

# INTERNATIONAL LICHENOLOGICAL NEWSLETTER

Vol. 56, no. 1, July 2023



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. 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 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,

I am happy to report that the IAL is thriving. The number of registered members has now reached 270. If you received an email with this issue of the ILN, this means that you are a registered member of the IAL. If you know someone that is not a member, but would probably like to be a member of the IAL, please reach out to that person. If someone cannot pay the 30 Euro fee, please contact Vice President Marcela Eugenia da Silva Cáceres ([mscaceres@hotmail.com](mailto:mscaceres@hotmail.com)). The IAL has sponsors that are more than happy to cover that fee, when needed. We are now well positioned to reach out more actively to lichenologists outside Europe, North America and South America to join the IAL. A big thank you to Cécile Gueidan, Scott LaGreca, and Lucia Muggia who volunteered to lead this effort. The goal is to identify liaison persons within each of the local lichenological societies listed in each issue of the ILN (see below) to improve communications and synergy between the IAL and local lichenological societies. With the strong leadership of the IAL IDEA committee (members of that committee are listed at the end of the newsletter) the IAL is committed to be more inclusive. All lichenologists should be represented and have a voice within the IAL.

Other signs of vitality and dynamism of the IAL are demonstrated by the organization of lichen forays (e.g., in Alberta, see the article by Toby Spribille below), The Cabinet of Lichens initiative led by Silvana Munzi (see article below), and the recently formed Early Career Researcher (ECR) committee, which has organized several journal club discussions that are increasingly gaining popularity among young lichenologists. Do not hesitate to contact Ana ([anafavarovga@gmail.com](mailto:anafavarovga@gmail.com)) and Theo ([T.Llewellyn@kew.org](mailto:T.Llewellyn@kew.org)) if you are interested to join the ECR group.

With 2024 approaching quickly, there will be two important international meetings that lichenologists are likely to attend: The XX International Botanical Congress (IBC 2024, July 21-27, Madrid, Spain; <https://ibcmadrid2024.com>) and the 12<sup>th</sup> International Mycological Congress (IMC12; August 11-15, 2024; Maastricht, Netherlands; <https://imc12.org>). Symposia proposal submissions for IMC12 are now possible until September 11, 2023. The IMC is a nice and convenient midpoint meeting between our IAL congresses (next IAL congress is scheduled for 2026 in Italy). Many lichenologists attend the IMC, and the IAL traditionally organizes a dinner for its members, during which the IAL gives a series of awards. See the two articles below for more information about the IMC meeting.

It is with sadness that I end this letter. Ewa Bylińska, Chicita Frances Culberson, and Alan Orange passed away recently (their obituaries are included in this issue of the ILN). My sincere condolences to everyone who knew them. I did not know Ewa, and did not know Alan well, but I had the privilege of working in the same department as Chicita for more than two decades. She was one of the reasons why I was excited to come to Duke University for my Ph.D. and to eventually pursue my career. For lichenologists, it is impossible to think about Chicita Culberson without thinking about the abundance and unique diversity of secondary compounds found in lichen thalli. The discovery and meticulous characterization of these compounds by Chicita formed one of the main foundational pillars of lichenology and greatly contributed to the recognition of Duke University internationally. To this day, the techniques she developed to identify lichen products continue to be in use. Recently, I was reviewing a manuscript on lichen systematics and noticed that four articles from Chicita (as first author or single author) are cited. The synergistic complementarity of Chicita (chemist) and Bill Culberson (lichen systematist) was powerful. Thousands of specimens containing the secondary compounds they have characterized are deposited in the lichen collection (named after them) of the Duke Herbarium. Because these compounds are highly stable, these specimens and all associated data and documents, continue to be reference standards. Many scientists around the globe visited the Culbersons to work with them and to access their unique lichen collection. This is one of the reasons

why this lichen collection continues to be among the most active and revered world-wide. It was a privilege to interact with Chicita and to witness excellence at the highest level possible.

*François Lutzoni, Durham, North Carolina*

## **CALL FOR NOMINATIONS FOR IAL AWARDS TO BE GIVEN AT THE IMC12**

The IAL Council is planning to give the following awards during the 12<sup>th</sup> International Mycological Congress (IMC12; August 11-15, 2024; Maastricht, Netherlands; <https://imc12.org>):

**The Acharius Medal** is presented in recognition to the life work of distinguished lichenologists. It was established in 1992, awarding one to multiple awards every two years.

**The Dharani Awasthi Award** is 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.

**The Margalith Galun Award** is for outstanding student contributions to an IAL meeting (posters and oral presentations).

The **Mason Hale Award** is granted to recognize excellence in research by young lichenologists for outstanding work resulting from doctoral dissertations or similar studies.

The **Aino Hensen Award** has been given to prominent researchers early in their career, who has completed a Ph.D. within five years prior to the submission deadline.

The **Sylvia Sharnoff Education Award** is given to an outstanding educational web page devoted to lichens, prepared by a student or school at pre-university, university or graduate level (in any language). Any aspect of lichen biology used in an educational program would be acceptable.

