IAL5 SCIENTIFIC PROGRAM
ORAL SESSIONS

MONDAY August 16, 2004

I Registration and hanging up posters 11.00–18.00 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

II Welcome picnic 19.00–21.00 in the Botanical Garden of the University of Tartu (Lai Street 38/40, Tartu)

TUESDAY August 17, 2004 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

I Opening 9.00–10.20

9.00–9.10 Piece of music – Artur Kapp (1878–1952) Sonata in f (1897) I Allegro – performed on organ by **T. TRASS**

9.10–9.15 Welcome words from the Local Organising Committee

9.15–9.30 Official opening by the Rector of the University of Tartu **J. AAVIKSOO**

9.30–9.50 Speech of the President of IAL **P. L. NIMIS**

9.50–10.20 **A. DOUGLAS** (invited lecture): Symbiosis: cooperation, slavery or domestication?

10.20–10.50 Coffee break

II Discussion Session 1: Translation of phylogenetic analyses into classification 10.50–13.00

CONVENER – Thorsten Lumbsch

10.50–10.55 **T. LUMBSCH:** Introductory Comments

10.55–11.25 **E. PARMASTO:** Integrating molecular and morphological data in the systematics of fungi

11.25–11.40 **M. WEDIN**, H. DÖRING & G. GILENSTAM: Optional lichenization – an overlooked fungal evolutionary strategy, and alternatives for dealing with this in classification and naming

11.40–11.55 A. CRESPO, O. BLANCO, P. K. DIVAKAR & **D. L. HAWKSWORTH:** Development of a revised generic system for parmelioid lichens based on molecular phylogenetic studies using three molecular data sets (IST and LSU nu rDNA and mt SSU rDNA)

11.55–12.10 **R. LÜCKING:** From phylogeny to classification: what to do with paraphyletic grades, and is the phylocode a valid alternative?

12.10–12.25 **P. DEPRIEST:** Linnean nomenclature in a phylogenetic world

12.25–13.00: Discussion on basic rules for the translation of phylogenetic analyses into classification under the current code

13.00–15.00 Lunch

III Opening of poster session 15.00–17.50

15.00–15.10 **T. RANDLANE:** Introductory Comments

15.10–15.30 **S. HEIDMARSSON:** Review on posters of Session 1

15.30–15.50 **S. TCHABANENKO:** Review on posters of Session 2

15.50–16.10 **D. FAHSELT:** Review on posters of Session 3

16.10–16.30 **P.-A. ESSEEN:** Review on posters of Session 4

16.30–17.00 Coffee break

17.00–17.20 **W. B. SANDERS**: Review on posters of Session 5

17.20–17.50 **S. LOPPI:** Review on posters of Session 6

IV <u>Poster session 1: Systematics and Evolution</u> (authors standing at their posters)

18.00–19.00

POSTER-CHAIRPERSON– Starri Heidmarsson

WEDNESDAY August 18, 2004 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

I Oral session 1: Systematics and Evolution 9.00–13.00

CONVENER – Mats Wedin

CHAIRPERSON – David L. Hawksworth

9.00–9.05 **M. WEDIN:** Introductory Comments

9.05–9.20 **S. LAGRECA:** Chemical variation in the *Ramalina siliquosa* chemotype complex: revisiting an old question with new methods

9. 20–9.35 **J. BUSCHBOM** & G. MUELLER: Testing "species pair" concepts: An analysis of processes driving the evolution of *Porpidia flavocoerulescens/P. melinodes*

9.35–9.50 **F. BUNGARTZ** & T. H. NASH III: The lichen genus *Buellia* De Not. in the Greater Sonoran Desert Region: saxicolous species with one-septate ascospores

9.50–10.05 **C. PRINTZEN** & S. EKMAN: Phylogenetic methods and the delimitation and detection of lichen species

10.05–10.20 **F. HÖGNABBA:** Molecular phylogeny of the genus *Stereocaulon*

10.20–10.35 **G. KANTVILAS & M. GRUBE:** A phylogenetic study of *Siphula*

10.35–10.40 Questions

10.40–11.10 Coffee break

11.10–11.25 **B. STAIGER** & M. GRUBE: Molecular phylogeny and character evolution in *Graphidaceae* (Ostropomycetidae)

