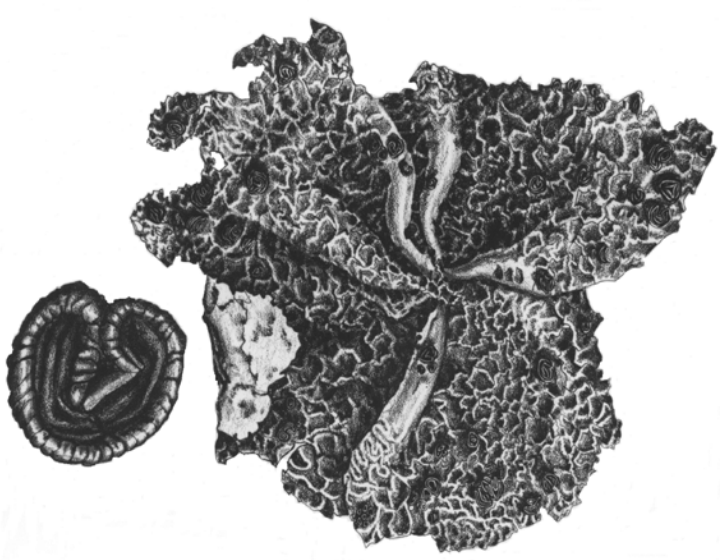
INTERNATIONAL LICHENOLOGICAL NEWSLETTER

Vol. **47**, no. 2, December 2014



Official publication of the
International Association for Lichenology

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ISSN: 0731 2830

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 USD for 2012-2016) 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 four 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) **Reviews:** presentation of recent progress and other topics of interest in lichenology with optional discussion. When the material exceeds the available space, the Editor will prepare a summary, on prior agreement with the contributors.

Any information intended for publication should reach the Editor on or before **June 15** and **November 15** 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 IAL7 Symposium (Bangkok, Thailand, 2012) are listed below, and will serve until 2016.

IAL Council 2012-2016

President: Helge Thorsten Lumbsch, The Field Museum of Natural History, Department of Botany, 1400 S. Lake Shore Drive, Chicago, IL 60605-2496, USA. E-mail: *tlumbsch@fieldmuseum.org*

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ASSOCIATION NEWS

New Acharius medalists

Pier Luigi Nimis

Pier Luigi graduated from University of Trieste in 1977, and has stayed there making it a name familiar to all lichenologists. He was appointed Professor of Botany in 1986, and became the Director of the Department of Biology in 1996. In his case, being first labelled as a botanist was not totally inappropriate, as amongst his first significant contributions were studies of the vegetation types and phytogeography of places as far apart as Sicily, Yukon, and Svalbard in the 1980s. Some of his earliest scientific names were those given to thorny-cushion plant communities in the Mediterranean, and in 1990 he introduced with Bolognini the "chorogram", a numerical device designed to translate data on different aspects of plants and their ecology onto maps.

He developed a close friendship with Josef Poelt, and in 1987 they produced a remarkable account of the lichens of Sardinia for an International Botanical Congress excursion which was attended by most leading lichenologists of the day. He soon became the foremost lichenologist in Italy, and was the founding President of the *Societa Lichenologica Italiana* in 1987. I am sure he had a hand in starting its journal *Notiziario* which was launched in 1988.

It was the detail and scholarship in *The Lichens of Italy* (1993), an 897 page monograph dealing with 2,145 infrageneric taxa, however, that established him as a key figure in international lichenology. Some of that work was undertaken in St Marc's Square in Venice, accompanied by espressos and cigarettes. As a citizen of Venice, with a flat there, he had special rights in the city. That work was followed ten years later by *A Second Checklist of the Lichens of Italy* with a thesaurus of synonyms (2003), an extremely valuable compilation dealing with a staggering 15,053 infrageneric names. Next on the agenda were keys, and *Keys to the Lichens of Italy* was launched in 2004, the first volume dealing with terricolous species (2004), and also with maps and detailed descriptions.

Pier Luigi was already well-aware of the potential of living organisms as pollution indicators in the 1980s, and he led a project to map areas in north-east Italy affected by the Chernobyl nuclear disaster by monitoring the levels of radioactive caesium isotopes in macromycetes (not lichens) in 1986. He was later also involved in examining radioactive caesium isotopes in mosses (1994) and forest plants (1996). Pier Luigi went on to apply his mathematical expertise to the bioindication of air pollution with lichens, using the Index of Atmospheric Purity (IAP) model. He managed to get lichen bioindication accepted at the highest levels in Italy, and launched projects involving school children in 1989. A fine example of this approach was the study of the Veneto region, which was accompanied by super coloured maps of key species frequencies as well as IAP values (1991). A study relating IAP values to the incidence of lung cancer made the pages on *Nature* in 1997. In 2000, Pier Luigi co-directed a NATO Advanced Research Workshop at the Orielton Field Centre in Wales, a remarkable event attracting 63 researchers from 21 countries, and leading to *Monitoring with Lichens – Monitoring Lichens* (2002) – still the vademecum of the field.

The awarding ceremony of Pier L. Nimis (centre) in IMC9. Photo: Robert Lücking

As an ecologist he was always interested in what lichens did, and this included effects of stonework, especially those of archaeological importance, and not least in and around Rome (1987), and he went on to co-author a text on the topic, *Licheni e Conservazione dei Monumenti* (1992), which includes keys and photographs.

But Pier Luigi is not just an Italian lichenologist, and he plays a major role in OPTIMA, including preparing an online checklist for the Mediterranean region (1997). About the same time he became much involved with Antarctic lichens, also producing an online database of lichen records and taking part in a major project to look for signs of global change in the continent. In more recent years, Pier Luigi has become increasingly involved in conservation issues in Italy.

To biologists at large, however, the name "Nimis" is perhaps most associated with the development of web-based identification keys that can be used for any organisms, the "KeyToNature" e-keys. These are particularly user-friendly, and the European Union funded a project on these involving 12 countries in 2008–2010. His latest book, *Tools for Identifying Biodiversity*, co-edited in 2010, has details of 86 e-based identification projects using a wide range of programs.