To learn more about these awards and to see previous recipients, go to this webpage: <https://ial-lichenology.org/awards/>.

All nominations should be sent directly by e-mail to François Lutzoni ([flutzoni@duke.edu](mailto:flutzoni@duke.edu)), and should include a detailed justification by the person making the nomination, including a CV and copies of certificates and/or university diplomas where relevant. Nominations for the Hale Award should also include a pdf(s) of the nominated thesis/work(s) or a link to a Dropbox account (or similar) where such a pdf is present. Nominations for the Awasthi and Hensen Awards should include two letters of support. All nominations must be made by a person other than the one being proposed. To oversee the nomination process and to generate more nominations, the IAL Council will establish a new committee – the Award Nomination Committee. For full transparency, the members of this new committee will soon be disclosed on the IAL website. Decisions about these awards will be taken by the IAL Council. Please be proactive about this important nomination process.

*François Lutzoni, IAL President*

## **INVITATION TO SUBMIT SYMPOSIA PROPOSALS FOR IMC12**

The 12<sup>th</sup> International Mycological Congress (IMC12; August 11-15, 2024; Maastricht, Netherlands; <https://imc12.org>) is approaching quickly. It is important that the lichenological community is well-represented and highly visible at this meeting. The best way for this to happen is by proposing symposia that include lichenologists. In the past, organizers of this congress have encouraged the submission of symposia that are not exclusively about lichenology to make sure that they have a broad appeal to the mycological community. This does not mean that they will not accept at least one, or a few, symposia focusing exclusively on lichenology. **The deadline to submit a symposium**

**proposal is September 11, 2023.** Guidelines and link to submit your symposium proposal can be found at this website: <https://imc12.org/symposium-proposal-submission-and-guidelines/>. I hope many of you will submit proposals. It is important to show how lichenologists are advancing mycology more broadly.

*François Lutzoni, IAL President*

## WESTERN CANADA LICHEN FORAY 2023 KANANASKIS COUNTRY, ALBERTA



We are pleased to announce the first Canadian IAL lichen foray in the foothills of the Rocky Mountains. Join us for a long weekend of lichen collecting, knowledge sharing and networking at the beautiful Barrier Lake Field Station near Calgary, Alberta.

When: Sept. 7–10, 2023

Where: [Barrier Lake Field Station](#) west of Calgary, Alberta, at the edge of beautiful Kananaskis Country.

Who: The foray is being organized by Toby Spribille, Diane Haughland and Bruce McCune and sponsored by the [International Association for Lichenology \(IAL\)](#).

Registration is open to members of the IAL. Not a member yet? It's easy, [click here](#) to learn more or join.

Agenda: Lichenologists of all experience levels are welcome. Participants will have an opportunity to collect and photograph lichens during the day in groups of 8-12 and interact over microscopes and

lichen literature in the afternoons and evenings. Participants will benefit from knowledge-sharing but the foray will not involve classes.

No on-site transportation is provided. Participants will carpool to and from field sites, and sign liability waivers for participation. Pre-scouted sites will be provided to participants as options covering a range of accessibility and difficulty.

What kinds of lichens to expect: the Kananaskis area is highly calcareous with a mixture of limestone, dolomite and calcareous sandstone. Elevations range from valley bottom to alpine tundra and weather permitting a wide range of sites will be included.

Price of registration: CDN\$310.

Good to know: The facility is [quite comfy](#), and the registration for the entire foray includes bunk lodging (with beds + sheets) and eight meals — dinner on arrival day, three meals Friday and Saturday, and breakfast Sunday. Dietary restrictions are of course accommodated.

Travel to Canada: entry requirements differ based on country of origin; U.S. citizens must [carry proper identification](#) such as a valid U.S. passport; [detailed info on other countries here](#).

Registration: opened on May 5 and is limited to the first 30 registrations on a first come, first served basis. [Click here](#) to find out more details and register!

*Toby Spribille*

## THE CABINET OF LICHENS

While I write this text, I proudly look at the list of people registered for this new initiative: 52 people, including beginners and experts, and increasing.

The Cabinet of Lichens is a recent IAL initiative, that I proposed and organized, aimed at creating an informal and comfortable environment for beginners taking their first steps in the world of lichens, with a focus on the practical difficulties of lichen identification and study. All expert lichenologists have been beginners and have encountered similar difficulties when approaching lichens for the first time: how can I get a spore out of the ascus? How can I check in the field if the photobiont is a green alga? What is considered a good specimen? How should I organize my herbarium? Indeed, this course was born thinking about the hours spent in the company of the many doubts raised by handling lichens.

## THE CABINET OF LICHENS, an IAL initiative

The name comes from the cabinet of curiosities: “Appearing in Renaissance Europe, the ‘cabinet of curiosities’ is an early ancestor of the modern museum. They also played a fundamental role in the development of modern science, even if they weren’t always that ‘scientific’ — it was not uncommon to find dried dragon blood or mythical animal skeletons in their collections. The popularity of the cabinet of curiosities waned during the nineteenth century, as it was replaced by official institutions and private collections. A cabinet of curiosities - or wunderkammer - stored and exhibited a wide

variety of objects and artifacts, with a particular leaning towards the rare, eclectic and esoteric. Through the selection of objects, they told a particular story about the world and its history.”