11.25–11.40 **E. A. DAVYDOV**, D. PERSOH & G. RAMBOLD: Phylogenetic analyses of the lichen family *Umbilicariaceae* based on material from Siberia

11.40–11.55 **E. BALOCH** & M. GRUBE: Phylogenetic studies in *Porinaceae*

11.55–12.10 **R. DEL PRADO** & H. T. LUMBSCH: Phylogeny of pyrenocarpous lichens: implications for the evolution of ascomata

12.10–12.25 **E. WIKLUND**, H. T. LUMBSCH, S. EKMAN, A. CREWE, A. & M. WEDIN: Phylogenetic relationships of the Lecanoromycetes utilizing combined mtSSU rDNA and nLSU rDNA sequence datasets

12.25–12.40 **D. PERSOH**: New insights in the phylogenetic relationships of lichenized Pezizomycotina

12.40–12.50 Questions

12.50–13.00 **D. L. HAWKSWORTH**: Golden thread

13.00–14.00 Lunch

II <u>Poster session 2: Lichen diversity</u> (authors standing at their posters) 14.00–15.00

POSTER-CHAIRPERSON– Svetlana Tchabanenko

III <u>Oral session 2: Lichen diversity</u> 15.00–19.00

CONVENER – Christoph Scheidegger

CHAIRPERSON – Irwin Brodo

15.00–15.10 **I. BRODO:** Introductory Comments

<u>Biodiversity Assessment and Biogeography</u>

15.10–15.30 **P. L. NIMIS** & S. MARTELLOS: Biogeography of lichens in Italy

15.30–15.50 **M. A. HERRERA-CAMPOS** & M. E. MARTÍNEZ: Analysis of the potential distribution of pendulous species of *Usnea* in Mexico

15.50–16.10 **S. STOFER**, C. SCHEIDEGGER, A. BERGAMINI, P. CARVALHO, S. DAVEY, M. DIETRICH, E. FARKAS, U. GRONER, K. KÄRKKÄINEN, C. KELLER, L. LÖKÖS, S. LOMMI, C. MÁGUAS, R. MITCHELL, P. PINHO, V. J. RICO, G. A. RUBIO, A.-M. TRUSCOTT, P. WOLSELEY & A. WATT: Impact of land use intensity on lichen diversity across European biogeographic regions

16.10–16.30 **P. WOLSELEY**, C. SCHEIDEGGER, S. STOFER, R. MITCHELL, A.-M. TRUSCOTT & A. VANBERGEN: Variation of lichen communities with landuse in Aberdeenshire

16.30–16.50 **F. BATIC**, D. KASTELEC, R. MAVSAR, H. MAYRHOFER & T. MRAK: Epiphytic lichens as indicators of anthropogenic impact and biodiversity in Slovenian forests

16.50 – 17.10 Coffee break

<u>Infraspecific variation and Phylogeography</u>

17.10–17.30 **N. WIRTZ**, C. PRINTZEN, B. SCHROETER & H. T. LUMBSCH: Molecular phylogeography of the bipolar lichen *Usnea sphacelata* and related species

17.30–17.50 **H. DÖRING** & M. WEDIN: Infraspecific variation within *Stereocaulon* species complexes – genetic markers, individuals, populations and species

17.50–18.10 **C. SCHEIDEGGER**, J.-C. WALSER, S. WERTH, J. KALWIJ, D. CSENCSICS, C. CORNEJO, C. KELLER, I. MIKHAILOVA, S. TCHABANENKO, T. PYSTINA & I. JÜRIADO: Regional population differentiation in *Lobaria pulmonaria* and its implication for conservation strategies

<u>Floristics and Conservation practice</u>

18.10–18.20 **S. TCHABANENKO**: Lichens of southern part of Sakhalin and Kurile islands

18.20–18.30 **A. G. PAUKOV** & S. N. TRAPEZNIKOVA: Lithophilous lichens of Middle Urals

