

# INTERNATIONAL LICHENOLOGICAL NEWSLETTER

Vol. 57, no. 2, December 2024



Official publication of the  
**International Association for Lichenology**

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ISSN: 0731 2830

The opinions expressed in the *Newsletter* are not necessarily those held by  
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## INTERNATIONAL ASSOCIATION FOR LICHENOLOGY

The **International Association for Lichenology (IAL)** promotes the study and conservation of lichens. It organizes symposia, field trips, and distributes a biannual newsletter. The activity of IAL can be followed on several social media platforms: [IAL YouTube channel](#), [IAL Facebook page](#), [IAL Twitter account](#). People wishing to renew their membership or become members of IAL are requested to pay their membership fee (one payment of 30 EUR for 2021-2026) using PayPal or by bank transfer. All details available at <http://www.ial-lichenology.org/>.

The **International Lichenological Newsletter** is the official publication of IAL. It is issued twice a year (July and December) in English. Previously published newsletters are available at <https://ial-lichenology.org/newsletters/>. 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.

**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.**

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IAL affairs are directed by an Executive Council elected during the last General Meeting. Council members elected at the virtual IAL9 Symposium (Bonito, Brazil, 2021) are listed below, and will serve until 2026.

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## ASSOCIATION NEWS

### LETTER FROM THE PRESIDENT

Dear members of the IAL and friends,

One of the main highlights since our last newsletter was the 12th International Mycological Congress (IMC12) that took place in The Netherlands this past August. It was such a pleasure to meet so many lichenologists in person, especially after so many years of virtual interactions imposed by the pandemic. Meeting in person made me realized even more how much the COVID-19 pandemic impacted all of us.

I was delighted to see how prevalent lichenology was during this international mycological meeting (see the outstanding article by Robert Lücking in this issue of the ILN). One proud moment for me was when a mycologist told me during the congress that it was “all about lichens” this year. This is in part a reflection of the dynamism of lichenologists embracing new technologies to address longstanding questions about lichen symbiosis, which has been facilitated by strong and vibrant foundational work by mutltiple generations of lichenologists. Another hallmark of the meeting was the presence of many young investigators recognizing the potential of lichens to address fundamental questions about symbiosis. Overall, there was a lot of enthusiasm about lichenology. My hope is that this will translate into young lichenologists being hired in academia, museums, and research centers.

With IMC12 behind us, it means that we now have to focus on the 10<sup>th</sup> congress of the IAL (IAL10), which is less than two years away. As you will see, this issue of the ILN includes a lot of information about IAL10. Please read carefully and identify how you can contribute. The success of this meeting depends in large part on the involvement of all IAL members and includes: the organization of specific symposia or workshops, nomination of exceptional Ph.D. students and lichenologists for awards, contribution of talks or posters, and nominating officers for the next IAL council. Please familiarize yourself with the deadlines and come up with a plan for IAL10.

Please note that there will be a major discount for the registration fee for IAL10 for current members of the IAL. If you are not a member of the IAL, now would be a good time to become a member. This can be easily done on the IAL website: <https://ial-lichenology.org/membership/> Thank you!

Best wishes,

*François Lutzoni, Durham, North Carolina*

## ACHARIUS MEDAL TO KANSRI BOONPRAGOB

I would like to extend my deepest gratitude to the nomination committee for awarding the Acharius Medal to a truly exceptional individual whose accomplishments are as remarkable as they are inspiring. Today, we honor a colleague who has dedicated nearly four decades to building a thriving community of lichenologists in a country where, when she began her journey, this field of study was virtually nonexistent. This achievement is particularly significant because it has taken place in a tropical country, where the biodiversity of lichens is vast yet was largely unexplored. Her strategic focus on fostering international collaborations and investing in the education and training of young scientists has proven to be an extraordinarily successful approach.

I am honored to speak about my esteemed colleague and dear friend Kansri Boonpragob, emeritus professor at Ramkhamhaeng University in Bangkok.

I speak on behalf of many colleagues, including our Thai colleagues Kawinnat Buaruang, Khwanyuruan Naksuwankul, Ekaphan Kraichak, and Sittiporn Parnmen who were unable to attend this conference. However, I am extremely happy that Kansri is here with us tonight.



The award ceremony at IMC12 (Photo: Lucia Muggia)

Kansri's career began in botany and vegetation studies. After earning her Bachelor's degree from Kasetsart University in Bangkok, she pursued her Master's thesis in Tennessee and later obtained a diploma in environmental management and protection at the Technical University in Dresden. Her journey into the world of lichenology began when she completed her Ph.D. at Arizona State University under the mentorship of Tom Nash, focusing on the ecophysiology and impact of air pollution on lichens, particularly *Ramalina menziesii*, in California in 1987. Afterward, she returned to Thailand and established a lichen research group at Ramkhamhaeng University in Bangkok. There, she continued her work on ecophysiology and air pollution and initiated pioneering research on climate change. Her contribution to the Intergovernmental Panel on Climate Change (IPCC) was instrumental, and as part of the IPCC, she was among those honored with the Nobel Peace Prize in 2007—a truly remarkable achievement. The IPCC reports, to which she contributed, have been pivotal in shaping global policies aimed at mitigating the effects of climate change.

Realizing that the taxonomy of lichens in Thailand was underdeveloped, Kansri devoted herself to overseeing and supporting numerous projects and training students to address this gap. At a time when the diversity of tropical lichens was poorly understood globally, her efforts were both timely and transformative. She initiated collaborations with prominent international lichenologists, including Jack Elix, David Hawksworth, Klaus Kalb, Robert Lücking, Pier Luigi Nimis, Phillip Rundell, and the late Ming-you Lai, among others. Kansri also encouraged her students to attend international conferences and visit laboratories in Europe and North America to gain experience and build networks. Furthermore, she organized international meetings, such as the Thelotremataceae workshop in 2008 and the IAL7 congress in 2012. Her meticulous organization of these meetings, including preparing her students through English language training, ensured their success. This strategy paid off handsomely—a Thai lichen checklist published seven years ago included contributions from 21 Thai lichenologists, out of a total of 25 authors. This publication more than doubled the number of lichen species known from Thailand compared to a catalog published only 15 years earlier, reflecting nearly a century of lichen research in the country. The momentum she created has not waned; the number of known species has since increased by over 100.

In addition to being an inspiration and supporter of her students and colleagues and their students, Kansri is a most generous host, offering her guest condos to visitors and providing more food than anyone could ever consume – in addition to inviting them for lunch and dinner every day. Those who attended the IAL7 congress will fondly remember her favorite lakeside restaurant outside of Bangkok close to her home, where she loves to entertain her guests.

Kansri's career in lichenology spans over 40 years, but her intellectual curiosity has always extended far beyond lichens alone. Her publication record is extensive, including more than 50 scientific journal articles, several books, and numerous introductory articles on lichens, ecology, and botany written in Thai.

We are incredibly fortunate to have Kansri Boonpragob as our mentor, colleague, and collaborator. Her enthusiasm, generosity, and unwavering determination are unparalleled, and we will continue to seek her wisdom and guidance as she continues to be an active and engaged professor emeritus.

Congratulations, Kansri, on this well-deserved recognition!



Kansri Boonpragob and Thorsten Lumbsch presenting Acharius medal (*Photo: Robert Lücking*)

*Thorsten Lumbsch*

## MASON HALE AWARD TO THEO LLEWELLYN

I am very pleased that Theo Llewellyn has received the Mason Hale Award for best PhD Dissertation. I was his MSc mentor and PhD supervisor and it was a pleasure to supervise Theo all these years. He is an extremely talented scientist.



Theo Llewellyn collecting lichens, Portland Island, UK (Photo: Ester Gaya)

In his thesis, Theo focused on photoprotective anthraquinone pigments in the diverse order *Teloschistales* (Ascomycota) as a case study exploring how adaptive metabolic traits arise and diversify in lichen-forming fungi. He generated a genome-scale phylogeny for the *Teloschistales*, developing and implementing a lichen-specific metagenomics pipeline to sequence, assemble and annotate lichen-forming fungal genomes. Through comparative genomics, Theo identified putative anthraquinone biosynthetic gene clusters (BGCs) in *Teloschistales* genomes and demonstrated that BGC diversification occurred via re-shuffling existing enzyme-coding genes with novel accessory genes. To understand anthraquinone evolution across the whole clade, he then combined his genomic dataset with densely sampled multilocus data to produce a robust genome-scale time tree. Phylogenomic analysis showed around half of current *Teloschistaceae* genera to be unsupported, and he proposed a set of stable, evolutionarily relevant higher taxa instead. To understand how genomic variation affects the metabolite phenotype, he jointly analysed the genomes with new, untargeted metabolome data. This revealed a complex interplay between genomic and metabolic variation and suggested that, for anthraquinones, BGC variation affects compound regulation and transport more than structural diversity. Finally, as anthraquinones are broadly cytotoxic, he hypothesized that anthraquinone-producing *Teloschistaceae* lichens evolved resistance mechanisms to avoid self-toxicity. Enzyme assays, axenic culture experiments, selection analysis and *in silico* protein modelling in combination indicated that *Teloschistaceae* lichens achieved self-resistance through the

evolution of efflux pumps, toxin methylation, and resistant target enzymes. Together, the results of Theo's dissertation demonstrate the power of multiomic approaches in investigation of the evolutionary processes that shape metabolite diversification in lichens.



Theo Llewellyn collecting lichens, Namibia (Photo: Ester Gaya)

Interestingly, Theo's dissertation shows how generally accepted patterns in non-lichenised fungi apply equally to lichens. It fills in a major gap in the *Lecanoromycetes* tree of life. It is the first study to directly explore self-resistance mechanisms in lichens and investigates processes in BGCs that not even research in model fungi such as *Aspergillus* has dealt with.

I believe this thesis has made major advances in our understanding of lichen biology and the evolution of secondary metabolites. This is the first fungal study to use whole genome sequences with a Bayesian time-calibration approach. This is also the first study to identify anthraquinone BGCs in the *Teloschistales*, and the largest lichen phylogenomics study in terms of number of loci and genomes. Again, it is the first to jointly analyse genomes and metabolomes of lichen-forming fungi using a comparative and evolutionary-based approach that directly tests joint trait evolution, and challenges previous assumptions of metabolite evolution in lichens. It also presents for the first time an assessment of genome size in lichens using cytometric data. Last but not least, it tackles the ongoing debate on the classification of higher taxa in *Teloschistaceae*.

Theo's viva panel (defense panel in Britain), composed by Prof. Paul Dyer and Prof Matthew Fisher, praised his performance enthusiastically. A quote from their report: '*Excellent high-level viva, impressive range of responses, creative and engaged constructively with all the criticisms. The work was clearly that of the candidate.*'

Well done Theo!!!

*Ester Gaya*

## IAL10 - CALL FOR SYMPOSIA

The IAL10 is approaching, and as announced by social media, the webpage of IAL10 can be visited at <https://ial10.units.it/>.

The call for symposia has been open since September 1, 2024 and will be closed on June 1, 2025.

You are welcome to submit your symposium proposal following the link 'Call for papers'. Multidisciplinary symposia fitting within one or more of the six broad topics of Ecology, Biology, Physiology, Systematics, Lichen biomonitoring, and Lichen and monuments, will be considered.

Please consider the following instructions when preparing your symposium proposal:

The symposium proposals will be evaluated by the Scientific Committee.

The symposium proposal should include the following information: names of the proponents and contact person(s), title, and short abstract.

The symposium proponents should be at least two people who will chair the symposium if it is accepted.

The symposium proponents must belong to two different affiliations from two different countries.

The symposium chairs will cooperate with the scientific committee in the selection of the contributions for poster and oral presentations.

Please use the template provided (to be downloaded at the 'Call for symposia page') to prepare your symposium proposal.

We are looking forward to receiving your symposium proposals. Thank you for your cooperation in preparing this exciting 10<sup>th</sup> IAL meeting.