The Cabinet of Lichens is not only a cycle of seminars but a space where mainly beginners (but not only beginners) can find answers to their questions and curiosities, to learn what lichens have to say about the “world and its history”. The webinars are the starting point, but Q&A sessions, production of educational material, and more are being planned.

Here is the first group of fantastic lichenologists that have shared their experience with us so far, and that I would like to thank once again:



From left to right:

Bibiana Moncada (Universidad Distrital Francisco José de Caldas, Bogotá, Colombia; Botanischer Garten Berlin, Berlin, Germany): *First steps in field lichenology: Recognition and collection techniques of lichens.*

Adriano Spielmann (Universidade Federal de Mato Grosso do Sul, Brazil): *Microscopic and macroscopic characters: What to look at in lichen identification.*

Holger Thüs (Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany) and Gothamie Weerakoon (Natural History Museum, London, UK): *Thinking beyond the moment – a beginners guide to lichen collecting and collections.*

The initiative is free but reserved for IAL members. The webinars are recorded, and we will translate/subtitle them in collaboration with the IDEA committee. More information can be found at <https://ial-lichenology.org/the-cabinet-of-lichens/>.

I’m currently planning a series of new Cabinet of Lichens activities starting in September 2023. If you are willing to contribute (giving webinars, translating/subtitled, moderating discussion sessions, etc), let me know at [ssmunzi@fc.ul.pt](mailto:ssmunzi@fc.ul.pt).

*Silvana Munzi*

## REPORTS

### INVESTIGATION OF THE LICHEN BIOTA IN SOUTHERN AFRICA

This past March to May, a research team of lichenologists Danielle Ward and Alan Fryday, geobotanist Nishanta “Nishi” Rajakaruna and botanists, Madeleen Struwig, and Sutapa Adhikari conducted the first known investigation of the lichen biota of two contrasting environments in southern Africa. The project was initiated by requests from Paula Strauss of Grootbos Nature Reserve and Dylan Smith of Tswalu Kalahari Reserve and had two main objectives: (1) to provide each reserve with basic knowledge about the lichens on their properties, and (2) to gather basic data on the diversity, frequency and abundance of lichens in the main habitat types at each reserve. In addition, the team fostered lichenological interest among local communities and built capacity for locally-led research. Although each team member came to the project with a different background and experience in lichenology, everyone benefitted from the work by building on their personal knowledge and identifying directions to pursue further collaborative lichen research.



Team members: Madeleen Struwig, Alan Fryday, Nishanta “Nishi” Rajakaruna, Danielle Ward, and Sutapa Adhikari  
(Photo: Dylan Smith, Paula Strauss)

This project represents the first attempt to identify lichens at the Grootbos and Tswalu Kalahari nature reserves, which are otherwise well-documented in terms of their biodiversity. The two reserves are located within two distinct southern African biomes. The Grootbos Reserve, in the far south of the continent and with a Mediterranean-type climate, is characterized by its pristine fynbos communities with exceptionally high plant diversity and endemism but is also dotted with small pockets of southern coastal forests. The cool and damp forests on the reserve host a suite of corticolous macro- and microlichens and one foliicolous genus. In contrast, the Tswalu Kalahari Reserve, in the subtropical northwest of South Africa, experiences arid and semi-arid conditions that are favorable to a diverse assemblage of saxicolous crusts, but relatively few epiphytic lichens. We encountered a range of taxonomic and functional diversity among the lichens at both locations, but no lichen communities and few species were shared between the Grootbos and Tswalu Reserves. Multiple collected specimens at both reserves were identifiable only to genus. These will be undergoing molecular analysis and the team anticipates several new species, and potential genera, as a result of our work.

In addition to conducting the first investigation of lichens in these environments, another priority was to encourage and support local researchers in establishing their own lichen research projects. These included Madeleen and Sutapa, two early career researchers from North-West University, South Africa and provided opportunities for them to identify specific areas of interest within lichenology, learn identification techniques, and participate in various elements of the project. Members of the team who were not based in South Africa benefitted from other team members’ understanding of the natural history of the sites and contextualization of nature reserves within South Africa.



In order to share lichen information with various audiences, Alan and Danielle gave presentations about lichens to the guides and research staff at both reserves. These presentations were designed to equip people with information about the overall significance and relevance of lichens as well as inform them where conspicuous lichens occurred at each reserve. The team also collated photos and information about locally occurring lichens so that visitors and staff at each reserve can use a field guide to independently identify lichens.



Two of the lichen communities at the Gootbos Reserve and the Tswalu Kalahari Reserve (Photo: Danielle Ward).

While much insight was gained from this preliminary work, the team recognizes the vast potential for new species discoveries and ecological investigations within the two environments. We hope to revisit these sites and continue to build on the partnerships that have been established. We also look forward to continuing to support the growing interest in lichenology at North-West University.



