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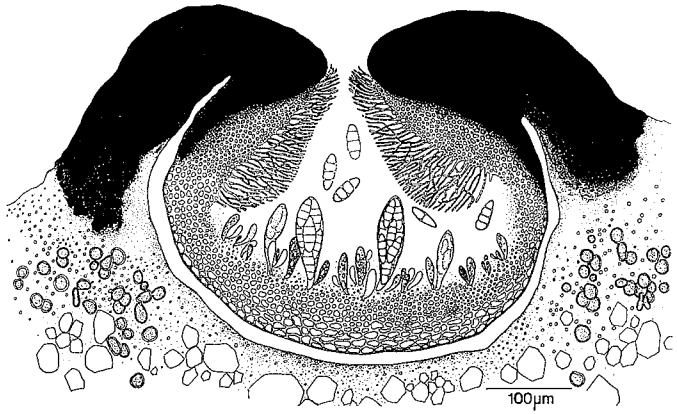

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International Association for Lichenology

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INTERNATIONAL ASSOCIATION FOR LICHENOLOGY

The International Association for Lichenology (IAL) promotes the study and conservation of lichens. It organizes symposia, field trips, and distributes a biannual newsletter. There is a listserver that 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 or become members of IAL are requested to send their subscription (one payment of $40 US for 2001-2004) to either Treasurers.

The **International Lichenological Newsletter** is the official publication of IAL. 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) **Review**: presentation of recent progress in particular fields of lichenology with optional discussion. 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 4 Symposium (Barcelona, Spain, 2000) are listed below, and will serve until 2004.

I.A.L. EXECUTIVE COUNCIL 2000-2004

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ASSOCIATION NEWS

Activities of the IAL Council

Excursion: IAL will endorse the excursion and field meeting to be held in southwest China (Yunnan Province) in late 2002. This meeting will be organized by Bruce McCune and the Kunming Institute of Botany. Further details can be found under **http://www.proaxis.com/~mccune/kunming.htm.**

IAL5 in Tartu: Planning for the next General Meeting in Tartu has already started as a result of discussions started via the Council's e-mail system, with the help of the IAL advisory board.

The President visited Tiina Randlane, the organizer of the meeting, during the first week of November 2001. In his opinion, Tartu will be an ideal venue for IAL5, something between the exciting metropolis of Barcelona and the intimate, convent-like atmosphere of Bastad. The town is small (ca. 100,000 inhabitants), everything is within walking distance, and there are enough hotels for all tastes and pockets.

The Council agreed that participation costs will be significantly lower than those of the previous meeting. In the following months, the scientific organization of the meeting will be discussed in greater detail. The Council will meet in Venice around mid-March 2002 to decide on the general outline of symposia, dates, excursions, etc. The first circular should be printed in time to be distributed during the Oslo meeting in August 2002, and with the first issue of the *Newsletter* after the Venice Meeting.

Awards and Medals: The Council decided to award Acharius medals and Mason Hale Awards not only at the General Meeting but also at major international conferences. The next opportunity will be at the IMC7 in Oslo. Details on submitting nominations are provided below.

Acharius medal and Mason Hale award — Call for nominations

The IAL Council will award an Acharius Medal and a Mason Hale Award at the next IMA Congress in Oslo in August 2002.

ACHARIUS MEDAL — The Acharius Medal recognizes the life-work of distinguished lichenologists. Nominations should be sent to the Secretary of IAL by e-mail (*sancholg@eucmax.sim.ucm.es*) no later than March 1st, 2002. They must contain: a) name and address of the proponent, b) name and address of the nominee, c) a brief summary of the life-work of the nominee.

MASON HALE AWARD — The Mason Hale Award (500 US$) recognises excellence in research by young lichenologists for outstanding work resulting from their doctoral dissertations or similar studies. Nominations should be sent by mail to the Secretary of IAL (Dr. L. G. Sancho, Dept. de Biologia Vegetal II, Facultad de Farmacia, Universidad Complutense, 28040 Madrid, Spain) no later than March 1st, 2002. They must contain: a) name and address of the proponent, b) name and address of the nominee, c) a brief illustration of the research work of the nominee, including some notes on her/his curriculum vitae, d) a copy of her/his dissertation.

NEWS

American Bryological and Lichenological Society meeting, 23-30 July 2002, Storrs, Connecticut. — The meeting will be held on the campus of the University of Connecticut. There will be one or two local field trips (July 24–25 are available), with an informal workshop organized by Ernie Brodo on ascal tip identification methods following one or both of the field trips. A welcome breakfast will be held on July 26, followed by talks; on July 27 talks, symposia and business meeting; on July 28 talks and farewell banquet. The symposia will be organized by Richard Zander (Bryophyte Flora of North America) and Jon Shaw (Phylogeography of mosses and possibly lichens). The field trip following the meeting will be in Maine.

Jim Lawrey, Fairfax

Kunming Field Meeting, October 2002 — You can now register for the lichenological field meeting in October 2002 in Yunnan Province, China. The event is held under the auspices of the IAL. For more information and registration form see: **http://www.proaxis.com/~mccune/kunming.htm**. We can accommodate a maximum of 30 participants. Our leader will be Wang Li-song of the Kunming Institute of Botany. He travels a lot, as do I, so we apologize for any delay in answering your inquiries.

Bruce McCune, Corvallis

15th Symposium of Baltic Mycologists and Lichenologists, 26-30 September 2002, Birstonas, Lithuania — The timetable of the symposium will include extensive excursions to the surrounding forests for which the region is famous (e.g., old spruce forests in Punia, old oak stands in Balbieriskis and Stakliskes, etc.). Anyone interested in macro-, micromycetes, myxomycetes or lichens is invited to take part. Presentations concerning any field of mycology and lichenology are invited, especially those on ecology and conservation. Registration is preferably by email.

Contact persons: Dr. Jurga Motiejunaite (email: *mikojm@botanika.lt*, tel. 3702 697 251, fax 3702 729950, Postal address: Institute of Botany, Zaliuju ezeru 49, LT-2021 Vilnius, Lithuania) or Dr. Grazina Adamonyte (email: *grazina@botanika.lt*, tel. 3702 697 251, fax 3702 729950, Postal address: Institute of Botany, Zaliuju ezeru 49, LT-2021 Vilnius, Lithuania).

Jurga Motiejunaite, Vilnius

IMC7, August 11-17, 2002, Oslo, Norway — Preparations for this congress are progressing. Lichens will be covered in several symposia, e.g. "Molecular data versus traditional classifications of lichens", "Lichenized ascomycetes and their phylogeny", "Linking structure and physiology in lichens", "Non-mycorrhizal interactions between fungi and photoautotrophs (Forget about Mycorrhiza)". More information is available from: **http://www.uio.no/conferences/imc7/index.html**

International Botanical Congress, 2005, Vienna, Austria — The Editor attended an initial meeting of the organizing committee of the IBC. A society was founded to serve as a backbone for logistic and financial issues of the congress. The organizers underlined the importance of applied fields in plant sciences, which will receive a major focus at the next IBC. A first announcement is planned for the beginning of 2003.

The Editor

Personalia

Andre Aptroot and **Laurens Sparrius** visited **Prof. Ming-Jou Lai** (Taipei & Taichung, Taiwan) from October 5–23, 2001. They mainly collected microlichens from lowland to mountainous areas throughout the island. Interesting and important localities included Kengting, Mt. Hohuanshan, Mt. Tahsuehshan, Kukuan, Yangmingshan, Sanji and the mangroves in Tamsui (Taipei) and Anping (Tainan).

Irwin (Ernie) Brodo heaved a sigh of relief with the appearance of "Lichens of North America", a book he prepared with coauthors **Sylvia** and **Steve Sharnoff**. Grappling with the question "Is there life after books?" Ernie has returned to more mundane lichenological pursuits including some papers on the Queen Charlotte Island lichens and some teaching. Last summer, he taught a course on crustose lichen identification at Eagle Hill on the coast of Maine (the Humboldt Field Research Institute), and he plans to return there next summer to teach two courses: a repeat of the basic crustose lichen course, and one on "Special Topics" that will probably focus on *Lecanora* and *Ochrolechia* and, probably, sterile crusts.

Alan Fryday (Michigan State University Herbarium) spent 10 days during July in Barrow and Atqasuk, on the Arctic Slope of Alaska, at the invitation of the Barrow Arctic Science Consortium (BASC). He was investigating the potential for including lichens in future collaborative, bio-complexity research projects in the American Arctic.

