

INTERNATIONAL LICHENOLOGICAL NEWSLETTER

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The opinions expressed in the *Newsletter* are not necessarily those held by the International Association for Lichenology

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 listserv 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 2016-2020) 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 10 and November 10 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 IAL8 Symposium (Helsinki, Finland, 2016) are listed below, and will serve until 2020.

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ASSOCIATION NEWS

A MESSAGE FROM THE PRESIDENT

Dear friends and members of the IAL!

I am very honoured to have been elected as the next IAL President! I look forward to working for the benefit of the IAL members and for international lichenology for the next four years, but I do that with humbleness and some anxiety – there is clearly a lot to do and to deal with. The IAL is an association made up of a number of very strong enthusiasts. Passion for our organisms is something that characterizes many, if not most members. IAL provides us with an arena for discussion and communication over the borders of research subjects and interests, and I think it is very fair to say that to many of us, the IAL Conferences are at least as important as venues for project discussions and informal exchange of ideas with old and new friends, as they are important as venues for formal talks and posters. The recent IAL8 Conference in Helsinki was a very successful meeting indeed and I want to thank the organisation committee led by Marko Hyvärinen, including virtually every professional Finlandian lichenologist and many others at the Luomus museum, plus student volunteers and others who made this all work so well. You did an excellent job welcoming the participants and making us feel at home! Many thanks!!

The last IAL council, led by Thorsten Lumbsch, has worked hard and I want to thank them all for what they have done during the last four years. The new Council that you just elected have several important things in front of us. The situation in the world in general may seem dark and gloomy when I write this, but it has never been more important to work against further deterioration of our natural ecosystems and their biodiversity, and to secure as many important lichen habitats of different kinds as possible for the future. I think that the IAL's lichen conservation work will become an extremely important contribution, and as such, one of the more significant parts of our Association's future efforts.

I am very happy to see the great increase in the number of active lichenologists in tropical countries! The next International Mycological Conference (IMC11) will take place in San Juan, Puerto Rico 16-21 July 2018. I expect that lichenology and the IAL will be well represented there! We traditionally have additional meetings (if needed) and IAL Dinners at the IMCs. The IAL9 meeting will be organized by Marcela Cáceres and her team in August 2020, and this exciting meeting will take place in Bonito, Brazil! I am very much looking forward to these meetings and I hope to meet many of you at the IMC11 and IAL9!!

Mats Wedin, IAL President 2016-2020

NEW ACHARIUS MEDALLISTS

THOMAS GEORGE ALLAN GREEN

Professor Thomas George Allan Green is a terrestrial ecologist, a botanist and a lichenologist. His studies have been mainly focused on plant physiology, covering a wide scope of organisms—from trees and ferns, to mosses and lichens. However, most of his scientific work, and perhaps the papers with the highest impact in the scientific community, have dealt with lichens.



Dr. Allan Green (Photo: Leopoldo G. Sancho)

Although originally from the UK, with a PhD from Oxford University, Prof. Green moved early in life to his second homeland, New Zealand, where he worked on adaptation strategies of *Pseudocyphellaria* spp. and other macrolichens of the southern temperate rainforest. In his third homeland, Germany, he worked with Dr. Otto Lange, Dr. Ludger Kappen, Burkhard Büdel and Dr. Burkhard Schroeter on some of the most significant lichen physiology experiments in recent

decades. Over the past 12 years, I have had the good fortune to share with Dr. Green his fourth homeland, Spain. For his scientific work here, Dr. Green was awarded the prestigious Spanish grant “Ramón y Cajal”.

Dr. Green can be considered one of the first who laid the basis for our modern understanding of the physiological functions and adaptations of lichens in their habitats. His long list of very valuable, refereed publications began in 1974 with a paper about lichen physiology published in the journal, *New Phytologist*. Later he investigated the influence of major environmental parameters on CO₂ exchange in lichens, resulting in seminal papers about carbon dioxide exchange and diffusive resistance of CO₂ in relation to water status in lichen thalli. Prof. Green always uses the highest technical standards for his instrumentation, and stimulates interdisciplinary cooperation to address important issues in plant ecology. He contributed to the development of automatic and portable instruments in order to carry out accurate measurements under extreme climatic conditions. Most of this work deals with the adaptation and physiological performance of lichens under the extreme conditions of continental Antarctica, mainly in the challenging region of the Dry Valleys, where he was the leader of some of the most remarkable Antarctic New Zealand international expeditions. More recently, however, a significant part of his activity has moved to the study of biological soil crusts, not only in polar habitats, but also in alpine and arid regions. His many reviews about lichen ecology, biodiversity and ecophysiology have become especially renowned. Even more impressively, Dr. Green represents, on the highest level, the perfect balance between research and teaching at our University, something we all strive to achieve. In fact, in 2012, in recognition of his amazing academic merits, he obtained the higher doctorate in Science by Oxford University.

Dr. Green has most helpful to colleagues and students everywhere in the world. As many others before me, I have also benefited from his extensive knowledge, and his apparently endless source of bright ideas, for many years. We owe him the deepest gratitude for stimulating discussions, fair and fruitful cooperation, his teaching, and many other kinds of help and support. We are all extremely happy to see the Acharius Medal presented to him.

Leopoldo G. Sancho, Madrid (Spain)

JOSEF HAFELLNER

Josef Hafellner has dedicated his scientific life to the classification and taxonomy of lichens and their inhabitant lichenicolous fungi. Josef became irreversibly attracted to mycology despite earlier interests in plant systematics. Already in his first publication about *Thelocarpon*, with his mentor Josef Poelt, he settled one of his main interests: the significance of ascus structural characters for ascomycete classification. He continued with this theme during his doctoral studies on *Karschia*, a poorly known genus that included fungi with different lifestyles (Hafellner 1979). The monograph of the primarily tropical genus *Letrouitia*, Josef's habilitation treatise (Hafellner 1981), was a further milestone. A taxonomic revision of the families Lecanoraceae and Lecideaceae—his contribution to the *Festschrift* of Josef Poelt—was probably also his most influential work in lichenology (Hafellner 1984). At that time, both of these large families were heterogeneous, and classification within them was puzzling. Josef's new concept to recognize no less than 48 families was controversially discussed in the beginning, but provided a solid framework for the classification and taxonomy of Lecanoralean lichens. In the years to follow, his outline as well as his focus on reproductive characters for classification became increasingly accepted. Josef's taxonomic concepts provided a coherent framework for lichen systematics and helped to classify newly discovered lineages. Phylogenetic tests of his ideas also influenced the developing molecular era of lichenology.

Josef Hafellner dedicated a second important line of research to the knowledge of lichenicolous fungi. Equipped with an equal expertise about lichens and non-lichenized fungi, Josef explored the diversity and specificity of these lichen colonizers. This work resulted in the description of a significant number of new species and genera, and new insights about their relationships.

Further scientific interests concerned the distribution of lichen diversity („lichen floristics“). Josef’s list of major collecting trips and expeditions to explore these questions is too long for details, but they provided a basis for numerous papers that expanded our knowledge about the distribution of lichens across the globe. As his specimens are stored in public herbaria, Josef’s outstanding collecting activity also represents an invaluable community resource for lichenology. Presently, Josef Hafellner has collected around 100000 specimens so far, and his scientific output comprises more than 288 publications. His recent retirement from academic duties did not lower his activity, and the years to come will increase these figures.



Josef Hafellner holding his Acharius medal (Photo: Martin Grube).

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Martin Grube, Graz (Austria)

BRUCE McCUNE

Bruce graduated with a BA in Botany and Biology and an MA in Botany, both from the University of Montana. Bruce's career in lichen research began in 1977 as a summer teaching assistant for Mason Hale at the University of Montana's Flathead Lake Biological Field Station. His Master's degree correlated lichen and moss distributions with landscape gradients in the Swan Mountains of Montana and he wrote his own computer code to analyse the complex data set. Bruce then moved to the University of Wisconsin at Madison where he undertook a PhD in forest ecology. While in Madison, he continued honing his lichen taxonomy skills. John Thomson was just down the corridor from Bruce's lab; he was retired but continued to work and publish on lichens, and would help Bruce with identifications and chemical tests. In 1984, after obtaining his doctorate, Bruce was appointed as Research Associate at Butler University in Indianapolis, and taught plant ecology during summers at the same University of Montana field station at which he was first introduced to Mason Hale. In 1987, Bruce was appointed as an Assistant Professor in the Department of General Science at Oregon State University, and in 1991 he moved to an Assistant Professorship in the Department of Botany and Plant Pathology, where he continues to work. He was promoted to Associate Professor in 1993 and full Professor in 1999.



Bruce McCune with Viktoria Wagner and Toby Spribille at IAL8 Symposium (Photo: Meg Ojala).

Bruce has published prolifically in journals and books. He is a polymath. His lichen research spans ecology, floristics, conservation, response to pollution, growth and development, and taxonomy. Bruce has described many new species, especially in the genus *Hypogymnia*, on which he is a world authority, but also in *Bactrospora*, *Hypotrachyna*, *Letharia*, *Pseudocyphellaria*, *Rhizocarpon*, *Rinodina* and *Trapeliopsis*. He was a contributor to each of the three volumes of the Sonoran

Desert lichen flora. His ecological and floristic interests have focused mainly on forest epiphytes and soil crust communities (both very well-represented in Oregon) but more recently have extended to the Alaskan tundra. One of Bruce's principal interests has been identifying drivers of epiphytic lichen diversity. His 1993 paper "Gradients in epiphytic biomass in 3 *Pseudotsuga-Tsuga* forests of different ages in western Oregon and Washington" is the most highly cited lichen paper published in *The Bryologist* since 1969 (ranks fourth if you add in bryophyte papers). Bruce is possibly just as well known in plant ecology circles as he is as a lichenologist and he continues to publish research on ecology in the broad sense. In fact his most highly cited paper is "Equations for potential annual direct incident radiation and heat load" which he published in *The Journal of Vegetation Science* in 2002 with Dylan Keon. He is an expert on ecological analysis methods and modelling, and is of course the co-author with M.J. Mefford of *PC-ORD. Multi-variate Analysis of Ecological Data* and its numerous revisions (1991, 1993, 1995, 1997, 1999, 2006, 2011). PC-ORD and Hyperniche have revolutionized the way ecologists approach community analysis.

His other books include: *The Lichens of British Columbia*, Part 1 (1994 with Trevor Goward & Del Meidinger); *Macrolichens of the Northern Rocky Mountains* (1995, with Trevor Goward); *Macrolichens of the Pacific Northwest* (1997, with Linda Geiser); *Analysis of Ecological Communities* (2002 with James Grace); *Biotic Soil Crust Lichens of the Columbia Basin* (2007 with Roger Rosentreter); *Montana Lichens: An Annotated List* (2014 with several others). His books have made field and laboratory identification of lichens much more accessible to citizens, students, and professional naturalists alike.