Typical habitats within the Grootbos Reserve and the Tswalu Kalahari Reserve (Photo: Paula Strauss, Dylan Smith).

This project has been supported by an Exploration Fund Grant through the Explorer's Club as well as the Grootbos Foundation, the Tswalu Foundation, the Tswalu Kalahari Reserve, and the Fulbright US Scholar Program.



*Danielle Ward, Alan Fryday, Nishanta "Nishi" Rajakaruna, Madeleen Struwig, Sutapa Adhikari, Dylan Smith and Paula Strauss*

## NEWS

### WORKSHOP “ECOPHYSIOLOGY AND GENOMICS APPLIED TO LICHEN BIOMONITORING”

A workshop on “Ecophysiology and Genomics Applied to Lichen Biomonitoring”, organized by the *SYMBIOGENE\_GIUV-330* research team and funded by the project PROMETEO/2021/005 (Generalitat Valenciana) will be held on November 23<sup>rd</sup> and 24<sup>th</sup>, in the Assembly Hall of the “Botanical Garden” of the University of Valencia, with the coffee-breaks in the outdoor area of the Garden. The Director of the Garden, Dr. Jaime Güemes, has reserved these spaces for us:

<https://www.jardibotanic.org/?idioma= eng>

<https://www.jardibotanic.org/?apid=sollicitud despais imatges i reportatges -53>

The “Scientific Culture and Innovation Unit” of the University of Valencia will help us to manage the administrative issues related to registration and certificates:

<https://www.uv.es/uvweb/scientific-culture-innovation-unit-chair-scientific-dissemination/en/scientific-culture-innovation-unit-chair-scientific-dissemination-1285898622434.html>

Invited participants who accepted:

Tatyana Darienko, Georg-August-University Goettingen, Germany  
 Linsa Geiser, USDA FOREST SERVICE Washington, USA  
 Steve Leavitt, Brigham Young University, Provo- UT, USA  
 Christian Lorenz, Università di Padova, Italy  
 Lucia Muggia, Università di Trieste, Italy  
 Gregor Pichler, University of Innsbruck, Austria  
 Thomas Pröschold, Georg-August-University Goettingen, Germany  
 Maonian Xu –Hi, University of Iceland, Hagi, Iceland  
 Myriam Catalá, URJC, Madrid, Spain  
 Pradeep Divakar, Farmacia UCM, Madrid, Spain  
 Francisco Gasulla Biología UAH, Madrid, Spain  
 David Pizarro, Farmacia UCM, Madrid, Spain  
 Emma Crespo, UJI, Castellón, Spain  
 Pablo Cuervo de la Uveg, Burjassot, Spain

We look forward to receiving word from people interested in this meeting, and to discussing these subjects in the pleasant Valencian autumn. Please contact Patricia Moya ([patricia.moya@uv.es](mailto:patricia.moya@uv.es)) or Eva Barreno ([barreno.eva@gmail.com](mailto:barreno.eva@gmail.com)).

*Patricia Moya and Eva Barreno*

### NORDIC LICHEN SOCIETY

The biannual meeting/excursion of the society takes place in North Jutland, Denmark 11-15 October, 2023.

There may be vacancies, so if you are interested, please contact Sascha Hellmann Hansen [shh@ign.ku.dk](mailto:shh@ign.ku.dk) for further information.

*Ulrik Søchting*

## EAGLE HILL INSTITUTE'S 2023 LICHEN-RELATED SUMMER SEMINARS

Eagle Hill is right on the coast of Eastern Maine, between Acadia National Park and Petit Manan National Wildlife Refuge. <https://www.eaglehill.us/index.shtml>

**August 6 – 12** Lichens, Biofilms, and Stone. Judy Jacob and Michaela Schull

Selected other seminars:

**July 30-August 5** Field Botany of the Maine Coast: Learning to Network with the iNaturalist Community. Robert Wernerehl

**August 20 – 26** Ferns and Lycophytes: Identification, Biology, and Natural History \*2. Robbin Moran, Carl Taylor, Alejandra Vasco

**August 27-September 2** Identification of Trees and Woody Plants of the Northern Forest: A Wholistic Approach. Erika Mitchell

For general information, the registration form, seminar flyers, and a complete calendar of ALL seminars:

<https://eaglehill.us/programs/sems-weeklong/calendar-weeklong.shtml>

If you have any questions about the content of the seminar, please reach out to the seminar instructor(s), whose contact info can be found on the seminar flyer. If a seminar you are interested in is full, and you would like to be put on the waitlist, please fill out the application form.

If you have any questions about registering for the seminar, please contact us at [office@eaglehill.us](mailto:office@eaglehill.us).