David Galloway (Landcare Research and University of Otago) visited Norway (Tromsø and Bergen) and Sweden (Uppsala) in September. In Tromsø, where he was a guest of the University, he spent several days in the field looking at arctic-alpine lichens that also occur on the mountains of southern New Zealand and/or South America. He had fruitful discussions with **Arve Elvebakk** and **Jarle Bjerke** on the lichens of southern Chile, and especially of cool temperate Southern Hemisphere taxa in *Psoroma* s.l.. In Uppsala he was hosted by **Roland Moberg**, and in 5 days was able to make extensive use of the impressive new facilities at UPS, especially in consulting exsiccata, type specimens, early and recent literature, and also recording the excellent recent New Zealand lichen collections. In Bergen it was great catching up again with **Per Magnus Jørgensen** and his fine team of lichenologists. Per Magnus and he worked as in the "old days" and managed a description of a new species of *Parmeliella.* Work on the Supplement to the Flora of New Zealand Lichens is now entering the "home stretch" – the draft text will be completed by January 2003 with publication expected later in 2003. On present evidence the Supplement will deal with some 60% more taxa than the 1985 version. In November–December David will visit Chile, to participate in GLAL-5, and to do some field work on *Placopsis*. Work is in progress on a revision of Southern Hemisphere species of *Placopsis*, with an account of the New Zealand taxa as a first major task.

Katherine Glew (University of Puget Sound, Tacoma, USA) and **Suzanne Joneson** (University of Washington, Seattle, USA) joined **Ted Pietsch** in the International Sakhalin Island Project (ISIP) this past summer to study the lichen biodiversity of temperate regions from the Russian Far East. Both collected lichens from the southern part of the island. The results will be part of a larger floristic and faunal study. They were joined by researchers from the Russian Academy of Sciences, and several Japanese Universities. Katherine is also working with student **Corinne Miller** (University of Puget Sound) conducting a floristic study of alpine lichens from Mount Rainier National Park (Washington State, USA). In addition, they are analyzing distribution patterns of the lichens and correlating these patterns with the presence of vascular plants.

Hiroyuki Kashiwadani (Tsukuba), **Masakane Inoue** (Akita), **Kwang Hee Moon** (Korea, presently in Tsukuba) and **Göran Thor** (Uppsala) made a 13-day field trip to South Korea in May/June 2001. Lichens were collected mainly on Cheju-do Island, but one day was spent around Pusan. They also met Professor **Kim Youn-Shik** (Korea University, Seoul). Cheju-do is Korea's largest island about 100 km south of the peninsula. At 1950 m, the mountain Halla-san on the island is South Korea's highest peak. Halla-san's last major eruption was in 1007 and thick deciduous and coniferous forests cover the slopes. Collections were made all the way from the lowland, where a few pockets have subtropical vegetation, up to the top of Halla-san. The first results of the work will be published next March from the National Science Museum, Tokyo.

Ming-Jou Lai (Taipei & Taichung, Taiwan) has been taking a sabbatical since June 2001. He has been teaching/visiting at Ramkhamhaeng University (Bangkok), Hanoi University (Vietnam), Shanghai Normal University, Shanghai Museum of Natural History, Institute of Botany (Beijing, Kunming), Academia Sinica, and Beijing University. Supported by the National Science Council, Taipei, he is going to work on a lichen project with the Department of Ecology & Systematics, Helsinki University in spring of 2002.

Lucyna Sliwa (Krakow, Poland) is working with **Cliff Wetmore** as a post-doc this year, researching the *Lecanora dispersa* group in North America. She will be borrowing material from several herbaria. It appears that there are some additional species in North America that have been lumped under *L. dispersa*. She will also continue her studies on this group in Antarctica, following on the work with **Maria Olech** in Krakow.

Mats Wedin (Umeå University) left The Natural History Museum in London, December 1999, to take up a lecturing post in Umeå, Sweden. Since his arrival, he has been teaching different courses on plant and fungal systematics, evolution and floristics, and has been involved in starting several new advanced courses in biodiversity and systematic methods. Recently, Mats was awarded the Swedish Research Council Researcher Post in Systematics, which will enable him to spend most of his time doing research during the coming years. Mats has built up a small group of PhD students in Umeå. At present the group includes **Elisabeth Wiklund** (phylogenetic studies in the Lecanoromycetes, particularly within and close to the Lecanorales), **Åsa Nyberg** (floristic, phylogenetic and ecological studies of coprophilous fungi) and **Anna Crewe** (phylogenetic studies and species-delimitation problems in metalliferous *Acarospora*; co-supervised by **William Purvis**, NHM). Four students finished their MSc theses under Mats' supervision last academic year: **Elisabeth Wiklund** (Phylogenetic relationships of the lichen genera *Evernia* and *Menegazzia* (Parmeliaceae) inferred from nuclear ITS, 5.8S and LSU sequences), **Filip Högnabba** (A multi-gene study of the relationships in the *Sphaerophorus globosus* complex), **Diego Balonga** (Molecular phylogeny and classification of the fungal families Microcaliciaceae and Coniocybaceae) and **Åsa Granberg** (The phylogenetic relationships of *Abrothallus*, a genus of lichenicolous fungi). At present, **Kikki Könberg** is finishing her MSc thesis entitled "Phylogenetic relationships of *Stictis* and *Conotrema* (Ostropales, Lecanoromycetes)". During 2001, Mats is planning to take up most of the threads of research he had to drop when leaving the NHM, and he welcomes all friends and colleagues to drop by Umeå University when visiting northern Scandinavia for excursions in the future!

Obituaries

Elisabeth Tschermak–Woess (1917 – 2001)

With Elisabeth Tschermak-Woess' death on April 26th the scientific community lost a great cytologist, phycologist and also lichenologist. In recognition of her outstanding contributions to cytology and lichenology, D. Schweizer and J. Poelt dedicated very personal accounts to Professor Tschermak-Woess on the occasion of her 70th birthday together with a list of her publications up to 1988 (compiled by J. Loidl, *Pl. Syst. Evol.* 158).

Although weakened by poor health but still interested and enganged in the continuation of her lifelong studies on algae, E. Tschermak-Woess collected, cultivated, isolated and examinated aerophytic algae and phycobionts up to some months before her death. Born in Znaim (Czech Republic), E. Tschermak finished her studies of Botany and Chemistry in Vienna 1941. After a short period as assistant at the Botanical Institute at the University of Vienna and her marriage with Friedrich Woess (1944), she started her academic career 1948 under the auspices of the great cytologist Lothar Geitler. From 1971 until 1985 as professor of botany (cytology and genetics), E. Tschermak-Woess' research interests shifted from cytology, karyology and the biology of lichen symbiosis toward aerophytic and lichen algae with special emphasis on their biology and systematics. Tschermak-Woess' scientific legacy includes more than hundred papers and one book ("Strukturtypen der Ruhekerne von Pflanzen und Tieren", Vienna 1963). Some of the highlights among many others are her studies on endomitotic polyploidy in plants with the discovery of giant chromosomes ("Riesenchromosomen"), the descriptions of some new or scarcely known lichen-gonidia (e.g. of the genera *Myrmecia, Leptosira, Dictyochloropsis, Trebouxia, Asterochloris, Nannochloris, Dilabifilum, Elliptochloris, Chlorella*) or the very useful annual reviews on "Morphologie und Entwicklungsgeschichte der Zelle" in the series "Progress of Botany" (in cooperation with L. Geitler). Every lichenologist will further enjoy the outstanding review on lichen algae with many critical remarks on algal taxonomy, prepared for M. Galun's "Handbook on Lichenology" (1988). The author remembers vividly his intense discussions with E. Tschermak-Woess about the taxonomic rank of the common photobiont *Trebouxia* (and *Pseudotrebouxia*) or the very different asexual reproduction processes with autospores or aplanospores in green algae etc. – but in spite of different point of views, E. Tschermak-Woess' arguments were always based on very careful examinations with the microscope and supported by investigations of living material from nature or from cultures. The outstanding karyological and cytological research done by Professor Tschermak-Woess encouraged her students to continue in the

same field of botanical science. Unfortunately, it seems that the studies on algae and photobionts at Tschermak-Woess' laboratory in Vienna will come to an end, but the results, especially on lichen algae, enlarged our stock of lichenological knowledge since many years and will do it in future. Elisabeth Tschermak-Woess will be remembered as an exceptionally skilled light microscopist, working sometimes at the limits of the laws of optics – this refers to the profound cytological training with Lothar Geitler. In her last years, Elisabeth Tschermak-Woess returned to the studies of algae, as in the beginning of her scientific career, where her first paper (1941) dealt with the coccal green alga *Trochiscia*. Her last manuscript on a new species of *Hemichloris* from Antarctica deals with the same order, but remains in preparation. Elisabeth Tschermak-Woess found her peace in the small Tyrolean village Trins, where she spent many summer holidays in the spirit of the botanists Anton Kerner and Richard Wettstein, who had also a summerhouse there. For those who had the privilege of knowing Elisabeth Tschermak-Woess personally, she will be remembered for her great enthusiasm in science but also for the warmth of her friendship.