There is so much more that could be said, but these notes may give a flavour of an exceptional polymath and generous man, whom I have been privileged to know and visit. He always had a strong commitment to the IAL, serving as President in 2000–2004, and it is difficult to think of a more appropriate recipient for the highest award the IAL can bestow, the Acharius Medal. We all wish Pier Luigi a productive future, and trust that now he is just past 60 years he will ride his motorbike a little less furiously than I recall.

David L. Hawksworth, London

Peter Crittenden

The Acharius medal is awarded for a lifetime of achievement in lichenology, and is thus often awarded to researchers who have retired or are nearing retirement. That Prof. Peter Crittenden, awarded the Acharius medal during the 10th International Mycological Congress at Bangok, Thailand is indeed just about to retire might come as a surprise to many due to his youthful looks!

Peter became interested in lichens whilst at school and went to study Botany at the University of London (Westfield College), graduating in 1971. Whilst in London he became a regular visitor to the Cryptogamic Herbarium at the Natural History Museum and held two summer vacation studentships under the guidance of Peter James. However, his principal interest was ecology and he then moved to Sheffield (UK) where he studied for a PhD under Prof. David Read, studying the effect of sulphur dioxide pollution on pasture grasses. His research career in lichenology then really began when he travelled to Canada to work as an NERC/NATO overseas research fellow at McMaster University with Ken Kershaw on a project investigating the role of lichens in the nitrogen cycle in boreal-arctic ecosystems. This included pioneering work investigating nitrogenase activity in *Stereocaulon paschale*, an important mat-forming lichen in boreal forests, and this set the scene for the focus of much of his future work. After a return spell as a Junior Research Fellow at the University of Sheffield, Peter then took up a lectureship at the University of Nottingham (UK) in 1981 where he has remained ever since.

During his time at Nottingham Peter has developed an international reputation for research into various aspects of lichenology. These include, principally, research into the ecophysiology of

Acharius medalist Peter Crittenden (right), IAL president Thorsten Lumbsch (centre) and Paul S. Dyer (left) in awarding ceremony in IMC9. Photo: Robert Lücking

lichens – investigating the activity and importance of nitrogen and phosphorous uptake in both natural and polluted ecosystems. As well, he refined methods for the axenic culture of lichen-forming fungi, and their possible applications in biotechnology. With colleagues at the University of Nottingham he has also applied molecular genetic techniques to study the nature of sex and variation in lichen-forming fungi, and most recently the genomics of *Xanthoria parietina*. In connection with all this work, Peter has travelled widely from 'Pole-to-Pole' including work in the Antarctic, Arctic, Namibia, Tasmania and throughout Europe. In all of his work, he has been associated with the application of new techniques to study lichen biology, most recently including the use of X-ray computed tomography (X-ray CT) and 3D-printing to analyse the 3D-structure and growth of lichens. He has always led a vibrant team of post-graduate students and post-doctoral workers, of whom he has been very supportive and many have pursued careers in ecological research.

Peter has published over 50 articles in a variety of journal including *Nature*, *The New Phytologist*, and *the Lichenologist*. Indeed it is in the context of *the Lichenologist* that most will be familiar with Peter as he has been the senior editor since 2000. He inherited a journal of high standard and by his extraordinary dedication and commitment has improved it further, increasing its volume and status and steering it into the modern era. The high standard of finished copy owes much to the fact that Peter personally oversees every paper to publication. He is known for editing manuscript proofs on public transport, in bed, over meals and even at local cinemas whilst waiting for films to start! He is also on the editorial board of *Fungal Ecology*.

Peter Crittenden has made many other contributions related to lichenology. He was president of the British Lichen Society (BLS) from 1998–1999 and has remained on the Council of the BLS in connection with editing of *the Lichenologist*; he has been a member of Council of the British Mycological Society, and was a Council member of the International Association of Lichenology (IAL) before taking on the major role of President of the IAL from 2008–2012. He is also a current member of the IAL nominations committee.

In his private life, Peter is a dedicated family man, with wife Margaret and sons Richard and Tim. When younger, Peter hoped to enthuse an interest in lichenology in his sons by taking them on many field collecting trips. Since then they have both become IT specialists! During part of his sabbatical based in Tasmania at the Australian Antarctic Division, Peter was converted to the pursuit of 'peak-bagging' and continues to enjoy ascending mountains when opportunity and a walking companion present themselves. Peter is also a dedicated cyclist, part of a group of keen cycling biologists from the University of Nottingham. His achievements in cycling include completing the UK 'coast-to-coast' route and a Tour-de-France Alpine mountain stage. Indeed, once in his bright blue lycra cycling clothing, this has led to Peter being affectionately known by the acronym a 'MAMIL' i.e. a Middle Aged Man in Lycra.

Peter Crittenden is a most worthy recipient of the Acharius Medal. We wish him many healthy and productive years ahead and look forward to his continued service to lichenology.

Paul S. Dyer, University of Nottingham, UK

Gintaras Kantvilas, Tasmanian Herbarium

Mason E. Hale award

Tami McDonald

The Mason Hale Award for 2014 is given to Tami McDonald for her thesis "Genomic insights into the lichen symbiosis: *Cladonia grayi* as a model lichen" which she produced at Duke University under the main supervision of François Lutzoni.

Tami McDonald's thesis includes pioneering and ground-breaking work applying genomics to the understanding of gene expression and function in lichen fungi (in this process generating genomic data from eight lichens), and researching gene regulation mechanisms in the lichen symbiotic system (in particular, the evolution of ammonium transporter genes and their role in enabling interactions between myco- and photobionts). This thesis has potentially far-reaching implications and her studies are clearly of fundamental interest to life sciences in general as well as lichenology. It is the result of very hard work under what have sometimes been difficult circumstances, as innovative and ground breaking work often is.

On behalf of the Committee (Peter Crittenden, Louise Lindblom and Mats Wedin) and the IAL Council, I wish to congratulate Tami, wish her all the best for her future career!

Mats Wedin, Stockholm

Mason E. Hale award ceremony in IMC9. Thorsten Lumbsch (left), Tami McDonald (centre), François Lutzoni (right). Photo: Robert Lücking

IAL8: Welcome to Helsinki, Finland

1–5 August 2016

The Finnish Museum of Natural History LUOMUS and co-organisers welcome the 8th IAL Symposium participants to Helsinki in August 2016. The Symposium's overall theme, "Lichens in Deep Time" refers to early times: evolutionary history, early divergence, our old bedrock, history of lichenology and includes the sessions listed below. You can now register your interest by selecting your favourite sessions on the registration form be found on the symposium website (*http://ial8.luomus.fi*).

