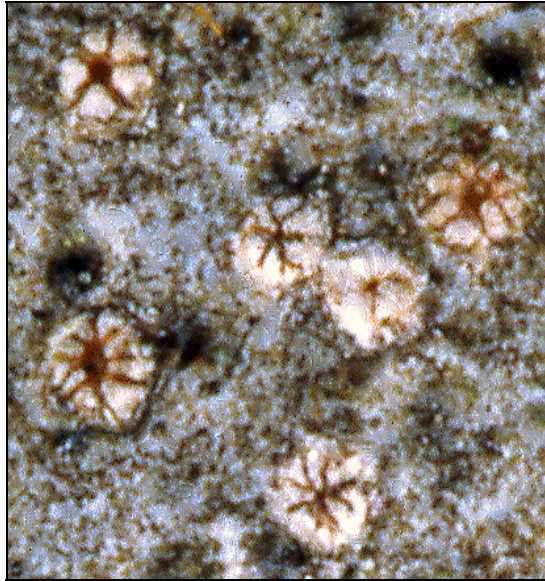


Information, program and abstracts



Young lichenologists' workshop in Hungary

17–20 April 2009, Vácrátót, Hungary

Institute of Ecology and Botany
Hungarian Academy of Sciences



Vácrátót, 2009

Edited by

Edit Farkas and Katalin Veres

Farkas, E. and Veres, K. (eds) (2009): *Information, program and abstracts*. Young lichenologists' workshop in Hungary, 17–20 April 2009, Vácrátót, Hungary. – Institute of Ecology and Botany, Hungarian Academy of Sciences, Vácrátót, 20 pp.

Logo: *Petractis clausa* (photo: L. Lőkös)

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Young lichenologists' workshop in Hungary

17–20 April 2009, Vácrátót, Hungary

Organisers: Edit Farkas and Katalin Veres

General information:

Aim of the workshop: The future of lichenology mostly depends on the younger generations. However especially the young scientists are those who have more difficulties in establishing contacts, they are mostly unable to attend large scientific meetings, often their knowledge on foreign languages needs some training, as well as their oral abilities in discussions are insufficient for speaking in front of a larger public. Therefore we decided to organise a small, rather local meeting for young scientists with deep interest for lichenology. Students and colleagues who completed their PhD recently (*i.e.* some years ago) are invited to present on their current research topic. All topics within lichenology are welcome. You may also bring new ideas what might be in focus of our discussions as well as in the future lichenological research.

Registration: 17 April 2009, 11.00 – 15.30 in the Lichen Collection, Department of Botany, Hungarian Natural History Museum, Address: H-1087 Budapest, Könyves Kálmán krt. 40.

Site of the workshop: Institute of Ecology and Botany of the Hungarian Academy of Sciences. Address: H-2163 Vácrátót, Alkotmány utca 2–4 (location: 47° 42' 25.5" N, 19° 14' 9.8" E, c. 30 km NE of Budapest).

Language: The official language of the workshop is English.

Scientific programme: Oral presentations and poster section on 18–19 April 2009.

Excursion: 19 April 2009, on "Tece" protected, private, sandy grassland area.

Accommodation: Hotel Hangulat, H-2163 Vácrátót, Petőfi tér 20. Phone: +36 28 360 502. (<http://www.hangulatetterem.hu/page.php?4>).

Travel: Public buses departure from the station "Újpest-Városkapu" of Metro 3 (blue line). The ticket costs 450 HUF. The current timetable for bus:

Budapest → Vácrátót		Vácrátót → Budapest
on Friday	on Saturday and Sunday	on Saturday and Sunday
6:25	7:30	6:24
7:40	9:30	8:27
10:00	14:40	13:20
13:30	17:20	16:18
14:40	19:30	18:25
16:55		
19:10		

The program:

Friday, 17 April 2009

Arrival to Botany Department, Hungarian Natural History Museum, Budapest
(Address: H-1087 Budapest, Könyves Kálmán krt. 40, near “Népliget” underground station). Welcome by Hungarian participants in the Lichen Collection.