Throughout his career, Bruce has been an avid formal collector of plants, bryophytes and lichens with over 37000 accession numbers to his name. These specimens are largely deposited in the Oregon State University Herbarium or in Bruce's private herbarium.



Certificate and Acharius medal (Photo: Meg Ojala).

In addition to being a gifted and prolific researcher, Bruce has made an unstinting contribution to the promotion of lichenology and to the training of several generations of professional lichenologists. He is a founding member of, and the driving energy behind, the Northwest Lichenologists; he is currently their Secretary and Treasurer, and has also served as Editor in Chief of its associated journal *Monographs in Lichenology*. The Northwest Lichenologists works to mentor and train lichen fieldworkers from various sectors; it organizes annual field and written tests to provide certification for regional professional lichenologists. Bruce has also served on the Editorial Board of *The Bryologist* (since 2012) and on the IAL Council.

At a more local level Bruce—together with his wife Pat, his two daughters Sara and Myrica and their two cats called Alectoria and Bryoria—regularly hosts “bring and shares” or “potlucks” at his house for his students and other lichenologists who are in the vicinity. Here new research ideas are discussed over beer, after which there is frequently a game of whiffle ball or table tennis – the latter

a sport in which I am told Bruce shows considerable prowess. I can imagine that Bruce's method for inoculating forest trees with *Usnea longissima* might well have been dreamt up at one of these gatherings after a few beers: this involves stuffing a fistful of *U. longissima* filaments into a condom, filling and inflating the condom with water for added weight, sealing it with a knot and then catapulting the lichen-loaded "French letter" high up into the canopy to inseminate the tree of choice—this takes tree-hugging to new heights! Bruce also hosts the Northwest Lichenologists' annual board meeting at his home which I am told is a well-attended and enjoyable social event.

Bruce is highly regarded by those who work with him. Adjectives used by his close associates to describe him include amazing, supportive, generous, humble, inspiring, brilliant, productive, kind, encouraging, and inquisitive. In correspondence with his collaborators, one person wrote "Bruce is one of my favourite people on the planet"; another, "Every conversation (with him) is a treasure because he is such a wonderful bank of knowledge and ideas". It is clear that Bruce is greatly appreciated by, and a friend to, all who have worked with him.

For his outstanding contribution to lichenology, the IAL Council is delighted to award the Acharius Medal to Bruce McCune.

Peter Crittenden, Nottingham (UK)

AINO HENSSEN AWARD TOBY SPRIBILLE

The Henssen Award Committee is honored to present the 2016 Henssen Award to Toby Spribille. Among the candidates for this award, Toby stood out in number, impact, and breadth of publications since his PhD (in 2011). He has published widely in such areas as taxonomy, phylogenetics, biogeography, ecology, mycobiont-photobiont interactions, and conservation of lichens. More recently, he has also begun to use genomics approaches in lichen biology. To pursue his diverse research interests, Toby collaborates with lichenologists all over the world. During his career he has switched research institutes frequently (including stays at Montana, Chicago, Graz, and others) and established a strong professional network. The committee feels that Toby creatively uses his unique combination of expertise in various disciplines, as well as his connectedness in the community, to both advance the field of lichenology and showcase lichens to a broader audience.



Toby Spribille (Photo: Robert Lücking)

Henssen Award Committee 2016: Imke Schmitt, Rebecca Yahr, Andreas Beck

MASON E. HALE AWARD FERNANDO FERNÁNDEZ-MENDOZA

The Mason Hale Award is granted to recognise excellence in research by young lichenologists for outstanding work resulting from doctoral dissertations or similar studies, and the IAL awards one Hale Award each time. As usual, the Hale Award Committee had an unusually difficult task, with a large number of exceptionally good PhD thesis nominations to consider. Every nomination could easily have been a worthy recipient.

The Mason Hale Award 2016 is given to Fernando Fernández-Mendoza for his thesis “Genetic diversity and gene flow between Arctic and Antarctic populations of the lichen *Cetraria aculeata* along the Andes and the Rocky Mountains,” which he produced at the Johann Wolfgang Goethe-University in Frankfurt am Main, Germany, primarily under the supervision of Christian Printzen.

Fernando’s thesis is one of the very first modern studies on the classical biogeographical problem of the origin of bipolar lichen distributions, taking into account the complexity of multi-partner symbiosis (including the constantly occurring bacteria), factors influencing biogeographical patterns, and basic population genetic mechanisms to explain observed patterns of genetic diversity in lichens.

In his thesis, Fernando focuses on how and when the disjunct distribution of *Cetraria aculeata* originated, and what roles different historical and ecological processes played in shaping this distribution. One example is that he shows that photobiont presence is partly a response to a selective process related to climate. This climatic pattern is also found in the bacterial community in *C. aculeata*. Lichen fungi may, therefore, be able to respond to different environmental conditions by selectively associating with different symbiotic partners.



Dr. Fernando Fernández-Mendoza holding his Mason Hale Award (Photo: Scott LaGreca).

Fernando’s studies reach beyond both lichenology and the study of symbiotic organisms. There are several examples, but I will mention one. When struggling with the problem of dating historical dispersal events in populations, when haplotypes are widely distributed geographically, Fernando treated dispersal events as character state transitions among geographical regions, and developed a new method to model the evolution of geographic ranges along phylogenetic trees, making a time-explicit use of stochastic character mapping. The very novel idea here is that he focused on identifying the relative dates of the dispersal events and their distribution along tree time, using ultrametric phylogenies. This allowed him to show the following: *Cetraria aculeata* dispersed from the Northern Hemisphere into South America during the Pleistocene; that Patagonian populations became isolated earlier than the more northerly Bolivian populations; and that Antarctica was colonized from Patagonia as recently as 50-100k years ago.

Fernando's dissertation is highly innovative, and contains conceptual and methodological advances where problems are studied in an integrative way, using a wide range of approaches and perspectives. His work is pioneering for future biogeographical studies, and he is a most worthy candidate for the Mason Hale Award!

On behalf of the Committee and the IAL Council, I congratulate Fernando, and wish him all the best for his future career!

Mats Wedin, Chair of the Hale Award Committee, Stockholm (Sweden)

MARGALITH GALUN AWARD FOR THE BEST STUDENT'S ORAL PRESENTATION IN IAL8

The winner of Margalith Galun Award for the best student's oral presentation in IAL8 in Helsinki was Veera Tuovinen from Swedish University of Agricultural Sciences, Uppsala (Sweden). She gave a talk entitled „Visualizing fungal communities in lichens by fluorescent *in situ* hybridization” (co-authored by Hanna Johannesson, Göran Thor and Toby Spribille) in the session ‘The diversity within’. Congratulations!

The Editor



Veera Tuovinen (Photo: Veera Tuovinen).

MARGALITH GALUN AWARD FOR THE BEST STUDENT'S POSTER IN IAL8

Margalith Galun Awards for the best student's oral presentation and poster were given for the first time in IAL7 meeting in Bangkok, so in Helsinki these awards had already become a tradition. A committee consisting of three senior lichenologists (Ernie Brodo, Pat Wolseley and Tiina Randlane) had ‘a mission impossible’ – to choose one poster that is just the BEST out of all the posters presented with a student as the first author. There were more than 50 such posters!

The committee was aware of the responsibility and met several times. We first defined the criteria upon which to judge the posters. We decided to evaluate (a) the importance of the topic, (b) the achieved results, and (c) the presentation of the poster. Each student poster was given three marks independently by each committee member. On these criteria, 15 posters out of 50+ were discussed

The winner of Margalith Galun Award for the best student's poster in IAL8 in Helsinki was Antoine Simon from University of Liège (Belgium) with the poster titled "Extensive mitogenome rearrangement within the Peltigerinae (lichenized Ascomycetes): comparison between *Ricasolia amplissima* and *Peltigera membranacea*" (co-authored by Yang Liu, Emmanuël Sérusiaux and Bernard Goffinet) and presented in the session 'Genomics and bioinformatics'. This presentation appeared outstanding in all the our criteria: the novelty of the topic – study and comparison of mitochondrial genomes of two lichenized fungi from closely related families; the achieved results (nearly complete mitochondrial genome of *Ricasolia amplissima* having the size of about 82 kb) and proposed outcomes (massive gene rearrangements may have occurred in the mitogenomes of closely

related lichenized Ascomycetes); and finally, the concise text and elegant design of the poster were outstanding.



Antoine Simone during the IAL excursion (Photo: Dinah Parker).

There was consensus among the committee members concerning the final winner. However, the competition for the award was fierce because several other interesting, informative and clearly presented posters by student authors were hanging in the corridors of the University of Helsinki main building. Two other students who remained close to getting the award are also worth of mentioning: Kanami Yoshino from Chiba University (Japan) with her poster "Candidates of ribitol transporter gene obtained from *Ramalina conduplicans*" in the session 'Evolution of lichen symbiosis', and Dinah Parker from University of Connecticut (USA) with the poster "When your partner shapes your look: ITS analysis of symbionts in *Dendriscoaulon intricatum* and *Ricasolia quercizans*" in the session 'Peltigerales'.

The award committee congratulates all the participants of the poster competition, winners and those who didn't win (there are no 'losers' in such an endeavour) for their imagination, hard work, and careful studies.

Tiina Randlane, Tartu (Estonia)

DHARANI AWASTHI AWARD

GAURAV KUMAR MISHRA

The Dharani Awasthi Award 2016 for a prominent young researcher working and living in a low income country, who has completed a Ph.D. within five years prior to the submission deadline was given to Gaurav Kumar Mishra from National Botanical Research Institute in Lucknow (India). Congratulations!

The Editor

NEWS

BILATERAL COOPERATION BETWEEN CENTRO DE ECOLOGIA, EVOLUÇÃO E ALTERAÇÕES AMBIENTAIS – UNIVERSIDADE DE LISBOA, AND INSTITUTE OF BOTANY – SLOVAK ACADEMY OF SCIENCES

The genus *Solenopsora*, like many genera of the recently described family Leprocaulaceae, is an example of understudied lichen group. Members of the genus occur predominantly in the Mediterranean, Macaronesian and Madrean floristic regions. Altogether, the genus comprises around 25 species distributed in large mountain groups of temperate and subtropical regions. The centre of diversity (up to 10 taxa) is in the Mediterranean. The European taxa are distributed predominantly in the Mediterranean basin, with some spreading into the Atlantic region. Their occurrence in continental parts of Europe is limited.

Two species, *S. cesatii* and *S. candicans*, reach the Western Carpathians. A pilot study showed that this genus could be polyphyletic. Following this study, recent work has aimed at disentangling the evolutionary relationships within the genus. However, fresh material was missing from the Atlantic coast of the Iberian peninsula – namely Portugal.