Georg Gärtner, Innsbruck

Zdeněk Černohorský (1911 – 2001)

Zdeněk Černohorský, Professor Emeritus at Charles University, Prague, died in Prague, September 5, 2001, eight months after his 90th birthday. Professor Černohorský is well known as the co-author of a key to Czechoslovak macrolichens (Černohorský, Nádvorník and Servít 1956), for using fluorescence analysis in lichen identification, and for a series of taxonomical and chorological studies in yellow *Rhizocarpon* species. However, he was interested in many branches of botany, especially anatomy (a monograph on seeds of *Cruciferae*), morphology (a textbook with eight editions!) and education. Last but not least, he was active in organizing and managing science, namely in the Czechoslovak Botanical Society (12 years as the Chairman and 27 years as the Editor-in-Chief of the journal of the Society, *Preslia*) and in academic functions (Vice-Chancellor, Dean).

Professor Černohorský was an excellent teacher. He always encouraged talented young people and watched them with fatherly love. His language and rhetorical capabilities as well as conviviality facilitated good relationships with many colleagues abroad. Unfortunately, he spent most of his life at a time when travelling abroad was very difficult; so he was unable to establish as many contacts as he might have liked. Nevertheless, he was able to make use of each of the few journeys he made abroad both for educational and personal contacts. He had close links with many old friends in other countries (e.g. Á. Löve, J. Poelt, G. Clauzade, M.R.D. Seaward). Zdeněk Černohorský was a person of high personal integrity. His life was not easy, but he lived it both with honour and humility. He will be missed by all generations of Czech and Slovak botanical communities.

Jiří Liška, Pruhonice

New Literature

BRODO, I.M., SHARNOFF, S.D. and SHARNOFF, S. 2001. *Lichens of North America*. Yale University Press, New Haven and London. 795 pp. US$69.95 ISBN 0-300-08249-5.

This is the long awaited book on North American lichens. It is the final product of 15 years' work to compile information and illustrations of the species presented in this enormous volume. The result is impressive, though it should be made clear that the book does not provide a scientifically complete account on all lichens known from North America. This was clearly not the goal, as is also apparent from the notes on the use of vernacular names: "If the existence of vernacular names helps popularize lichens, then our purpose will have been served". An invitation to lichenology is a colorful yet informative book; this is certainly the main aim of the authors. Moreover, it would almost be impossible to compile here all of the c. 3600 species in North America (see **http://www.ndsu.nodak.edu/instruct/esslinge/chcklst/chcklst7.htm**), ranging from the arctic climates of Alaska to the arid habitats in Arizona and the tropical habitats in Florida. Too many open questions exist in many crustose groups to squeeze them into this book and still make it attractive and affordable. Thus, about a third of the total flora is covered, 1050 species are represented in the identification keys, and 924 photographs of 804 species are included. Almost all foliose genera are represented, and a wealth of better-known or easily recognizable crustose lichens is included.

The book starts with a carefully written introduction on the morphology, physiology, secondary chemistry, ecology, distribution, use, and classification of lichens (including also some of the photographic tricks). The appendix includes a brief outline of the classification of lichens, a glossary, references and an index. The entries for the individual species start with the Latin name (the authors of the names can be looked up in the index), a vernacular name, and a map representing the geographic distribution. The descriptions concentrate on diagnostic characters, and are followed by data on chemistry and habitat. The comments on the species include remarks on variability and similar species.

The photographs in this book are of superb quality, both scientifically and aesthetically. Virtually, each of the photographs is unique and could be framed as a separate masterpiece in a gallery. Most species are so characteristically depicted that they can be determined using the photographs (apparently, plate 8 shows a parasitized, yellow *Acarospora* and not a *Pleopsidium*). While looking at the images during a contemplative evening, one may easily end up with open and new questions, such as what causes the concentric appearance of ascomata in *Porpidia crustulata* (plate 706), and why are the neighbouring thalli fusing in this and other species, while those of *P. flavocaerulescens* (plate 707), *Sporostatia testudinea* (plate 806) and others display barrage zones? Where does *Racodium* belong phylogenetically (plate 752)? (And, how is it possible to keep calm and prepare a sharp photograph in boreal, black fly-infested habitats?) This book is a source of inspiration for those who have already got or are likely to get infected by lichen fever.

One might argue about the generic classification, e.g. why are yellow and brown *Acarospora*s in one genus, while *Neofuscelia* and *Xanthoparmelia* or *Peltigera* and *Hydrothyria* are separated; also the separation of *Cladina* and *Cladonia* is still maintained. However, nomenclatorial fluctuations are probably not of great importance for the wider readership of the book, and some users will prefer to use the vernacular names instead, which may be regionally be stable (and easier to understand than Latin names for an inexperienced non-native speaker listening to the North American pronunciation); sometimes they indicate a fine sense of humor .... such as the name "Wanderlust lichen" for *Rhizoplaca haydenii*.

The authors have produced a refreshing book on lichens for a broad circle of readers. The incredibly low price for a book with such high quality photographic reproduction will certainly contribute to its wider, certainly cosmopolitan, distribution.

The Editor

LLIMONA, X. and HLADUN, N. 2001. Checklist of the Lichens and Lichenicolous Fungi of the Iberian Peninsula and Balearic Islands. *Bocconea* 14: 1-581. ISSN 1120-4060. Available from: International Foundation pro Herbario Mediterraneo, Via Archirafi 28, I-90123 Palermo. Price: 55 Euro.

The crowded Iberian lichenological community is presently engaged in the hard task of compiling a lichen flora of the Iberian Peninsula. Several taxonomic groups are being revised for this purpose. The present volume is not an annotated checklist, but rather a bibliographical thesaurus to the huge body of literature concerning Spain (incl. the Balearic Islands) and Portugal. It was primarily thought of as a fundamental aid to the authors involved in the compilation of the Flora. No further geographic subdivision within the Peninsula is adopted, not even that between Spain and Portugal, which is a pity. The authors, however, probably thought that distributional data would better if supplied by the authors of the taxonomic revisions within the Flora. The list is based on the screening of 1587 publications. For each of the 2794 infrageneric taxa (2426 lichens and 368 lichenicolous fungi) the following information is given: a) a chronological list of all literature records with specification of the page and of the number of records reported in each publication, b) the epithets under which a given taxon was originally cited. The introduction briefly outlines the history of lichenology in the Iberian Peninsula. Doubtful names are placed in an appendix. The index includes 7381 names. The authors have tried to interpret and update the nomenclature of old records, in which case the original name is always cited (prudently, without authors' names). Of course, several faults can be found here and there, but this is inescapable in works like this. On the whole, this is an extremely important, huge synthetic work, which fills a large gap in the knowledge of the Mediterranean lichen flora. It will be useful not only for those involved in the compilation of the forthcoming Iberian Flora, but also to any lichenologist interested in the flora of Southern Europe and the Mediterranean. The Authors must be congratulated on having finally completed a work thathas lasted for more than ten years. This volume is the publication nr. 4 of the O.P.T.I.M.A. Commission for Lichens.

Pier Luigi Nimis, Trieste

MCCARTHY, P.M. (ed.) 2001. *Flora of Australia. Volume 58A. Lichens 3*. 264 pp. Available from: CSIRO Publishing, PO Box 1139, Collingwood Vic 3066, Australia (**www.publish.csiro.au**). Price: 85.00 A$ (hardback, ISBN 0-643-06713-2), 70A$ (Paperback, ISBN 0-643-06712-4).