11.00-15.30 Registration and travel to Vácrátót.

Saturday, 18 April 2009

9.00–9.15: Welcome

9.15–10.30: **Oral presentations**, convener: Veres, K.

9.15–9.45: Farkas, E.: *About old lichenologists for young lichenologists*

9.45–10.15: Guttová, A. et al.: *Lichen-indication of the air quality in Bratislava, Slovakia*

10.15–10.30: Farkas, E. and Lőkös, L.: *Protected species of lichenised fungi in Hungary*

10.30–11.00: Coffee-break

11.00–12.30: **Oral presentations**, convener: Farkas, E.

11.00–11.30: Crişan, F.: *Chorological, ecological and coenological studies upon foliose and fruticose lichens from the Padurea Craiului Mountains (Bihar County, Romania)*

11.30–12.00: Dingová, A.: *Lichen synusia and their coenological relations on the Aeolian sand in Borská nížina (Borská lowland), Slovakia*

12.00–12.30: Flakus, A.: *Diversity of foliicolous lichenised fungi in Bolivia*

12.30–14.00: Lunch: near lecture site

14.00–16.00: Walk in the Botanical Garden, exhibition in “Berkenye-ház” building

16.00–16.30: Coffee-break

16.30–17.00: Presentation on VBI Lichen Herbarium, databases and homepages on lichens

17.00–18.00: Discussion on selected topics, projecting lichen photographs (bring your best ones!)

18.30– : Dinner in Restaurant Hangulat

Sunday, 19 April 2009

9.00–10.30: **Posters** on current/future dissertation topics, convener: Farkas, E.

- Jabłońska, A.: Preliminary studies towards the taxonomic revision of the genus *Porpidia* s.lat. in Poland
- Oset, M.: The lichen genus *Stereocaulon* in Poland – some preliminary results
- Kowalewska, A.: Diversity of lichens on birch (*Betula pendula*) in reference to their position (in height) on the tree trunk
- Molnár, K. and Farkas, E.: Secondary metabolites of the lichen *Hypogymnia physodes* (L.) Nyl.

10.30–11.00: Coffee-break

11.00–12.30: **Oral presentations**, convener: Guttová, A.

11.00–11.30: Németh, J. and Farkas, E.: *A literature study on associations of lichens with special attention to lichenicolous fungi*

11.30–12.00: Varga, N.: *Literature studies on lichenicolous fungi from Hungary*

12.00–12.30: Veres, K. and Farkas, E.: *Analysis of scientometric data on lichen ecology*

12.30–14.30: Lunch: warm meal in Restaurant Hangulat

15.00–17.00: Discussion on selected topics or walk to “Tece” sandy grassland area, depending on the weather.

Monday, 20 April 2009

Travel home or stay in Budapest and study in Lichen Collection, etc.

Abstracts

Chorological, ecological and coenological studies upon foliose and fruticose lichens from the Pădurea Craiului Mountains (Bihar County, Romania)

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The Pădurea Craiului Mountains are located in the western part of Romania, forming a platform fragmented in peaks and isolated massifs, separated by karstic depressions and valleys. The altitudes gradually decrease toward Northwest, from 986 m to 350 m and toward the two peripheral depressions. The analysis of the lichen flora was carried out on the basis of specimens collected and determined between 1992–1998. We catalogued 135 species of foliose and fruticose lichens. Five new species were identified for the Romanian lichen flora: *Collema subflaccidum* Degel., *Leptogium teretiusculum* (Wallr.) Arnold, *Phaeophyscia chloantha* (Ach.) Moberg, *Phaeophyscia hirsuta* (Mereschk.) Moberg, *Parmelina pastillifera* (Harm.) Hale. The lichen flora was analysed in relation with the ecological preferences of the species toward light, humidity, temperature and chemical reaction of the substrate. The analysis of the lichen vegetation in the Pădurea Craiului Mountains is based on 140 relevés, grouped in 12 associations, belonging to 8 alliances, 7 orders and 7 classes of vegetation, 11 associations being new for the studied area.