On behalf of the Organizing and Scientific Committees,

*Lucia Muggia, President of the IAL10*

## ANNOUNCEMENT FROM THE NOMINATION COMMITTEE

The 10<sup>th</sup> international meeting in Trieste is quickly approaching, and the time has come to think about the election of a new IAL council. We are calling for nominations for IAL council officers –President, Vice-President, Secretary, Treasurer, Assistant Treasurer, Editor, and three Council Members at Large. According to the IAL constitution, any member of the IAL may submit nominations or be nominated. Nominations, to be valid, need the written consent of the nominee and must include short description of the background and rationale what this candidate may bring to the organisation in this position. The deadline for submissions is May 1<sup>st</sup>, 2026 and should be send to e-mail: [ave.suija@ut.ee](mailto:ave.suija@ut.ee). Hence, we are waiting for your proposals!

*Troy McMullin ([tcmullin@nature.ca](mailto:tcmullin@nature.ca)),  
Manuela Dal Forno ([mdalforno@brit.org](mailto:mdalforno@brit.org))  
and Ave Suija ([ave.suija@ut.ee](mailto:ave.suija@ut.ee))*



## CALL FOR NOMINATIONS FOR IAL10 AWARDS

As we prepare for the International Association for Lichenology 10<sup>th</sup> Symposium (IAL10), to be held in Trieste, Italy, July 26–31, 2026 (<https://ial10.units.it/>), we invite you to nominate distinguished individuals for the awards listed below, which will be presented by the International Association for Lichenology during IAL10. These awards celebrate exceptional contributions, and recognize both emerging talent and lifetime achievements, in lichenology.

### 1. Acharius Medal

This award honors the lifelong achievements of outstanding lichenologists. Established in 1992, it is granted to one or more recipients. Nominations must include an email from two nominators and the CV of the nominee.

### 2. Dharani Awasthi Award

This award is aimed at young researchers residing in low-income countries who have completed their PhD within five years before the nomination deadline (**January 31, 2026**). Nominations must include a CV, a copy of a document showing the date the PhD was obtained, and two letters of support.

### 3. Mason Hale Award

This award recognizes excellence in research by young lichenologists for work resulting from doctoral theses or similar studies. Only graduate students who defended their dissertation between **February 1, 2024, and January 31, 2026** (inclusively) are eligible. Nominations must include a justification letter, a PDF of the dissertation (or a link to a Dropbox account or similar, where the document is stored), a CV, and a copy of a document showing the date when the PhD was obtained.

### 4. Aino Henssen Award

This award is for emerging researchers who have completed their PhD within five years before the submission deadline. Nominations must include a justification letter, a CV, a copy of a document showing the date the PhD was obtained, and two letters of support.

### 5. Sylvia Sharnoff Education Award

This award recognizes outstanding educational websites devoted to lichens, prepared by students or educational institutions at any level. The site may be in any language and can include any aspect of lichen biology used in an educational program. Nominations must include the website link and a justification explaining why the site deserves recognition.

Nominations must be submitted by someone other than the nominee and should include all required documents specified for each award, accompanied by a detailed justification from the nominator. Both the nominee and the nominator must be members of the IAL. Decisions about the awards will be taken by the IAL Council.

The deadline for submitting nominations is **January 31, 2026**. All nominations must be submitted by email to **Julieta Orlando** ([jorlando@uchile.cl](mailto:jorlando@uchile.cl)) and **Marcela Caceres** ([mscaceres@hotmail.com](mailto:mscaceres@hotmail.com)) **simultaneously**. The email subject line should state "**IAL Award Nomination**". For more information about awards and previous recipients, visit <https://ial-lichenology.org/awards/>.

We encourage all members of the IAL community to submit nominations and celebrate the remarkable achievements that have shaped, and continue to shape, the field of lichenology.

*IAL Awards Nomination Committee*

## NEWS

### DNA EXTRACTS DEPOSITED IN DNA BANK OF THE NATURAL HISTORY MUSEUM OF OSLO (NHMO)

Most of my DNA extracts are now deposited and accessible in the DNA Bank of the Natural History Museum of Oslo (NHMO). They comprise over 1000 lichen total DNA extractions, mostly *Xanthoria parietina*, *X. aureola* and *X. calcicola* (e.g. Lindblom & Ekman 2005, 2006, 2007, 2012; Lindblom & Blom 2016), but also a few from smaller projects (Tønsberg et al. 2016; Lindblom et al. 2019, 2023). Accompanying information about GenBank numbers, the herbarium where the original specimen is deposited, etc., are included in the database.

The NHMO DNA Bank is the largest Norwegian non-human DNA bank. It is searchable and open for loans to the general scientific community on certain conditions. More information: <https://www.nhm.uio.no/english/collections/dna-bank/>

#### References

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- Tønsberg, T., Blom, H. H., Goffinet, B., Holtan-Hartwig, J. & Lindblom, L. 2016. The cyanomorph of *Ricasolia virens* comb. nov. (Lobariaceae, lichenized Ascomycetes). *Opuscula Philolichenum* 15: 12–21.

*Louise Lindblom, Bergen*

### THE MICROBE PLANET

I am pleased to let you know about the release of the documentary series “PLANETA MICROBIO” made by <https://scienceintoimages.com/es/>, for **Caixaforum+**, <https://caixaforumplus.org/>.

The series “THE MICROBE PLANET”, consisting of twelve 25-minute episodes, is the first devoted entirely to the world of microbes, which includes all microscopic organisms, not only bacteria. In **Chapter 9, ‘Can’t live without you’**, the part **dealing with LICHENS** starts 10 minutes 30 seconds into the episode.

<https://caixaforumplus.org/v/no-puedo-vivir-sin-ti>

The series adopts an ecosystemic perspective, considering microbes in the context of their relationships with the other organisms that inhabit the planet.

Thus, microbes appear as organisms from which we can learn and try to extract answers to some of the questions that humanity has historically asked itself: Can immortality be achieved? What is the relationship between love and death? Are males necessary? Why can we drink wine or eat bread? What will extra-terrestrial life be like?

In addition, the series highlights the importance of microbes in the evolution and maintenance of all life on the planet, and shows them as the components of the first ecosystems and interactions between organisms, especially symbiotic relationships.

The ideas of Lynn Margulis and James Lovelock are reflected throughout the series, both when microbes are related to the different types of symbiosis, from endosymbiosis or ectosymbiosis to the formation of new species as well as complex holobiomes and when topics such as ecopoiesis or the functioning of the biosphere as a whole are discussed.

It has been necessary to show microbes as they function and, in addition, to do so in the most aesthetically pleasing way possible. In order to condense all these topics and concepts into the 12 episodes of the series, and to make them attractive and eye-catching, the authors employed special recording techniques, using light microscopes as camera lenses with both a documentary and aesthetic aim.

It is not a series designed for scientists, to whom it may be of interest, but for non-scientists, for people who, despite not having scientific training, may be interested in learning more about the wonderful and complex world of living beings and their interactions with the environment.

We hope that you can spread this news among your colleagues involved in different specialties, as well as to students on all your courses, since it was made with the purpose of spreading quality and originality.

This October, the chapter has been included into the official section of the RAW SCIENCE FILM FESTIVAL, Nueva York.

The locations for the film are Spain, Portugal, Mexico and Australia.

The experts participating in each of the chapters can be found listed at the end of the document.

The SYMBIOGENE team of the University of Valencia (Eva Barreno, Patricia Moya, Salvador Chiva) have contributed to **Chapter 9: 'Can't live without you'**.

The voiceover is in Spanish with English subtitles.

This is the link to the trailer of the series:

<https://caixaforumplus.org/c/planeta-microbio>

"The Making of":

<https://caixaforumplus.org/v/making-of-planeta-microbio>

The producers of ScienceIntoImages S.L. would appreciate it if the IAL partners could disseminate this summary, along with the links, to Basic Education centres, Middle School Institutes, and Vocational Training Institutes, as the content may be very useful for both teachers and students.

*Eva Barreno*

## **Index of the series "THE MICROBE PLANET" audio-visual**

### **Episodes and Experts**

\***Rubén Duro**, Science Intoimages, Audiovisual Co., **Episode 01: Microbes**

<https://scienceintimages.com/>

[https://es.wikipedia.org/wiki/Rub%C3%A9n\\_Duro](https://es.wikipedia.org/wiki/Rub%C3%A9n_Duro)

\***Pedro Luis Fernández**, Anatomic Pathology, **Episode 02: Looking for Immortality**

<https://scholar.google.com/citations?user=Qko8oG0AAAAJ&hl=es&oi=ao>

<https://www.researchgate.net/profile/Pedro-Fernandez-8>

\***Jordi Guimerà**, Applied Sciences in Geology, **Episode 03: The Environmental Patrol.**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=Jordi+Guimer%C3%A0&btnG=](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=Jordi+Guimer%C3%A0&btnG=)

\***Ilargi Martínez-Ballesteros**, Microbiology-Bacteriology, **Episode 04: The Salt of Life**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=ilargi+mart%C3%ADnez-ballesteros&oq=Ilargi+Mart%C3%ADnez](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=ilargi+mart%C3%ADnez-ballesteros&oq=Ilargi+Mart%C3%ADnez)

<https://www.researchgate.net/profile/Ilargi-Martinez-Ballesteros>

\***Pere-Joan Cardona Iglesias**, medical Microbiology-Parasitology, **Episode 05: Love and Death**

<https://scholar.google.com/citations?user=TCxdlFUAAAAJ&hl=es&oi=ao>

<https://www.researchgate.net/profile/Pere-Joan-Cardona>

\***Enric Bartra**, Viticulture, Biodiversity & Enology, **Episode 06: Noah's Microbes**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=Enric+Bartra&btnG=](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=Enric+Bartra&btnG=)

<https://www.researchgate.net/profile/Enric-Bartra-2>

\***M<sup>a</sup> Dolores Quesada**, Systemic & Nosocomial Infections, **Episode 07: Miraculous microbes**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=Mar%C3%ADa+Dolores+Quesada&btnG=](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=Mar%C3%ADa+Dolores+Quesada&btnG=)

\***Ricard Guerrero**, Microbial Ecology, **Episode 08: The Earliest Ecosystems**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=ricard+guerrero+i+moreno&btnG=](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=ricard+guerrero+i+moreno&btnG=)

\***Eva Barreno**, Lichen Symbioses & Microalgae, **Episode 9: 'Can't live without you'**

[https://www.researchgate.net/profile/Eva\\_Barreno2/contributions/?ev=prf\\_act](https://www.researchgate.net/profile/Eva_Barreno2/contributions/?ev=prf_act)

[http://scholar.google.es/citations?sortby=pubdate&hl=es&user=CafMiwsAAAAJ&view\\_op=list\\_works](http://scholar.google.es/citations?sortby=pubdate&hl=es&user=CafMiwsAAAAJ&view_op=list_works)

\***Montse Bayés**, Microbiology in Food Quality & Safety, **Episode 10: Edible microbes**

<https://www.maxzander.cat/index.html>

[info@maxzander.com](mailto:info@maxzander.com)

\***Ricardo Amils**, Microbial ecology-harsh environments, **Episode 11: Extraterrestrials? Aliens?**

[https://scholar.google.com/scholar?hl=es&as\\_sdt=2007&q=Ricardo+Amils&btnG=](https://scholar.google.com/scholar?hl=es&as_sdt=2007&q=Ricardo+Amils&btnG=)

<https://www.researchgate.net/profile/Ricardo-Amils-2>

\***Mercedes Berlanga**, Diversity in microbial mats & biofilms, **Episode 12: I am I and my microbes**

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## REPORTS

### LICHENS AND LICHENOLOGISTS AT THE IMC12

Six years ago in 2018, IMC11 in San Juan, Puerto Rico, was the last time lichenologists from all around the world (or at least a large proportion of them) could meet in person. Then came COVID19, and the 2020 IAL9 meeting, meticulously planned by our Brazilian colleagues and the first IAL meeting scheduled in South America, fell victim to the pandemic. It was eventually held as a virtual meeting one year later in 2021. While that experience was great fun in its own way, and instigated a number of novelties for the IAL community, since 2018 we have been missing the opportunity to meet in person at a larger event. It was therefore no surprise that the IAL community was well represented at the IMC12 in Maastricht, Netherlands, this past August. Due to COVID19, IMC12 had likewise been postponed from 2022, to be held six years after the previous meeting in Puerto Rico.