18.30–18.40 **I. N. URBANAVICHENE:** Lichens of the boreal forests of Russia – questions of conservation

18.40–18.50 **G. P. URBANAVICHUS:** Biogeographical survey of Russian "red book" lichens

18.50–19.00 **M. KUKWA:** Lichen genus *Lepraria* in Poland

THURSDAY August 19, 2004 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

I Oral session 3: Genes, Physiology and Structure 9.00–13.00

CONVENER – Peter Crittenden

CHAIRPERSON – Richard Beckett

9.00–9.05 **R. BECKETT:** Introductory Comments

9.05–9.20 **A. ZAVARZIN:** How much do we know about morphogenesis and secondary growth of a lichen thallus?

9.20–9.35 **W. B. SANDERS:** Investigating lichen life cycles on transparent substrates placed in situ

9.35–9.50 **P. CRISAFULLI,** P. MODENESI, E. PITTAO, E. ROCCOTIELLO & M. TRETIACH: Influence of isidia development on CO_2 gas exchanges in the epiphytic lichen *Pseudevernia furfuracea* (L.) Zopf var. *furfuracea*

9.50–10.05 **M. JENSEN** & P. ROSENKRANZ: Imaging of photosynthetic activity of lichens using chlorophyll fluorescence: the water supersaturation effect

10.05–10.20 **R. P. BECKETT** & F. V. MINIBAYEVA: Extracellular reactive oxygen production and metabolism by lichens

10.20–10.35 **K. A. SOLHAUG** & Y. GAUSLAA: Testing of ecological roles of secondary lichen compounds

10.35–11.00 Coffee break

11.00–11.15 **I. SCHMITT** & H. T. LUMBSCH: Diversity and evolution of secondary metabolite encoding genes in the *Pertusariaceae*

11.15–11.30 **F. A. SEYMOUR,** P. D. CRITTENDEN, M. J. DICKINSON, M. PAOLETTI, D. MONTIEL & P. S. DYER: Breeding systems in the lichen-forming fungal genus *Cladonia*

11.30–11.45 **R. HONEGGER,** U. ZIPPLER & S. SCHERRER: Mating systems and genetic diversity in the genus *Xanthoria*

11.45–12.00 **S. SCHERRER,** U. ZIPPLER & R. HONEGGER: Characterisation of the mating-type locus in the genus *Xanthoria*

12.00–12.15 **L. LINDBLOM** & S. EKMAN: Population structure and habitat-correlated genetic differentiation in *Xanthoria parietina*

12.15–12.30 **S. WERTH**, J. KALWIJ, D. CSENCSICS, C. CORNEJO & C. SCHEIDEGGER: Does disturbance matter? A landscape genetic approach for *Lobaria pulmonaria*

12.30–12.45 **V. REEB,** P. HAUGEN, F. LUTZONI & D. BHATTACHARAYA: Phylogeography of homing endonucleases found in *Pleopsidium* (*Acarosporaceae*) and it implication for group I intron mobility

12.45–13.00 **J. MIADLIKOWSKA**, A. E. ARNOLD, V. HOFSTETTER & F. LUTZONI: High diversity of cryptic fungi inhabiting healthy lichen thalli in a temperate and tropical forest

13.00–14.00 Lunch

II <u>Poster session 3: Genes, Physiology and Structure</u> 14.00–15.00 (authors standing at their posters)

POSTER-CHAIRPERSON– Diane Fahselt

III <u>Discussion session 2: In search of model organisms</u> 15.00–17.50

CONVENER – Rosmarie Honegger

15.00–15.20 **E. STOCKER-WÖRGÖTTER,** T. FEUERER & J. ELIX: Secondary chemistry and ecophysiology of crustose lichens: culture of selected mycobionts of the genera *Haematomma* and *Rhizocarpon*

15.20–15.40 **R. HONEGGER:** Why do we need model organisms in experimental lichenology?

15.40–16.40 <u>Open discussion: Re-lichenization under sterile conditions</u>

Which systems were so far successful?

– culturing conditions, substrates and media

– reproducibility

– synchronization

– standardization

Search for new model organisms:

– among main groups of lichen-forming fungi? Crustose or microfilamentous species rather than morphologically advanced ones with internal stratification?