- Early evolution of lichens – S. Leavitt and J. Rikkinen
- Lichens at extremes – L. Sancho and B. Büdel
- The diversity within – L. Muggia and J. U'Ren
- Tropical lichens in the 21st century – R. Lücking and K. Papong
- Lichen conservation – J. Pykälä and C. Scheidegger
- Lichen ecology and biogeography – B. McCune and P. Lõhmus
- Systematics and phylogenetics – T. Spribille and C. Gueidan
- Species and populations – C. Printzen and S. Pérez-Ortega
- History of lichen research – T. Ahti and M.R.D. Seaward
- Genomics and bioinformatics – I. Schmitt and D. Armaleo
- Cladoniaceae – S. Stenroos and R. Pino-Bodas
- Parmeliaceae – L. Myllys and P. Divakar
- Peltigerales – J. Miadlikowska and B. Moncada
- Lichens in a changing environment – P. Crittenden and C. Ellis
- Evolution of lichen symbiosis – F. Lutzoni and F. DalGrande
- Lichen secondary metabolism – K. Palmqvist and J. Asplund

FIELD TRIPS

Pre-Symposium excursion to the Southern Finnish Archipelago, off Finland's south-west coast, where lies one of the country's most beautiful and unique areas. Shaped by the Ice Age, the archipelago consists of over 20,000 islands and islets. You will find an array of crusts, including *Verrucaria* and *Caloplaca*, and foliose species such as *Lasallia*.

Post-Symposium excursion to Northern Finnish Lapland, Europe's last wilderness. Its barren, beautiful natural landscape has an irresistible charm, and the changing seasons are more clearly evident on the northern side of the Arctic Circle than anywhere else. In the north, *Nephroma*, *Solorina* and *Bryoria* are found, for instance.

Mid-Symposium day trip to Helsinki's surroundings. Mixed forests with bare outcrops offer much for the lichenologist. Carpets of *Cladonia* are everywhere, as are *Peltigera*, *Stereocaulon* and many parmelioid species.

TIMELINE

- 4 August 2014 – First Circular, website opens
- 15 October 2015 – Second Circular and call for papers
- 31 January 2016 – Submission of abstracts opens
- 15 March 2016 – Submission of abstracts closes
- 15 April 2016 – Early registration opens
- 15 May 2016 – Late registration opens

ABOUT FINLAND

Located between East and West, with snowy winters and warm, light-filled summers, Finland offers a number of fascinating contrasts. Finland's unspoilt forests and thousands of lakes and islands provide plenty of opportunities for visitors to enjoy beautiful natural surroundings.

THE VENUE

The Symposium will take place in the Main Building of the University of Helsinki, in the heart of the capital. Getting to Helsinki is easy. There are direct flights from many Asian and North American locations, and from most major European cities. Reaching Helsinki from Scandinavia and the Baltic republics is also possible by ferry, and from St. Petersburg, Russia, it is only a few hours by train.

CONTACT INFORMATION: Botany Unit, Finnish Museum of Natural History, P.O. Box 7, FI-00014 University of Helsinki, Finland

e-mail: *ial8@helsinki.fi*

Facebook: *mycologyteam*

Twitter: *MycologyTeam*

LOCAL ORGANIZING TEAM

Marko Hyvärinen (chair), Soili Stenroos, Leena Myllys, Hanna Lindgren, Annina Launis, Laura Hiisivuori, Seppo Huhtinen, Juha Pykälä, Jouko Rikkinen and Jouni Aspi

For updated information please visit the Symposium website: *http://ial8.luomus.fi*

NEWS

Lichen researchers in India establish the 'Indian Lichenological Society'

It was a joyous moment for Indian lichenologists on 17 October 2014 after obtaining the Certificate of Registration for their 'Indian Lichenological Society', a long awaited and much deserved achievement. The first meeting of Indian lichenologists to constitute the society was held during 6 February 2011 under the leadership of the late Dr D.D. Awasthi. However, due to several technical problems and the death of Dr Awasthi the society could not been registered then. The newly formed Indian Lichenological Society pays its deepest tribute to Dr Awasthi, popularly known as the 'Father of Indian Lichenology'.

Looking back on the history of lichenology in India from the time of Carl Linnaeus to the late 1920s, its lichens were mostly studied by European lichenologists. The pioneer Indian workers were Qurashi (1928) and Chopra (1934), who studied lichens from Himalayas, and Dr Awasthi whose first publication appeared in 1948 (Biswas & Awasthi 1948). Dr Awasthi started his work on Indian lichens at Lucknow University in 1952 and gained his PhD from the University of Colorado in 1963. Meanwhile, lichen research centres were also established at the CSIR-National Botanical Research Institute, Lucknow in 1961 by Dr Ajay Singh, at the Botanical Survey of India, Kolkata by Drs C.G. Dharne and K.N. Roychoudhury in 1967, and at the Agarkar Research Institute, Pune by Dr P.G. Patwardhan during the early 1970s. For many years these were the only four centres engaged in lichens studies and all present-day lichen researchers in the country are their decendents. Today there are more than 200 researchers working on various aspects of lichens in about 20 academic institutions spread all over the country.

It is noticeable that even after six decades this area of science did not receive the desired attention in the country. The lack of encouragement, proper guidance, identification manuals, literature and inaccessibility of the experts are some of the reasons that made lichenology a less popular subject for research among new aspirants in India. The lichen researchers of the country do not have a common platform to interact with each other and share their thoughts. Therefore, it was strongly felt that an association for lichen researchers in India was needed

Indian lichen researchers during their first meeting to constitute the Indian Lichenological Society. Standing from left to right, Drs. Satish Mohabe, Rohit Mishra, Anupam Dikshit, D.K. Upreti, D.D. Awasthi, Roshni Khare, K.P. Singh, S.R. Singh, Rajesh Bajpai and Sanjeeva Nayaka. Sitting from left to right, Anand Pandey and Shobha Rawat

to enhance their performance and in turn popularize lichenology in India and also abroad. The aim of the 'Indian Lichenological Society' is to promote lichen research in India by organizing regular workshops, lectures, conferences and publishing, as well as recognizing the contribution of individual researchers by facilitating them with certificates, medals and awards. As the society grows it hopes to provide financial assistance for needy researchers for travel and small-scale research, as well as undertaking innovative activities for its members. The Headquarters of the 'Indian Lichenological Society' (ILS) is located at Lucknow (website: *http://www.indianlichenology.com*).

