of hits returned per search is set to 250. The database contains generally verified references, that is, they have been checked for accuracy against the original. DALI was compiled by D. Triebel and G. Rambold, and is copyrighted by Botanische Staatssammlung München. (D. Triebel, München).

Italian literature on lichens and air pollution - More than 300 papers were published in Italy on this subject, at least 80% of which appeared after 1987. Much of this literature, being in Italian and published in local journals, is still very poorly known to the international audience. However, the amount of data that has accumulated on the variation range of biodiversity measures and on metal concentrations throughout the country is so impressive that it already allows to set some National standards. This searchable database collects all papers on bioindication of air pollution in Italy, including Lichens, bryophyes, higher plants and animals. For the moment, searches can only be made by author, title, journal and year, but during 1999 it will be also possible to search by selected keywords. *http://www.univ.trieste.it/~biologia/anpa.html* (P. L. Nimis, Trieste).

Mediterranean Lichens - The information system on lichens in the Mediterranean region will be available in a refined version by the end of 1998, and will be accessed from our own new server. The new version will make it possible to query the distribution of lichens in the Mediterranean region on the basis of all published checklists. Furthermore, more flexible search possibilities, e.g. for lichens with certain non-

geographic parameters (ecology, growth form, etc.), are planned. If you want to revise the text, feel free to do so. You can also add something, if you want to have further features in the new version. The new address will be *http://biobase.kfunigraz.ac.at:80/medlichens.html* (M. Grube, Graz).

Lichen Laboratory Methods: Web Page under Construction

Following discussions among a core group of lichenologists at IMC6 in Jerusalem, a web page is being set up devoted specifically to "Lichen Laboratory Methods". The discussion highlighted the need to easily access lichen lab methods which are often fragmented in the literature or buried in expensive books or journals with limited circulation. It also addressed the usefulness of accessing methods which the authors do not necessarily plan to publish in print, or methods which may have failed to produce the expected results. The availability of serious but unsuccesful attempts provided by a web page would have several benefits: at worst it would avoid repetition of mistakes and at best it would increase the probabi lity that someone would develop modifications turning failure into success: good but unsuccessful ideas are often simply *almost* right. A web page would have the possibility of growing and changing in pace with the science and the technologies, would be freely accessible to the majority of scientists, and would limit delays in time and availability between the generation of ideas and results and their general diffusion through the scientific community. The web page is under construction right now and the goal is to open it up by the spring or summer of 1999. The page would start with a set of core methods grouped and accessible via hypertext links. It would be connected also to already available lichen web pages and relevant non-lichen web pages. The core methods will include: lichen culture methods and findings; isolated symbiont culture and analysis; DNA extraction methods; RNA extraction methods; molecular techniques useful for lichens as they appear (in situ hybridization, cytology, chromosome analysis etc); it might expand over time to include secondary compounds, physiology, and ecophysiology. Any scientist wishing to contribute is welcome. Only contributions sent in electronic format will be included. Contributions can include figures if they are necessary to reproduce or understand the methods. Contributions will be edited and screened to ensure quality and clarity. Whether the methods were previously published or unpublished, the authors, institutions and addresses must be avaliable. By submitting an unpublished procedure, the authors implicitly agree that it can be used freely and can be quoted in subsequently published work. The editors of the page do not guarantee the veracity or the effectiveness of the presented methods. Please send your questions, comments, methods to: *darmaleo@duke* ed and/or to *otts@rz.uni-duesseldorf.de*

Sieglinde Ott, Düsseldorf and Daniele Armaleo, Durham

LIAS Project

All genus and species data of LIAS databases can be accessed now via checkbox forms (*http://dbsys.botanik.biologie.uni-muenchen.de/ botsamml/lias/ liasonline.html*). Users and experts are kindly asked to revise these forms online and submit the revised set by using the button "Send (revised) item description" at the bottom of each form. The data will be re-imported into the database after control. There is another option as well, to print out the relevant pages, to revise them manually, and send them by mail. The two web interfaces DAP ('DeltaAccess Perl') and DAWI ('DeltaAccess Web Interface') were supplemented by the option to use Intkey as a helper application and, as a further option, NaviKey by Noel Cross (Harvard) is ready to be installed as a Java interface for all

databases. A new database with all 200 species of the *Lecanora subfusca* group by H. T. Lumbsch and R. Guderley is expected this year.

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