The two-year bilateral project “Disentangling evolutionary relationships across the morphologically and ecologically diverse lichen genus *Solenopsora*” funded jointly by the Portuguese “Fundação para a Ciência e a Tecnologia” (FCT) and the Slovakian “Slovak Research and Development Agency (APVV SK-PT-2015-0027)” allows the collection of material both in Portugal and in the Slovak Republic, which will be used to complement a dataset comprising sequences of several regions of fungal DNA enabling the reconstruction of the phylogenetic relationships of this lichen genus.

The researchers of the Institute of Botany, Slovak Academy of Sciences, Anna Guttová and Zuzana Fačkovcová, have been working for the last three years to unravel the phylogenetic relationships within the European groups of the genus *Solenopsora*, with emphasis on entities in basal positions and evolutionarily closely related outgroups, and relate it with species ecology. At the same time, Zuzana has focused on the phylogeography of one of the phylogenetically younger species – *Solenopsora candicans*. They teamed with their Portuguese colleagues Laura Concostrina, Paula Matos and Silvana Munzi to gather material for ongoing studies, to revise already existing collections, and for sequencing and analysis the collected material.

This past year was the first year of the project, during which we organized two field trips:

Portugal

Participants: Anna Guttová, Zuzana Fačkovcová, Silvana Munzi

Date: 25 April-1 May 2016

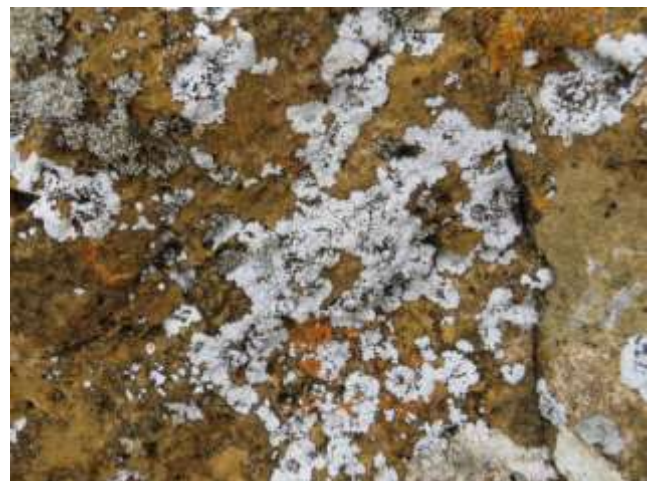
Sampling localities:

Estremadura: Sintra, Fontanelas, Barril de Baixo – the mouth of the Lisandro River, Ericeira – Praia de Ribeira d'Ilhas

Pombal: Serra de Sicó, villages Pousadas Vedras and Ereiras

Cadaval: Serra de Montejunto, the summit of Monte Junto

Coimbra: the valley of the river Mondego



Solenopsora candicans at Barril de Baixo – the mouth of the Lisandro River (Photo: Anna Guttová).



Zuzana Fačkovcová at Barril de Baixo – the mouth of the Lisandro River (*Photo: Anna Guttová*).



Zuzana Fačkovcová and Silvana Munzi at the summit of Monte Junto (*Photo: Anna Guttová*).

Slovakia

Participants: Anna Guttová,
Zuzana Fačkovcová, Silvana
Munzi

Date: 7-13 November 2016

Sampling localities:

Čierna hora Mts: Veľká Lodina –
Bokšov

Branisko – Smrekovica Mts: the
valley of the stream Kopytovský
potok – Suchý vrch

Bachureň Mts: Šindliar – Kamenná
Baba



Solenopsora cesatii at Veľká Lodina – Bokšov (Photo: Anna Guttová).



Silvana Munzi collecting samples at Šindliar – Kamenná
Baba (Photo: Anna Guttová).



Nature Reserve of Bokšov (Photo: Anna Guttová).

Silvana Munzi and Anna Guttová, Bratislava



LICHENS AS A TOOL FOR INTERPRETATION OF ENVIRONMENTAL CHANGES AND MANAGEMENT

cE3c 2017 Advanced Course - <http://lichens.fc.ul.pt/>

10-14 July 2017 | 4 days lectures and labs + one day field excursion

Objectives: With this course, we aim at providing the participants with the basics of lichen biology and ecology, biomonitoring, and data analysis methods for the purpose of using lichens to interpret environmental conditions. Participants will also learn to apply this knowledge in the development responsible, science-based environmental management policies.

Teachers: Pedro Pinho (Univ. Lisboa), Paula Matos (Univ. Lisboa), Silvana Munzi (Univ. Lisboa), Cristina Máguas (Univ. Lisboa), Cristina Branquinho (Univ. Lisboa), Sofia Augusto (Univ. Porto), Laura Concostrina (Univ. Lisboa).

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

Schedule: 9:00-17:30 (36h)

Lichens are amongst the most sensitive organisms to environmental changes at the ecosystem level. Some of the most important drivers of global change, like climate, pollution and eutrophication, are factors to which lichen communities respond in only a few years time, and lichen physiology in a few weeks. Therefore, by “reading” lichens we can obtain useful information about the status of the environment and its changes over time and space.

Since the nineteenth 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 geographic applicability as well as high inter-comparison potential, and has proven to better predict impacts at the ecosystem level than total diversity measures. Newly developed physiological methods allow us to assess a lichen’s response to rapidly changing environmental conditions. Moreover, the link between physiological mechanisms, functional diversity and ecological impacts provides a sound base for the development of environmental policies.

The main themes of the course will be presented in six modules, ranging from basic knowledge of the lichen symbiosis to data collection and interpretation. The course will be organized in lectures, lab experiences (including lichen identification), and a one-day excursion for hands-on learning of biomonitoring methods.

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

Module 1 (*Lichen biology and ecology*) This module will provide basic knowledge of lichen biology and lichen ecology:

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

Module 2 (*Systematics*) The module will cover basic lichen structure and techniques needed for lichen determination (lab class) to provide students with basic skills of lichen identification:

- Morphology and anatomy: photobionts; growth forms; sexual and vegetative reproduction strategies.
- Determination methods based on morphological and chemical characters.
- Introduction to the most common lichen genera, available floras, and online keys.
- Identification of lichen specimens: macro- and microscopic characters (including preparation and observation of samples); chemistry; and determination keys.

Module 3 (*Ecophysiology*) This module will focus on modern approaches to lichen ecophysiology for assessing 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*) This module 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*) This module aims to give an overview of the main methodologies that use lichens as biomonitors:

- What to measure? Standard sampling methods based on biodiversity and bioaccumulation.
- How to measure? When to use transplants vs *in situ* lichens in biomonitoring studies. When to use total diversity vs functional diversity.
- Different problems demand 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*) This module gives students basic information on how to analyze and interpret data collected using methods presented in the previous modules:

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

Excursion One-day field excursion to a Mediterranean cork-oak woodlands to: (1) test the acquired knowledge on species identification; (2) apply two biomonitoring methods: (a) the standard European method for air pollution and (b) the method for biological soil crusts.

ECTs: This course counts as 6 ECTs for FCUL PhD students as part of their first doctoral year. For FCUL PhD students who need only 5 ECTs recognized in their specific PhD programs, the excursion is not mandatory; in this case, certification will be on 'Topics in Lichens as a tool for interpretation of environmental changes and management'.

Location: Departamento de Biologia vegetal (FCUL)

N° (min, max) students: 10 – 18

Prerequisites: “Licenciatura” (bachelors degree) in Biology, Natural Science or related areas

Directed to: PhD or MSc students in Ecology, Environmental Studies, Geography or related areas, and postdocs, as well as professionals working in these (or related) fields.

Fee: Free for 1st year PhD students in the Doctoral program in Biology (FCUL), Biodiversity, Genetics and Evolution (BIODIV UL; UP), and Biology and Ecology of Global Changes (BEAG UL, UA) when the course counts credits for their program (in which case the delivery of a final report done after the course is mandatory); 25 € for PhD students from institutions of the PEERS network (cE3c, CFE); 125 € for FCUL Master students and unemployed; 180 € for BTI, BI and other PhD students; 250 € for Professional and postdocs.

When the maximum number of students is reached 9 vacancies will be available for non-paying 1st year PhD students mentioned above, being, by order of preference: 1) cE3c students; 2) BIODIV students (not from cE3c); 3) FCUL students (not from cE3c); 4) BEAG students (not from FCUL).

Deadline for applications: May 31st 2017

→ Candidates should send a short CV to lichenscourse@fc.ul.pt

Silvana Munzi (University of Lisboa)

XX SYMPOSIUM OF BALTIC MYCOLOGISTS AND LICHENOLOGISTS

The XX Symposium of Baltic Mycologists and Lichenologists will be held in Gdańsk (Poland), September 25-29th, 2017. During the Symposium, meetings of the Nordic Lichen Society as well as the Lichenological Section of Polish Botanical Society will also take place (more information on the NLS meeting will appear in *Graphis Scripta*). The main organizers of the Symposium are the University of Gdańsk and the Foundation for the Development of the University of Gdańsk. Further information will be available in March 2017.

Martin Kukwa, University of Gdańsk (Poland)

**EAGLE HILL INSTITUTE SEMINARS ON LICHENOLOGY IN 2017
ON THE COAST OF EASTERN MAINE, JUST EAST OF ACADIA NATIONAL
PARK**

May 21-27	Crustose Lichens of the Acadian Forest	Stephen Clayden
Jun 4-10	Undergraduate Field Studies: Introduction to Bryophytes and Lichens	Fred Olday
Jul 2-8	Lichens and Lichen Ecology	David Richardson and Mark Seaward
Jul 23-19	Lichens, Biofilms, and Stone	Judy Jacob and Michaela Schmull
Aug 6-12	Independent Studies: Interesting and Challenging Saxicolous Lichens of North America	Alan Fryday

The following general flyer has links to individual lichen seminar flyers:

<https://madmimi.com/p/d8c219?fe=1&pact=172217-135615528-7501261478-65168e2c176d0f9cc0d25d34eb92acbf7db1ae05>

For general information: <https://www.eaglehill.us/programs/nhs/nhs-calendar.shtml>
office@eaglehill.us

David Richardson, Halifax (Canada)

REPORTS

THE 8TH IAL SYMPOSIUM, "LICHENS IN DEEP TIME," AUGUST 1-5, 2016, HELSINKI, FINLAND

The eighth international symposium in lichenology (IAL8) was arranged this year in Finland for the first time. Finland was a very appropriate choice for the symposium, because the country has a long history of lichenology and some twenty active lichenologists at present.

More than 300 people from 46 countries participated during the first week of August in the meeting, arranged in the auditoria of the main building of University of Helsinki (Figs 1 & 2). About 120 oral presentations and numerous posters exhibited the wide scope of present-day lichenology (Fig 3). Most of the leading lichenologists were present and gave exciting lectures with new data on the biology of lichens. One of the highlighted themes was the cryptic biodiversity present in lichens.