This is the third volume of the Flora of Australia dealing with lichens. The book contains accounts of the following families: Sphaerophoraceae, Baeomycetaceae, Icmadophilaceae, Peltulaceae, Arthrorhaphidaceae, Lobariaceae, Myeloconaceae, Trichotheliaceae, and Verrucariaceae. In total, 256 species and infra-specific taxa are covered. The individual accounts are authored by reknown experts. The attempt to cover *Verrucaria* is particularly noteworthy and represents a good step forward in the classification within this genus. Similarly, the key to the genera of crustose pyrenocarpous lichens in Australia is a contribution of high general interest. Many species descriptions are

followed by brief discussions of diagnostic characters and similar species. The colour images of selected species are of high quality. The keys are kept brief, usually with few characters in a pair. This may create problems with critical taxa and sometimes the couplets have overlaps, e.g. on page 162, couplets 7 and 9. The distribution maps are kept on separate pages, but in cases where only one spot is depicted for the whole continent, their sense might be questioned. The appendix contains the formal descriptions of new taxa and combinations, including the new family Myeloconaceae in Trichotheliales.

The Editor

ORANGE, A., JAMES, P.W. and WHITE, F.J. 2001. *Microchemical methods for the identification of lichens*. British Lichen Society. Available from B.R.E. Green, 22 Cil y Graig, MENAI BRIDGE, Gwynd, WALES LL59 5HP, U.K. (enquiries: email: *brianregreen@compuserve.com*). ISBN 0-9540418-0-1. Price: £ 10 (£ 8 for members of BLS).

After two earlier publications, this is the updated guide to chemical analysis of lichens focusing on species occurring in the British Isles. It represents a comprehensive compilation of methods used to determine the secondary compounds, from simple spot tests to chromatographic methods. About half of the book is dedicated to thin layer chromatography, which is still the most widely used method for routine detection of lichen compounds. This chapter includes a rather detailed description of procedures and solvent systems. Exemplary chromatograms are illustrated, e.g. of *Lepraria*, *Leproloma*, *Peltigera*, and *Nephroma* species, as well as of those containing xanthones. The appendix contains a list of TLC data for 154 commonly encountered lichen substances, plus an extra list for 20 xanthones (it should be noted that the colours given for xanthones may vary to some extent).

Other chapters in the book provide information on spot tests and other chemical reactions, microcrystallization, various insoluble pigments, iodine reactions, further staining reactions, and the use of polarized and fluorescent light. There are also some comments about ethics, to avoid extensive damage to herbarium specimens and thalli in the field. Here, I wonder whether it wouldn't be better to remove a thallus part instead of dropping chemicals on intact thalli. Some interesting histochemical work in lichens could have been included, e.g., that of Schlarmann (*Bibl. Lichenol.* 25: 133-135) or Kauppi & Verseghi-Patay (*Ann. Bot. Fenn.* 27: 189-202). Nonetheless, the book covers every important aspect, and with the numerous tricks mentioned here and there, resulting from the authors' decades of experience. It is an invaluable compendium for lichenologists.

The Editor

REPORTS

X OPTIMA Meeting, 13.-19. Sept. 2001, Palermo, Italy. – The meeting of the Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area took place in the picturesque ambiance of the Norman-styled Palazzo Steri. Starting with the initial receptions, the hosts took great care of the social side. There was enough time to meet and to eat, which was a good basis for fruitful discussions among colleagues during subtropical evenings. The scientific programme focused mainly on aspects of

phanerogamic botany. Also, the proposal for a large herbarium building to host Mediterranean plants was presented. Cryptogamic topics were dominated by bryology; lichenology was represented by only a few contributions. This was a pity, since lichenological knowledge has experienced an explosive development during the past years. Significantly, the Checklist of the Iberian Peninsula and Balearic Islands by N. Hladun and N. Llimona hot off the press was distributed during the meeting. Meanwhile a checklist of Crete lichens is in press, and the Italian lichens on-line project is progressing rapidly.

The Editor

Reports from local lichenological societies

The IAL Council encourages the exchange of information amongst lichenologists, particularly the activities of local societies, including their meetings, excursions, and publications. For this issue, we received information from five societies.

The **British Lichen Society** has had a very active and productive year. Two field meetings led by Peter James were well attended, one on Jersey, where participants visited Larbalastier sites and many old records were refound, and an *Opegrapha* workshop in Dorset where many lichens were seen *in situ*, including *Opegrapha areniseda*. A weekend in Shropshire was combined with a BIOBASE workshop to encourage site-based recorders. Next year the Spring meeting will be in Donegal. Other meetings can be found on the BLS website at **www.theBLS.org.uk**.

The long awaited "Lichen Habitat Management" book edited by Tony Fletcher is now at the printers, 180 pages (£ 10 to BLS members, £ 14 to non-members). The new and improved "Microchemical Methods for the Identification of Lichens" by Alan Orange, Peter James and Joy White is now available (£ 8 to members, £ 10 to non-members) and Fascicle 6 on *Caloplacas* (126 pp., £ 7.50 to members, £ 9 to non members). All these will be available at the AGM on January 11th, but otherwise can be obtained from Brian Green through the BLS website. This year the AGM is combined with the Swinscow lecture on "Reflections on Lichenology; Achievements and challenges over the last 40 years" by David Richardson on the Friday evening at the Linnean Society. On the Saturday after the AGM there will be a series of Lectures on "Island Hopping" given by Tony Fletcher (the outgoing president), Peter James, Clifford Smith and Simone Louwhoff, so we hope that many of you will hop over to London for this meeting and join us.

Pat Wolseley, London

The Dutch **Bryological and Lichenological Working Group (BLWG)** is organizing its next biannual 10-days' summer field meeting in Norway. Generally, excursions of the BLWG are open to foreign lichenologists, and colleagues from Germany, Belgium, Luxembourg, France, Austria, Czech Republic and Great Britain have joined us in the past. Excursion targets are not only Nature Conservation areas, but also include churchyards, dykes, megalithic monuments, roadside trees, parks and industrial waste areas. Reports of most excursions and papers on other aspects of lichenology are regularly published in the Working Group's journal *Buxbaumiella*, which has had 52 issues in 29 years. Special issues have been devoted to e.g. the Lichen Red List (no. 46 in 1998) and

the Lichen Checklist (no. 50(1) in 1999). All papers in *Buxbaumiella* are in Dutch, more recently with an English summary. The journal does not publish new taxa or new combinations; however it is open to contributions in the English language. Contact us at *info@blwg.nl* for a subscription (at 15.90 /year).

Although there is currently no lichenological position at a Dutch university or major herbarium, Dutch lichenologists have never been as productive as in the past few years. The present research includes: (1) fundamental research on lichen taxonomy, mostly at the "Centraalbureau voor Schimmelcultures". (2) applied research on lichen ecology, e.g. at "Alterra Green World Research". (3) professional lichen monitoring, mostly at the request of governmental organizations; the private bureau "LON" has been very active in this field during the past 20 years, and has gathered a great wealth of lichenological data.

The BLWG is paid on a project basis by the Dutch government for lichenological activities such as the preparation of the Red List and the monitoring of Red List species. Advice is given on an *ad-hoc* basis to other interest groups that become aware of the presence of lichens (e.g. Nature Reserve managing bodies, city councils, graveyard attendants, restoration and monument bodies, even artists and local pressure groups). Recently, national and European nature conservation regulations (e.g., the Habitat directive) have moved the focus towards the potential lichenological interest of proposed building sites (e.g. for road construction or city development). Often special excursions to such areas are organized, which are also reported in *Buxbaumiella*.

Some past and present activities can be found on our website **http://www.blwg.nl**. The updated excursion programme is available here, and all kinds of publications, including a downloadable checklist. Our aim is to make more information available in the future. A recent feature is the picture of a 'mystery' lichen.

Han van Dobben, Utrecht

The **California Lichen Society** continued to grow over the past year, with membership now at 170. The *Bulletin*, which is published twice a year, provided information especially helpful to California lichenologists, with articles on "Catapyrenioid Lichens in California" by Othmar Breuss and Cherie Bratt Vol.7 No.2, 2000; a "Guide to the Macrolichens of California: Part 2, The Gray Foliose Lichens" by Darrell Wright in the same volume; and a definitive and well illustrated article by Darrell Wright on "Some Species of the Genus *Usnea* in California" Vol 8 No.1, 2001. Field trips took members to locations in the San Francisco Bay Area, to the northern and southern parts of the state, and into the foothills of the Sierra Nevada Mountains. Lectures on lichen photography, mushrooms, and lichens on oaks, along with several workshops, filled out the year for CALS members. Many thanks are due our outgoing President Judy Robertson for four years of dedication and hard work.