Lichens already took part of the spotlight on the first day (Sunday) as part of the IMC12 *Early Career Mycologists Symposium*, with the talk *Climate Zone-Specific Genomic Differences in the Lichen-Forming Genus Umbilicaria* by Edgar Wong, a postdoc with Prof. Imke Schmitt in the Molecular Evolutionary Biology Group at Senckenberg (Germany). The keynote lecture in this symposium was given by Camille Truong from the Royal Botanic Gardens in Victoria, Australia. While her talk was about mycophagy and its implications, she is well known for her work on *Usnea* lichens with Philippe Clerc and María de los Ángeles Herrera-Campos. She also received the Daniel McAlpine Medal as part of the Young Mycologist Awards at the IMA meeting during the conclusion of the congress.

On Monday, part of the focus was on the symposium *DNA Sequences as Type Equivalent - Where to Next?* While this issue applies more to ecologically hidden fungi and is not really relevant to the discovery of unknown lichen diversity, it has some implications, such as the potentially formal description of lichenicolous fungi known only from DNA sequence data. One example is the invalidly described genus *Lawreymyces*, found in *Agonimia* and *Normandina* lichens, which made it into the *International Code of Nomenclature for algae, fungi, and plants*. I have been involved in this topic for about a decade now, and find it highly fascinating, although it tends to distract me from doing real work on lichens. But real lichens were also showcased on this day, in two sessions focusing on genomics and secondary fungal metabolites: Symposium 12 (*Genomic Guided Natural Product Discovery*) and Workshop 10 (*Genomics of Fungal Secondary Metabolism: A Need for Collaborative Efforts*). As part of Symposium 12, Theo Llewellyn, freshly PhD'd under the guidance of Ester Gaya at Royal Botanic Gardens Kew, and who would receive the Mason Hale Award later that day, presented a talk entitled *Self-Resistance Adaptations Allowed Toxic Metabolites to Become Key Adaptive Traits for Photoprotection in Lichen-Forming Fungi*, using the brightly pigmented Teloschistaceae as model group. Workshop 10 featured two lichen-related presentations: *Biosynthetic Exploration in The Genomic Era: A Focus on Lichenized Fungi* by Garima Singh from the University of Padova (Italy), also co-organizer of Symposium 12, and *Successful Heterologous Expression of Lichen Prenyltransferases Provides a Glimpse into Meroterpenoid Biosynthesis in These Organisms* by Kristina Haslinger from the University of Groningen (Netherlands), whose lab specializes on potential pharmaceutical applications of natural products, providing a link between basic research and industry.

The IAL dinner, well organized by Lucia Muggia, Marcela Cáceres, Imke Schmitt, Viktoria Keller, Cecile Gueidan, Nicolas Magain, and François Lutzoni, took place Monday evening in the scenic restaurant Orangerie. All together, 47 people attended the dinner, if I counted correctly.



Impressions from the IAL dinner at IMC12 in the Orangerie in Maastricht: Lichenologists enjoying the physical vis-à-vis, mentally preparing for the food feast while chatting about work-related and other topics (all pictures by the author).



More impressions from the IAL dinner: The venue; François Lutzoni taking care of the entertainment section; announcements of the Acharius Medal and the Mason Hale Award, and handing over the IAL flag (all pictures by the author).

After stomachs were filled with delicious food, current IAL president François Lutzoni took the stage, quite obviously having fun leading through the official part of the evening like a seasoned moderator, with the Acharius Medal and the Mason Hale Award and a much anticipated surprise raffle of lichen items carefully handcrafted by our talented Thai colleagues. For this year's award ceremony, we did have a perfect gender balance: Kansri Boonbragob received the well-deserved Acharius Medal for her life's work establishing a successful lichen research group at Ramkhamhaeng University in Bangkok, Thailand, from which quite a number of excellent lichenologists have emerged over the past decades. The award was fittingly presented by Thorsten Lumbsch, Vice President of Science and Education at the Field Museum, Chicago, and longstanding collaborator with Kansri and her group. The Mason Hale award went to the aforementioned Theo Llewellyn for his splendid doctoral thesis on one of the most challenging lichenized fungal families, the Teloschistaceae, seen through fresh eyes and with novel methodological approaches. We certainly all hope that his thesis lays the groundwork for resolving the ongoing taxonomic challenges within this important family. I am not going to enumerate all the winners of the lichen items raffle, as there are too many. All I will say is this: when you yourself are called, you better listen to your wife about what to bring back.

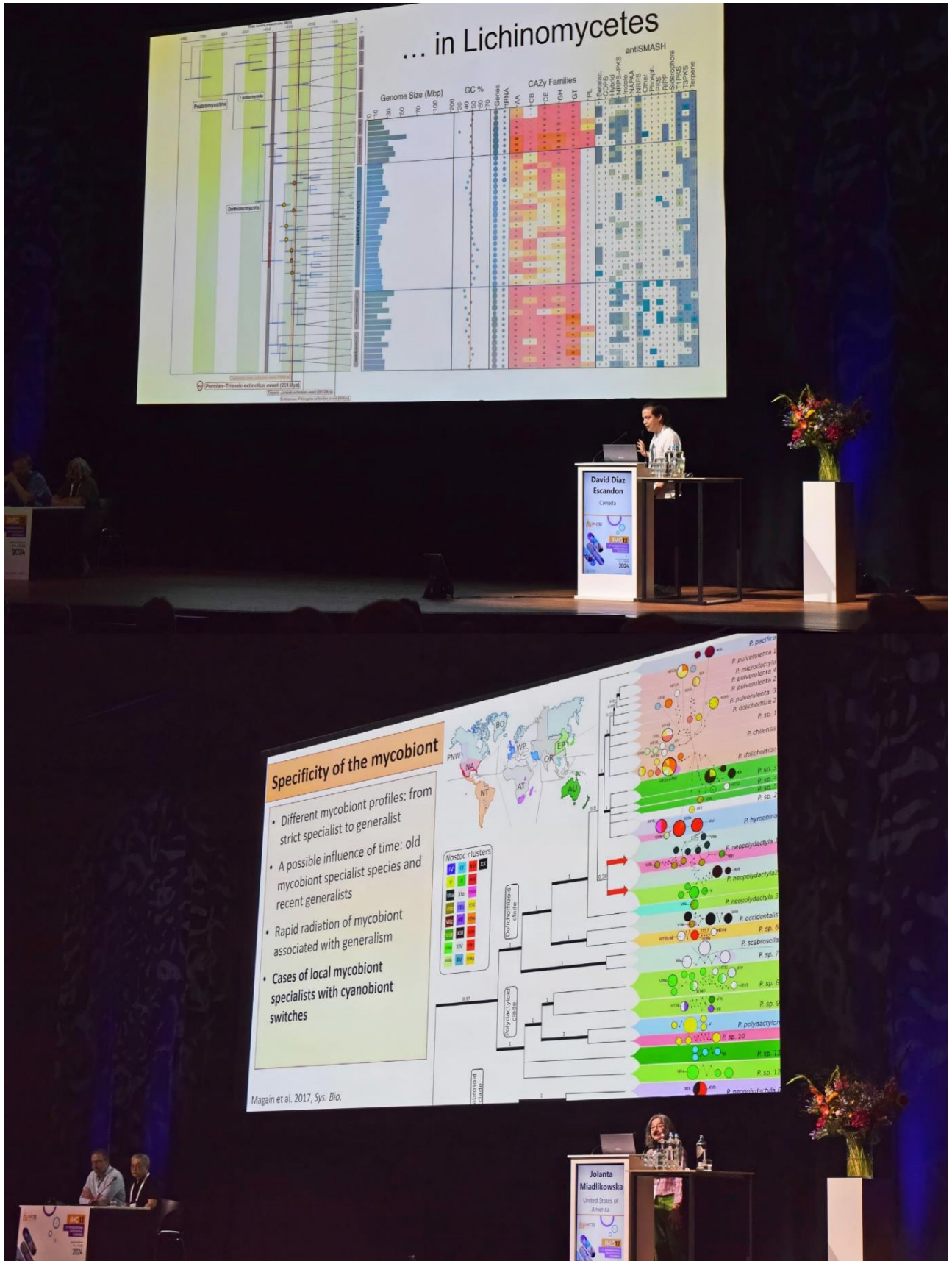
The IAL dinner also saw the formal handing over of the IAL flag from Marcela Cáceres, organizer of IAL9 in Brazil, to Lucia Muggia, organizer of IAL10, to be held in 2026 in Trieste, Italy. We all look forward to this meeting, which, due to the COVID19 pandemic, will be the first in-person IAL Symposium since IAL8, held ten years prior in Helsinki!



Official IAL group photo from the IMC12 in Maastricht (picture taken by an unnamed member of the Orangerie team).

It was to be expected that phylogenomics would be a dominant theme in IMC12. So day three (Tuesday) took off with Workshop 11 (Fungal Genomics), organized by Annegret Kohler and Igor Grigoriev, with two lichen-related presentations: *Evolution of Lichen-Forming Fungi, not their Cyanobionts, shapes the Taxonomic and Metabolic Diversity of Cyanolichen Microbiomes*, by Diego Garfias Gallegos, from the lab of François Lutzoni and Jolanta Miądlikowska at Duke University in North Carolina, USA; and *Reconstructing a Fungal Diversification Event Antedating Multiple Mass Extinctions: A Cautionary Tale for Phylogenetics (and Phylogenomics)*, by David Díaz Escandón, from the lab of Toby Spribille at the University of Edmonton in Alberta, Canada. In parallel, Workshop 14 (*Studies in Heterobasidiomycetes – In Memoriam Franz Oberwinkler*), organized by Mary Catherine Aime and Dominik Begerow, (Germany), also included a lichen-related presentation:





Getting serious: David Díaz Escandón from the Spribille lab at the University of Edmonton exploring Lichinomycetes genomes with AI, and Jolanta Miadlikowska from the Lutzoni lab at Duke University dissecting *Peltigera-Nostoc* associations (pictures by the author).

Millanes Romero from the Universidad Rey Juan Carlos in Madrid, Spain. In the morning Keynote Session 3 (*Evolution, Biodiversity and Systematics*), right after the workshops, Jolanta Miądlkowska herself took the stage with her splendid plenary talk on *Peltigera-Nostoc* associations, entitled *An Ecological Clade-Based Genomic Approach for the Study of Symbiotic Pairing Mechanisms in Lichens*.

Lichens had a say in three symposia on Tuesday. Symposium 17 (*Interfungal Parasitic Relationships: From De Bary's Observations to Functional Genomics and Advanced Imaging*), organized by



Unveiling the diversity inside lichen miniature ecosystems: Gulnara Tagirdzhanova and Lucia Muggia (pictures by the author).

Levente Kiss and Alexander Idnurm, included another talk on lichenicolous Basidiomycota: *Living Within a Lichen - The Life Cycle of Tremella caloplacae s.l.*, by Sandra Freire Rallo from the working group of Ana Millanes Romero at the Universidad Rey Juan Carlos in Madrid, Spain. Symposium 18 (*Species Emerging from the Dark*), organized by Anna Rosling and Christian Wurzbacher, focused on cataloguing species diversity from metagenomics, including two talks on lichen-associated organisms: *Lichen Metagenomics as a Tool for Symbiont Detection*, by Gulnara Tagirdzhanova, a former student of Toby Spribille and currently a postdoc with Nick Talbot at the Sainsbury Laboratory in the UK; and *The Lichen-Associated Mycobiota*, by Lucia Muggia from the University of Trieste, Italy, as mentioned above the organizer of IAL10 in 2026.