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Quraishi, A.A. 1928: Lichens of the Western Himalayas. *Proceedings of the 15th Indian Science Congress*, 228.

Sanjeeva Nayaka, Secretary, ILS

Lichenology Laboratory, CSIR-National Botanical Research Institute, Rana Pratap Marg, Lucknow-226001, India

Lichen ecology and identification, Part 2

Ekenäs herrgård, 4–8 May 2015

This course can be attended independently from part 1, which took place in 2014 and covered general aspects of lichen ecology and biology of today in a contemporary framework (funding received from the Ecology Research school – basics and applications, SLU Uppsala). The second part will be an introduction to lichen identification focussing on Fennoscandian species.

Learning targets for Part two:

- Field knowledge of common and characteristic lichen species of different habitats in Sweden
- Understanding of important ecological aspects related to lichens and nature conservation
- Lichen identification using microscopical examination in the laboratory
- Basic understanding of advanced techniques in lichen identification including analysis of chemical compounds by TLC

Göran Thor (*goran.thor@slu.se*), professor at SLU, will be directing the course. Participants are expected to read literature prior to the course. All students will give an oral presentation and be expected to actively participate in the discussion groups.

Target group: PhD students, master students, researchers, consultants, and government officials/museum staff with a relevant background in biology

Working language: English/Scandinavian

Recommended course credits: 3 ECTS

Number of participants: Maximum 17.

Fee: No course fee, and free accomodation and food for all participants is funded by "Stiftelsen Oscar och Lilli Lamms minne".

Registration: Registration, including a short CV (indicating the nature and stage of your research project), can be submitted until **10 April**. Priority will be given to PhD students enrolled in the Swedish Taxonomy Initiative and to members of ForBio when the maximum number of participants is exceeded by registrations.

Registration (or questions): Malin Strand, Coordinator STI, e-mail: *malin.strand@slu.se* tel: +46(0)705-654246

Location and practicals: The Ekenäs mansion (58°57'06.96"N, 16°35'32.88"E) is located in the countryside c. 100 km SW of Stockholm and is close to excellent lichen habitats as old growth forests and traditional agricultural landscapes with very old oaks and exposed siliceous and calcareous rocks. In the 19th century, G.O.A. Malme collected a large number of lichens in Stora Malms parish W of Ekenäs. We will revisit some of his old localities and hopefully refind some of his rare species such as *Bacidia laurocerasi*, *Lecidea apochroeella*, *Lecidella xylophila*, *Megalaria grossa*, *Menegazzia terebrata*, *Micarea anterior* and *Rinodina polyspora*. The current Ekenäs mansion was built in 1905 and much of the furniture etc. are still from this time which gives the manor a unique athmosphere. We expect you to arrive at Stockholm in the afternoon of Sunday, **3 May**. Two cars will depart to Ekenäs from Arlanda and/or Stockholm around 4.00 p.m. We will spend half days in the field and half days at the dissecting and transmission light microscopes identifying the collected samples. The evenings will also be used for course activities . A more detailed schedule will be sent to those attending the course. The course ends after lunch on Friday **8 May**. Transportation to Stockholm/Arlanda will be available for all participants. Attendees will be most welcome!

Lichens as a tool for the interpretation of environmental changes and management – CE3C 2015 Advanced Course –

http://ecofun.fc.ul.pt/Activities/lichens-course

9–13 June 2015 | 4 days lectures and lab classes + one day field excursion

This course aims at providing the participants with a basic knowledge of lichen biology and ecology, approaches to biomonitoring, data analysis and interpretation. This will allow participants to use lichens as a tool to interpret environmental conditions and to contribute to a scientific-based environmental management.

Teachers: Cristina Máguas (Univ. Lisboa), Cristina Branquinho (Univ. Lisboa), Sofia Augusto (Univ. Rovira I Virgili, Tarragona), Laura Concostrina (Univ. Lisboa), Esteve Llop (Univ. Barcelona), Paula Matos (Univ. Lisboa), Silvana Munzi (Univ. Lisboa), and Pedro Pinho (Univ. Lisboa).

Location: Universidade de Lisboa, Faculdade de Ciências, Departamento de Biologia Vegetal

Time schedule: 9:00–12:30 and 14:00–17:30 (36h in total)

Lichens are amongst the most sensitive organisms to environmental changes at the ecosystem level. Some of the most important drivers of global change, such as climate, pollution and eutrophication, are factors to which lichen communities respond ecologically in only a few years and physiologically in few weeks. Therefore, by interpreting lichens useful information can be obtained regarding the status of the environment and its changes over time and space.

Since the 19th century, observations based on changes in lichen community composition and species frequency have been used for biomonitoring purposes. Currently, new approaches based on functional diversity and lichen physiological response are being developed. Functional diversity has a wide geographical applicability and high inter-comparison potential and it as has proved to be better at predicting impacts at the ecosystem level than total diversity measures. Newly developed physiological methods allow us to assess lichen responses to the rapidly changing environmental conditions. Moreover, the link between physiological mechanisms, functional diversity and ecological impacts provides a credible basis for the development of environmental policies.

Six modules identify the main themes of the course, ranging from basic knowledge on lichen symbiosis to data collection and interpretation. The course will be organized into lectures, laboratory work, lichen identification and a one-day excursion to apply biomonitoring methods.

A brief description of the modules structure is given. The modules are sequential and thus attending all is mandatory.

Module 1 (Lichen biology and ecology) providing basic knowledge on lichen biology and their ecology:

- Introduction to lichen symbiosis, highlighting the role of each partner.
- The ecological role of lichens, including ecosystem functioning.
- From the deserts to the poles: strategies for lichen survival in extreme environments.
- Lichens in the context of global change: key features that make them excellent ecological indicators of air pollution and climate change.