– any fungal species which re-lichenizes easily under sterile conditions?

– profiles of potential candidates

Sexual reproduction in the Petri dish:

– which species of lichen-forming fungi did so far complete their sexual reproductive cycle under sterile culturing conditions?

–which external factors induce fruiting body formation in lichen thalli in nature?

Genomic libraries:

– available

– under construction

16.40–17.10 Coffee break

17.10–17.50 Open discussion: Sterile culturing and long-term storage of lichen-forming fungi and their photobionts

– genetic stability of isolates and how to test it

– suitability of isolates for studies on secondary metabolism and relichenization after long periods of sterile culturing

– how do we keep our reference strains? Conventional vs. cryopreservation

– culture collections: where do we deposit our isolates?

Conclusions

IV IAL meeting 18.00–19.30

FRIDAY August 20, 2004 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

I Oral session 4: Lichen Ecology 9.00–13.00

CONVENER – Susan Will-Wolf

CHAIRPERSON – Bruce McCune

9.00–9.25 **S. C. SILLETT** & M. E. ANTOINE: Epiphytic cyanolichens: ecology, conservation, and directions for future research

9.25–9.45 **J. BEVAN,** R. ALEXANDER & R. LAZARO SUAU: Soil crust lichens in the El Cautivo badlands, SE Spain

9.45–10.05 **H. BÜLTMANN:** Lichen strategy-types on non-calcareous soils with a consideration of species richness

10.05–10.25 **A. DE LOS RIOS,** J. WIERZCHOS, L. G. SANCHO & C. ASCASO: Ecology of endolithic Antarctic lichens

10.25–10.45 **P. GIORDANI:** The influence of environmental variables on epiphytic lichen diversity in Liguria (NW-Italy)

10.45–11.15 Coffee break

11.15–11.35 **M. HAUCK** & A. PAUL: Manganese as a site factor for epiphytic lichens

11.35–11.55 **H. HEDENÅS:** Spatial distribution of epiphytic lichens on aspen, at stand and landscape level

11.55–12.15 **G. KANTVILAS** & S. J. JARMAN: Impacts on lichens and bryophytes of alternative silvicultural regimes in Tasmania's wet forest: preliminary results

12.15–12.35 **L. KIVISTÖ:** Epiphytic lichens in a fragmenting boreal forest landscape

12.35–12.55 **I. MIKHAILOVA:** Populations of epiphytic lichens under stress conditions: survival strategies

12. 55–13.00 **B. MCCUNE:** Golden thread

13.00–14.00 Lunch

II Poster session 4: Lichen Ecology 14.00–15.00 (authors standing at their posters)

POSTER-CHAIRPERSON– Per-Anders Esseen

III Oral session 5: Photobionts 15.00–18.00

CONVENER – Thomas Friedl

CHAIRPERSON – Burkhardt Büdel

15.00–15.20 **R. YAHR,** R. VILGALYS & P. T. DEPRIEST: Geographic variation in photobiont specificity points to ecological, not evolutionary, specialization in *Cladonia*

15.20–15.40 **W. B. SANDERS,** R. L. MOE & C. ASCASO: Symbiont transformation in the unique phaeolichen formed by *Verrucaria tavaresiae* and its brown algal phycobiont *Petroderma maculiforme*

15.40–16.00 **G. HELMS** & T. FRIEDL: Photobionts of the *Physciaceae* and the genus *Trebouxia*

16.00–16.20 **H. THÜS,** G. HELMS, T. FRIEDL & B. BÜDEL: High diversity of sub-alpine aquatic lichens – is it determined by the submersion resistance of lichen photobionts?