The first symposium of IMC12 fully dedicated to lichens was Symposium 21 (*Tropical Lichens Unveiled: Exploring Biodiversity Wonders*), organized by Manuela Dal Forno from the Fort Worth Botanic Garden and Botanical Research Institute of Texas, USA, and Marcela Cáceres, from the Universidade Federal de Sergipe in Aracaju, Brazil. Both put together a diverse program, covering the major tropical areas with topics such as species discovery, global diversity, and environmental impacts on lichens, showcasing female expertise in tropical lichenology. Bibiana Moncada, from the Universidad Distrital Francisco José de Caldas in Bogotá, Colombia, and Curator of Lichens and Bryophytes at the Botanischer Garten und Botanisches Museum Berlin (Herbarium Berolinense) since July 2024, opened the symposium with insights on a phylogenetic revision of lobarioid lichens in the Philippines (*The Subfamily Lobarioideae (Peltigeraceae) in the Philippines*), as part of an NSF-funded project spearheaded by Manuela Dal Forno. I had the pleasure to follow with a new prediction of global tropical lichen diversity (*How Diverse are Tropical Lichens?*), forecasting 60,000 species. Many of the unknown species are hidden in known, often misapplied names, as shown by the presentation *Parmeliaceae in East Africa* by Paul Kirika from the National Museums of Kenya in Nairobi, a longstanding collaborator with the labs of Thorsten Lumbsch and Pradeep Divakar.

For a solid estimate of global tropical lichen diversity, critically revised national checklists are needed. The emerging checklist for Brazil, assembled by André Aptroot in collaboration with numerous Brazilian colleagues, is thereby setting a new world record for country-level lichen diversity, with close to 5,000 species, as shown by Marcela Cáceres in her talk *Lichens From Brazil: Five Thousand Species and Counting*. Hidden diversity in the genus *Psora* was discussed by Ann Evankow, working with Einar Timdal at the University of Oslo in Norway, in her presentation *ITS as a Tool to Discover and Describe Cryptic Diversity of Psora (Lichenized Ascomycota) in Cryptogam Collections*. She left us with a lot of anticipation and we are looking forward to her results.

Gothamie Weerakoon, Curator of the Lichen Collection at the Natural History Museum in London, UK, is currently collaborating in a unique project which attempts to link lichen biodiversity to environmental disturbance factors in Bhutan and Pakistan (South Asia), as presented in her talk *Using Traits to Interpret Taxonomic and Biogeographic Variation in Epiphytic Lichens in Contrasting Atmospheric and Environmental Conditions in Bhutan and Pakistan*. The underlying inventories have already revealed many novel species. Gomphillaceae, and especially its foliicolous members, have been the target of recent phylogenetic revisions.

The dissertation of Elise Lebreton, who is working in the lab of Nicolas Magain at the University of Liège in Belgium, and also collaborating with foliicolous lichen expert Emmanuël Sérusiaux, has dramatically increased the geographic coverage and taxon sampling, revealing many additional new genera and a large number of unrecognized species. The data presented in her talk *Exploring the Biogeography of Foliicolous Lichens: A Focus on the Family Gomphillaceae (Ascomycota: Graphidales)* clearly reject the idea of widespread tropical species, in favor of a high level of regional endemism. These findings are in line with the results of studies on tropical macrolichens, as shown by Bibiana Moncada and Paul Kirika. Pamela Rodriguez-Flakus, from the lab of Adam Flakus in the W. Szafer Institute of Botany of the Polish Academy of Science, and a specialist in tropical lecideine lichens, rounded out this symposium with her presentation *Evolution at the Edge: The Impact of*

*Climate Change on Lichen and Fungal Communities in Glacier Forelands of the Bolivian Andes.* All in all, I was very pleased to see that there are still so many things to discover among tropical lichens,



Tropical Lichens Unveiled: The symposium took the audience through all tropical regions and covered a diversity of macro- and microlichens (all pictures by the author).



Tropical Lichens Unveiled afterparty: The participants seemed to enjoy the moment (pictures by the author).

and that several new generations of skilled lichenologists have emerged ready to take on this challenge.

After a quick sleep, on Wednesday Symposium 33 (*Ecology and Evolution of Fungal-Photoautotroph Interactions*), organized by François Lutzoni from Duke University and Elizabeth (Betsy) Arnold from the University of Arizona, USA, focused on the intricacies of the fungal symbioses with photosynthetic partners. Five of the presentations tackled lichens, with a diversity of novel methodological approaches including phylogenomics. *The Spatial and Evolutionary Pairing Mechanisms of Lichen Mycobionts and Photobionts*, presented by Carlos Pardo De La Hoz and François Lutzoni from the Lutzoni Lab at Duke University, took a deeper look at *Peltigera-Nostoc* associations as a model group to explore evolutive patterns and processes of symbiotic associations

in lichens. The lichen body plan is what sets lichen symbioses apart from all other fungal symbioses with photoautotrophs. The lichen thallus takes shapes not known from fungi alone, and only in association with the corresponding photobiont.

Using *Xanthoria parietina* as a model organism, Gulnara Tagirdzhanova showed in her talk (*Using Meta-Omics to Understand Lichen Symbiotic Architectures*) how metagenomics and metatranscriptomics are being applied to identify those genes potentially involved in the formation of the lichen thallus, from the entire range of symbionts present. It is currently assumed that many lichen-forming fungi share the same photobionts, resulting in a presumed lower photobiont diversity compared to lichen mycobionts. Kento Miyazawa from the University of Tsukuba in Japan went on to test this for Gomphillaceae, Pilocarpaceae, and Ramalinaceae. In his presentation *Symbiotic Relationships and Dispersal Modes of Follicolous Lichens with Chlorococcoid Photobionts in Japan*, he could show that the number of photobiont OTUs belonging to the genera *Chloroidium*, *Jaagichlorella*, *Parachloroidium*, *Phyllosiphon* and *Symbiochloris* practically matched those of the mycobiont species in a 1:1 ratio. One explanation for this surprising result is the frequent co-dispersal of both symbionts in these lichens, fostering within-thallus selection.

Stephen Sharrett, in the working group of Jessica Allen at Eastern Washington University, USA, talked about *Rarity, Cause or Consequence: Comparative Population Genomics of Six Lichenized Fungi with Contrasting Range Sizes, Life Histories, and Morphologies*. He compared the population genomics of three common and widespread vs. three rare species in the genera *Lepraria*, *Punctelia*, and *Usnea*, finding that rare species show stronger geography-driven genetic structure, whereas widespread species are apparently capable of regular genetic exchange over larger distances. How phylogenomics including transcriptomics helps to address ecophysiological questions in lichen symbioses was shown by Michael Cunliffe from the Marine Biological Association of the UK, in his presentation *Omne Trium Perfectum – Unravelling the Ecological Interactions Between a Marine Lichen and Associated Symbiont Cyanobacteria*. His team studied the marine lichen *Lichina pygmaea*, finding that it associates with two different cyanobacteria of the genera *Rivularia* and *Pleurocapsa*. The tripartite symbiosis enables the lichen to tolerate the fluctuating conditions of the intertidal zone, as soluble carbohydrates are differentially produced by the two photobionts during high and low tide.

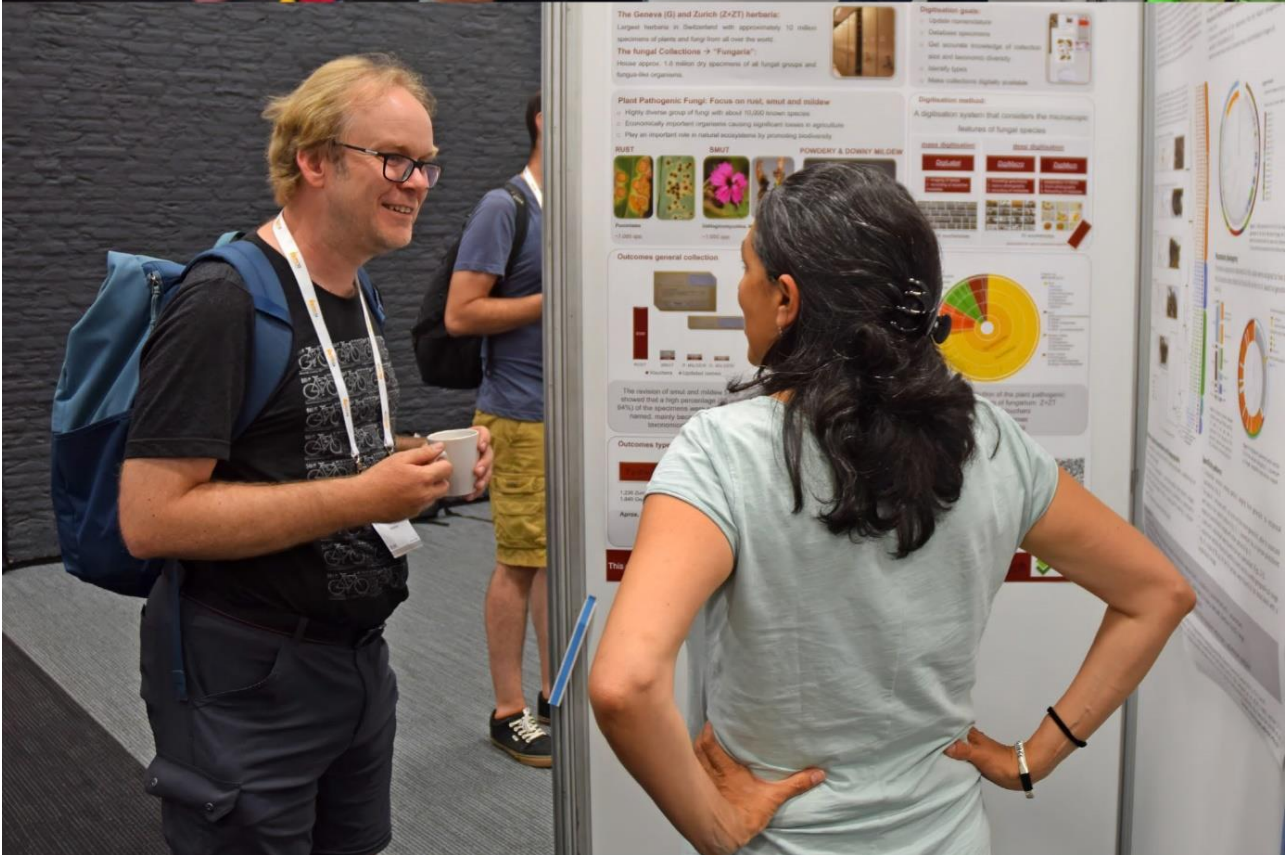
The academic lichen portion of IMC12 was concluded on Thursday with Symposium 39 (*Community Ecology of Fungi and of Fungi and Bacteria*), organized by Cheng Gao and Ida Skaar. Cheng Gao himself, from the Institute of Microbiology of the Chinese Academy of Science and the State Key Laboratory of Mycology in China, presented *Metagenomic Insights Into Lichens*, with a structural and functional survey of 90 assembled metagenomes of fungi, 32 of algae, and 368 of bacteria, finding genomic signal reflecting climate, thallus morphology, and the nature of the photobiont. But the lichen activities did not stop there, as Friday was dedicated to a lichen excursion, organized by Nicolas Magain and his team of the University of Liège, going beyond the border to the Eifel region in Rheinland-Pfalz, Germany, a region characterized by rare lichens growing on lava rock.



The intricacies of the lichen symbiosis revealed by novel approaches: the symposium on Ecology and Evolution of Fungal-Photoautotroph Interactions touched on diverse aspects of fungal symbioses and lichens played a major role (picture courtesy by Marcela Cáceres).