The California Lichen Society organized a book signing for the new "Lichens of North America" by Irwin Brodo and Sylvia and Stephen Sharnoff on November 18. The signing was held at the California Academy of Sciences in Golden Gate Park, San Francisco. Unfortunately Irwin Brodo could not attend, but Stephen was there, and presented a short but very interesting slide show about some of the adventures he and his late wife Sylvia had in the course of taking photographs for this book.

Janet Doell, Point Richmont

The **French Association of Lichenology (AFL)** was created in 1976 and focuses especially on lichenological trips. There are now 120 members (French and French

speaking). The first excursion in Provence was organized by G. Clauzade and C. Roux. Since then, many other trips have been undertaken every two years in France (Normandie, Baie de Somme, Limousin, Auvergne, Mont-Caroux, Dijonnais, Haute-Savoie, Maconnais, Hautes-Alpes, Bretagne, Corse, etc.) and in foreign countries: Belgium (Ardennes), Spain (Andalousie, Val d'Aran), Italy (Dolomites), Switzerland (Valais), Denmark.

Scientific meetings were organized in Lille, Paris, and Grenoble. A bulletin (*Bull. Inform. Assoc. Fr. Lichénol.*) edited by C. Van Haluwyn is published twice yearly. It contains papers on varied subjects (systematic, floristic, bioindication, thesis abstracts of young members) and presents the life of the association. Short sessions are organized every year during February at Fontainebleau (Vegetal Biology Laboratory near the forest).

During last summer, a trip was organized in Haute-Savoie by J. M. Sussey, R. Bobey and A. Bochaton from the city of La Roche-sur-Foron. About 40 members were present. They studied and inventoried of lichens in several different and beautiful sites: Plaine Joux, Plateau des Glières, Le Salève, Flaine, Vallée de Chamonix and Forêt de Coudrée. It was the occasion to celebrate the 25th birthday of the association and the 70th of Prof. Marie-Agnes Letrouit-Galinou, a founding member!

For next year, a trip will be organized in the Pyrenées (France) and in 2003 an excursion is proposed to Croatia.

Juliette Asta, Grenoble

The **Slovak Lichenological Working Group** opened the season with a traditional two-day "Appertio Anni Lichenologici" at the in early April 2001, when the previous year was reviewed and presentations were given by Ivan Pišút (Invasive Lichens), Eva Lisická (Lichenological Curiosities from Veľká Fatra Mts), Anna Guttová (Submediterranean Elements in Lichen Flora of Muránska Planina Mts) and Viera Orthová (Lichens of Andros, Greece). The seminar was followed by a 1-day excursion to the Malé Karpaty Mts. We are happy that, despite the small number of lichenologists, these meetings are regularly attended by students.

Joint work with Sergey Kontratyuk on the lichens of the Eastern Carpathians Mts and evaluations of quality of particular areas and regions were carried out. The publication is eagerly awaited.

During spring and summer the exhibition by Eva Lisická "Lichens – an Endangered Partnership" was on show in the towns of Levice and Turčiansky Svätý Martin. Anna Guttová was awarded "Sillinger's Award" for young scientific workers by the Slovak Botanical Society for her contribution to the discipline. At the end of August, Slovak and Czech lichenologists met on field meeting in the Pieniny National Park. In November the season was traditionally closed by a "Vindemia Lichenologica", which included a lecture by Jana Kocourková (Prague) on lichenicolous fungi and 1-day excursion to a protected peat – bog area in Malé Karpaty Mts.

Eva Lisická and Anna Guttová, Bratislava

Presence of IAL members in international associations

Besides belonging to their own local associations, some IAL members are also members of other international associations or committees. Here is a preliminary list of their activities. This list is by no means complete. Our participation enables us to know what these larger unions and association are planning and what role lichenologists can play in them. The list will be updated in the future and placed on the WWW. Please let the editor know of other lichenologists involved in international organizations.

IUBS: International Union of Biological Sciences (www.iubs.org) — The goal of this Union is to promote the study of biological sciences; to facilitate and coordinate research and other scientific activities that require international cooperation. Scientific programs are of an interdisciplinary nature, carried out in collaboration with national scientific authorities and in cooperation with other international organizations, both inter-governmental (UNESCO, UNEP, FAO, EC, etc.) and non-governmental. These programs include, among others, integrative biology (including biodiversity, bio-indicators, biological education, biological nomenclature, biosystematics). C. Scheidegger is a member of the Commission for Conservation biology. David Hawksworth is chair of the International Committee on Bionomenclature (IUBS and IUMS), chair of the International Commission on Fungal Taxonomy (IUBS and IUMS), and co-chair, of the IUBS/IUMS Committee on Microbial Diversity.

IUCN: The World Conservation Union (www.iucn.org) — The Union aims at conservation of the integrity and diversity of nature and at equitable and ecologically sustainable use of natural resources. C. Scheidegger is the Chairman of the Lichen Specialist Group of Species Survival Commission.

OPTIMA: Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area (www.bgbm.fu-berlin.de/OPTIMA/organization/default.htm) — This is the international association of botanists interested in the Mediterranean area. OPTIMA encompasses botany in its widest sense and deals with all groups of plants and all disciplines which have an impact on systematic studies. Xavier Llimona and Martin Grube are secretaries of the Commission for Lichens.

IMA: International Mycological Association (lsb380.plbio.lsu.edu/ima/) — The purpose of this association is the encouragement of mycology in all its branches. David Hawksworth has been Honorary President since 1994. Pier Luigi Nimis is currently a member of the Executive Committee.

IOSEB: International Organization for Systematic and Evolutionary Biology — David Hawksworth is a member of the Council.

IAPT: International Association for Plant Taxonomy – David Hawksworth is a member of the General Committee on Botanical Nomenclature.

REVIEW

Issues for lichenologists working in the tropics

Tropical regions in the world cover a vast area between the Tropics of Cancer and Capricorn, ranging from extensive continental masses dominated by tropical forests in S. America, Africa and SE Asia to oceanic islands of the Pacific. Aptroot and Sipman (1997) suggest that the tropics contain from one third to one half of the total lichen diversity of

our planet, yet despite early exploration and collecting in tropical areas our knowledge of the lichens of this region is still very patchy. These are also areas where rapid loss of biodiversity is taking place due to increased pressures from logging, mining, tourism and, in the Pacific, rising sea levels, so that there is some urgency for tackling disappearing tropical diversity.

What are the problems facing people wishing to work on lichens in the tropics?

There are few checklists for tropical lichens because there are relatively few people working on lichens of these regions and they are widely scattered across the world. This makes any attempt at producing comprehensive lists a daunting task. Considerable work has been done in Papua New Guinea by lichenologists (see Aptroot *et al.* 1997). Even so, between 1997-99 105 species have been added to the Flora, suggesting that there is still a long way to go (Coppins & Wolseley, in press). Most lichenologists working on tropical lichens have a frightening number of 'spx' and 'cf.' taxa that frequently do not make it onto the checklist in the end. The catalogue of lichens of the smaller Pacific islands (Elix & McCarthy, 1998) is an invaluable reference for anyone working on tropical Pacific lichens. However, even recent checklists include old publications, many of which will include mis-identified species or one-line descriptions of a type specimen that is often difficult to track down.

There are few monographs that cover a family or a region and even fewer field guides or floras for tropical regions. Where good literature exists, as on foliicolous lichens, progress has been rapid (e.g. Lücking 1999a, 1999b). For East Africa there is the well-used publication on macrolichens by Swinscow & Krog (1988), and the Flora of Australia volumes (e.g. 1992, 1994, 2001) are steadily contributing towards our knowledge of tropical species in that region, but is this literature always available to local people working in the tropics and is it affordable? What taxonomic literature is available for other tropical areas?

Perhaps the biggest change that could enhance the availability of information to local people is the Internet. Already Sipman's key to lichen genera of the Guianas (**www.nmnh.si.edu/biodiversity/lichkey2.htm**) is widely used in the tropics. Other keys and checklists are available at **www.rrz.uni-hamburg.de/biologie/ialb/herbar/lichenw.htm** and **www.uni-bayreuth.de/departments/planta2/ass/robert.html**.