Module 2 (Systematic) covers basic lichen structure and techniques needed for lichen determination (lab class) to provide students with basic skills on lichen identification:

- Morphology and anatomy: photobionts, growth forms, sexual and vegetative reproduction strategies.
- Determination methods based on morphological and chemical characteristics.

- Introduction to the commonest lichen genera, available floras and online keys.
- Identification of lichen specimens: macro- and microscopic characters (preparation and observation of samples); chemistry and determination keys.

Module 3 (Ecophysiology) focuses on modern approaches in lichen ecophysiology to assess the impact of environmental stress drivers on lichen functioning:

- Lichen physiological response to environmental changes.
- What should we measure? Selecting parameters to assess cause and/or effect of human-induced environmental disturbances.
- Case studies from laboratory and field.
- Integration of molecular, physiological and ecological techniques.

Module 4 (Using lichen functional diversity: from topsoil to trees) offers an overview on the use of lichen functional diversity as an indicator of global change drivers:

- Functional diversity, what does that mean? A review of definitions and components, including chemical and life-history traits.
- Why is functional diversity so important? The link to ecosystem functioning and the response to environmental changes.
- Case studies with biological soil crusts and epiphytic lichens.

Module 5 (Biomonitoring) provides an overview of the main methodological approaches using lichens as biomonitors:

- What to measure? Standard sampling methods based on biodiversity and bioaccumulation.
- How to measure? When to use transplants or *in situ* lichens in biomonitoring studies. When to use total diversity or functional diversity.
- Different problems ask for different approaches: case-studies of different environmental problems (in urban, natural and industrial areas) and the link with human health.

Module 6 (Data analysis and interpretation) provides students with basic ideas on how to analyze and interpret data collected according to previous modules:

- Theory and practical examples will be given.
- Emphasis on GIS interpretation of results in space.

Excursion One-day field excursion to Mediterranean cork-oak woodlands to test the acquired knowledge on species, and to apply biomonitoring methods: the standard European method for air pollution and the method for biological soil crusts.

ECTs: This course can have recognition of 6 ECTs for FCUL PhD students enrolling as part of their first doctoral year. For students only requiring 5 ECTs recognized in their specific PhD programmes, the excursion is not mandatory and the certificate will be on "Topics in lichens as a tool for interpretation of environmental changes and management".

Number (min.–max.) students: 10–18

Minimum requirements for attendance: "Licenciatura" (bachelor) in Biology, Natural Sciences or related areas. Language: English

Fee: Free for 1st year PhD students in doctoral programmes: Biology (FCUL), Biodiversity, Genetics and Evolution (UL; UP) and Biology and Ecology of Global Change (UL, UA); 20 € for PhD students from institutions of the PEERS network (Ce3C, CFE); 100 € for FCUL Master's students and unemployed; 150 € for BTI, BI and other PhD students; 200 € for Professionals and post-doctorates.

Deadline for applications: 1 May 2015

Application: Candidates should send an application including a 1-page CV to e-mail: *lichenscourse@fc.ul.pt*

International Lichenological Excursion to Armenia

15–24 June 2015, Armenia

Within the framework the "OPTIMA Iter Lichenologicum" initiative, the Young Biologists Association NGO (*http://www.yba.am*) and Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area (OPTIMA) are organizing an international lichenological excursion to Armenia. The aim is to study the lichen diversity of the Khosrov Forest State Reserve and other areas in Armenia. The participants can be experienced lichenologists as well as amateurs. It will be possible to export the collected material from Armenia for further identification and laboratory studies. As a result of the excursion, a joint paper in *Flora Mediterranea* will be published. The participants will also visit other important cultural and natural sites of the country.

The organisers gratefully acknowledge the support of the Ministry of Nature Protection of the Republic of Armenia, Caucasus Nature Fund (CNF-Armenia) and the Ecotour Travel Agency (*http://www.ecotour.am*).

Excursion programme

Day 1: Arrival, City tour, Welcome dinner

Day 2: Field trip to Khosrov Forest State Reserve

Day 3: Field trip to Khosrov Forest State Reserve

Day 4: Field trip to Khosrov Forest State Reserve

Day 5: Visit to Khor Virap Monastery, Areni wine tasting, and observing Bezoar Goats in Shatin village. Visit to Areni-1 Cave Complex, a treasure trove of Copper Age (5000–4000 BC) artefacts including the oldest shoe, brain and winery in the world.

Day 6: Visit to Zorats Qarer (Armenian Stonehenge) and Tatev Monastery (via Tatever, the longest funicular in the world).

Day 7: Field trip to Aragats mountain

Day 8: Field trip to Aragats mountain

Day 9: Visit to "Sevan" National Park (Sevan Lake) and "Dilijan" National Park

Day 10: Departure

Registration: The maximum number of participants is 15. The deadline for registration is **1 March 2015**. For participation of accompanying persons, please contact the organizers via e-mail: *arsen@yba.am*.

For registration please follow the link: *https://docs.google.com/forms/d/1bf4SmTZTozQUZuyt4vczlh5GCsbHKJfe7-WCyfvga4o/viewform*

Registration fee: The Registration fee per person is 1000 € (accommodation in single room) or 850 € (accommodation in double room where two participants are willing to share).

The fee includes:

- Airport pick up
- Local transportation throughout the duration of the tour
- An English speaking professional guide for cultural tours
- Accomodation in the hotel
- Three meals (breakfast, lunch, dinner) during the tour, plus hot tea/coffee

The fee excludes:

- International airfare
- Entrance Visa (no Visa is necessary for EU citizens)
- Travel insurance

Payment: The payment should be made ONLY after confirmation of acceptance by the organisers. The transfer of the participation fee is possible via bank international transfer (NB! this should not include any transfer fee by the intermediary and recipient banks) through the following bank account:

Beneficiary bank: CJSC INECOBANK, Yerevan, Armenia

Swift code: INJSAM22

Beneficiary's account: 20050022370921040

Beneficiary name: Ecotour LLC

Cancellation policy: The registration fee will be fully refunded until **30 March 2015** based on a written request of cancellation. Partial refund (50% of registration fee) is possible until **1 May 2015**. Later requests will not be considered.