Just before the congress, the world press published stories on the basidiomycetous yeasts found by a team led by Toby Spribille, Veera Tuovinen and others 'as third partners' in lichens, and the authors presented a lecture on their findings (Fig 4). Molecular phylogenetic studies have produced a huge amount of new information that is going to change much of lichen taxonomy and nomenclature. Even data on sequencing whole genomes of lichenized fungi were presented. Tropical and Antarctic lichens and their ecology were other popular subjects. Studies on cryptogams in Paleogene amber was one novel subject. Lichens and climate change was naturally one subject of general importance. For more information on the proceedings, the symposium

abstracts are still available on the official IAL8 website (<http://ial8.juomus.fi/instructions-information/>).

The organizing committee made every effort so that the symposium ran very smoothly. For instance, it was easy to move from one session to another, simultaneous session, and exciting lunches were served very close to session locations.



Fig 1. Symposium opening in the University Great Hall (Photo: Mikael Rantalainen).



Fig 2. Congress delegates listening very carefully (Photo: Adriano Spielmann).

Pre- and post-symposium tours were organized, one to the SW Archipelago of Finland (by the University of Turku) and another to interior Finnish Lapland (by the University of Oulu). In addition to learning from the guiding lichenologists and botanists who accompanied them, the participants had permission to collect lichen specimens.



Fig 3. Gintaras Kantvilas in the history session (*Photo: Adriano Spielmann*).



Fig. 4. Groundbreaking discovery (*Photo: Adriano Spielmann*).

The program in Helsinki included parties in the Botanical Garden and at Saaristo, a restaurant on the island Klippan in a harbour of Helsinki—with fantastic views to the sea and the old fortress

Suomenlinna (Viaborg). In addition, a half-day excursion to Suomenlinna and Vallisaari islands took place on Wednesday (Fig 5). The weather was excellent throughout the week.

The participants could also purchase the bulky, new book 'Lichens of Finland', edited by Soili Stenroos, Saara Velmala, Juha Pykälä and Teuvo Ahti, at a table on-site. It is profusely illustrated with colour photographs. All Finnish macrolichens, and a selection of microlichens, are treated. A full, updated list of the lichens and lichenicolous fungi of Finland with provincial distribution data is presented at the end of the book. The book is available by visiting <http://www.luomus.fi/fi/kirjat>. Order now: the books make perfect holiday presents for your lichenology colleagues.



Fig. 5. Lichen grounds of the Vallisaari island (Photo: Adriano Spielmann).

Numerous participants visited or worked in the lichen herbarium of the University of Helsinki, i.e. Botanical Museum of the Finnish Museum of Natural History (official herbarium acronym: H). There was a real crowd for three weeks: we counted 56 working visitors before, during or after the congress! The visitors were surprised by the facilities, and the extent of the collections. In fact, the Helsinki lichen herbarium officially contains c. 446 500 lichen specimens (out of 3.4 million specimens in the whole herbarium), which means that it must be amongst the top five largest lichen collections in the world. Most of the recently acquired Herbarium of Aino Henssen is not yet included, nor is the herbarium of the former Finnish Forest Research Institute (HFR), which is just now being moved to H. Herbarium H is also highly international, comprising modern and historic collections from all continents. The herbarium is rich in type specimens, especially in the herbaria of William Nylander (H-NYL), Erik Acharius (H-ACH) and Veli Räsänen.

The IAL8 was a magnificent event for the participants, as well as for the organisers. Before Finland we met in Thailand; next time will be in Brazil. See you all there in 2020!

Teuvo Ahti & Marko Hyvärinen, Helsinki (Finland)

THE 8TH IAL SYMPOSIUM IN HELSINKI

The eighth symposium of International Association for Lichenology took place at University of Helsinki (Finland), August 1-5, 2016. The organization team, under the patronage of the Finnish museum of Natural History LUOMUS, prepared a rich program composed of interesting talks, poster sessions, field excursions, a collective dinner, and garden party. Furthermore, the Finnish lichenologists prepared an English version of the new, c. 800-page book, *Lichens of Finland*, with many nice, colour photographs. According to official information, a total of 118 talks were presented in 18 sections. The total number of participants was 283 people.



Pine forest with *Cladonia stellaris* - the excursion to Archipelago (Photo: Jiří Malíček).

The symposium started with an opening ceremony in the Great Hall of University, followed by presentations on the history of lichen research and early evolution of lichens in the main building of University. In contrast to previous symposia, contributions on lichen taxonomy, diversity and secondary metabolisms were relatively fewer in number. Instead, genomics, genetic variation, phylogenies, climate change, ecological modelling, photobiont diversity, and association of various partners forming lichens were the highlights of this congress.

The social program began with a welcome reception in the City Hall on Monday evening, followed by the IAL dinner on Tuesday. On Wednesday, participants had a nice opportunity to visit islands near Helsinki via boat. Nevertheless, the social highlight of the meeting was the party in the Botanic Garden, including a rich dinner, live music, and a garden excursion. Thursday evening was filled by the General IAL meeting, and elections of a new IAL president and council.

The organizing committee prepared two multi-days excursions: the pre-symposium trip to the Archipelago National Park in the south of Finland, and the post-symposium trip to the Finnish Lapland, to the north. I am able to judge only the first excursion; it was filled with lovely scenery of a never-ending number of small granite islands and pine forests. We enjoyed the opportunity to learn and collect many interesting lichens under the guidance of two local experts—Seppo Huhtinen and Juha Pykälä. We especially appreciated the well-equipped lab, including free beer and wine, tasty Finnish cuisine, and perfect organization.



Pine forest with *Cladonia stellaris* - the excursion to Archipelago (Photo: Jiří Malíček).

Big thanks belong to the whole organization team for the excellent preparation that went into this meeting; the kind atmosphere they provided; and all their hard work.

Jiří Malíček, Prague (Czech Republic)

HELSINKI AND THE LICHENOLOGISTS UNDER THE MOTTO „LICHENS IN DEEP TIME”.

Once again, the IAL congress was a great experience, with an extreme variety of lichenological topics, presented in talks and posters by lichenologists from all over the world. Since this symposium takes place every four years, it enhances our awareness of the developments that were taking place in this area of research within the period from one symposium to the next – like snapshots stitched together into a time-lapse movie. Besides the high level of participation in all the sessions and the lively scientific exchange, there was also (again) the vibrant experience of meeting and talking to colleagues from countries from Iceland to South Africa, from Chile to Canada, and from Russia to the US. While drinking some coffee, wine or beers, a lot of intercultural exchange was happening, and diverse collaborations between all kinds of working groups were established.

Although there was not really much time during this convention to explore the city, and cultural highlights of Helsinki, the symposium was very well-organised and it will again be an incubator for the development of lichen research by having brought together hundreds of researchers representing the world's expertise on lichenology (300 delegates from 46 countries). Finally, I want to thank the local organising team as well as the IAL Council and the Scientific Committee of the symposium, which were chaired by Thorsten Lumbsch and Marko Hyvärinen (respectively), for a successful meeting and a job well done. See you in Bonito, Brazil at IAL9!

Georg Brunauer, Salzburg (Austria)

THE IAL8 POST-SYMPOSIUM EXCURSION

The IAL8 post-symposium excursion—in Lapland—was a great trip, made even greater by the mild weather conditions. Thanks so much to Annu Ruotsalainen and the rest of the Oulu team for their first-rate organization! I keep many fond memories of that excursion, with the sight of a fearless reindeer being the most vivid (just after coming across a beautiful specimen of *Solorina crocea*).



Antoine's strong emotional reaction when he saw his first reindeer during the IAL8 post-symposium excursion (*Photo: Antoine Simon*).

I felt fortunate to be surrounded by such remarkable and friendly people. For a hint of the warm ambiance participants experienced during the trip, here's a video of our enthusiastic choir in Pallas (lyrics written by Gintaras Kantvilas, Jessi Allen, and Peter Crittenden; based on Monty Python's Finland song): https://www.youtube.com/watch?v=0_WqT097JCI

Antoine Simon, Liège (Belgium)

**INTERNATIONAL LICHENOLOGICAL COURSE AND WORKSHOP:
"LICHENS AS A TOOL FOR AIR POLLUTION RESEARCH",
ZAGREB (CROATIA), 26–28 SEPTEMBER, 2016**

A three-day lichenological course was held in Zagreb, Croatia, teaching basic lichen biology, identification and lichen biomonitoring. The course was a natural product of networking activities among junior European lichenologists, who had gathered together during the “Lichen ecology & identification” course in Ekenäs, Sweden (2015), the 2nd Young Lichenologists’ Workshop in Budapest, Hungary (2015), and subsequently informally during the IAL8 Symposium in Helsinki, Finland (2016). It was at this latter meeting that our Croatian colleague, Maja Maslač, suggested a meeting in Zagreb to focus on the above-mentioned topics—all very relevant for students, researchers, consultants, government officials and museum staff with a biological background. After some discussions and planning, she made the idea happen. From 26 to 28 September, 2016, we met at the Faculty of Science (University of Zagreb), thanks to financial support from the project HR.3.2.01 - 0130 "OkoLIŠ" (financed by European Union; European Social Fund) and Geonatura Ltd. Moreover, we enjoyed talks from two invited experts in the field, Dr. Silvana Munzi (University of Lisbon, Portugal) and Dr. Luca Paoli (EGIS System and University of Siena, Italy). In total, 15 participants from Croatia and Slovakia attended the course.