16.20–16.50 Coffee break

16.50–17.10 **J. RIKKINEN:** tRNALeu (UAA) intron morphotypes among lichen-forming *Nostoc* strains

17.10–17.20 **H. O'BRIEN,** J. MIADLIKOWSKA & F. LUTZONI: Patterns of specifity in cyanobacterial lichen symbioses

17.20–17.50 **L. MYLLYS,** S. STENTOOS &M. KUUSINEN: Photobiont specifity of cyanobacteial lichens – evidence from epiphytic communities

17.50–18.00 **B. BÜDEL:** Golden thread

IV <u>Poster session 5: Photobionts</u> 18.00–18.30 (authors standing at their posters)

POSTER-CHAIRPERSON– William B. Sanders

V <u>IAL dinner</u> 19.30–23.00 in the White Hall of the Museum of Tartu University History (Lossi Street 25, Tartu)

19.45 Presentation of Acharius Medals, Hale Award and Sharnoff Price

20.15 Buffet dinner

SATURDAY August 21, 2004 at the Vanemuise Concert Hall (Vanemuise Street 6, Tartu)

I Oral session 6: Lichen uses 9.00–13.00

CONVENER – Ole William Purvis

CHAIRPERSON – Mark R. Seaward

9.00–9.20 **A. APTROOT:** Lichens and global warming: further evidence and the role of *Trentepohlia*

9.20–9.40 **Z. JERAN,** R. JACIMOVIC, T. MRAK, F. BATIC, D. KASTELEC, R. MAVSAR & P. KALAN: Epiphytic lichens as biomonitors of atmospheric pollution in Slovenian forests

9.40–10.00 **P. ADAMO,** C. AGNORELLI, R. BARGAGLI, L. BARUFFO, S. GIORDANO, P. MODENESI, S. ORLANDO, E. PITTAO & M. TRETIACH: Lichen and moss bags as monitoring devices: active or passive uptake of trace metals?

10.00–10.20 **W. SAIPUNKAEW,** P. WOLSELEY, P. J. CHIMONIDES, & K. BOONPRAGOB: Lichens as monitors of urban pollution in northern Thailand

10.20–10.40 **R. S. LARSEN,** J. N. B. BELL, P. J. CHIMONIDES, P. W. JAMES, O. W. PURVIS, F. RUMSEY & A. TREMPER: Impact of current atmospheric conditions on epiphytic lichens and bryophytes in London

10.40–11.10 Coffee break

11.10–11.30 **L. G. SANCHO,** R. DE LA TORRE, G. HORNECK, C. ASCASO, J. WIERZCHOS, A. DE LOS RIOS & A. PINTADO: Lichens in outer space: the BIOPAN experiment

11.30–11.50 **R. LÜCKING:** Rainforest lichens as models of community formation and indicators of microclimatic zonation and ecological continuity

11.50–12.10 **R. ALEXANDER,** J. BEVAN & R. LAZARO-SUAU: Mapping and monitoring biological soil crusts in SE Spain

12.10–12.30 **J. W. BJERKE:** Concentration of secondary substances in arctic-alpine lichens in relation to UV-B radiation and co-occuring variables

12.30–12.50 **E. STOCKER-WÖRGÖTTER:** Formation and accumulation of pharmaceutically relevant lichen metabolites in mycobiont cultures: are they induced by environmental stress factors?

12.50–13.00 **M. SEAWARD:** Golden thread

13.00–14.00 Lunch

II Poster session 6: Lichen uses 14.00–15.00 (authors standing at their posters)

POSTER-CHAIRPERSON– Stefano Loppi

III <u>Discussion session 3: Phylogenetic methods</u> 15.00–17.50

CONVENER – Francois Lutzoni

15.00–15.35 P. O. LEWIS, **M. HOLDER** & K. E. HOLSINGER: Allowing polytomies in Bayesian phylogenetic analyses, and an introduction to the next generation of collaborative phylogenetics software

15.35–16.10 **M. M. MCMAHON:** Demonstration of MacClade and Mesquite

16.10–16.40 coffee break

16.40–17.15 C. COX & **F. KAUFF:** A data management framework for the AFTOL project

17.15–17.50 **F. LUTZONI** ET AL.: Where are we in assembling the fungal tree of life, classifying the fungi, and understanding the evolution of their subcellular traits?

<u>IV Finish</u> 18.00–19.00

18.00–18.15 Transfer of power from the old IAL Council to the new; speech of the new IAL president

18.15–18.20 Welcoming words from the Organiser of IAL 6

Fairwell