Grants for young lichenologists: Two grants of 300 € will be provided by OPTIMA to support the participation of young lichenologists.

Eligibility: PhD students, postdoctoral and young researchers are eligible to apply for support.

Application: Please complete the application form at: *https://docs.google.com/forms/d/1eT7_liesSdotgzTf4uf8d6pMA-nezIKV0XM8YdLFodo/viewform*

Enquiries: For enquiries, please contact us via e-mail: *arsen@yba.am*

Nordic Lichen Society (NLF) meeting

3–7 August 2015

The 2015 Nordic Lichen Society (NLF) meeting and excursion will be arranged in Norway from 3 to 7 August 2015. It will be located at the campus of Nord-Trøndelag University College in Steinkjer. Further information on registration, accommodation, excursions, prizes etc. will be announced in **January 2015**.

Mika Bendiksby, Oslo and Håkon Holien, Steinkjer

XVII Congress of European Mycologists, Madeira, Portugal

21–25 September 2015

The next Congress of European Mycologists will be held on the island Madeira, Portugal and is organized under the auspieces of European Mycological Association (EMA; *http://www.euromould.org*). The venue of the congress is located in the conference centre of the Vidamar Hotel in the island's capital, the city of Funchal.

Main thematic areas:

- Cell biology, biochemistry and physiology
- Environment, ecology and interactions
- Field mycology and conservation
- Evolution, biodiversity and systematic
- Fungal pathogenesis and disease control
- Medical mycology and fungal pharmacology
- Genomics, genetics and molecular biology

Important dates:

31 March 2015 – Deadline for receipt of abstracts

30 April 2015 – Deadline for early bird registrations

31 August 2015 – Closing date for registrations on-line and accomodation

For further information: *http://www.mundiconvenius.pt/eventos/2015/xviicem2015/*

REPORTS

XIX Symposium of the Baltic Mycologists and Lichenologists, Šķēde, Latvia

22–26 September 2014

The XIX Symposium of the Baltic Mycologists and Lichenologists, organized together with the Latvian Mycological Society, Latvian Museum of Natural History, Latvia University of Agriculture, University of Latvia and Latvian State Forest Research Institute "Silava", was held at Šķēde Forest Research Station "Mežmāja" in Latvia from 22 to 26 September 2014. The programme consisted of different scientific activities, including fieldtrips, short excursions and laboratory workshops. In total, there were 80 participants from 14 different countries.

The first day began with arrival of participants at the Latvian Museum of Natural History, from where they were transported to the symposium venue. Earlier incoming participants had the opportunity to visit the mushroom exhibition at the Museum. In the evening of the first day organizers welcomed all participants with an opening party accompanied by live music. The second day of the symposium was filled with enjoyable scientific presentations and a poster session. Prior to this, a short excursion to the dendrological plantation "Eiropas Birzs" in the area of the Šķēde Forest Research Station "Mežmāja" was arranged. This plantation is

Ready for the fieldtrip. Photo: Diāna Meiere

dedicated to European solidarity, each country of which is represented by its most characteristic tree.

On the morning of the third day an amazing field trip to different Latvian forest types had been arranged, after which the scientific schedule was continued by exciting presentations. In the evening, time was spent in the laboratory, studying specimens collected during the field trip. On the fourth day, full day field trip to the oldest nature reserve in the Baltic States, Slītere National Park, situated on the west coast of Latvia. After the climbing the oldest Latvian Slītere Lighthouse, we explored the Slītere Nature trail, walking through the relict broadleaf forest and alkaline fens swamps, which are protected habitats at the European level. This was followed by a trip to the Mazirbe village, a cultural capital of the Livonians and walked to the astonishing west Baltic seashore with white sands and the grey coastal dunes overgrown in some places by forest with continuous coverage of epigeic lichens (*Cladonia* and *Cetraria* spp.). On the way back we walked around the old manor park (cultivated since the 17th century) near Dundaga Castle, exploring fungi and epiphytic lichens, and finding conservation value species (*Lobaria pulmonaria*, *Sclerophora pallida*). In the evening, we had the final symposium dinner in a fishermen's tavern of Roja, including entertainment involving a Latvian folk dance and a competition. On the last day, we had an excursion on the way back to Riga, visiting the ancient town Kuldīga with its unique architecture in western Latvia. We walked along its attractive small streets, enjoying the mysterious atmosphere of the town. Participants were also charmed by the naturally-formed Venta waterfall, the widest in Europe. The weather was beautiful throughout the symposium, especially during excursions.

We would like to thank all members of organizing committee, especially Diāna Meiere, Inita Dāniele and Ilze Irbe, for the tremendous week in Latvia. The next Symposium of the Baltic Mycologists and Lichenologists in 2017 will take place in Gdansk, the first time in Poland.

Polina Degtjarenko, Tartu

Nóra Varga, Budapest

Julia Gerasimova, St. Petersburg

XXVII annual meeting of the Italian Lichen Society

The 27th annual meeting of the Italian Lichen Society (SLI) took place in Montecatini Terme (Tuscany) from 15 to 17 October 2014 in the pleasant venue of the historic conference room of Terme Excelsior. The scientific sessions were devoted to biomonitoring, biology and biodiversity. Three poster sessions were also dedicated to the same topics. The biomonitoring and bioindication studies predominated and several innovative approaches were presented, such as the biomonitoring of levoglucosan and the magnetic characterization of the particulate matter accumulated in lichen transplants. In the biodiversity sessions contributions to the lichen checklists were presented with *Ramonia subsphaeroides* (Tav.) Vězda found for the first time in Italy, and fungal-specific sequencing of lichen thalli revealed an unexpectedly high diversity of lichenicolous fungi etc. Abstracts, proceedings and further details of the programme are available on the SLI website (*http://www.lichenologia.eu/index.php?procedure=incontri_conv1&id=20*).

Participants at the social dinner of XXVII SLI annual meeting. Photo: Michele Puntillo

Seirophora villosa (Ach.) Frödén. Photo: Sonia Ravera

The meeting was preceded by a field trip organized by Renato Benesperi in coastal dune systems with *Juniperus* spp. hosting the red-listed macrolichen *Seirophora villosa* (Ach.) Frödén.