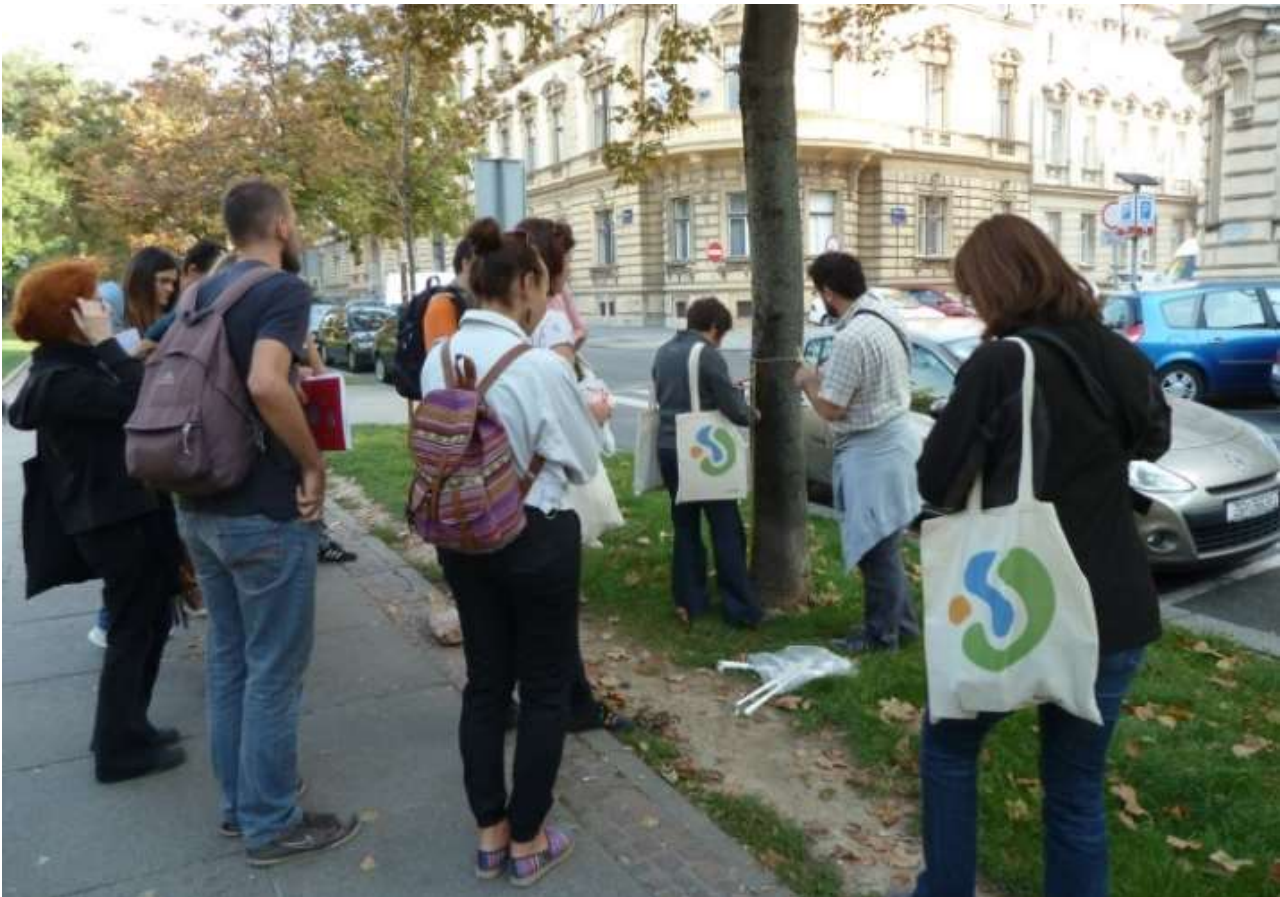


Group photo of the organizers and participants (left to right): Marko Doboš, Sandra Hodić, Martina Vidović, Paula Počanić Vovk, Ivana Rešetnik, Luka Škunca, Zuzana Fačkovcová, Ivana Šimunović, Silvana Munzi, Maja Maslač, Mirta Tkalec, Marija Čuček, Saša Likić, Anamarija Ridl, Ivana Kušan, Anamarija Čukurin, Luca Paoli, Neven Matočec, Anamarija Partl, [Dragana Pejaković - not present in the picture] (Photo: Željka Vidaković-Cifrek).

The programme was conveniently divided into theoretical and practical parts. Because every participant had a different level of knowledge about lichens, Maja Maslač began the course with an introduction to lichen biology and biodiversity. Moreover, she talked about history of lichenological research, lichen taxonomy, evolution and the various concepts of lichen symbiosis in the light of recent research. After this, our invited speakers presented talks on biomonitoring studies, in order to share their expertise with participants. We learned why lichens are successful bioindicators and how

to use them for evaluating the state of the environment. Luca Paoli explained methods for lichen diversity assessment, bioaccumulation, and data interpretation, and Silvana Munzi continued by explaining how to use physiology and molecular techniques (protein expression) to study lichen-nitrogen interaction. The afternoon programme was devoted to practical lichen identification in the laboratory.

The following day, it was time for participants to show how much they had learned the day before. We visited two different localities situated in Zagreb, and sampled lichen diversity on five trees per locality. In order to compare more and less polluted areas, one sampling site was established in the centre of the city, and another in a green area on the border of the city. We were divided into small groups, so every participant had the opportunity to enjoy hands-on sampling and identification of lichens. We evaluated lichen diversity of nitrophilous and oligotrophic species separately, and then total lichen diversity for each site. Despite nitrophilous species being diffused in both sites, the additional presence of oligotrophic ones within the city border clearly increased biodiversity in that site.



Sampling the lichen diversity in the centre of Zagreb. (Photo Zuzana Fačkovcová).

Finally, we learned how to use the free software package QGIS for spatial interpretation of the obtained data.

One part of the course was also dedicated to physiological experiments. After theoretical lectures by Prof. Mirta Tkalec and Dr. Saša Likić (University of Zagreb), we investigated the physiological parameters of *Flavoparmelia caperata* thalli contaminated with different levels of cadmium. First, we measured chlorophyll fluorescence emission as an indicator of the photosynthetic performance of the samples. Next, we measured the concentration of photosynthetic pigments in relation to the

level of cadmium exposure. Finally, we got acquainted with measuring the concentration of specific lichen substances using high-performance liquid chromatography (HPLC).



Preparation of *Flavoparmelia caperata* samples to measure the concentration of photosynthetic pigments in thalli after cadmium exposure (Photo: Anamarija Partl).

The hospitality of the organizers was amazing from the beginning, when they welcomed us with *Cetraria islandica* tea, up to the very end, when they said goodbye with a small competition for a lichen prize: soap made from *Evernia prunastri*. During the course, they took care of every small detail, allowing us to immerse ourselves in the fascinating world of lichens and air pollution. Moreover, they were very helpful with our extended, additional field trip to calcareous outcrops in the Kalnik ridge (northern Croatia). There, we searched for populations of the lichen *Solenopsora candicans* as part of an ongoing phylogeographic study (within broader research in elements strongly linked to Mediterranean-type ecosystems) currently being conducted at the Institute of Botany in Bratislava.

On behalf of all participants, I would like to thank the organizers for preparing such a great and inspiring meeting where people with various interests could meet, exchange their experiences, and establish new collaborations.

Zuzana Fačková
Institute of Botany, Slovak Academy of Sciences, Bratislava

LICHENS AS A TOOL FOR INTERPRETATION OF ENVIRONMENTAL CHANGES AND MANAGEMENT UNIVERSIDADE DE LISBOA (PORTUGAL), 11-15 JULY 2016

After 4 years, the advanced training course entitled “Lichens as a Tool for Interpretation of Environmental Changes and Management”, held annually at the Centre for Ecology, Evolution and Environmental Change (cE3c) at the Universidade de Lisboa (Portugal), is already a tradition. Every year, we are excited to see participants making their first steps in the world of lichens.

Similarly, it’s almost a tradition to have a friend joining our teaching team, composed of Cristina Máguas, Cristina Branquinho, Paula Matos, Silvana Munzi, Pedro Pinho (Universidade de Lisboa, Portugal) and Sofia Augusto (Universitat Rovira I Virgili, Spain). This year, our invited guest was Dr Sonia Ravera (Università del Molise, Italy), President of the Italian Lichen Society and expert lichen taxonomist. Participants from Italy, Lithuania, Portugal and Spain all contributed their enthusiasm to the course, making it even more successful.

Once again, a one-day excursion took place at “Companhia das Lezirias”, Samora Correia (<http://www.cl.pt/htmls/en/home.shtml>) in a Mediterranean cork-oak woodlands. The hot July sun didn’t prevent us from learning biomonitoring methods based on terricolous lichens and biological soil crusts (Figs. 1, 2); the refreshing shadow of *Quercus suber* however, made epiphytic lichens more attractive (Fig. 3).



Figure 1. Paula Matos explaining the biomonitoring method for biological soil crusts (Photos: Pedro Pinho and Jonás César Agulló Brotons).



Figure 2. Paula Matos explaining the biomonitoring method for biological soil crusts (Photos: Pedro Pinho and Jonás César Agulló Brotons).



Figure 3. Application of the standard European method for air pollution (Photo: Pedro Pinho).

Next year, the course will be offered on 10-14 July 2017. The programme is available at <http://ecofun.fc.ul.pt/Activities/lichens-course>. All correspondence should be directed to lichenscourse@fc.ul.pt.

Once again, our special thanks go to Claudia Oliveira (cE3c Secretariat) for her help with course organization.

Silvana Munzi, Lisbon (Portugal)

Second Symposium of Lichenological Studies in Venezuela, 16-17 September 2016, Maracaibo

Six years after the first symposium in the Caracas Botanical Garden (Venezuela), a second Symposium of Lichenological Studies (Simposio de Estudios Liquenológicos de Venezuela; SELV) was organized from 16-17 of September 2016, this time in Maracaibo (Zulia state). The SELV are organized by the Venezuelan Lichenological Group (GVL by its initials in Spanish). The first Symposium was in 2010 organized by Venezuelan lichenologist Jesus Hernandez. The Maracaibo SELV was organized by Jose Soto, biologist from Zulia University (LUZ), promoter of lichenology in the Maracaibo, and an important contributor to the lichen collection in herbarium HERZU. The objective of the Symposium was to bring together everyone who is doing work on lichens in Venezuela. The first SELV hosted 10 conferences and 18 participants. In 2016, there were 15 conferences, 3 workshops, 38 participants and two international guests from Colombia. The main topics of the conferences and workshops were on lichen taxonomy and systematics; biodiversity; ecology; chemistry; use of lichens as bioindicators; and education.



Jesus Hernandez is giving the opening speech for the event.

The first day was dedicated to the 15 conferences and one workshop. The opening speech and conference were dedicated to the father of Venezuelan lichenology, Volkmar Vareschi, who began working on lichens upon his arrival in Venezuela in the 1950's. At the end of the day, the GVL annual meeting was held. Many important decisions were taken on the future of Venezuelan lichenology, but the most important was that the group will organize a SELV every two years. It will be held in the framework of the National Botanical Congress, which is also held every two years. This will help the GVL cut down on organizational costs, and count a bigger audience for the promotion of lichenology. This would place the next SELV in July 2017 in Maturin (Monagas state). Another important decision was that in the years in between, another event will be held, named the GVL Encounter (Encuentro del Grupo Venezolano de Liquenólogos, EGVL). The first EGVL will be held in San Cristobal (Táchira state). The EGVL will have a day of conferences and workshops, followed by a few days dedicated to a field trip. The time after the field trip will be dedicated to the identification of the specimens collected. The purpose of the field trip will be to collect in areas that have not been collected yet, have been poorly represented in herbaria, or where nothing has been published for the area yet. The EGVL plans to publish its field trip findings in a known journal shortly after the meeting.



Group photo from the Symposium.

Upon finishing the GVL annual meeting, a dinner was hosted along with some awards from the GVL.

The aims of the Second Symposium were completely fulfilled. It was a great chance to view all the advances in Venezuelan lichenology and to finally propose yearly meetings of the GVL.