Lichen synuzia and their coenological relations on the Aeolian sand in Borská nížina (Borská lowland), Slovakia

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The research has been carried out on the Aeolian sand in Borská nížina (Borská lowland, SW Slovakia) from 2006. The studied area is characterised by a relatively high number of terrestrial lichens (34 taxa), some of the species are rare and included in the Red book of Slovakia. Phytocoenological samples of different size were taken for the study of lichen synuzia and their relation to higher plant associations. Diversity, abundance and dominance of terrestrial lichens were studied in various vegetation types. Preliminary results show that anthropogenic impact – especially forestry – has a considerable effect on lichens. Significant differences were found in lichen diversity and abundance between localities with natural succession and those with managed forests (of different age). The diversity and abundance of lichens on the locality with natural succession and those in protected forests were similar.

About old lichenologists for young lichenologists

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The systematic knowledge of lichenised fungi is founded by Erik Acharius in the turn of the 18th and 19th century. The early history of lichenology is treated in books and chapters (Krempelhuber 1867, Schneider 1897, Poelt 1973, Henssen and Jahns 1974, Hawksworth and Hill 1984, Galun 1988, Lorch 1988). Most important details about famous lichenologists of the world are found in *Ainsworth and Bisby's dictionary of the fungi* (Kirk et al. 2001) and in the handbook by Grummann (1974). However lichenologists (especially the elder generation) of our time – not found in the above sources – may be of interest of the younger generation. The activity of some outstanding lichenologists is presented on the basis of various literature sources (e.g., Kärnefelt and Thell 2007, papers of ILN) and personal experiences.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160).

Protected species of lichenised fungi in Hungary

Farkas, Edit¹ and Lőkös, László²

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Following the compilation of the first National Red List of Lichens (Lőkös and Tóth 1997), three proposals were prepared for legal protection of lichen species (Farkas et al. 1999, Farkas and Lőkös 2003, 2004). Due to our activities 8 lichen species became protected by law in 2005 and 2008 in Hungary. Law „23/2005(VIII.31) KvVM” protects 5 species: *Cetraria aculeata*, *Cladonia magyarica*, *Usnea florida*, *Xanthoparmelia pseudohungarica* and *X. subdiffluens*. Law „18/2008(VI.19) KvVM” protects further 3 species of genus *Cladonia* (subgen. *Cladina*): *C. arbuscula*, *C. mitis* and *C. rangiferina* earlier listed in Annex Vb of European Commission Habitat Directive (2003) as species important for their populations. Their collection in large amount was not allowed for this reason from 2003 and finally they became legally protected in 2008.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160).

Diversity of foliicolous lichenised fungi in Bolivia

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Bolivia is a tropical country characterised by highly diverse geography and high biodiversity. Its main part is covered by different tropical rainforests, which are suitable biotopes for the growth of foliicolous lichens. However, no recent inventory has been undertaken there for a long time. Majority of species occurring probably in the country has not been recorded, and a detailed study may provide valuable information in the future. In 2004 the author initiated a comprehensive study on Bolivian foliicolous lichens. So far specimens have been collected from 40 different localities in departments Beni, Cochabamba, La Paz, Pando and Santa Cruz. Finally, the study will be based on material collected from all main forest types in the country. Preliminary results show that this group of lichens in Bolivia is very interesting – six species new to science, and many new records were found in a small part of the collected material. Currently it is not yet possible to estimate their exact diversity, but based on knowledge from other South American countries, we can assume that Bolivia hosts about 300 species of foliicolous lichens.