During the meeting, a new Steering Committee, Sonia Ravera (President), Deborah Isocrono, Stefano Martellos, Silvana Munzi and Luca Paoli, was elected for the next three years, and the SLI Working Groups were partially rearranged as follows: Biomonitoring, Ecology, Floristics, Didactics and Popularization, and Biology with emphasis on Cultural Heritage.

Stefano Loppi, Department of Life Sciences, University of Siena

PERSONALIA

Lichenologists recieved State Prize of Ukraine

After a tough competition in several stages during 2013, a series of publications entitled ‘Elaboration of scientific bases and methods of bioindication and biomonitoring natural ecosystems of Ukraine’, including 41 monographs and 190 articles, submitted by ten authors, relating to plant ecology, mycology, zoology, hydrobiology, landscape geography and forestry, were finally selected to receive the State Prize of Ukraine. Among the prize-winners selected in October 2013, three lichenologists were selected, namely **Prof. Oleg B. Blum**, Head of Bioindication and Chemotaxonomy Laboratory, M.M. Gryshko National Botanical Garden of National Academy of Sciences of Ukraine, **Prof. Sergii Ya. Kondratyuk**, Head of

Laureats of State prizes of Ukraine for 2013 with President of National Academy of Sciences of Ukraine, Academician B.Ye. Paton (sitting in the centre): the first row from left to right: G.G. Minicheva, Ya.P. Didukh, Yu.P. Zaytsev, B.G. Alexandrov, O.B. Blum, I.F. Buksha, S.Ya. Kondratyuk; the second row: Yu.G. Tyutyunnyk, S.A. Afanasyev

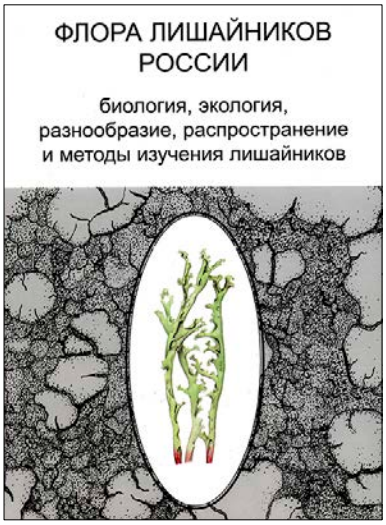
Lichenology and Bryology Department, M.H. Kholodny Institute of Botany of National Academy of Sciences of Ukraine and **Prof. Yulian G. Tyutyunnyk**, Landscale Architecture Department, National Academy of Executive Workers of Culture and Art of Ministry of Culture of Ukraine. These three researchers used lichens for bioindication and biomonitoring purposes and their results were considered particularly important in the publications considered. However, the prize ceremony was much delayed due to the revolutionary events in Ukraine when the country was without president. At last, on **8 December 2014**, an official ceremony for the State Prize Winners of 2013 was held in the Great Conference Hall of the National Academy of Sciences. In total 164 scientists from different fields, among them the ten biologists and three lichenologists, were awarded medals and diplomas for their outstanding research contributions.

Arne Thell, Lund

Sadly we have to announce the death of our former president Dr **David Galloway** on 6 December 2014 in Dunedin, New Zealand. An obituary will appear in the next issue.

BOOK REVIEWS

ANDREEV, M.P. & HIMELBRANT, D.E. (editors) (2014): Flora lishainikov Rossii: Biologiia, Ekologiia, Raznoobrazie, Rasprostranenie i Metody Izucheniia Lishainikov [The Lichen Flora of Russia: Biology, Ecology, Diversity, Distribution and Methods to Study Lichens, in Russian]. Moscow – St. Petersburg: KMK Scientific Press, 392 pp. ISBN 978-5-873-17-935-0. Price: not indicated.



Forty-three years have passed since the impressive ten-volume *Handbook of the Lichens of the USSR – Handbook of the Lichens of Russia* was published. This series is still the main summary of our knowledge of the Russian lichen flora providing both keys and distributional data for c. 3000 species.

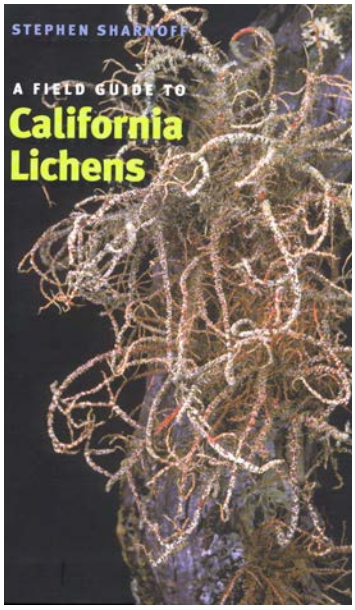
The book under review starts the new series *The Lichen Flora of Russia*, a very long-awaited publication. Bearing in mind that Russia is the largest country in the world, with a total area exceeding 17 million km^2, it is difficult to underestimate the task ahead of the authors, since it supports c. 3680 species of lichens and lichenicolous fungi from 552 genera; thus, a large amount of work has been undertaken by Russian contributors, M.P. Andreev, E.A. Davydov, L.V. Gagarina, Yu.V. Gerasimova, D.E. Himelbrant, L.A. Konoreva, E.S. Kuznetsova, T.V. Makryi, I.V. Sokolova, I.S. Stepanchikova and G.P. Urbanavichus, as well as foreign contributors, in particular T. Ahti from Finland, T. Randlane and A. Saag from Estonia, and O.V. Nadeina and A.A. Voytsekhovich from Ukraine.

This book provides a general introduction on lichens, but does not contain descriptions of taxa. Following an introduction on the 300 years of lichenological studies in Russia, it focuses on *Thallus morphology and reproduction*, *Photobionts* (with tables for their identification), *Secondary metabolites and chemosystematics*, *Diversity and distribution of lichens in Russia*, *Lichen ecology*, *Nomenclature and typification*, *Methods to study lichens*, *Molecular methods in systematics*, *Systematic arrangement*, and a *Glossary*. Ninety original high quality black-white pictures accompany the chapters on *Thallus morphology and reproduction of lichens* and *Photobionts*. The book also provides data on all the major herbaria containing Russian lichen specimens. The Flora ends with a key to 402 genera, the first attempt to summarize most of the data on Russian lichens available, which is divided into 14 parts on the basis on thallus morphology, type of fruiting bodies and photobionts. Unfortunately, the key does not cover sterile lichens or lichenicolous fungi.