Jesus E. Hernandez M.
Instituto Experimental Jardín Botánico Dr. Tobías Lasser
Universidad Central de Venezuela, Caracas, Venezuela
jeshernandezm@gmail.com

LICHENOLOGICAL EXPEDITION TO TAITA HILLS, KENYA 21 OCTOBER–2 NOVEMBER 2016

A joint Finnish-Estonian lichenological expedition to Kenya sounds like a wild dream. It happened, however, at the end of October 2016 when Jouko Rikkinen and Inga Jüriado from the University of Helsinki, and Tiina Randlane and Andres Saag from the University of Tartu, visited ‘Terra Station’ in Taita Hills, in south-eastern Kenya. The fifth member of the expedition, Ulla Kaasalainen from the University of Helsinki, had stayed in the same station already for nearly two months to collect material for her postdoctoral research project, and greeted our arrival as a welcome change to her everyday working routine.



Inga Jüriado and Jouko Rikkinen in the the Lumo Community Wildlife Sanctuary (Photo: Tiina Randlane).

About 30 million years ago, the Taita Hills were covered by extensive rainforest. During a cooler and drier period some 10 million years ago, the lowland forests were replaced by savanna, leaving the mountain ranges as "islands" where the tropical forests continued to prosper. As the region has been severely logged—and the foothills and slopes of the main peaks are extensively farmed—just fragments (altogether only 6 km²) of the indigenous forest have been retained. Because the Taita Hills are often surrounded by relatively cool moist air, clouds and mist coming from the Indian Ocean, these montane forests support an especially high diversity of bryophytes and cyanolichens. We had the good fortune to visit eight peaks—the mountains Ngangao, Mbololo, Fururu, Chawia, Kasigau, Maktau, Vuria (the highest, at 2200 m) and Susu—over seven days of field work. Collecting cyanolichens for later genotype analyses of the lichen symbionts was one of the goals of our field work; contributing to the species list of lichens (especially from the family Parmeliaceae) from the Taita Hills was the other. Towards that end, the following cyanolichen taxa were recorded and collected: *Leptogium azureum* group, *L. austroamericanum*, *L. phyllocarpum*, *Lobaria retigera*, *Peltigera ulcerata*, *Sticta fuliginosa*, *Sticta limbata*, and *S. weigeli*, but also several samples of *Coccocarpia*, *Crocodia*, and *Pseudocyphellaria*. The diversity of *Usnea* and *Ramalina* species (awaiting future identification) was also remarkable.

We spent an unforgettable two weeks in ‘Terra Station’, which is the Taita Research Station managed by the University of Helsinki, located in the small town of Wundanyi. The premises of the early Norwegian Christian missionary Jon Jøssang were sold to the University of Helsinki in 2009, and in 2011 the research station was officially opened. Currently, several local people are employed as station staff, and many students and university researchers visit the station as their research projects are connected with the biodiversity or climate studies of Kenya.



Premises of the Taita Research Station (Photo: Andres Saag).



At the foot of Mt. Kasigau: Mwadime Mjomba, Tiina Randlane, Darius Kimuzi and Andres Saag (from left to right) (Photo: Andres Saag).



Usnea sp. on the slope of Mt. Kasigau (3.828°S 38.645°E, elev.= 1790 m) (Photo: Andres Saag).

This expedition was organized and led by Jouko Rikkinen, Professor of Botany of the University of Helsinki, whose energy seemed to be inexhaustible: he was our guide, car driver and lecturer; he pointed out and photographed lichens, bryophytes and vascular plants on our trips to the mountains, but also numerous animals during the safari; and his supply of fascinating true stories was unlimited. However, his reserves of wine were not unlimited; unfortunately, they eventually came to an end. Nevertheless, we want to sincerely thank Jouko, and also Ulla, for their guidance and hospitality. We also want to acknowledge the great work done by the local staff: manager Mwadime Mjomba, research assistant Darius Kimuzi, and cook Rebecca Mwanyolo.

Tiina Randlane & Andres Saag, Tartu (Estonia)

REPORT OF THE MEETING OF THE *TREBOUXIA*-WORKING GROUP, TRIESTE, ITALY 2016

From the 26th through the 28th of September 2016, a group of international scientists working with *Trebouxia* photobionts gathered in Trieste, Italy to discuss recent advances and potential directions for future research to better understand this important lichen-associated algal genus. The meeting was organized by Lucia Muggia with the cooperation of Eva Barreno from the University of Valencia, and hosted at the University of Trieste. A total of 30 scientists (lichenologist and phycologists), representing eight countries (U.S.A. and Canada included) and 12 research groups, attended the two and a half day meeting, which included a broad range of seminar talks and a hands-on laboratory session.

The idea to organize this meeting—the first of its kind focusing on *Trebouxia*—was initiated by informal discussions during the 8th Congress of the International Symbiotic Society in Lisbon in 2015. Indeed, an ever-increasing number of lichenologists have turned their interest towards understanding lichens as symbiotic systems by investigating lichen photobionts, the majority of which are members of the green algal genus *Trebouxia*. Up until now, research on *Trebouxia* occurred rather independently across distinct research groups. Therefore, we recognized the need to meet jointly to present our data, discuss results, and strategize future directions of study within the scientific community. The impetus for establishing strategies for future research was derived from the large amount of data that has been generated for *Trebouxia* in recent years, and the rather inconsistent treatment of this data among studies.

Trebouxia is the most well-studied genus of lichen photobionts. Species occur worldwide in diverse habitats, many with distinct eco-physiological traits; in addition, they can be rather easily isolated in axenic cultures. The current availability of rich culture collections representing multiple species and isolates affords novel possibilities for diverse research interests. Notwithstanding, molecular sequence data continue to reveal novel lineages that are not yet represented in culture collections. Phylogenetic studies of diversity and relationships within *Trebouxia* highlight the pressing need for robust delimitation of species boundaries and formal species recognition of undescribed species in *Trebouxia* using an integrative approach.

The organizers of the *Trebouxia* workshop took into consideration multiple perspectives, spanning phylogenetic, ecophysiological and next generation sequencing approaches (NGS) studies, as well as culture-dependent analyses, to formulate an interdisciplinary roadmap for future studies of *Trebouxia*.



Group photo of the participants (Photo: Stefano Martellos).

Specific topics identified during the workshop to help direct research included:

- **Scalability:** at which scale are we performing our studies, and what differences should be considered when studies are conducted at global vs. local scales?
- **Informative phylogenetic loci:** the internal transcribe spacer region (ITS) seems to work well as a general barcode for *Trebouxia*. However, molecular species delimitation analyses using a single locus may not accurately delimit species boundaries, and putative species should be treated only as species hypotheses. What additional genetic markers can be added to improve species delimitation and specimen identification using DNA sequence data?
- **Photobiont diversity in culture and in the lichen thallus:** multiple photobionts are often isolated from the inside of a single, discrete lichen thallus. To what extent are these accessory algae involved in the lichen symbiosis?
- **Standardization of culture conditions:** cultures respond differently under variable culture conditions. Therefore, it is of key importance that differences in morphology and ultrastructure of the cells (and the chloroplast) of photobionts isolated in cultures be evaluated under standardized growth conditions and at the same age, for meaningful comparisons.
- **Standardization of clade nomenclature in phylogenetic studies:** new lineages of *Trebouxia* are continually being recovered in phylogenetic reconstructions, especially in cases where unique ecological niches or poorly explored geographic regions are investigated in more detail. The vast majority of these new lineages await formal taxonomic recognition because morphological and ultrastructural features have not been characterized. Developing axenic culture collections for these lineages will accelerate the description of new species by providing relevant morphological features.

- **High-throughput sequencing and its role in understanding lichen symbioses:** High-throughput sequencing approaches represent powerful tools for understanding symbiotic systems, and their application in lichenology is in its infancy. Challenges associated with sample and library preparation, PCR bias, determining the roles of accessory algae, and appropriate data analyses need to be effectively addressed to optimize the use of high-throughput sequencing in *Trebouxia* research.

Answers and detailed explanations to all these tasks will be summarized in a joint paper (in prep.). Meanwhile, we hope that the subjects will stimulate open dialog. We invite interested parties to start, take part or lead these discussions at www.symbioticgreenalgae.com (<http://symbioticgreenalgae.com/>); these topics can be found in the 'Forum' sessions of the webpage. With this, we would like to encourage all scientists working with green algal photobionts of lichens to interact more dynamically, exchange useful material for comparative analyses, and propose cooperative projects in which shared interests are jointly developed. We also were facing the possibility of applying for European funding for joint research on *Trebouxia*. Pedro Carrasco (Spain) analysed that the participants (number and countries) met the basic criteria for a Cost Action, but further researchers and countries are invited to help make our application successful.

Lucia Muggia, Trieste (Italy), Steven Leavitt, Provo (USA) & Eva Barreno, Burjassot (Spain)

BOOK REVIEW

NIMIS, P. L. (2016): The lichens of Italy. A second annotated catalogue. – Trieste: Edizioni Università di Trieste, 739 pp., Hardback. ISBN 978-88-8303-754-2. Price: € 80.

Over the last two hundred years, lichenology in Italy changed from top-notch in the middle of the 19th century (= the period of Massalongo and his contemporaries) to nearly complete neglect in the middle of the 20th century. In the 1970s, a new era started, originating in Trieste, with many active workers (representing many universities) joining the Italian Lichen Society. One of the first highlights was the publication of *The Lichens of Italy - An Annotated Catalogue* by Pier Luigi Nimis in 1993 (Museo Regionale di Scienze Naturali Torino, Monografia 12). At the time of its preparation, it was often colloquially called the “phone book” because of its size and amount of data.

Now I have the pleasure to announce a new phone book 23 years after the first one. As was its predecessor, it is a checklist for the lichenized fungi (and some related species) of Italy; it includes all the country's 21 administrative divisions, with complete literature references for the years 1993 to 2016. Because of the great progress in lichen floristics in Italy over the past decades, the number of references is nearly as many as in the first catalogue. They are listed on 57 pages (pp. 577-633), not repeating all the floristic literature cited in the 1993 volume. The very valuable notes and remarks of the first volume are also not repeated here, but updated remarks can be seen as additions to the previous catalogue. For the first time in print, the ecological indicator values for every species are presented, based on the rich data derived from the research on lichen distribution in Italy. All lichen species are also searchable on the ITALIC homepage (The Information System on Italian Lichens) by Nimis & Martellos (<http://dbiodbs.univ.trieste.it/italic/italic03>).