But large, crustose families such as Thelotremataceae and Graphidaceae are important components of tropical diversity, with many undescribed species. A recent thesis on Thelotremataceae from Thailand and Malaysia recognised 124 species, of which 35 were not ascribed to a known taxon (Homchantara, 1999). In these families generic concepts may need to be reconsidered in the light of tropical material. This type of research requires long term commitment by a team of researchers, which is often difficult to fund.

The literature that does exist is scattered in specialist journals and much of it is 19th century, so it is not available in the regions where it is most needed. Even in botanical institutes such as Bogor in Indonesia there is very little literature on lichens because the Institute cannot afford it. Although on-line literature is becoming a distinct possibility it is still only a small component of the available literature. In addition, the types are mainly in European or North American herbaria. This means that local people wishing to work with lichens must be trained overseas and must also get library support if they are to continue their studies. A stronger link between tropical lichenologists would facilitate this goal.

Lichens are not an economic group even though they have been widely used as bioindicators. Their potential for this in the tropics is considerable and there are now several groups working on aspects of tropical lichens. However, progress in these areas is dependent on systematic identification of material, and this still presents enormous problems where much of the material is new and undescribed. Furthermore, lichens are fungi and both groups have been locked in their own specialisms. Recent work in Borneo on lichens, bryophytes and termites in logged and unlogged forests assessed the use of a range of indicator groups.

Which way forward?

- Form a tropical group with a 6-monthly (?) newsletter that can provide useful information on web sites, keys and details of specialists who are willing and able to help with particular groups or regions. This would also create a much needed link between tropical lichenologists from all over the world, and create a focal point for discussion of common problems, exchange of information, and also improve our chances of obtaining funding. Bryologists have already formed a tropical group that has contributed to larger studies and in getting local people involved (**http://www.rbge.org.uk/bbs/tbg.htm**).
- Organise more workshops in the tropics so that we can exchange information and get more people, local and otherwise, involved.
- Target large taxonomic groups that we know will provide us with valuable environmental indicators and which can be studied by a group of researchers.
- Although taxonomic descriptions and verification of species require considerable time and numbers of specimens, researchers could be encouraged to describe and use morphospecies in reports and floras to encourage recognition and use of taxa that are not yet formally described. Swinscow and Krog followed this practice in the *Macrolichens of East Africa* (1988).
- Last but not least place lichens in context of other botanical and zoological studies, so that we contribute towards environmental knowledge on a wider scale and bring the importance of lichens as bioindicators into broader awareness.

Pat Wolseley and Simone Louwhoff, London

When collecting in the tropics it seems that every rock, tree and leaf provides something utterly bizarre and unique. As you sweat under the exponential increase in the weight of your collections and imagination, fragments of keys, descriptions and illustrations flicker before your eyes and confirm that this must be the lichenological hot-spot of the decade. Back in the lab, those specimens not degraded by fungi are laid out and scanned quickly before the slow process of careful identification begins. You document and sketch the specimens, and soon find the threadbare literature is exquisitely in tune with your own lack of experience. Frustration builds as it takes an hour or three to place a specimen in a genus, and the 20 'new' taxa recognised in the field become 2 'definites' and 3 'possibles'.

At this point an almost irresistible urge is felt. This the same urge to which Müller Arg., Nylander, Vainio and Zahlbruckner, in spite of their immeasurable contributions to tropical lichenology, frequently succumbed. The specimen looks like nothing in the literature (almost useless), nothing in the herbarium (woefully incomplete) and nothing I've seen previously (the less said about experience the better). Therefore, it must be a new species; the fact that it is no larger than my little finger nail can be overlooked.

I reckon the considerable pleasure in identifying a new species or record from the tropics is matched only by the sense of relief when stopping myself from misidentifying, in print, a new species or record. For this reason, I think it is very useful to refer in print to

a "Species *X*" or "aff. *vulgaris*" along with at least diagnostic information. Or to have these partial and tentative identifications freely and frequently exchanged between lichenologists using all available media.

At least half of the lichens found at any tropical locality also occur across most or all tropical regions. The availability of tentitative identifications and diagnostic notes may lead to the revelation that your partially identified fragment of "Species *X*" from Java is actually the same species as Smith's "aff. *vulgaris*" from Zaire, or the same as Müll.Arg.'s var. tropica recently borrowed by Jones from Geneva. This may be one route to that glorious day when the number of new taxa described from the tropics is matched or exceeded by the number of superfluous old names consigned to synonymy.

Pat McCarthy, Canberra

The suggestion by Pat and Simone, to encourage the description of morphospecies, is a controversial issue. The description of a new species requires knowledge about related species, variability and intermediate specimens, and the literature. Insufficient knowledge of the literature will result in nomenclatural problems and descriptions of numerous taxa with much older synonyms. A thorough overview of the old literature covering the tropics is hidden in the brains of a few experts, who are often heavily engaged with other work. Problems also arise, if old descriptions are ambiguous, when types are not properly designated, or when these are too old for detailed reanalysis. How to proceed before further deforestation will solve some lichenological problems: On one side, new descriptions with the increased risk of nomenclatural turbulences ? – which will definitely start if someone is digging into all the old names. Or, a more careful approach with 'ad interim' descriptions, with the 'risk' that another researcher describes the species validly only a little later? Anyway, just avoiding unclear taxa or 'cf.'-names in floristic lists (or in monographs) is counterproductive.

In the discussion about taxonomic changes in the last issue of the *Newsletter* (ILN34/1), the idea of unique designators for species as a complement to binomials was brought up. This was in another context, but the lichenological alpha exploration of the tropics could benefit from unique designations of distinct species in a publication – the informal citation "Sp. *XY*, in publication Z" is nothing else –, if these are accompanied by an informal reference specimen and some kind of description. A better knowledge about the observed total diversity of lichen species will be the result, which might be important in other fields, including conservation biology and ecology in the tropics.

Martin Grube, Graz

I thought that Pat McCarthy's little note hit the nail on the head. Two recent keys for crustose species (Lumbsch *et al.* "Key to the genera of Australian Lichens: Apothecial crusts" and McCarthy's "Key to the genera of crustose pyrenocarpous lichens in Australia") have been invaluable. I am finally beginning to understand a lot of the recent generic segregations from these works but more importantly I feel very comfortable with the determinations using the keys.

Types the size of a little finger nail are not as uncommon as one might think. When curation is minimal and they have been moved several times the fragments that are left are essentially impossible to work with.

Pat and Simone have pinpointed most of the problems. There are a couple that I would like to elaborate on.

1. Lichens are not of economic importance but many countries are now protecting their biological heritage and its diversity. One of the consequences of this heightened awareness is a bureaucracy that can be daunting if not obstructionist. The problem becomes acute when there is no local contact with whom you can work. Cultural differences in attitudes can be seemingly insurmountable. It is a brave person who embarks on a collecting trip before the necessary permit(s) is in hand but sometimes the only way to get it is to visit the government office issuing it. The lack of any potential financial benefit to the host country frequently tends to see applications shuffle to the bottom of the pile. I have found that in the end (and it may involve a couple of days kicking one's heels), the permit is issued.

Ignoring the permitting process is the last thing that one should do. Not only is it disrespectful, it is potentially dangerous from a legal point of view and other lichenologists visiting the country could face enormous difficulties as a consequence.

2. Pat and Simone's suggestions for progress to resolve the problem are good. The internet could resolve much of the problem and help people enormously by making keys, pictures, etc., more readily available. If a newsletter is produced it should be electronic, not only for economic and distribution considerations but also so that additional information, updates, corrections, etc., can be incorporated where they belong. That is after an issue is released it becomes incorporated into a main document that is indexed appropriately. A major problem at present is that professional biologists do not like to publish on the net because it is still not in the mainstream of information dissemination. Changes are beginning beginning to happen, particularly now that a number of editors and reviewers of papers are refusing to work with journals that do not put their volumes on the web, with free access, one or two years after publication.

I am not sure that we are at the point of organizing workshops in the tropics. Logistics can be enormously difficult in areas that appear to be the most suitable. Maybe IAL could organize a field meeting in a tropical area. I am uncertain, however, whether such meetings really promote the knowledge of the lichen flora in the area. Did the Costa Rica meeting result in any increase in lichen papers of the area? How about the meeting in Brazil?