*Laura Bentz*

## LICHEN COLLECTIONS IN HERBARIUM BOGORIENSE, INDONESIA

Herbarium Bogoriense (BO) is a national repository, currently managed by the National Research and Innovation Agency (BRIN) of Indonesia. BO was founded in 1841 and stores a huge number of botanical collections, especially from the Malesian phytogeographical region. Among its collections, there are cryptogams such as lichens, mushrooms, macroalgae, mosses, liverworts, and ferns. The number of lichen collections is relatively small, approximately 2000 numbers. The lichen collections stored in BO are dominated by Parmeliaceae about 25%. The oldest specimen was collected by J. E. Teijsmann in 1857. However, BO has only nine type specimens, with the oldest collected in 1921.

Based on preliminary observations of our herbarium collections, most of the lichen specimens were collected from Java. The island of Java has a chain of mountains and suitable abiotic factors (temperature, humidity, and light intensity) for a diversity of lichens to grow. Lichens were collected with other plant taxa from the mountains in Java starting in the Dutch East Indies era by eminent botanists and lichenologists such as G. Kjellberg, R. Scheffer, C.L.L.H. van Woerden, W. M. Docters van Leeuwen, and C. van Overeem. The lichen collection expanded further during the Neervoort and P.



Lichen specimens in BO (Photo: Fandri Sofiana Fastanti)

Groenhart exploration. The number of lichen specimens grows in parallel every time more lichen specialists go to the field to collect material from various places.



The oldest lichen specimen in BO (Photo: Fandri Sofiana Fastanti).

Type specimens of lichen (Photo: Fandri Sofiana Fastanti).

At the moment, the lichen collections in BO from eastern Indonesia are very few. Currently, lichen collection activities from eastern Indonesia are being initiated which include exploration, identification, specimen deposition and data management. The growing amount of data potentially will become a botanical resource that could be accessed by the general public. Therefore, we invite any prospective collaborators to explore the lichens of eastern Indonesia to help build our knowledge of lichen diversity from the lichenologically poorly known part of Indonesia.

Fandri Sofiana Fastanti

## NEW PROJECT ON ACAROSPORACEAE OF UTAH

Jana Kocourková, Kerry Knudsen & Eva Hodková of the Czech University of Life Sciences received a 4-year Czech-American grant to collaborate with Steve Leavitt at BYU on Acarosporaceae of Utah and a study of hybridization or introgression in the *Acarospora strigata* group. We are financially supported by the grant of Ministry of Education, Youth and Sports of the Czech Republic, the program of international cooperation between the Czech Republic and U.S.A. for research, development and innovations INTEREXCELLENCE, INTER-ACTION, no. LTAUSA23238

Kerry Knudsen

## NEW BOOKS AND PUBLICATIONS

### BOOK REVIEW

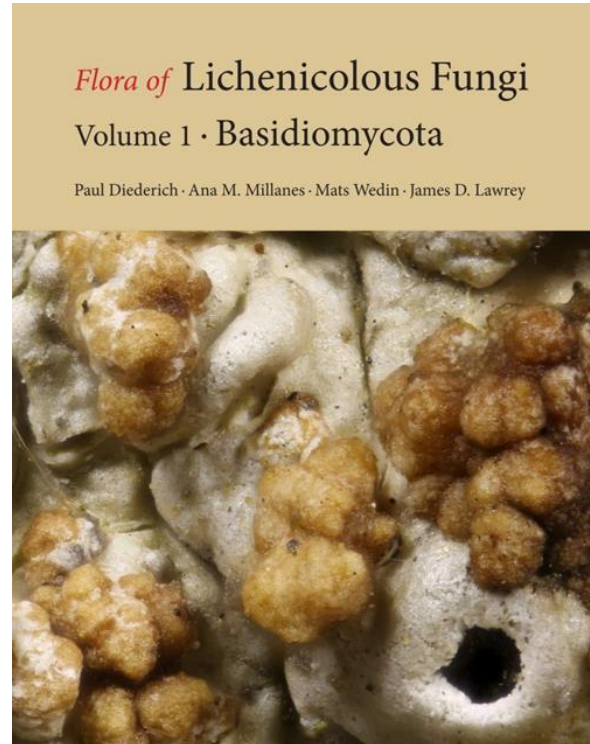
**Diederich, Paul, Millanes, Ana M., Wedin, Mats & Lawrey, James D.** (2022) *Flora of Lichenicolous Fungi. Volume 1. Basidiomycota.* 351 pages, the National Museum of Natural History, Luxembourg, ISBN: 978-2-919877-26-3. Price: € 35,00 €.

In 1742, Dillenius described and illustrated some species of *Usnea*, whose apothecia he named “orbiculos”. On his *Usnea barbata*, he discovered “orbiculos ... exigua carnei”, small and fleshy nodules. Acharius (1803, 1810), too, found two kinds of fruiting bodies on *Usnea* and referred to them as “orbilia” and “cephalodia”. It was only in the next century that Räsänen (1934) found out that these structures do not belong to the lichen but represent a lichenicolous fungus which he believed to be an ascomycete and called it *Biatoropsis usnearum*. Later authors gave different suggestions. Another 66 years later, and almost two and a half centuries after Dillenius’ discovery, Diederich (1990) finally made clear that what Räsänen had described were in fact basidiomata of a heterobasidiomycete.