Of course lichens were also well represented in the poster sessions, but it would take another set of pages to enumerate them all. Needless to say that the posters were also of high quality and covered a diverse range of topics. From a design perspective, the poster on New Caledonia lobarioids by Antoine Simon and his group stood out. A surprise was the poster showing the placement of the non-lichenized fungus *Cytospora* in the Gomphillaceae by the team of Marcin Piątek, adding another level of complexity to this family. Armenia is emerging as a lichen powerhouse, as shown by the poster on lichen conservation in Armenia by the lab of Arsen Gasparyan. Posters are also always a good reason to get to know one another and immerse oneself in scientific discussions, or just to have a little fun.

Overall, IMC12 was a great experience, well organized, in a great venue, and I had the impression of a new spirit emerging. Of course, it was the first mycological or lichenological congress dominated by novel approaches of phylogenomics and the topic of detecting hidden fungal diversity through metabarcoding. But it was not only that. I had the impression that not only has the mycological community become fully emancipated, but also that fungal research is becoming fully integrated, regardless of whether you work with emblematic mushrooms, medical fungi, obscure parasites or lichens. In previous IMCs, lichens used to have their own symposia, whereas here many of the lichen presentations were integrated into mixed symposia with overarching topics. It does seem that novel, emerging methods contribute to this integration and for the first time I had the impression that it is no longer possible to tell apart lichens from fungi or lichenologists from mycologists.



Relaxed lichenology: Manuela Dal Forno causing excitement with her studies on *Cora* lichens, and Mónica Otálora engaging with Toby Spribille in discussions on *Leptogium* (pictures by the author).



IMC12 also confirmed that promising new generations of lichenologists and mycologists are emerging in all fields, including taxonomy, which is still the fundament for everything else. Integrative taxonomy is the new trend, and I hope it both contributes to a better understanding of the diversity of fungi including lichens and underlines the continued need for taxonomic expertise. DNA sequencing cannot replace taxonomy; rather, good taxonomy is needed to place molecular data into the right context. I was also very pleased to see that phylogenomics is increasingly applied not just because it is "cutting edge" but in order to tackle real questions where other methods reach their limits. This does not mean that marker-based methods are becoming vintage (as sadly expressed by the new journal policies of *Molecular Phylogenetics and Evolution*). Rather, phylogenomics (HTS) compares to marker-based approaches (Sanger) like SEM to light microscopy. SEM is more powerful and provides higher resolution, but certain questions are still best answered by a look through a compound microscope. And we have to keep in mind that the difference between phylogenetics and phylogenomics is principally just a difference in the amount of data. And with large data sets, there come limitations, such as the need for an increased use of automatisms. The quality of such pipelines is increasing, but the devil is in the details. Sometimes accuracy, achieved by inspection of all data during all steps of the analytical process, is preferred over a larger amount of data with uninspected errors. In that sense, I am looking forward to further methodological developments, but I am especially looking forward to seeing the remaining secrets of the lichen symbiosis unveiled in the years to come.

*Robert Lücking*  
*Botanischer Garten und Botanisches Museum Berlin*

## **THE FOURTH LICHEN PHOTOBIONT WORKSHOP**

The Fourth Lichen Photobiont Workshop was held from 17-20 September 2024 in Gdańsk, Poland, hosted by the Department of Plant Taxonomy and Nature Conservation at the Faculty of Biology, University of Gdańsk, and organized by Beata Guzow-Krzemińska and Martin Kukwa, along with team members Magdalena Kosecka, Magdalena Oset, Emilia A. Ossowska, Łucja Ptach-Styn, Bartłomiej Hajek, and Agnieszka Jabłońska. This unique workshop attracted scientists worldwide to discuss cutting-edge research on the symbiotic relationships between lichens and their photobionts. With 22 oral presentations and 13 posters, the workshop offered a deep dive into various aspects of photobiont diversity and the environmental factors that influence these unique partnerships. The workshop was attended by 46 researchers from 11 countries, representing 17 institutions.

The first day of the workshop, Wednesday, 18 September, saw a full schedule of oral presentations, chaired by researchers such as Pavel Škaloud, Sergio Pérez-Ortega, Andreas Beck, and Imke Schmitt. The presentations covered a wide range of topics, with notable contributions from Gaia Bartolomeo, who explored photobiont diversity in Antarctic lichens, and Anna Götz, who examined myco-/photobiont associations across climatic gradients in Antarctica. Ulla Kaasalainen and her team discussed the distribution of *Trebouxia* photobionts along environmental gradients on Mt. Kilimanjaro, while Edgar Wong focused on the comparative genomics of *Trebouxia* taxa adapted to various climate zones. Sergio Pérez-Ortega and collaborators told the audience about algae in the city. Imke Schmitt et al. examined how algal layer architecture varies within species, while Kamila Dědková explored photobiont diversity in *Cladonia* lichens. Other highlights included Jiří Malíček and Ivana Černajová's presentation on hymenial algae as agents of photobiont dispersal, and Niko Johansson's investigation into the surprising association of lichen photobionts with bird feathers and feet, while Veronika Veselá discussed the presence of lichen photobionts in aeroplankton, and Pavel Škaloud focused on uncovering the true diversity of symbiotic and free-living green algae in the soil. Lucie Vančurová et al. presented differences in cryptic lichen species and their symbiont choice, Salvador Chiva provided updates on new *Trebouxia* species-level lineages, followed by Pavel

Škaloud's proposal for advancing species delimitation within *Trebouxia*. Magdalena Kosecka introduced a novel metabarcoding approach for studying algal diversity in lichens, and Matthew Nelsen shared efforts using Next Generation Sequencing to assess lichen diversity. Later presentations included Enrico Boccato's study on zoospore diversity and sexual reproduction in *Trebouxia*, Andreas Beck's present usage of microCT for 3D analyses in lichens, and Maonian Xu's findings on how algal partnerships influence lichen metabolite variations, using *Cladonia foliacea* as a case study. Henrique Valim explored diurnal and circadian transcriptome dynamics in lichen-forming *Trebouxia* algae, and Rosa Celia Poquita-Du examined the photo-physiological responses of *Trebouxia* strains to high light conditions. The final presentation was given by Ana García Muñoz, focusing on the investigation of photoprotection strategies in Trebouxiophyceae through the application of comparative genomics. The lively day of presentations and discussions wrapped up with a vibrant poster session.



Participants of the Fourth Photobiont Workshop (Photo: Martin Kukwa)

On Thursday, 19 September, participants took part in a field trip to the Hel Peninsula, a site known for its rich coastal biodiversity. This allowed hands-on exploration of lichen photobionts in natural settings, enhancing the theoretical knowledge discussed during the presentations. The field trip provided a rich historical and ecological experience, offering participants insight into the natural and cultural heritage of the region. The first stop of the field trip was near Rzucewo. Forests with unique shrubs surrounded this charming village, famous for its historic lime avenue (Sobieski Avenue) which was planted in the 17th century, possibly by King Jan III Sobieski. The village was also notable for its archaeological significance, with traces of Neolithic culture and a seal hunter's settlement discovered in 1894. The neo-Gothic palace, built in 1840 by the von Below family, had since been converted into a luxury hotel, the Jan III Sobieski Castle. Here participants had the opportunity to explore the area. Some headed south to examine lichen species on trees along the historic avenue, while others went east to visit the coast. A few walked north to see the 19th-century palace and jetty, where lichens grew on the trees. Others explored Pucka Street to the north and west, which featured numerous trees with lichen communities. Second stop was in Hel. This historic town, first mentioned

in 1198, had a rich history as a center for herring trade. The waters of the Bay of Puck submerged the original settlement due to coastline changes, but the town flourished in the 12th and 13th centuries. During the visit, participants could explore key historical sites on the beautiful seacoast, including the Evangelical Church of St. Peter and St. Paul (now serving as a Fisheries Museum), a lighthouse from 1942, and half-timbered fishermen's houses from the 18th–19th centuries. Participants could also visit the Seal Sanctuary (Fokarium), part of the University of Gdańsk, which houses rescued seals and offers feeding sessions. The group also had time to explore the fortification buildings of the Hel defense area, dating from 1931-1941. In addition to the historical and cultural highlights, the surrounding forest near Hel proved to be a significant area for ecological exploration. The forest featured a variety of lichen species, including *Cladonia* and *Peltigera*, as well as epixylic lichens that grow on decaying wood. Participants observed lichens growing on old concrete structures,



Jan III Sobieski Castle (Photo: Edyta Mazur)



View from the coast in Rzucewo to Gulf of Gdansk (*Photo: Edyta Mazur*)



View of the forest near the coast from the pier at Rzucewo (*Photo: Edyta Mazur*)

including *Protoblastenia rupestris*, a rare species in northern Poland. The most fascinating parts of the forest were located north of Hel, where scattered patches of forest met the dunes and seashore, offering a unique combination of habitats.



Seacoast at Hel with a view of Baltic Sea (Photo: Edyta Mazur)

Another field trip followed on Friday, 20 September, to Babi Dół, where researchers observed photobionts in diverse ecological niches, gaining deeper insights into how environmental factors shape symbiotic relationships in lichens. The first stop of the field trip was in Borecz village. Participants were encouraged to explore and collect lichens. The second stop was in a nearby forest near to an archaeological site featuring Neolithic stone circles (Kamienne Kręgi), believed to be a burial place for the Goths who inhabited the area at the beginning of our era. In this area, the expected species are *Aspicilia verrucigera*, *Lecanora flavoleprosa*, and *L. polytropa* and *Lecidea fuscoatra s.l.* The third stop took the group to Babi Dół village, from where they proceeded to the 'Jar Rzeki Raduni' nature reserve. This reserve features a pristine river valley with clean water and a well-preserved hornbeam forest.

The Fourth Lichen Photobiont Workshop in Gdańsk was a resounding success, providing an invaluable platform for collaboration and exchange of knowledge among lichenologists. The rich discussions, fieldwork, and innovative research presented at the workshop will undoubtedly drive the field of lichenology forward, paving the way for future discoveries in photobiont research.

*Edyta Mazur*

## SCIENTIFIC REPORT: EXPLORATION FOR SYMBIOTIC FUNGI (ECTOMYCORRHIZAE AND LICHENS) IN EAST KALIMANTAN, INDONESIA

East Kalimantan is one of the Indonesian provinces on Kalimantan Island (also known as Borneo), with capital Samarinda. This city is also the future capital of Indonesia. We travelled almost two hours from Jakarta to Samarinda by airplane. To reach the Kutai National Park, it took another five hours by car. We arrived at the National Park, its habitat characterized by wetland including peat and river. The lowland vegetation is dominated by trees of the Fagaceae and Dipterocarpaceae, which host ectomycorrhizal fungi. We explored several sites within the National Park, Prebab (OrangUtan habitat), Mentoko, and Sangkima. We not only observed conserved areas but also non-conserved areas such as the home garden, Bukit Bangkirai and Balikpapan Botanic Garden.

We collected more than 100 symbiotic fungi and lichen specimens, belonging to Agaricales, Boletales, Russulales, Thelephorales, Arthoniales, Ostropales, and Peltigerales. The Boletales were represented by *Phylloporus*, *Pulveroboletus*, *Boletus*, *Scleroderma* and *Pisolithus*, the Agaricales by *Amanita*, *Inocybe*, and *Laccaria*, the Russulales by *Russula* and *Lactarius*, Thelephorales by *Thelephora*, and Polyporales by *Coltricia*. For lichens, crustose forms predominated, since the community is typically lowland forest with mostly shaded habitat. Graphidaceae was most diverse, including species of *Sarcographa*, *Graphis*, *Thelotrema*, *Nitidochapsa* and *Phaeographis*. Other taxa include *Arthothelium*, *Coniocarpon*, *Crypthothecia*, *Dirinaria* and *Coenogonium*. We also found the foliose cyanolichen *Coccocarpia* in Bukit Bangkirai.