A few years ago I would have scoffed at the idea of bringing lichens into the mainstream of conservation management. Things are changing however. National Park and forest managers in the US are increasingly aware of lichens and their utility as environmental monitors. In this instance, we need to play more on the significance of lichen biodiversity as an indicator of habitat disturbance than air or other pollution. There are many other land management organizations out there who are or would be interested if only we would take the time to educate them. You may say how does this apply to the tropics? Many forest and natural area managers from the tropics come through national parks, forests, wildlife refuges, etc., for training, workshops, ideas, etc. Monitoring management effectiveness is a subject that frequently crops up in conversations and training programs. Getting lichens on the agenda as useful indicators of disturbance or lack thereof (e.g., the work of Francis Rose and Steven Selva) is an important first step. I always got a ribbing when I was associated with the National Park Service because of my interest in lichens whereas I worked on endangered species, invasives, biological control, etc. The tables are now turned because of the need to identify and protect undisturbed habitats. In the US there are large programs in the national forests and other federal agencies focusing on lichen monitoring and biodiversity. Managers of natural areas in the

Tropics are increasingly aware of the aims and purpose of these programs. What we need to do is to enable local lichenologists to provide the information.

Cliff Smith, Honolulu

Martin Grube's response to the Tropical lichenology discussion sent me running to dictionaries and the web for defintions of morphospecies because it seemed we were using the term in different senses. It is a term that was missing from botanical dictionaries prior to 1998 and has been most frequently used by entomologists to define species which could be distinguished from others in a genus but which were either probably new to science or difficult to match to earlier rather poor descriptions or poor material (David Jones, termite specialist, pers. comm.). This is precisely the situation we often find ourselves in tropical lichenology, and it is in this sense that we propose to use the term. Pat McCarthy took the point further, suggesting that many tropical species were widespread, and that available descriptions and specimens of our morphospecies could help solve this problem before we added to the confusion of taxonomic names available for tropical material. Each morphospecies would have a generic name and number or code, a description which could be used to distinguish it from other named species and link it to most closely related taxa (as seen at the time). It would also list specimen(s) available for further study and their location. This type of information could be available on the web and should contribute towards a better understanding of the distribution and ecology of tropical taxa, as an interim step towards publication of a species description by experts in that genus. This approach would also encourage lichenologists in the tropics to make useable descriptions that apply to specimens in their region and to send material to international experts/herbaria. The newsletter/website could include a list of experts/herbaria where specimens should be sent. The building up of local herbaria is an essential step towards increasing interest in lichenology in the tropics and in conservation of these organisms. It is hard for Europeans to understand the frustration of people working in tropical countries who do not have access to specimens or literature concerning local material. During a recent visit by a Sri Lankan colleague we have frequently used the Thwaites collection at the BM to identify specimens from Sri Lanka which will now be deposited in the national herbarium of the botanic gardens at Peradeniya.

Pat Wolseley, London

I think a central repository on the web for electronic keys is a great idea! A single web site that people can go to, and find and download what keys are electronically available for Europe, Central America, Antarctica, or wherever, and for whatever groups. The structure could be as simple as a single web page with a table which provides a key name, taxonomic group, region of relevance, author, and date. Click on the key name and download it. Since most keys will not be peer reviewed, I might suggest adding a link to comments for each key that users could submit – anonymously if they desire.

I would be glad to volunteer to maintain such a website, and could probably do so though a service offering free space for websites. The main limitation is that most only allow about 20MB of space. That could allow a large number of text-only keys, but if people include much in the way of pictures, then 20MB will quickly fill up. It might be good to have some sort of sponsorship from an existing lichen website that does not have strong limits to memory. I'd be glad to work with the administrator of an existing website to deal with updates. Alternatively, large memory using keys could be stored on other websites and just linked to from the central repository (but that could cause problems if

those linked sites change or shut down). Unfortunately, our web service for the state of Nevada is charging heavily for our web space, otherwise I would try to have our program sponsor the site.

Eric Peterson, Carson City

If disk space is a problem, I am sure we can help at the Natural History Museums in Oslo. We can store large amounts of data for the lichen community for free. We have just decided to buy a new web server which will greatly improve the response time of current services, e.g. Recent Literature on Lichens.

Einar Timdal, Oslo

I wonder whether we really need a single 'repository' for keys. A metadata page with links would be appropriate as well. And here is a further problem. Already now it is possible to construct keys in an automatic way: in other words, we do not need to have 'frozen' keys available somewhere in the net. There will be more and more sites where it will be possible to 'construct' keys according to users' demands. And I hope that there will be many of such sites, with different datasets and with different datastructures, because I am rather afraid of a certain McDonaldization of taxonomy which could derive from the concentration of information in a few 'dominant' sites.

Within ITALIC we have set up a user-friendly and elastic system for the automatic production of identification keys. Two prototypes can be seen at **http://dbiodbs.univ.trieste.it**. Presently we can produce keys for all epiphytic lichens of Italy and for ca. half of the remaining species. In a few months the whole Italian flora will be covered. The system permits complex queries, and there is a huge number of potential keys which can be produced, according to the demands of the users. At the moment we have a set of more than 60 different keys for epiphytic lichens: e.g. 'simple' keys for schoolchildren, keys for amateurs who do not have the ability to measure the spores, 'difficult' keys to genera, keys to lichens of specific habitats, regional keys, etc. It has little sense to make these keys available in a 'frozen' state when everybody will be potentially able to construct his own key *a la carte*.

Pier Luigi Nimis, Trieste

In reply to the comment of Eric Peterson, I want to draw attention to the existence for three years of a website which contains/links lichen identification keys: **http://www.bgbm.fu-berlin.de/BGBM/STAFF/Wiss/Sipman/keys/default.htm**. Since the site is on a server of the Botanical Museum, free space can be provided for anybody who wishes to deposit keys. Notification of existing keys will be greatly appreciated so that they can be linked. So far the keys are arranged taxonomically, because they are few. Tassilo Feuerer provides a geographical entrance via his checklist site **http://www.rrz.uni-hamburg.de/biologie/ialb/herbar/lichenw.htm**.

Concerning a newsletter for Tropical Lichenology, I was thinking about distributing by email directly to the participants. For this reason the issues should be as short as possible, and better distributed at shorter intervals. After publication they could be collected in a permanent website, so that they remain available for newcomers. However, I did not get far with the question, what to include in such a newsletter. Announcements for meetings and research opportunities would be a good thing, but probably not enough to fill the letter. News from lichenologists with information about their travel and research seems equally useful. Perhaps references to recent publications? However, these are difficult to

get for lichenologists in the tropics and the newsletter might frustrate them. Does anybody have better suggestions?

Harrie Sipman, Berlin

Out of the 25 biodiversity hotspots recognised by Myers *et al.* (2001), 16 occur in the tropics, principally in developing countries where threats are greatest and conservation resources are scarcest. It is estimated that these locations harbour 1/3–1/2 of the total lichen diversity of the planet (Aptroot and Sipman 1997) and still these locations remain un- or under-explored in terms of their lichen diversity. It is encouraging to note the upsurge in interest in the tropical lichens now.

In the tropics, the poor funding, lack of suitable jobs and omission of lichens from the textbooks of biology education drive the students out of lichenology. If anyone is interested in lichens, that person may have to start alone without much support from the next lichenologist in the country. To many of these researchers modern modes of communication is still a dream. On the other hand, inventorying lichens from diverse habitats from the vast tropics will be a mammoth task for the few lichenologists placed far and wide within the tropics, and a network among them is incomplete. The International Association of Lichenology (IAL) could support activities in tropical countries and help to establish new local societies there. After the CBD and WTO agreements, most of the tropical countries rich in biodiversity restrict heavily the movement of biological materials across their boundaries, restrict collections by foreigners from its forest land even while working on a collaborative program. In the field it is the local forest department personnel who deny permission to collect specimens by foreigners and later the quarantine department pose a threat during shipment for identification. These restrictions also affect genuine lichenologists and push them to an "identify it yourself" situation.