Four years earlier, Diederich described *Tremella lichenicola* as the first lichenicolous heterobasidiomycete (Diederich 1986). Ten years later he published his well-known monograph “The Lichenicolous Heterobasidiomycetes” (Diederich 1996), which covered 46 taxa, a kind of precursor of the book presented here.

The new book, “Flora of Lichenicolous Fungi. Volume 1. Basidiomycota” (the first volume of a planned worldwide Flora of Lichenicolous Fungi) is edited by Paul Diederich together with Ana M. Millanes, Mats Wedin and James D. Lawrey, all outstanding experts in the field. The twelve chapters, dealing with the classes of Basidiomycota with lichenicolous members, taxa with unknown position and *Tremella*-like bacterial galls, are written by Paul Diederich and a changing set of co-authors. They not only elucidate the lichenicolous heterobasidiomycetes, but also the homobasidiomycetes including the “mushroom” genera *Gamundia* and *Arrhenia*; the bulbil-forming genera *Burgoa*, *Minimedusa*, *Erythricium*; and others. Overall, 197 species of Basidiomycota are presented, 74 of them newly described, and 13 further taxa are informally described. Furthermore, the new genera *Parmeliicida* (Agaricomycetes, Cantharellales), *Zyzygomyces* (Tremellomycetes, Filobasidiales) and *Kriegeriopsis* (Microbotryomycetes) are introduced.

After an introduction—covering the history, the phylogenetic perspectives, the geographical distribution, and an estimation of the number of lichenicolous Basidiomycota worldwide—a key to all known taxa is given. Fortunately, the lichenicolous heterobasidiomycetes (not the homobasidiomycetes) are very host specific, so the key to the species can be constructed based on host. I do not want to imagine how a strictly morphology-based key to, for instance, *Tremella*, would look like. Nevertheless, it is preceded by a morphology-based key to the orders. Each class chapter begins with an introduction and a phylogenetic tree of the lichenicolous species of the class, followed by additional keys, based primarily on morphology. For the above-mentioned reasons, in *Tremella* only keys for species reproducing by conidia and species with aseptate basidia are given. Thankfully, the description of the methods used to determine the phylogenetic relationships and the long lists of



species with the GenBank accession numbers were transferred to the electronic supplementary material. The only thing I miss is a short chapter on morphology, anatomy and reproduction along with a clarification about the used terminology, as most lichenologists will be familiar with this in the Ascomycota but perhaps not in the Basidiomycota. On the other hand, the detailed description of the examination methods is very helpful.

The core of the book are the chapters about the species. Each species, established or newly described, is presented with a complete modern description, including excellent pictures of the habit as well as microscopic preparations, which are sometimes replaced by mostly rather schematic line drawings. Further information on ecology and hosts is given, along with their geographic distribution, both textually and cartographically. In most cases, additional data on the identification or on the frequency is provided.

In conclusion, it is a pleasure to work with this outstanding book (or just to browse it). Of inestimable value is the completeness—e.g., you will never find a sentence like: “for illustrations and a description see ...”. This will also enable beginners without a vast amount of electronic and on-paper publications to work on this interesting group. Fortunately, the field season has already begun and I am looking forward to going on excursions with a sharpened view. I suppose I am not the only one, and we will have an increase of finds and new species of Basidiomycota in the coming years. Anyone interested in lichenicolous fungi should definitely have this book in his library. Congratulations to Paul and colleagues!

Thanks to a generous offer the book and the supplementary material are available as a pdf. However, I strongly recommend the purchase of a hardcopy, since the price is very affordable for such a richly illustrated and large-format book. Both may be ordered here: <https://www.mnhn.lu/science/flora-of-lichenicolous-fungi/?lang=en>

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*Wolfgang von Brackel*

## NEW PUBLICATION

The use of lichens as bioindicators is effective because of the pollution sensitivity of these organisms. A group of undergraduate students developed a project comparing lichen length and chemical element content in an urban environment vs. primary rainforest in Brazil. There was a higher frequency of lichens in the primary forest than in the urban environment, and the urban environment showed higher levels of P, K, S, Cu, Fe, and Zn. In contrast, the primary forest showed higher levels of Ca, Mg, and Mn. Pb, Ni, and Cd were not detected in either environment. Extreme levels of pollution were not identified, but the lichens showed impacts from urbanization. The published article is available here: <http://periodicos.unitau.br/ojs/index.php/biociencias/article/view/3617>

*Julio Cesar Voltolini*

## OBITUARIES

**EWA BYLIŃSKA**  
**1933 – 2023**



On 24 March 2023, Professor Ewa Bylińska, an outstanding botanist and a long-time academic teacher at the University of Wrocław, passed away. She was a wonderful, warm and kind-hearted person who will always remain in our memories.