Vegetation in Bukit Bangkirai Forest (Photo: Fandri Sofiana Fastanti)



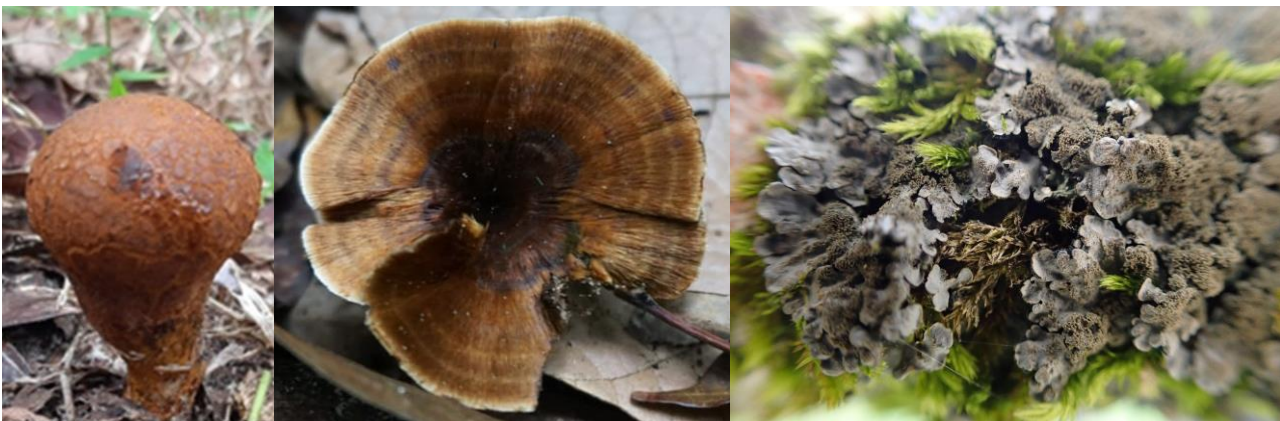
OrangUtan observed while collecting ectomycorrhizal fungi and lichens in Prevab, Kutai National Park (Photo: Helbert)



The team fascinated by mushrooms found in Sangkima, Kutai National Park (from left: Desi, Fandri, Roland, Atik, Helbert)



Tracking and eyeing ECM and lichens; reaching the leaves to determine the host of ECM (Photo: Fandri Sofiana Fastanti)



*Pisolithus* sp. (left, Photo: Atik Retnowati), *Coltricia* sp. spotted near Dipterocarpaceae trees (middle, Photo: Fandri Sofiana Fastanti), *Coccocarpia* sp. (right, Photo: Fandri Sofiana Fastanti)

We noted 25 plants as hosts associated with ectomycorrhizal fungi. They belong to 12 families, 4 of them not identified to genus level in Annonaceae, Burseraceae, Lauraceae, and Malvaceae. Dipterocarpaceae was the dominant family associated with the ectomycorrhizal fungi found in several locations. Based on these preliminary results, we decided to continue the exploration early next year.

*Fandri Sofiana Fastanti, Atik Retnowati*



## 32<sup>ND</sup> MEETING OF THE POLISH BOTANICAL SOCIETY LICHENOLOGICAL SECTION

The 32<sup>nd</sup> Meeting of Polish Lichenologists was held in Elbląg (northern Poland) from September 9-12, 2024. The meeting was organized by the Lichenological Section of the Polish Botanical Society, in collaboration with the Elbląg Forest District and the Elbląg Upland Landscape Park. The event brought together 21 lichen enthusiasts, including researchers from Polish universities and institutes, amateurs, and students.

The one-day plenary session was opened by the head of the Lichenological Section and followed by two lectures on the landscape and biological diversity of the Elbląg Upland. The main part of the plenary session featured eight lectures covering a wide range of lichenology topics, from educational and citizen-science activities to the inventory of lichen diversity in cities and parks. Presentations also addressed issues in taxonomy, phylogeny, and the distribution of the genera *Parmelia* and *Rhizocarpon*, as well as species from the family *Megasporaceae* in Europe. Additionally, two lectures focused on the revision of the lichen genera *Cora* and *Pulvinora* in Bolivia.

The poster session included four presentations on lichen inventories in several protected areas, as well as taxonomic novelties from Bolivia. Participants engaged in lively and fruitful discussions not only about the topics presented but also about broader lichenological questions and challenges. They shared their thoughts and highlighted new ideas.



Participants of the 32<sup>nd</sup> Lichenological Section of the Polish Botanical Society Congress (Photo: Rafał Szymczyk).

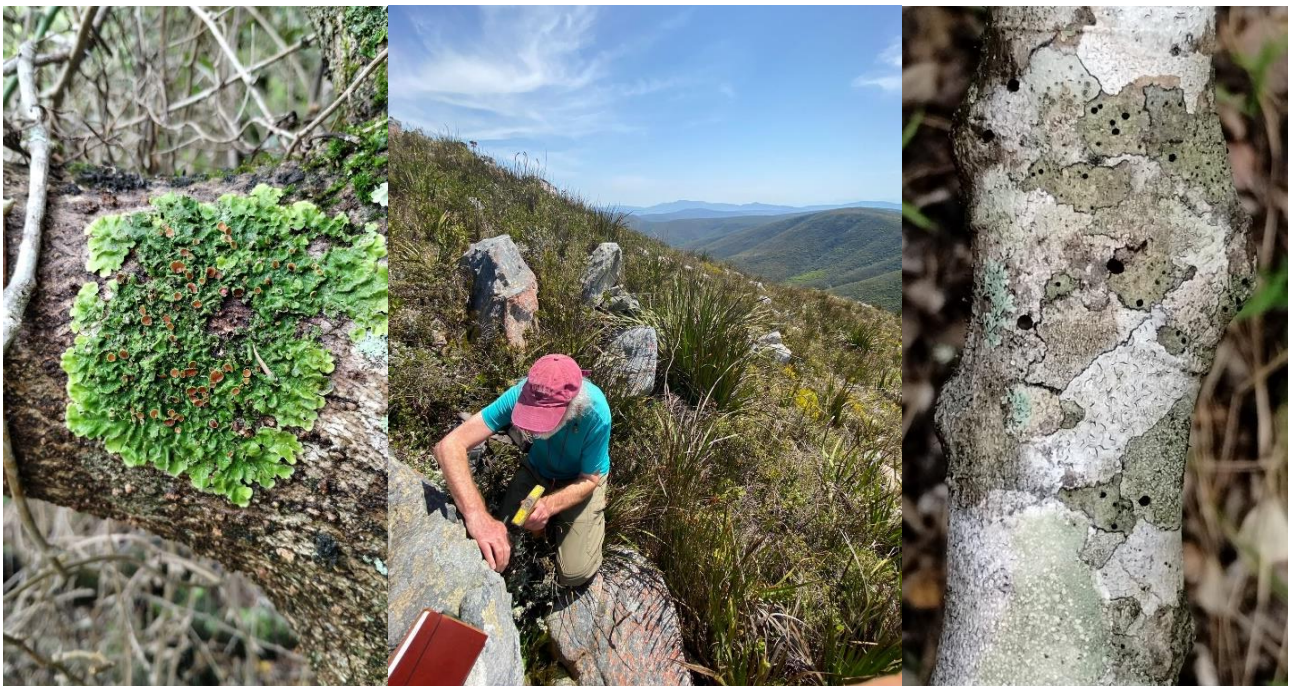
On the second day, there was a field trip to the Grabianka Valley in Elbląg Upland Landscape Park, where participants had the opportunity to explore the park's nature and exchange knowledge about the diversity of epiphytic lichens. The field trip concluded with a historical tour of the old village of Kadyny and its Maiolica factory. Attendees left the conference inspired and satisfied, eagerly looking forward to future meetings.

Valerii Darmostuk

## GROOTBOS REVISITED

In April 2023, the [Grootbos Foundation](#), a non-profit company that promotes conservation and research, whilst also working to uplift the local community, invited Danielle Ward and myself to visit Grootbos Private Nature Reserve in the Agulhas region of Western Cape Province, South Africa. During this visit, we provided information on the lichen biota for their upcoming field guide and carried out some preliminary ecological work ([IAL Newsletter 56\(1\)](#)). Throughout this visit it became clear that the reserve possessed a rich and largely undocumented lichen biota, and so a longer visit was arranged for 2024, focused on exploring the lichen biodiversity and promoting lichen research in the Walker Bay region and in South Africa more widely.

[Grootbos Private Nature Reserve](#) covers an area of 3650 hectares with four different fynbos shrubland communities and several patches of southern coastal (milkwood) forest and southern afrotemperate (afromontane) forest. The area has a Mediterranean-type climate, a hilly landscape (maximum elevation of c. 475 m) with an underlying rock type of quartzitic sandstone. Fynbos is a hyperdiverse, fire-adapted biome that requires fire every 10-15 years, so is not a good habitat for lichens. However, some older woody shrubs that have escaped fire support good communities of crustose lichens along with *Ramalina* and *Usnea* spp. Exposed rocks support an extensive but species-poor community dominated by crustose *Teloschistaceae* and *Buellia* sp., although even here unusual and interesting species are present. The main lichenological interest, however, is to be found in the small pockets of afrotemperate and milkwood forest. Foliose lichens are common with *Crocodia aurata* and *Ricasolia holstiana* being particularly frequent. The milkwood forests were also particularly rich in *Collema* with *Collema glaucophthalmum*, *Leptogium cyanescens* and *L. phyllocarpum* among the species seen. Crustose species were abundant, often completely covering the surface of smooth barked trees and shrubs. Among the species identified so far are *Alyxoria ochrocheila*, *Brigantiaea leucoxantha*, *Haematomma sorediatum* and *Normandina pulchella* but many species of *Bacidia*, *Coenogonium*, *Graphidaceae* and *Porina* await further investigation. A particular surprise was the discovery of a small thallus of *Cliostomum griffithii*, apparently new to Africa.



*Ricasolia holstiana*, Alan collecting at Grootbos PNR (Photo: Marelise Faul, Grootbos Foundation), branch with lichens

We also extended the range of the survey to include other sites on the Agulhas Plain. A coastal site near Danger Point yielded several crustose *Teloschistaceae* along with *Dufourea flammea* and *Roccellina hypomecha*, and at Groot Hagelkraal, an area of limestone crags and outcrops, we collected *Protoblastenia incrustans* – another species apparently new to Africa.

An important part of this visit was the organization of a three-day lichen identification workshop at the [Grootbos Environmental Centre](#). Over a long weekend, we were joined by 11 scientists and lichen enthusiasts from across South Africa to learn more about lichens. We visited afro-montane and milkwood forests and participants examined their collections in the lab, learning how to recognize and name structures important for identification both macroscopically and microscopically by cutting and staining sections of apothecia. The workshop ended with a productive discussion about the way forward for lichen enthusiasts and researchers in South Africa.



Lichen ID workshop (Photos: *Sutapa Adhikari, North-West University; Carly Vlotman, Grootbos Foundation*)

While in South Africa I also took the opportunity to visit the Bolus herbarium (BOL) at the University of Cape Town. This herbarium has a large lichen collection (c. 5,000 specimens) that has recently



Lichen collection at Bolus Herbarium, University of Cape Town

been digitized using the Symbiota platform and can be searched at <https://bolus-herbarium.africa/>. Most of the collections date from the early 20<sup>th</sup> century but the collection is being expanded by incorporating recently collected specimens from South Africa. The Bolus herbarium also administers

a memorial post-doctorate fellowship to study any aspect of the ‘flora’ of South Africa, so anyone interested in a year (or two) in South Africa studying lichens should contact the herbarium curator, Cornelia Klak <[Cornelia Klak](#)> for more information.

A huge thank you to Paula Strauss for organizing the lichen ID workshop and to the Biological Science Department of the University of Cape Town for their loan of microscopes, without which the workshop would not have been possible. All photos by the author unless otherwise specified.