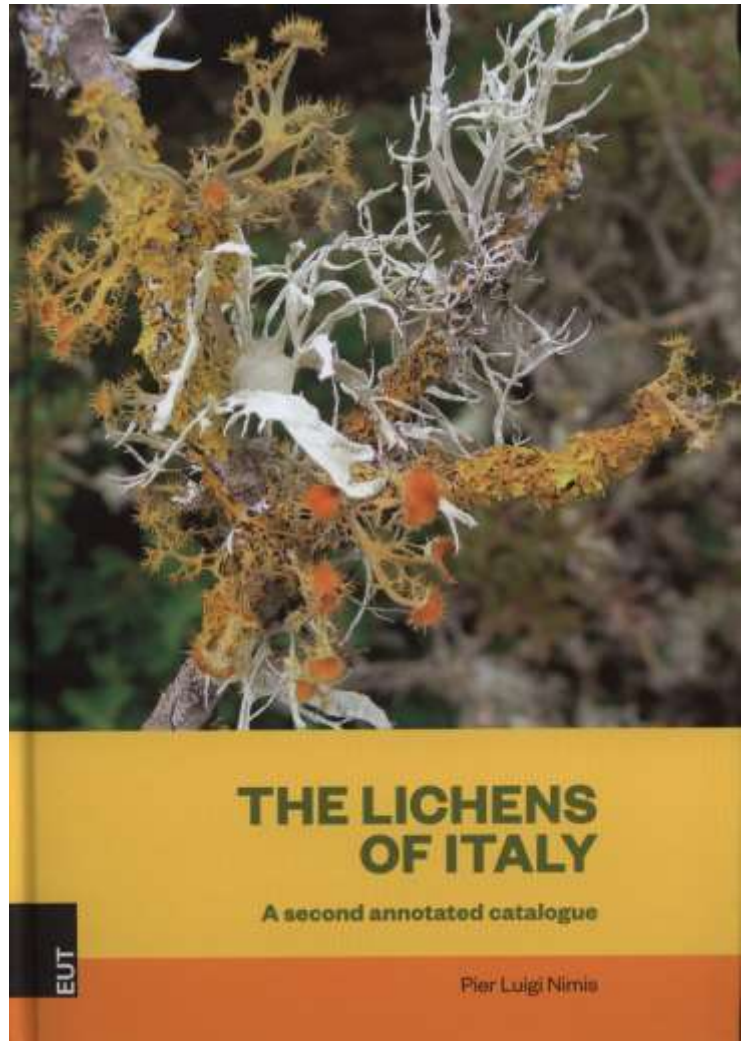
The nomenclature of the catalogue follows the most recent changes, but includes all the synonyms from the first issue as well.

The catalogue now accepts 2704 taxa for Italy, compared to 2145 in 1993. A fascinating table of progress in the lichenological exploration of Italy from 1993 to 2016 (p. 3) shows the increasing numbers of known taxa for the 21 administrative divisions. The lowest number is now 490 for Molise, and the highest number is 1582 for Trentino-Alto Adige. But more impressive is the fact that for every region, the number of species known has increased in almost case, and (unlike in 1993) no region remains completely underexplored.

In addition to the usual introductory chapters, the new catalogue also includes an interesting, rewritten chapter on the history of lichenology in Italy (p. 5-11).

The author refrained from formally proposing new combinations in groups presently under study, but some changes were unavoidable. They are listed (p. 19-20) and include *Collemopsidium halodytes* (Nyl.) Grube & B.D. Ryan, *Gyalolechia flavorubescens* (Huds.) Söchting, Frödén & Arup var. *quercina* (Flagey) Nimis, *Lobothallia hydrocharis* (Poelt & Nimis) Sohrabi & Nimis, *Physcia mediterranea* Nimis (nom. nov. pro *Physcia scopulorum*), *Protoparmeliopsis graeca* (J. Steiner) Sipman & Cl. Roux, *Protoparmeliopsis vaenskaei* (Cl. Roux & C. Coste) Cl. Roux, and 10 new combinations in the genus *Myriolecis*.

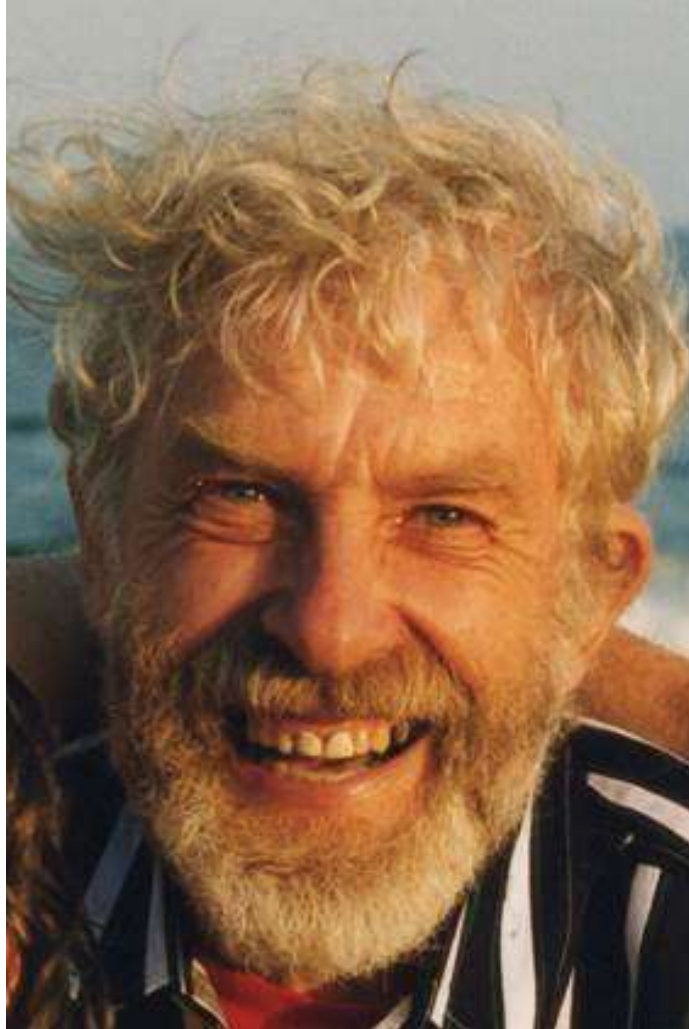
With all its valuable information, the new catalogue will be a necessity for every serious lichen library—and not only in Italy and Europe. Italian lichenology, and especially the author, should be congratulated for such an achievement.



Peter Scholz, Schkeuditz

ORBITUARY

DR. WOLFGANG MAASS



Sadly, Dr. Wolfgang Maass passed away this past winter. His friends and colleagues mourn this important contributor to the study of lichens. Born in Helsinki, Finland, in 1929, he studied in Germany; in 1960, he emigrated to Nova Scotia, Canada. Dr. Maass studied the biosynthesis and chemistry of lichen substances, and later the ecology and conservation of rare lichens. His work led to the listing of one of the first endangered lichens in Canada, *Erioderma pedicellatum*. A more complete history of Dr. Maass' life can be found in the journal *Symbiosis*, published 2016 Volume 69, Issue 3, pp 199–203 [DOI 10.1007/s13199-016-0421-z]

Robert P. Cameron

PERSONALIA

JOSEF HAFELLNER TURNED 65!



Josef Hafellner holding the Festschrift. There are his colleagues, guest and friends in the audience (*Photo: Walter Obermayer*).

On the occasion of his birthday earlier this summer, his colleagues at the Institute of Plant Sciences surprised Josef with a Festschrift in Herzogia on Nov. 17th, 2016. After a scientific talk presented by Mats Wedin, (international) colleagues, guests, and friends moved to the nearby greenhouse in the Botanical Garden, where Josef's birthday party commenced. The greenhouse provided an appropriate ambience for the event, featuring personal exchange of old and new stories in lichenology, and—of course—discussion of scientific matters.

Martin Grube, Graz (Austria)

DR. WILLIAM A. WEBER TURNED 98!

Dr. William A. Weber, Professor Emeritus at the University of Colorado at Boulder, and former curator of the University of Colorado Museum turned 98 last week. Congratulations, Bill!

David Richardson, Halifax (Canada)

NEW PHD THESES FROM THE UNIVERSITY OF TARTU, ESTONIA

Kristiina Mark defended her PhD thesis "**Diversification and species delimitation of lichenized fungi in selected groups of the family Parmeliaceae (Ascomycota)**" on 7 October 2016 in Tartu, Estonia.



From left to right: Mats Wedin, Lauri Saag, Kristiina Mark and Tiina Randlane after Kristiina's defence ceremony on 7 October 2016 in Tartu (Photo: Andres Saag).

In her doctoral thesis, Kristiina studied species boundaries and evolutionary relationships in the lichenized fungal genera *Cetrelia*, *Usnea* (section *Usnea*), and *Vulpicida*. She also attempted to

identify lichenized fungal species using DNA sequences from pyrosequencing, and estimate its usage and accuracy. Her thesis shows that many taxa of lichen fungi are still in need of taxonomic revision. Two synonymizations (*Vulpicida juniperinus* = *V. tilesii* = *V. tubulosus*, and *Usnea lapponica* = *U. substerilis*) were proposed and one new species (*Usnea parafloridana*) described in the framework of her thesis. She also found that the genera *Vulpicida* and *Usnea*, section *Usnea* represent recently diverged species complexes with conflicting genetic signal and unclear species relationships. Here, novel species-tree and species-delimitation methods should be used instead of a traditional gene-tree approach. *Cetrelia*, on the other hand, is a group with a longer evolutionary history, resulting in relatively well-circumscribed species and clear diagnostic characters. Kristiina's investigations showed that DNA-based identification can be used as an alternative species identification method in a system of well-circumscribed taxa with a high-quality reference database, while NGS platforms can be used to accelerate reference database construction when species are difficult to sequence via the Sanger technique.

The thesis was supervised by Assoc Prof. Dr. Tiina Randlane (University of Tartu) and Dr. Lauri Saag (Estonian Biocenter). Prof. Dr. Mats Wedin from the Swedish Museum of Natural History acted as the opponent for the thesis. Kristiina is now continuing her lichen studies as a post-doc at the Swiss Federal Research Institute (WSL) under the supervision of Prof. Dr. Christoph Scheidegger. The electronic version of Kristiina's PhD dissertation can be found in the University of Tartu DSpace repository <http://hdl.handle.net/10062/53459>.

Polina Degtjarenko also successfully defended her PhD thesis "**Impacts of alkaline dust pollution on biodiversity of plants and lichens: from communities to genetic diversity**" on 16 November 2016 in Tartu (Estonia), with Assist. Prof. Stefano Loppi (University of Siena, Italy) as the opponent. Her thesis was supervised by Assoc. Prof. Dr. Tiina Randlane (University of Tartu) and Dr. Liis Marmor. The thesis is based on four published papers.