Professor Ewa Aldona Maria Bylińska, botanist, plant ecologist and lichenologist, was born on 22 April 1933 in Motycz near Lublin. After completing her studies at the Faculty of Natural Sciences at Wrocław University, she worked as a teacher in primary and secondary schools for several years, and in 1959 began her doctoral studies in the Department of Pharmaceutical Botany at the Wrocław Medical Academy, which she completed in 1973. She obtained her doctoral degree in natural sciences at Wrocław University on the basis of her thesis on the winter transpiration capacity of selected species of the genera *Populus*, *Viburnum* and *Lonicera* as indicators of the northern limit of their ranges. Her supervisor was Associate Professor Maciej Czarnowski (the thesis was published in *Monographiae Botanicae* No. 50 in 1975).

Since the late 1970s, much of her research was concerned with the use of plants, particularly lichens, to monitor the environmental impact of polluting gases, heavy metals, radionuclides and

hypertrophication. The data assembled from plant and soil analyses demonstrated existing burdens and provided credible baselines on which to monitor not only changes in urban development, industrial practices and legislative policy, but also, sadly, disasters such as Chernobyl—the published measurements for southwest Poland were unparalleled in Europe since it was shown that background levels were already artificially high. Other monitoring work evaluated, for example, relative levels and impact of fluoride and mercury in the Wrocław area; sulphur dioxide levels in the foothills of the Karkonosze region; heavy metal levels associated with mine spoil heaps, vehicle emissions and metal-enriched rocks; and the value of electron paramagnetic resonance in pollution monitoring. This work, published between 1978 and 2002, is reviewed in *Acta Universitatis Wratislaviensis, Prace Bot.* 79: 35-48 (2001) and in *Wrocław University in the European Culture of the 19th and 20th Centuries* (2015).

In 1993 she was awarded a post-doctoral degree on the basis of her thesis entitled ‘Studies on the biogeochemistry of plants from the area of occurrence of polymetallic deposits in Rudy Janowickie (Sudety)’ (published in *Acta Universitatis Wratislaviensis, Prace Bot.* 70 in 1992), and in 2002 she received the title of Professor of Biological Sciences. As well as her authorship of numerous scientific papers, reviews and communications, she made many field trips, sometimes with internships, to England, Ireland, Spain, the Netherlands, France, Germany, Hungary, Czechoslovakia and Turkey.

Since her doctoral studies, she has been professionally connected with the Department of Ecology and Nature Protection (currently Department of Ecology, Biogeochemistry and Environmental Protection) in the Institute of Botany of the University of Wrocław. Since 1980, she was Head of the Storczyk Ecological Station in Karpacz and responsible for the revitalisation of the building and the provision of excellent conditions for work and teaching; she retired in 2010.

In recent years, she struggled with many ailments, but despite her difficulties, she never lost her cheerfulness and optimism.

To the family of the late Professor Ewa Bylińska, her colleagues and friends, we offer our condolences and express our sorrow and sincere sympathy.



Ewa Bylińska (Photo: Mark Seaward)

Mark Seaward, Wiesław Fałtynowicz



**CHICITA FRANCES CULBERSON**  
**1931 – 2023**



Anyone who has ever put a thin-layer chromatography (TLC) plate into a tank in order to identify the chemical products of a lichen owes a debt of gratitude to Chicita Frances Culberson, who passed away on 5 March 2023. The importance of her work on the study of lichen chemistry in the second half of the 20<sup>th</sup> century can hardly be overstated. Her papers on techniques for identifying lichen substances have appeared in the Literature Cited sections of thousands of lichenological contributions, and her summaries of what is known about lichen secondary products have been consulted by everyone seriously using lichen chemistry in their studies. Among her more than 100 carefully executed scientific articles, most of them in collaboration with her husband, William (Bill) L. Culberson and/or her dedicated friend and technician, Anita (“Rusty”) Johnson, were ground-breaking studies of gene flow, synthesis of lichen products by mycobionts in pure culture, evolution of lichens and biosynthesis of their products, and on and on.

Chicita was born in Philadelphia, Pennsylvania on 1 November 1931. She was an undergraduate at the University of Cincinnati when she met Bill and had no particular interest in lichens or their chemistry. That changed in 1953, however, when they got married and began an exciting and fruitful collaboration that lasted their lifetimes. By 1956, after Bill got his Ph.D. at the University of Wisconsin under John W. Thomson and Chicita got her Master’s Degree in chemistry, Bill and

Chicita published their first joint paper combining taxonomy and chemistry in the study of the “*Parmelia dubia*” group [*Punctelia*].

Chicita’s life and contributions will be treated in detail by others, and they have already been outlined, first by Ted Esslinger in his biographically rich citation of Chicita when she received the I.A.L.’s Acharius Medal in 1992 ([https://ial-lichenology.org/awards/Acharius\\_CulbersonCF/](https://ial-lichenology.org/awards/Acharius_CulbersonCF/)) and by Karl Leif Bates in a Duke University newsletter when the Duke University Herbarium was named in honour of Chicita and Bill in 2010 (<https://today.duke.edu/2010/05/culberson.html>). Here, I would like to relate something about Chicita, the scientist and the person.