Lichen-indication of the air quality in Bratislava, Slovakia

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Lichen-indication research ongoing in Bratislava (SW Slovakia, 368 km²) in 2006–2008 confirms the ability of epiphytic lichens to respond positively to a decrease in air pollution. It also reveals a raise in total diversity of epiphytic lichen biota (69 species), so as in frequencies of the species, number and cover of epiphytic lichen species on standardised trees (0–4 species in 1981 versus 0–13 species in 2008). Winter experiment with transplanted thalli of *Hypogymnia physodes* exposed for 3 months showed insignificant damages (max. < 10%). The accumulation of heavy metals in the thalli of exposed species *Evernia prunastri*, *Parmelia sulcata*, *Hypogymnia physodes* (analysed by AAS) does not show dramatic results. It confirmed, however, diverse levels of pollution in the urban districts. The field data (diversity and occurrences of epiphytic lichens, results of transplantation experiments, etc.) are stored in ArcGIS, which provides opportunities for automated assessment and creates space for further data from future monitoring events targeted to epiphytic lichens.

This work was supported by Slovak Research and Development Agency (No. APVV-51-040805) and Grant Agency VEGA (No. 2/7068/27; No. 1/3052/06).

Preliminary studies towards the taxonomic revision of the genus *Porpidia* s.lat. in Poland

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The taxonomy, chemistry, habitat requirements, distribution and morphological variation of the genus *Porpidia* Koerber s.lat. were studied in Poland. The study of this genus was much neglected in the country in the past. Specimens were determined using only thallus characters and spot tests (for colour reactions) and it led to many misidentifications. Additionally, sterile sorediate lichens were mostly ignored during field studies as being not attractive and difficult to determine. Therefore, in some cases they are not very well represented in herbaria. A total of 982 specimens have been examined. Preliminary results confirm the occurrence of *P. albocaerulescens*, *P. cinereoatra*, *P. crustulata*, *P. macrocarpa*, *P. macrocarpa* f. *nigrocruenta*, *P. melinodes*, *P. soredizodes*, *P. speirea*, *P. superba*, *P. tuberculosa*, *P. zeoroides* in Poland. *P. superba* f. *sorediata* is reported as new to Poland. A sorediate morph of *P. albocaerulescens* is also recorded in the country for the first time. The occurrence of *P. hydrophila*, *P. rugosa*, and *P. trullisata* has not been confirmed in Poland and the status of these species remains unknown.

Diversity of lichens on birch (*Betula pendula*) in reference to their position (in height) on the tree trunk

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The lichen flora of birch (*Betula pendula*) was studied in Northern Poland. The aims of the study were to recognise the species composition of lichens and to detect the changes in the frequency and average percentage cover for selected lichen species occurring on birch trunks. A total of 600 trunks of different age were analysed. Each tree trunk was divided into 20 plots from the tree base up to 2 m. Altogether 137 lichen species were found. For the 36 most frequent species the relation of the frequency and abundance to the vertical distribution on the trees were tested using a general linear model (GLM). Significant differences were found in average number of species per plot among different plots on the trunks. Most of the analysed lichens show also significant differences in their frequency and abundance related to the distance above ground-level.

Secondary metabolites of the lichen *Hypogymnia physodes* (L.) Nyl.

Molnár, Katalin¹ and Farkas, Edit²

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Hypogymnia physodes (L.) Nyl. is among the most common epiphytes on acidic bark throughout the northern hemisphere. This foliose lichen species has been frequently used as an indicator of air quality due to its abundance and its moderate sensitivity to sulphur dioxide and heavy metals.

The aim of this study was to compare the relative concentrations of secondary lichen compounds in *Hypogymnia physodes* samples collected from sites of different environmental conditions.

14 specimens were analysed by HPLC with reversed-phase column and gradient elution. Seven lichen substances have been identified in the thallus: the cortical β -orcinol *para*-depsides atranorin and chloroatranorin, the medullary β -orcinol depsidones physodalic and protocetraric acids, as well as the medullary orcinol depsidones physodic, 3-hydroxyphysodic and 2'-O-methylphysodic acids. Medullary depsidones represent the major secondary compound pool and cortical depsides display substantially lower concentrations. 3-hydroxyphysodic acid occurs in lower concentration in the most polluted areas.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160 and OTKA T048736).