Research supported by the [Grootbos Foundation](#)

*Alan Fryday*

## NEWS FROM INDIAN LICHENOLOGICAL SOCIETY

The Indian Lichenological Society, Lucknow, celebrated its 10<sup>th</sup> Foundation Day along with the 102nd birth anniversary of Dr. D.D. Awasthi, Father of Indian Lichenology on September 28, 2024, via Google Meet. On this special occasion, Dr. Pradeep K. Divakar from Complutense University of Madrid, Spain, delivered an insightful talk titled “**Molecular Phylogeny and Its Application in Lichens.**”

Drs. D.K. Upreti, Sanjeeva Nayaka, and Gaurav K. Mishra paid a tribute to Dr. Awasthi, honoring his memory. Additionally, Drs. K.P. Singh, S.R. Singh, and G.P. Sinha reflected on Dr. Awasthi’s significant contributions to the field of lichenology, commemorating his lasting impact on the discipline.

*Dr. Sanjeeva Nayaka*  
*Executive Council Member, ILS*

## PARTICIPATION OF LICHENOLOGISTS IN THE INTERNATIONAL ASSOCIATION FOR BIOMONITORING OF ENVIRONMENTAL POLLUTION (IABEP) CONGRESS

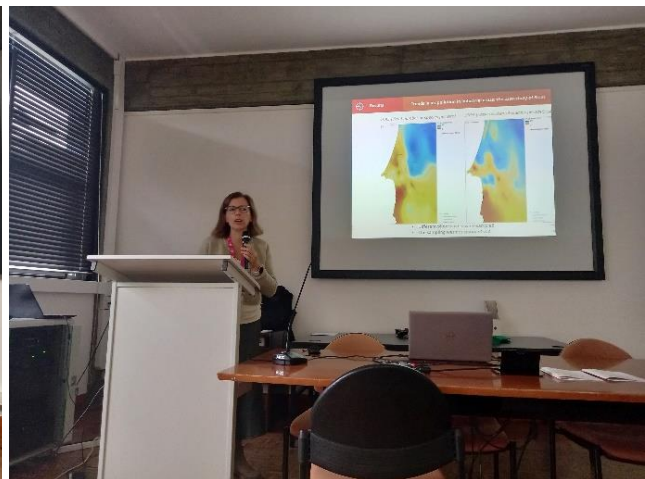
This past November 4-6, I had the pleasure of hosting the second congress of the International Association for Biomonitoring of Environmental Pollution (IABEP) at the Faculty of Science, Universidade de Lisboa.

Founded in Trieste in 2023, the IABEP (<https://iabep.net>) promotes the use of biomonitoring techniques to measure the effects of pollution worldwide. To achieve this, IABEP encourages the study of biomonitoring techniques and stimulates communication and discussion among those interested in biomonitoring of pollution.

The IABEP congresses serve as pivotal gatherings for scientists, researchers, and environmental experts from around the world to exchange knowledge, share innovations, and collaborate on strategies to monitor and mitigate environmental pollution. Among the many specialists who contribute to this dialogue, lichenologists play a critical role due to their expertise in biomonitoring using lichens—organisms particularly sensitive to environmental changes and pollution.

During the congress, members of the IAL and other lichenologists presented findings in several key areas, including the effects of air pollution on lichen diversity and distribution, and the latest developments in using lichens as bioindicators of emergent pollutants such as microplastics.

In the first plenary of the congress, Linda Geiser (US Dept of Agriculture – Forest Service) shared important insights on how to create digital infrastructure that will facilitate the collection and application of biomonitoring information in environmental management and policymaking. A large part of the experiences she described involved the use of lichens. Similarly, in the second invited talk, Cristina Branquinho (Universidade de Lisboa) dealt with the challenges posed by the study of temporal biomonitoring studies, including sampling design, methodological standardization, accounting for temporal fluctuations, data analysis, and resource allocation. The presentation reviewed several case studies that evaluate long-term pollution trends through biomonitoring; many of them were lichen biomonitoring surveys.



Linda Geiser (on the left) and Cristina Branquinho (on the right) plenary speakers at IABEP2024.

Hugo Counoy (Université Catholique de Louvain) proposed a meta-analysis of bioindication surveys conducted using the standardized European protocol for lichen biomonitoring. The goal is to recognize species that are highly indicative across Europe and easily identified and, by combining such data with European environmental databases (including air pollutant concentrations, climatic variables, and land cover information), to understand the key drivers influencing the frequency of each individual species across Europe.

Luca Paoli (Università di Pisa) presented a study in which the biodiversity of epiphytic lichens was used to assess the effects of air pollution around a landfill site in central Italy. He showed how biomonitoring of air pollution is suitable for implementation of environmental policies on air quality and atmospheric pollution control as well as waste management strategies. Luca also highlighted the importance of lichen collections for evaluating past levels of chemical elements and assess their variation in remote areas. A revision of *Lobaria pulmonaria* collections from remote forests of the Western Carpathians (Slovakia) allowed researchers to characterize past and current profiles of several pollutants.

Aldo Winkler (Istituto Nazionale di Geofisica e Vulcanologia) brought together lichens and archeology, applying magnetic and chemical biomonitoring methodologies in lichen transplants in the Palatine Hill archaeological site in Rome. He showed that plant leaves are suitable for providing preventive conservation services that limit the overall impact of particulate pollution on cultural heritage sites within busy metropolitan contexts.

Paolo Giordani (Società Lichenologica Italiana), coordinator of the working group for biomonitoring of the Italian Lichen Society, announced that the working group is developing a methodological proposal which takes into account the sources of variability in lichen biodiversity data, with the aim of increasing their comparability.

Sonia Ravera (Università di Palermo) presented preliminary findings from the ongoing "BioConLobaria" project, which primarily focuses on understanding the response of *L. pulmonaria* transplants to various environmental factors within forest ecosystems. Growth rates and survival probabilities were assessed and modelled under each experimental condition to better understand how this species responds to environmental pollution.

Lisa Grifoni (Università di Siena) assessed the ability of moss and lichen transplants collected from a remote area to accumulate microfibers and Potentially Toxic Elements under the same deployment conditions across a range of urban exposure sites.

Yannick Agnan (Université Catholique de Louvain) argued that the use of biomonitoring data derived from citizen science can overcome this resolution challenge by filling spatial gaps. This kind of participatory approach can also raise public awareness of current environmental concerns, while educating the public about the scientific method. The example provided is the French Lichens GO project ([www.lichensgo.eu](http://www.lichensgo.eu)) that aims to assess air quality through lichen biomonitoring using a simplified version of the standardized European protocol to allow comparisons with expert data.

Martin Bačkor (Slovak University of Agriculture in Nitra) critically evaluated the possibility of using frequently occurring cryptogams such as lichens and mosses in phytoremediation of metal(loid)s from soil and water. He discussed various sources and harmful effects of metal(loid)s on lichens and mosses, factors affecting metal(loid) bioavailability, advantages and disadvantages of lichen and moss use in remediation at different levels, from populations to cells and from ecology to molecular biology.

Maria Alexandra Oliveira (Universidade de Lisboa) described how Portugal responded to the National Emissions Reduction Commitments (NEC) directive requiring member states to establish monitoring networks and assess the effects of sulfur, nitrogen, and ozone on ecosystems. In the past year, a long-term network has been implemented, including woodland, forests, grasslands, heathland, scrub and croplands. Of course, lichens are among the biomonitors considered in the network.

Lichens have been intensively used as biomonitors for decades, if not for centuries, but they still surprise with their versatility and wide range of possible applications.

Here's to the many uses of lichens in biomonitoring still to come!

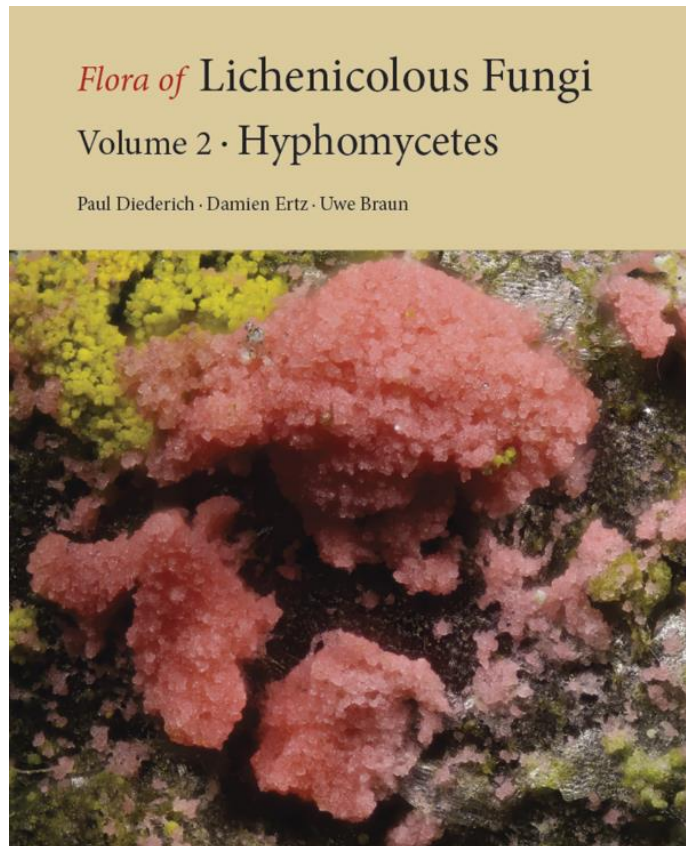
*Silvana Munzi*  
*Universidade de Lisboa*

## NEW BOOKS AND PUBLICATIONS

**Diederich, Paul, Ertz, Damien and Braun, Uwe** (2024) *Flora of Lichenicolous Fungi. Volume 2: Hyphomycetes*. 544 pages, National Museum of Natural History, Luxembourg, ISBN: 978-2-919877-27-0. Price 40 € (+ shipping cost).

I am pleased to announce that volume 2 of a world Flora of lichenicolous fungi will be published in December by the National Museum of Natural History in Luxembourg.

The second volume of the *Flora of Lichenicolous Fungi* focuses on hyphomycetes, a group of asexual fungi in which conidia are not formed within complex conidiomata, such as pycnidia. Most of the species covered belong to the *Ascomycota*, with a few representatives from the *Basidiomycota*. In total, 296 species and one variety, across 101 genera, are described, illustrated, and keyed out, with distribution maps provided for most species. Of these, 271 species and one variety are considered obligate lichenicolous fungi, while an additional 25 species are facultatively or doubtfully lichenicolous. This volume introduces four new genera (*Gyalectiphila*, *Llanorella*, *Pseudophaeoisaria* and *Stipitithea*), 53 new species, 11 new combinations, two new lectotypifications, and 13 new synonymies. Phylogenetic trees are included for genera where reliable molecular data for lichenicolous asexual species are available. These genera include *Acremonium* s.lat. (encompassing *Cylindromonium*, *Globonectria*, *Pronectria*, *Sarocladium*, *Scolecofusarium*, *Trichonectria*, *Trichothecium*), *Cladophialophora*, *Cladosporium*, *Epithamnolia*, *Gonatophragmium*, *Hobsoniopsis*, *Illosporium*, *Lawreya*, *Lichenostigma* (including *Etayoa*), *Microcera*, *Neobaryopsis*, *Psammia*, *Sclerococcum*, *Taeniolella*, *Taitaia*, *Verrucocladosporium* and *Xanthoriicola*.



You may order the volume directly at the National Museum of Natural History ([Flora of Lichenicolous Fungi](#)) or at <https://www.koeltz.com>

A free download will also be available. However, as this is a Flora, I strongly recommend everybody interested in lichenicolous fungi or in hyphomycetes to order a hard copy.

*Paul Diederich  
National Museum of Natural History  
Luxembourg*

## BOOK REVIEW

**Hurley, Kay** with illustrations by Susan Adele Edwards (2024) *Lichenpedia: A Brief Compendium*. xii +180 pages, hardcover. Princeton University Press, ISBN: 9780691239903, Size: 4.5 x 6.75 in. (12.3 x 17.8 cm), Princeton & Oxford Price: \$17.95/£10.99.