Recently we were able to identify three specimens satisfactorily using email. In order to get the accurate identification from Dr H. Sipman and R. Lücking, scanned microphotographs of all the vital characters of these specimens were made as a power point slide with the tabulated description. These files were sent to the above specialists through email and the reply came within 24 hrs containing the correct name with suggestions. Now we are following this method with some of our national experts also for species identification. This method helps to save a lot of time and unnecessary procedures with Government agencies in the identification of species. Our only concern is that experts should not be troubled too much by following this method. In this context also, the IAL can play a vital role in helping to set up an e-identification service using database technology. All lichen specialists interested in tropical lichens can contribute to the species identification through this facility. This facility, must be economical to the tropical user, unlike expensive identification services. The tropical user may be allowed to use this database for revisionary works. This activity will also protect the important type material from transportation and overexploitation.

G.N. Hariharan and P. Balaji, Chennai, India

We would like to thank everyone who contributed to the discussion on Tropical Lichenology, for offers to help in setting up websites, for developing rudimentary ideas further and for suggesting additional ways in which tropical lichenology could progress.

We started out trying to identify some of the problems of working in the tropics, brilliantly and realistically portrayed by Patrick McCarthy, but much of the discussion has been focused on the European zone where lichen diversity is comparatively well-known.

The accomplishment of Nimis *et al.* for Italy demonstrates what can be achieved when an entire relational database is created, but must remain a pipe-dream for tropical lichenologists. How many years of data collection does this represent, and how big was the task of coding and creating flexible character keys? Although the web has great potential in helping tropical lichenology, both Eric Peterson and Pier Luigi Nimis mention the problems of large datasets on the web.

With such an open topic as Issues for Lichenologists in the Tropics, contributors were bound to cover a variety of issues, however there was only one contribution from the tropics ….. but those of us who work with people in the tropics know only too well that even access to computers and the web is often limited. Nevertheless in Thailand there is now an active lichen research group at Ramkhamhaeng University (**http://www.ru.ac.th/lichen/home_page.htm**), and more recently at Chiang Mai University following regular lichen workshops in both places from 1991 onwards. This has become established through collaboration and regular visits to the UK and Australia to consult literature and specimens.

Regarding a tropical newsletter, we obviously have enough interested lichenologists to support and develop the idea, but how should this be run? As a 6-monthly newsletter on an already existing website including a range of subjects such as new references in tropical lichenology, advertising meetings and workshops and reporting on their outcomes, advertising grants for people to come and work at another institution on a particular taxonomic group from the tropics, etc. We should try to encourage the use of the website regionally as its aim is to help people "in situ" as well as visitors to the tropics. It could also inform visitors about local conditions such as where to obtain collecting permits, a problem outlined by Clifford Smith. As a listserver for Tropical Lichenology, much like the Hawaiian listserver where people can ask questions, find useful collaborators, advertise projects in the tropics etc.

Our suggestions about collecting and making data available of morphospecies was only positively taken up by McCarthy who considered that the availability of diagnostic information on "species *X*" might aid rather than hinder solving taxonomic problems in the tropics. Perhaps this could be done much as Search Lichen Literature using Search New Lichen Taxa instead. Simple descriptions could be available, together with spore drawings and location of specimens, so that while trying to identify a specimen from existing keys and descriptions, users could consult this list for further options. Hariharan and Balaji suggested an e-mail ID system through which known specialists could identify tropical specimens, but this could, if widely used, turn into a flood of requests that would be difficult for any lichenologist to deal with. It would need formalising, a proforma of characters designed and records tracked so that they are available, and now we are getting close to the objectives of LIAS.

Those of you who are interested in becoming involved please continue to contact us with your suggestions and, together, we will work out the most appropriate way to accomplish this, and circulate this to users for their opinion.

Pat Wolseley and Simone Louwhoff, London

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LICHENOLOGY-ON-LINE

The Società Lichenologica Italiana has a new web site at: **http://dbiodbs.univ.trieste.it/sli/home.html**. The site also provides an entry to "Lichit", the listserver of Italian lichenologists.

Pier Luigi Nimis, Trieste

The web-site of the Michigan State University Herbarium (MSC) now supports a considerable amount of information of interest to lichenologists (**http://www.bpp.msu.edu/herbarium/herb_frames.html**). The lichen collection at MSC is largely the result of Dr Henry Imshaug and is of international importance as it includes extensive collections from the West Indies and seldom-visited, island groups in the Southern Hemisphere (*Bryologist* 104: 464-467). The web-site includes a description of the lichen collection (c. 110 000 accessioned specimens) and a complete listing of the taxa held (c. 4000) with the geographical regions from which they were collected. Follow the link to "Lichen"

Alan Fryday, East Lansing

The Australian Virtual Herbarium (**http://www.anbg.gov.au/cgi-bin/avh.cgi**) also contains also lichen information and presents maps of the Australian distribution for many species.

Some 30.000 specimens from the herbarium B are accessible on-line provisionally in a trial website of the ENHSIN project (**http://www.bgbm.fu-berlin.de/BioDivInf/projects/ENHSIN/XMLClient.htm**).

Harrie Sipman, Berlin

The list of lichenologists is back up on line at **www.botany.hawaii.edu/lichen**. I suggest that you consult your entry. If you do not have one we would like you to enter your details using the ADD button. If something is wrong with your entry you should change it using the UPDATE button.

Cliff Smith, Honolulu

A new web site called "Epiphytes and Forest Management" has been established (**http://ucs.orst.edu/~mccuneb/epiphytes.htm**). We have learned a lot in the last ten years about how forest management practices are likely to affect lichens in the Pacific Northwest of North America. The purpose of this web site is to help communicate those findings in a question-and-answer format.

Bruce McCune, Corvallis

A complete and updatable catalog of the lichens of Colorado is available (**http://www.colorado.edu/CUMUSEUM/research/botany/Catalog/Catalog.htm**). The Colorado Catalog also covers vascular plants and bryophytes, and has a comprehensive bibliography.

Bill Weber, Boulder

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Lichens-l is the official mailing list of IAL. You can subscribe by sending an e-mail to *listproc@hawaii.edu* with the message "SUBSCRIBE LICHENS-L YourFirstName YourLastName".

Back issues of ILN

The following back issues of ILN are still available: 9(1), 9(2), 10(1), 10(2), 11(1), 11(2), 12(1), 12(2), 13(1), 13(2), 14(1), 14(2), 15(1), 15(2), 16(1), 16(2), 17(1), 20(1) and further issues. Photocopies are available of: vol. 1(1), 1(2+supp.), 1(3) , 2(1), 3(2), 6(2), 7(1–2), 8(1–2). Two indexes are also available: Index to vol. 1–8, Index to vol. 9–13. – According to a resolution of the IAL Executive Council, published in ILN 16(1), April 1983, the following charges will be levied for back issues of ILN: Vol. 1: US$ 0.25 per number (3 per volume); vol. 2–8: US$ 0.50 per number (2 per volume); vol. 9–13: U S$ 1.00 per number (2 per volume); vol. 14–17: US$ 1.50 per number (2 per volume). Back issues from vol. 20–29 are available for US$ 1.00 per number (3 per volume). The Indexes are free. New members will receive free only copies of the numbers constituting the volume issued for the calendar year in which they join IAL. Orders for vols. 1–29 to be sent to H. Sipman, Bot. Garten & Bot. Museum, Königin-Luise-Strasse 6-8, D-14191 Berlin, Germany, fax: (+49) 30-84172949, e-mail: *hsipman@zedat.fu-berlin.de*. For later issues contact the Editor.

The cover-page illustration

Thelidium papulare (Fr.) Arnold: Cross section of a perithecium. The species prefers calciferous rocks with vertical or inclined surface at moist situations. It is easily recognized by the characteristically shaped involucrellum and the ascospore septation. Illustration: Alois Wilfling, Graz (1997, ined).

LIST OF SOCIETIES

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North America, Northwest: Northwest Lichenologists (NWL). Secretary: Bruce McCune, 1840 NE Seavy Avenue, Corvallis, Oregon 97330 USA; e-mail: *mccuneb@bcc.orst.edu* Web page: **www.nwlichens.org** To get on e-mail list: *pittams@bcc.orst.edu* (Sherry Pittam).

North America, California: California Lichen Society (CALS). Info: Judy Robertson, 362 Scenic Ave., Santa Rosa, CA. 95407, USA; e-mail: *JKSRR@aol.com*, phone: (+1) 707-584-8099. Web page: **http://ucjeps.herb.berkeley.edu/rlmoe/cals.html**

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