I was extremely lucky in having a career that almost entirely overlapped those of Bill and Chicita (I began studying lichens in 1957; they began in 1953). Although I was accepted for doctoral studies at Duke in 1959, I decided (for various reasons, none of them very compelling) to go to Michigan State University instead. Nevertheless, I visited the Duke labs and got to know the Culbersons in the early 1960s and periodically ever since, trying to learn as much about lichen chemistry as I could. On these visits, I saw how meticulous Chicita was in extracting products from lichen fragments using two different solvents, how careful she was to purify her reagents, especially acetone (which she distilled in the lab), how thorough and well-organized she was in recording the results of the analyses and storing the extracts. For Chicita, there were no compromises in the pursuit of accurate, thorough, reproducible results. Her equipment, although serviceable, was often old and in the need of repair, resulting in delays until she was satisfied that everything was working properly. Duke provided her with a lab, but all of her research was funded by grants, which were not always predictable or timely. For most of her career at Duke, she worked as an unsalaried Senior Research Associate.

Chicita developed the three-solvent, relative  $R_f$  TLC system in the late 1960s to help lichen taxonomists lacking special training in organic chemistry to identify the chemical products of their specimens. The first publication was a collaboration with Hörður Kristinsson in 1970, and then she kept it up-to-date with periodic modifications and improvements. She looked disapprovingly at anyone who tried to use the system with short cuts (e.g., only one or two developing solvents instead of three, single solvent extractions, old solvents, etc.). I’m as guilty as most of us.

But Chicita was far too kind and gentle a soul to ever be vocally critical of a colleague. She was soft-spoken and modest, more anxious to help and improve someone’s technique than to make them feel unworthy. She helped scores of colleagues with identifications of unknown substances and gave informal workshops, all the while dealing with her own projects. Her lively wit and easy smile were always in evidence. Working with her on the genus *Haematomma* after Bill died was one of the most gratifying and edifying lichenological experiences of my 65-year career.

Lichenology lost a giant when Chicita died. There will never be another like her.

*Irwin M. Brodo, Canadian Museum of Nature, Ottawa, Canada.*

**ALAN ORANGE**  
**1955 – 2023**



Alan demonstrating TLC techniques at a saxicolous lichen workshop in Scotland, May-June 2005 (*Image copyright John Douglass*).

Alan Orange died at the early age of 67 on 5 February 2023, following a debilitating illness. He was modest and unassuming, and probably unaware of his reputation as one of the foremost British lichenologists in modern times. He was born in Leeds but grew up in the rural Forest of Dean, with his environment doubtless stimulating his lifelong interests in natural history. After a first degree at the University of Bristol and an MSc at the University of Reading, he moved to Wales where he lived and worked for all of his life. Initially he worked as a field botanist at the UWIST field centre at Newbridge on Wye, building the scientific framework for conservation of rivers, and developing his long-standing personal interest in freshwater lichen communities. He then moved to Cardiff in 1986 as Curator of Lichens for Amgueddfa Cymru-Museum Wales, for many years as a paid staff member but in 2013 becoming an Honorary Research Associate alongside work as a self-employed biological consultant.

Alan's focus was on lichen taxonomy, but within the context of field biology, ecology and conservation. He specialized in some of the more difficult and less-loved lichen groups, including *Lepraria* and the Verrucariaceae. He was a prolific but cautious author, contributing a series of important publications including revisions of *Hydropunctaria*, *Trapelia* and various groups of *Verrucaria*, and accounts of lichens from such diverse places as Iceland, Nepal and the Falkland Islands. Perhaps his first love was field work, though he rarely attended formal lichen field meetings and when he did, promptly disappeared into the distance searching for interesting species rather than spending time socializing. Nevertheless, he was always genial, courteous and helpful to those needing his advice.

Alan embraced technology as part of the taxonomist's tool kit, firstly using innovative microchemical techniques and then molecular sequencing as part of his daily life. However, his skills in more traditional methods such as microscopy and technical drawing were also highly developed, and his papers incorporated all of these elements.

In addition to formal taxonomic work, Alan was committed to making his work accessible to non-specialists, including an introduction to lichens on trees, a manual on microchemical methods for lichens, and a beautifully illustrated guide to pyrenocarp lichens. He also contributed the exquisite line drawings in the *Lichens of Great Britain and Ireland*, as well as many generic accounts.

Alan was a committed member of the editorial board for the new edition of that work, currently being published as family accounts on the British Lichen Society website. He was first author for the family accounts of Porinaceae, Trapeliaceae and Verrucariaceae, and had important inputs into many others, including the Catillariaceae and Pilocarpaceae (in which he introduced new taxa and combinations).

A more complete appreciation of Alan's life will be published in the *Lichenologist*.

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**Orange A** (2008) *Saxicolous Lichen and Bryophyte Communities in Upland Britain*. - Joint Nature Conservation Committee (JNCC) Report No. 404. Peterborough.

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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>

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

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### The cover-page illustration

*Acroscyphus sphaerophoroides* Lév. (Ascomycota: Lecanoromycetes: Caliciaceae) from alpine area of Hokkaido, northern Japan (Photo: Yoshihito Ohmura).