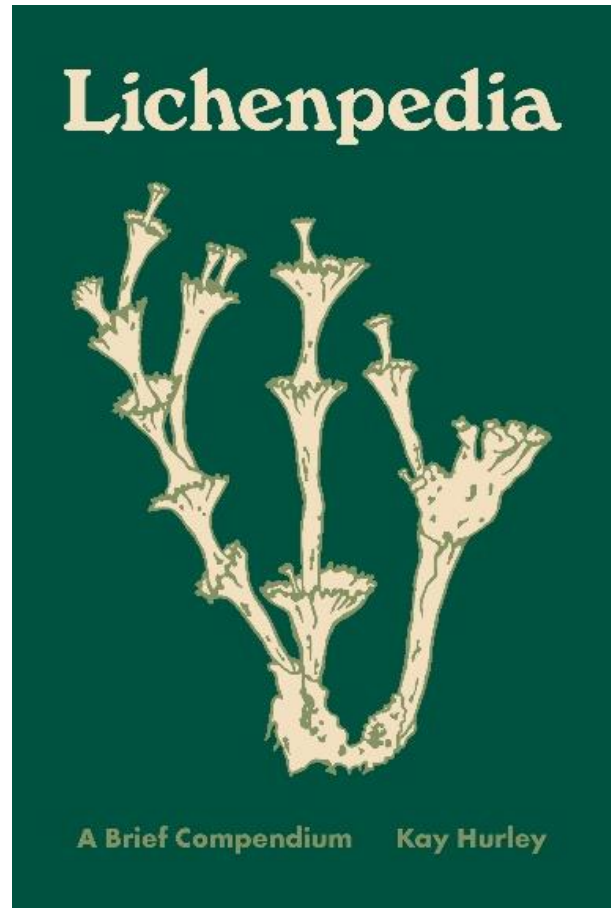
The opening sentences in Kay Hurley's little book on lichens are, "Lichens are weird. Wonderfully weird." She then devotes 173 pages explaining in what way they are weird and why they are wonderful. It's a great ride and a great read, especially if you, sort of, like lichens to begin with. Written for the layperson, the book's aim is to tell stories about lichens that will amuse and amaze, i.e., get people hooked into taking a closer look at the lichens they encounter on their walks and travels.

The format is simple and straightforward: an encyclopedic series of vignettes and mini-essays on subjects (in alphabetical order, of course) such as lichen names, parts of lichens, and often people with a lichenological connection. The topics include the mystery of what constitutes a lichen (two, three, four .. more components?), the history of advances in lichenology (her fascination with Schwendener has him mentioned numerous times), the uses of lichens, the importance of lichens in the ecosystem, and so on.

Kay Hurley is a naturalist and writer. Her style is witty, often funny but not silly, always engaging and almost entirely scientifically accurate. Hurley has obviously had a lot of fun delving deep into the available literature and has come up with some fascinating bits of lichen-lore, many that were certainly new to me. The text is well researched and up-to-date, and the few errors are not worth mentioning. The author seems particularly impressed with the recent discovery of endolichenic yeasts by Toby Spribille as well as the more philosophical essays by Trevor Goward on the nature of lichens published in *Evansia*.

Although this book is written for keen and curious amateur naturalists, I would still recommend it for lichen professionals simply because it is such a fun read, and only the rare pro couldn't learn something in those 173 pages.

*Irwin M. Brodo*





## PERSONALIA

### NEW PHD

The doctoral defence of Nóra Varga was held on 22 November 2024 (<https://doktori.hu/index.php?menuid=193&lang=EN&vid=29608>). She was a PhD student at the



The committee stood up for the announcement of the result, honouring the new PhD degree recipient (*Photo: Edit Farkas*)

Doctoral School of Biological Sciences of the Hungarian University of Agriculture and Life Sciences, Gödöllő. Nóra's thesis is titled: "Diversity of lichenicolous fungi in connection with their host species and habitat in Hungary". Her evaluation was 100%, thus she had a successful defence with maximum points given by the committee.

*Edit Farkas*



Edit Farkas, Nóra Varga and László Lőkös after the defence (*Photo: Róbert Varga*)

## LIST OF SOCIETIES

**Australasia:** Australasian Lichen Society. Info: W.M. Malcolm, Box 320, Nelson, New Zealand 7040. Phone: (+64) 3-545-1660, e-mail: [nancym@micro-opticspress.com](mailto:nancym@micro-opticspress.com)  
Journal: *Australasian Lichenology*, web-page: <http://nhm2.uio.no/botanisk/lav/RLL/AL/>

**Brazil:** Grupo Brasileiro de Liquenólogos (GBL), contact: Dr. Adriano Afonso Spielmann, (e-mail: [adriano.spielmann@ufms.br](mailto:adriano.spielmann@ufms.br)), e-mail: [BrazilianLichens@gmail.com](mailto:BrazilianLichens@gmail.com);  
web-page: <https://brazilianlichens.wixsite.com/website>

**Central Europe:** Bryologisch-lichenologische Arbeitsgemeinschaft für Mitteleuropa (BLAM). Contact: Martin Nebel, Wellingsstr. 14, 70619 Stuttgart, Germany, e-mail [nebel\\_martin@web.de](mailto:nebel_martin@web.de), web-page: <http://blam-bl.de/>  
Journals: *Herzogia* <https://blam-bl.de/herzogia/herzogia-ueberblick.html>, *Herzogiella*, web-page: <https://blam-bl.de/herzogiella-oben.html>

**Colombia:** Grupo Colombiano de Liquenología (GCOL). Info: Bibiana Moncada, e-mail: [bibianamoncada@gmail.com](mailto:bibianamoncada@gmail.com);  
web-page: <https://www.facebook.com/groups/485251978343916>

**Czech Republic:** Bryological and Lichenological Section of the Czech Botanical Society. Chairperson: Svatava Kubešová, e-mail: [svata.kubesova@gmail.com](mailto:svata.kubesova@gmail.com), web-page: <https://botanospol.cz/cs/bls>  
Journal: *Bryonora*, web-page: <https://botanospol.cz/index.php/cs/bryonora>

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

**Estonia:** Mycology Society, Estonian Naturalists' Society, Struve 2, Tartu 51003, Estonia, Chairman: Kadri Pärtel, e-mail: [kadri.partel@ut.ee](mailto:kadri.partel@ut.ee)  
web-page: <http://mukoloogiauhing.ut.ee/> (in Estonian).  
Journal: *Folia Cryptogamica Estonica*, web page: <https://ojs.utlib.ee/index.php/FCE/>

**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.ahsti@helsinki.fi](mailto:teuvo.ahsti@helsinki.fi)  
Journal: *Karstenia*, web-page: <http://www.karstenia.fi/index.php>

**France:** Association française de Lichénologie (AFL). Président: Joël Boustie, e-mail: [joel.boustie@univ-rennes1.fr](mailto:joel.boustie@univ-rennes1.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](http://www.afl-lichenologie.fr/Afl/Publications_afl.htm)

**Great Britain:** The British Lichen Society (BLS). C/o: Royal Society of Biology, 1 Naoroji Street, London, WC1X 0GB, United Kingdom. President: Rebecca Yahr. Secretary: Eluned Smith. Email and Info: [enquiries@britishlichensociety.org.uk](mailto:enquiries@britishlichensociety.org.uk) For membership go to <https://my.britishlichensociety.org.uk/>,  
Society web-page: [www.britishlichensociety.org.uk/](http://www.britishlichensociety.org.uk/)

Journal: *The Lichenologist* (accessible via Cambridge Core <https://www.cambridge.org/core/journals/lichenologist>); *British Lichen Society Bulletin* <https://www.britishlichensociety.org.uk/the-society/bls-bulletin>

**India:** Indian Lichenological Society. Address for correspondence: Lichenology Laboratory; CSIR-National Botanical Research Institute; Rana Pratap Marg, Lucknow-226001, U.P., India. President: Dr. D.K. Upreti. Secretary: Dr. Gaurav K. Mishra, e-mail: [indianlichenology@gmail.com](mailto:indianlichenology@gmail.com), webpage: <http://www.indianlichenology.com>

**Iran:** Lichenology Branch, Iranian Mycology Society, C/o: The Museum of Iranian Lichens. P.O. Box 33535111, Tehran, Iran, Iranian Research Organization for Science and Technology (IROST). Info: Mohammad Sohrabi, e-mail: [sohrabi@irost.org](mailto:sohrabi@irost.org)

**Italy:** Società Lichenologica Italiana (SLI). President: Juri Nascimbene, Dipartimento di Scienze Biologiche, Geologiche e Ambientali Via Irnerio 42, Bologna, email: [juri.nascimbene@unibo.it](mailto:juri.nascimbene@unibo.it), 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](http://www.lichenologia.eu/index.php?procedure=pubbl_not)

**Japan:** The Lichenological Society of Japan (LSJ): President: Yoshiaki Kon, e-mail: [chiiruikenkyukai@gmail.com](mailto:chiiruikenkyukai@gmail.com),

web-page: <http://eng.lichenjapan.jp/>

Journal: *Lichen*, web-page [http://lichenjapan.jp/?page\\_id=19](http://lichenjapan.jp/?page_id=19)

The Japanese Society for Lichenology (JSL). President: Kunio Takahashi, contact email (secretary): [kawahara@kansai-u.ac.jp](mailto: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/>

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

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

**Nordic Countries:** Nordic Lichen Society (Nordisk Lichenologisk Förening, NLF). President: Michael Straarup Mielec, e-mail: [michael.straarup.91@gmail.com](mailto:michael.straarup.91@gmail.com)

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: Scott Schuette, contact e-mail: [swschuette@gmail.com](mailto:swschuette@gmail.com),

web-page: <http://www.abls.org/>

Journals: *Evansia*, web-page: <http://www.bioone.org/loi/evia>; and *The Bryologist*, web-page: <http://www.bioone.org/loi/bryo>

**North America, Northwest:** Northwest Lichenologists (NWL). Info: Bruce McCune, contact e-mail: [bruce@salal.us](mailto: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: Jesse Miller, contact e-mail: [president@californialichens.org](mailto:president@californialichens.org),

web-page: <http://californialichens.org/>

Bulletin: *Bulletin of the California Lichen Society*, web-page: <http://www.californialichens.org/calsbulletin/>

**North America, East:** Eastern Lichen Network. Info: Marian Glenn, e-mail: [glennmar@shu.edu](mailto:glennmar@shu.edu), web-page: <http://www.nybg.org/bsci/lichens/elnl/>

**Poland:** Lichenological Section of the Polish Botanical Society (Polskie Towarzystwo Botaniczne). President: Rafał Szymczyk, Environmental Survey Laboratory Ekoprojekt, Nowica 24, 14-405 Wilczęta, Poland, Email: [lichensptb@gmail.com](mailto:lichensptb@gmail.com)  
web-page: <https://pbsociety.org.pl/ind/sekcja-lichenologiczna/>

**Slovakia:** Slovak Botanical Society – Lichenological Working Group, c/o Institute of Botany, PSBC, Slovak Academy of Sciences, Dúbravská cesta 9, 845 23, Bratislava, Slovakia. Info: Zuzana Fačkovcová, e-mail: [zuzana.fackovcova@savba.sk](mailto:zuzana.fackovcova@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 Liquenólogos (GLAL). Info: Alfredo Passo, e-mail: [alfredo.passo@gmail.com](mailto:alfredo.passo@gmail.com)  
Journal: *GLALIA*, web-page <http://nhm2.uio.no/botanisk/lav/RLL/GLALIA/>

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Journal: *Clementeana*, web-page: <http://www.ucm.es/info/seliquen/cl.htm>

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## The cover-page illustration

*Siphulella coralloidea* Kantvilas, Elix & P. James on a steep bank of soil and rock, Sawback Range, south-west Tasmania (Photo: Gintaras Kantvilas).