Polina's thesis reviewed the long-term influence of alkaline dust pollution emitted from different sources (cement plant, limestone quarries, and unpaved road) on species diversity, including vascular plants, bryophytes, lichens, and algae; and, additionally, on the genetic diversity of *Usnea subfloridana* populations in Estonia. Her results showed that long-term dust pollution has a neutralizing effect on soil properties, pine and spruce barks: the pH value of soil and tree barks decreased along an increasing distance from the sources of pollution. The alkaline dust pollution has caused destruction of natural communities and formation of novel communities in the vicinity of pollution sources; for example invasion of non-typical (for local communities) as well as pollution-tolerant species occurred, including calciphilous species and species characteristic for nutrient-rich habitats. Polina's study also confirmed the usability of several previously proposed bioindicators and suggested new bioindicators of dust pollution among algae, lichens, bryophytes and vascular plants. Interestingly, dust pollution revealed a kind of 'parapositive' impact on natural communities, suggesting that pollution might, besides disturbing communities, temporarily also contribute to the distribution of rare, red-listed, protected and woodland key habitat species. However, those habitats are temporary phenomena, depending strongly on the continuance of pollution, and are certainly not suggested as a tool for supporting rare taxa. Finally, alkaline pollution had a negative impact on the genetic variation of *Usnea subfloridana* populations. The loss of genetic diversity could serve as additional evidence to support recognition of environmental disturbances induced by alkaline dust pollution. Online version of Polina's thesis is available at DSpace Repository of University of Tartu <http://hdl.handle.net/10062/54207>.



From left to right: Stefano Loppi, Polina Degtjarenko, Tiina Randlane and Liis Marmor after Polina's defence on 16 November 2016 (*Photo: Andres Saag*).

Currently Polina is working as Junior Research Fellow at the University of Tartu, and as Lecturer at Euroacademy (Tallinn), and is looking for a postdoc position (postdoc offers are always welcome at: polina.degtjarenko@ut.ee).

Kristiina Mark & Polina Degtjarenko, Tartu (Estonia)

NEW PHD THESIS FROM CHARLES UNIVERSITY IN PRAGUE

In September 2016, Jiří Malíček defended his Ph.D., entitled "Diversity, ecology and methods of the research of lichens in old-growth forests in Central Europe" His supervisor is Zdeněk Palice, and his opponents were Anna Guttová (Bratislava) and Sergio-Pérez Ortega (Madrid). Jiří

investigated lichen diversity in Central European old-growth forests using new methods of research that measured species richness. Papers on the importance of dead wood and large trees in Czech forests were also included in his thesis. In addition, there is a technical treatment of the taxonomy and ecology of members of the *Lecanora subfusca* group in the study region. There is also a short section discussing undescribed lichen diversity in forests.

The Editor

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Journal: *Australasian Lichenology*, web-page: <http://nhm2.uio.no/botanisk/lav/RLL/AL/>

Brazil: Grupo Brasileiro de Liquenólogos (GBL). Info: Marcelo P. Marcelli, Instituto de Botânica, Seção de Micologia e Liquenologia, Caixa Postal 4005, São Paulo – SP, Brazil 01061-970. Fax: (+55)-11-6191-2238, phone: (+55)-11-5584-6304 (institute), 218-5209 (home), e-mail: mpmarcelli@msn.com

Central Europe: Bryologisch-lichenologische Arbeitsgemeinschaft für Mitteleuropa (BLAM). Contact: Volker John, Pfalzmuseum für Naturkunde, Hermann-Schäfer-Straße 17, D-67098 Bad Dürkheim, Germany, e-mail: V.John@pfalzmuseum.bv-pfalz.de, web-page: http://www.blam-hp.eu/home_en.html
Journals: *Herzogia*, *Herzogiella*, web-page: <http://www.blam-hp.eu/herzogia.html>

Colombia: Grupo Colombiano de Liquenología (GCOL). Info: Bibiana Moncada. E-mail: bibianamoncada@gmail.com; web page: <http://grupocolombianodeliquenologia.blogspot.com/>

Czech Republic: Bryological and Lichenological Section of the Czech Botanical Society. Chairperson: Svatava Kubešová, e-mail: svata.kubesova@gmail.com, web-page: <http://botanika.bf.jcu.cz/bls/english/index.html>
Journal: *Bryonora*, web-page: http://botanika.prf.jcu.cz/BLS/bryonora_en.php

Ecuador: Grupo Ecuatoriano de Liquenología (GEL). Info: Alba Yanez, e-mail: albayanez8@gmail.com; web page: <http://grupoecuarianodeliquenologia.blogspot.com/>

Finland: Lichen Section, Societas Mycologica Fennica. C/o: Botanical Museum (Lichenology), P.O. Box 7, FI-00014, Helsinki University, Finland. Info: Teuvo Ahti, e-mail: teuvo.ahiti@helsinki.fi

Journal: *Karstenia*, web-page: <http://www.karstenia.fi/index.php>

France: Association française de Lichénologie (AFL). Président: Jean-Pierre Gavériaux, e-mail: jp.gaveriaux@numericable.fr, web-page: <http://www.afl-lichenologie.fr>.

Bulletin: *Bulletin d'Informations de l'Association française de lichénologie* (deux Bulletins annuels), web-page: http://www.afl-lichenologie.fr/Afl/Publications_afl.htm

Great Britain: The British Lichen Society (BLS). C/o: Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD, UK. President: Dr. A. Pentecost. Secretary: P.A. Wolseley. For membership go to <https://my.britishlichensociety.org.uk/>, Society web-page: www.britishlichensociety.org.uk/

Journal: *The Lichenologist* (accessible via Cambridge Core <https://www.cambridge.org/core/journals/lichenologist>); *British Lichen Society Bulletin*

Italy: Società Lichenologica Italiana (SLI). President: Sonia Ravera, via del Labaro 54, I-00188 Roma, e-mail: presidente@lichenologia.eu, web-page: <http://www.lichenologia.eu/>

Journal: *Notiziario della Società Lichenologica Italiana* (in Italian), web-page: http://www.lichenologia.eu/index.php?procedure=pubbl_not

Japan: The Japanese Society for Lichenology (JSL). President: Kunio Takahashi, contact email (secretary): kawahara@kansai-u.ac.jp, web-page: <http://www.lichenology-jp.org/index.php/en/>

Journal: *Lichenology*, web-page: <http://www.lichenology-jp.org/index.php/en/journal/>

Lichenological Society of Japan (LSJ). Secretary: Nobuo Hamada, e-mail:

MXI00715@nifty.com, web-page: <http://home.hiroshima-u.ac.jp/lichen/aboutlsj.htm>

The Netherlands: Dutch Bryological & Lichenological Society (Bryologische +Lichenologische Werkgroep, BLWG). Contact: L.B. (Laurens) Sparrius, contact e-mail: sparrius@blwg.nl, web-page: <http://www.blwg.nl>

Journals: *Buxbaumiella* and *Lindbergia*, web-pages: www.buxbaumiella.nl (open access) and www.lindbergia.org (open access)

Nordic Countries: Nordic Lichen Society (Nordisk Lichenologisk Förening, NLF). President: Ulrik Søchting, e-mail: ulriks@bio.ku.dk, web-page:

<http://nhm2.uio.no/lichens/nordiclichensociety/>

Journal: *Graphis Scripta*, web-page: see NLF web page

North America: American Bryological and Lichenological Society, Inc. (ABLS). President: Larry St. Clair, contact e-mail: swwolf@wisc.edu, web-page: <http://www.abls.org/>

Journals: *Evansia* & *The Bryologist*, web-page: <http://www.abls.org/publications.html>

North America, Northwest: Northwest Lichenologists (NWL). Info: Bruce McCune, contact e-mail: bruce@salal.us, web-page: <http://www.nwlichens.org>

Newsletter: *Northwest Lichenologists Newsletter*, web-page: <http://www.nwlichens.org>

North America, California: The California Lichen Society (CALs). President:, contact e-mail: president@californialichens.org, web-page: <http://californialichens.org/>
 Bulletin: *Bulletin of the California Lichen Society*, web-page: http://californialichens.org/?page_id=15

North America, East: Eastern Lichen Network. Info: Marian Glenn, e-mail: glennmar@shu.edu, web-page: <http://www.nybg.org/bsci/lichens/el/>

Poland: Lichenological Section of the Polish Botanical Society (Polskie Towarzystwo Botaniczne). President: Martin Kukwa, e-mail: dokmak@ug.edu.pl, web-page: <http://www.porosty.varts.pl/>

Slovakia: Slovak Botanical Society – Lichenological Working Group, c/o Institute of Botany, Slovak Academy of Sciences, Dúbravská cesta 9, 841 01, Bratislava 4, Slovakia. Info: Alica Košuthová, e-mail: alica.kosuthova@savba.sk, web-page: <http://sbs.sav.sk/>
 Journal: *Bulletin Slovenskej botanickej spoločnosti*, web-page: <http://sbs.sav.sk/SBS1/content.html>;
<http://ibot.sav.sk/lichens/>

South America: Grupo Latino Americano de Liqueólogos (GLAL). Info: Susana Calvelo, e-mail: scalvelo@crub.uncoma.edu.ar
 Journal: *GLALIA*, web-page <http://nhm2.uio.no/botanisk/lav/RLL/GLALIA/>

Spain: Sociedad Española de Liqueología (SEL). President: Isabel Martínez, e-mail: isabel.martinez@urjc.es, secretary: Sergio Pérez-Ortega, e-mail: sperezortega@rjb.csic.es, web-page: <http://www.ucm.es/info/seliquen/>
 Journal: *Clementeana*, web-page: <http://www.ucm.es/info/seliquen/cl.htm>

Sweden: Svensk Lichenologisk Förening (SLF). President: Martin Westberg, e-mail: martin.westberg@nrm.se, web-page: <http://www.sbf.c.se/slf/>
 Bulletin: *Lavbulletin*, web-page: <http://www.sbf.c.se/slf/Bulletinen.html>; see also *Svensk Botanisk Tidskrift*, web-page: <http://www.sbf.c.se/index.php?id=122>

Switzerland: Swiss Association of Bryology and Lichenology (BRYOLICH). President: Ariel Bergamini, e-mail: praesidium@bryolich.ch, web-page: http://www.bryolich.ch/index_en.html
 Journal: *Meylania*, web-page: http://www.bryolich.ch/meylania/meylania_en.html

Venezuela: Grupo Venezolano de Liqueólogos (GVL). Info: Jesús Hernandez, e-mail: Jeshernandezm@gmail.com, web-page: www.bit.ly/lqvzla

INFORMATION FROM THE EDITOR

The December issue of the International Lichenological Newsletter will be the last printed copy. From this point onwards, the International Association of Lichenology (IAL) Council has decided to publish the Newsletter in an electronic format only (PDF file). It will be distributed by e-mail to IAL members, and after a one-month grace period, will be available on-line via the IAL website (<http://www.lichenology.org/>). Please, do not make any additional payments to renew your hard copy of the International Lichenological Newsletter.

Moreover, please note the change in deadlines. Any information intended for publication should reach the Editor on or before **June 10** and **November 10** for inclusion in the July and December issues, respectively.

IAL ADVISORY COMMITTEE IS UNDER CONSTRUCTION

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The cover-page illustration

Ramalina intermedia by Lucy C. Taylor, first published in *American Arctic Lichens* Vol 1.
Macrolichens by J.W. Thomson