A literature study on associations of lichens with special attention to lichenicolous fungi

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As an introduction two- to multi-biont fungal-algal associations of lichens (*cf.* Farkas 2007, Hawksworth and Hill 1984, Rambold and Triebel 1992) are presented and illustrated. Among these, lichenicolous fungi are studied further in more details based on reviews (Hawksworth 1982, 2003, Lawrey and Diederich 2003) and chapters of a recent handbook (Honegger in Nash 2008; Fahselt in Nash 2008).

The most important facts of history of the study of lichenicolous fungi are mentioned. Examples are given about the role of lichenicolous fungi, transitions between nutrition modes and alterations of lichen metabolism.

Some recent results are mentioned to outline the current directions of research of this field (e.g. Miadlikowska et al. 2004, Ertz and Diederich 2006, Zhurbenko et al. 2008)

The current literature study for BSc level may be developed to a MSc work in various directions from theoretical biology to field-based biodiversity investigations.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160).

The lichen genus *Stereocaulon* in Poland – some preliminary results

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The genus *Stereocaulon* Hoffm. includes species that possess dimorphic thalli, being both crustose and shrubby. As many *Stereocaulon* taxa are similar in morphology, the chemistry plays an important role in the taxonomy of the genus. So far there is no comprehensive study of the genus *Stereocaulon* for the whole Polish territory. Detailed TLC data are missing, thus data on the distribution and threat of *Stereocaulon* species in Poland are still incomplete and uncertain. The basic aim of my project is to study members of the genus *Stereocaulon* in Poland with emphasis on chemistry and morphological variation. Besides, distribution and habitat requirements will be taken into consideration as well. To date, 13 taxa have been reported from Poland (Fałtynowicz 2003). Some species are considered to be rather common (e.g. *S. condensatum* Hoffm.), but others are known only from a few stands (e.g. *S. evolutum* Graewe ex Th. Fr.). Many specimens of *S. taeniarum* were recognised as *S. paschale*. *S. alpinum* var. *erectum*, and three varieties of *S. vesuvianum* exist in Poland, like in Slovakia. It is very interesting that more than 80% of the specimens of *S. incrustatum* contain atranorin only.

Literature studies on lichenicolous fungi from Hungary

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The study of lichenicolous fungi was neglected in Hungary during the last decades. A list of 24 species based mainly on the *Identification book of Hungarian microscopic fungi* by Bánhegyi et al. (1985a, b, 1987) was compiled. Several records of lichenicolous fungi originate from historical areas of Hungary and so far their presence has not been confirmed from recent Hungarian localities. The obligate lichenicolous *Abrothallus* species are probably the most recognisable on lichen thalli. Their study in future seems to be very promising. Specimens of the former *Karschia pulverulenta* might represent both *Tetramelas pulverulentus* and *T. phaeophysciae* (cf. Nordin and Tibell 2005). *Scutula epiblastematica* is remarkable, because the holotype of its synonymic species, *Hollosia vertesensis* is found in BP. *Athelia arachnoidea* (mentioned by Farkas 1990) is a common parasitic fungus, especially in air-polluted areas. Further research and study of fresh collections might expand the number of species known from Hungary.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160).

Analysis of scientometric data on lichen ecology

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The keyword „ecology” was searched under 38 805 publications of the on-line database *Recent literature on lichens* to the end of 2007. It was found at about 4% of all publications treated. The development of lichen ecological research is followed from the middle of 18th century to nowadays. The proportion of various fields (e.g. habitat-ecology, conservation biology, ecophysiology) within ecology is presented on pie charts in 4 time periods.

This work was supported by the Hungarian Scientific Research Fund (OTKA T047160).

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