The editors and contributors are to be thanked for a very valuable addition to our knowledge of the Russian lichen flora. The quality of printing and binding is high and it is strongly recommended for lichenological libraries.

Andrei Tsurykau, Gomel

SHARNOFF, S. & RAVEN, P.H. (2014): A Field Guide to California Lichens. USA: Yale University Press, 422 pages. Paperback. Price: c. 32 €. ISBN-13: 9780300195002



California has over 1500 reported species of lichen and still much of its wilderness areas have not been explored for lichen diversity. *A Field Guide to California Lichens* has well-done and informative images of about 400 species. Several plates show a species wet or dry. Some plates show thallus variation in species like *Acarospora socialis* H. Magn. and *Dimelaena radiata* (Tuck.) Hale & W.L. Culb. The color pictures are accompanied by brief texts discussing general diagnostic characters and distribution of each species. At the end of each genus are discussed some interesting but less common or rare species that are not illustrated. I wish I had this book when I was starting out learning the lichen biota of California. This is an excellent introduction to this hotspot of lichen diversity.

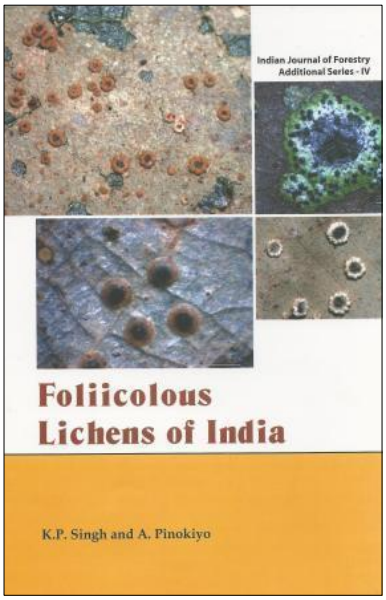
There are no keys. The purpose of the book is to give a general introduction to lichens to a wide range of people with an equally wide range of interests in nature. The book begins with an overview of lichens including their biology, ecology and cultural values. The rest of the book is a catalogue of genera which are separated in to four sections on foliose, fruticose, crustose and squamulose, and mushroom lichens. In general the species with the widest distribution were chosen for illustration, with some exceptions like *Cyphelium brachysporum* Nádv. For variable species like *Aspicilia pacifica* Owe-Larss. & A. Nordin, the picture of the most common phenotype was chosen. Lichens in California occur in a wide range of habitats from deserts to islands and subalpine mountain tops above 3000 meters. Pictures of lichens from all habitats were chosen. No matter where the reader is in the state, whether walking the cement sidewalks of Berkeley or hiking around Yosemite or Joshua Tree National Park, they will be able to see at least one species in the field guide. And to facilitate its general use, the book is 5.5 28.5 9.2 inches, small enough to easily slip into one's backpack. Its bright colored pages will satisfy the curious. It can also be used by students or amatuers to learn how to identify species before they move on to using the keys in our literature. It is already being used in workshops of the California Lichen Society. It will also no doubt recruit some new members of the California Lichen Society. I. Brodo is currently preparing a new set of keys for the lichens of North America which will be published by Yale Press. It will include in the keys every species in *A Field Guide of California Lichens*, except 19 of the rarest ones. This will increase the educational value of the field guide. For lichenologists either visiting California or who just enjoy a well-illustrated book to leaf through while having a beer or smoking a pipe, it will be a good addition to your library.

Kerry Knudsen

Faculty of Environmental Sciences, Czech University of Life Sciences, Czech Republic

The Herbarium, Dept. of Botany & Plant Sciences, University of California, USA

SINGH, K.P. & PINOKIYO, A. (2014): Foliicolous Lichens of India. – (Indian Journal of Forestry, Additional Series IV) – Dehra Dun: Bishen Singh Mahendra Pal Singh. 335 pp., ISBN 978-81-211-0626-9. Hardbound. Price: about USD 66.50 + shipping.



The new book on Indian lichens, a flora and guide book of the foliicolous lichens, covers 136 species, all of which are described in detail and illustrated by line drawings or colour photographs. Keys to families, genera and species aid determination. Most of the original work had been prior to 2007, but printing was delayed; however, with the publication of the *Flora Neotropica Monograph* on foliicolous lichens by R. Lücking in 2008, the authors used the chance to improve their text and arrange the families according to the system proposed by Lücking.

The distribution within India is given according to states, and within the states to districts. At the end of the book the distribution within 29 states or other units is also mapped with signature maps presenting the distribution of 2 or 3 species on one map. By comparing these maps, it is evident that a large number of states lack records of foliicolous lichens, especially in central, western and northwestern parts of India. In the introduction, the authors confirm that their work concentrated in the Eastern Himalayan region with Arunachal Pradesh, the West Ghats and the Andaman and Nicobar Islands. Therefore it can be estimated that the real number of foliicolous lichens of India is considerably higher, but the present book provides a valuable overview of this important ecological group of lichens which will allow future students to determine them more easily since much of the special literature is difficult to obtain. The extent to which the authors have extended our knowledge of this subject is reflected in the rather long lists of new records for those states researched more intensively (e.g. 35 for West Bengal, 37 for Sikkim or 47 for Meghalaya) as well as a list of 26 new records for India, including four species and one variety new to science (published beforehand in *Mycotaxon* or *The Lichenologist*).

The quality of the printing and binding is good and nearly all of the colour photographs are of a high standard and of great value for comparing determination results. With all the information presented here, the detailed descriptions and the information on known distribution in India, the book will certainly become a standard reference book for Indian lichenologists and for all those interested in foliicolous lichens in tropical and subtropical Asia.

Peter Scholz, Schkeuditz

IAL Advisory Committee

The cover-page illustration

Umbilicaria proboscidea by Bethia Brehmer, first published in *American Arctic Lichens* Vol 1. *Macrolichens* by J.W. Thomson