



**Volume 49 - December 2006**

*While care is taken to accurately report information, SILnews is not responsible for information and/or advertisements published herein and does not endorse, approve or recommend products, programs or opinions expressed.*

## In This Issue

Short History of "Speciation in Ancient Lakes" Group..	2
Special <i>Polish Journal of Ecology</i> Issue on Advances In European Freshwater Science.....	3
CYANONET: A Global Network for Cyanobacterial Bloom and Risk Management.....	4
The Freshwater Biological Association On the Threshold of 2007 .....	4
Book Reviews.....	6-9
Long-Term Dynamics of Lakes in the Landscape: Long-Term Ecological Research on North Temperate Lakes .....	6
Restoration and Management of Lakes and Reservoirs .....	7
The Tilapia Trail; The Life Story of a Fish Biologist.....	7
Tragedy in Mouse Utopia: An Ecological Commentary on Human Utopia .....	8
Recent Meeting Reports .....	9-10
Awards and Prizes .....	10

Material for the June 2007 issue should be sent to the Editor by:

**1 APRIL 2007**

Dr. Ramesh D. Gulati  
NIOO/Centre of Limnology  
Post Box 1299  
3600 BG Maarssen  
The Netherlands  
Fax: +31.294.232224  
E-mail: r.gulati@nioo.knaw.nl

Contributions on a PC formatted disk, in any standard word processor or DOS (ASCII) text, or as e-mail attachments, will assist the Editor.

## MEMORIAM

### To the Memory of Professor Vladimír Sládeček

**Born, 17. 01. 1924; Died, 26. 06. 2005**

*by Jan Helešic, František Kubiček and Věra Opravilová*

We paid last tributes to our colleague Professor Dr. Vladimír Sládeček on 1 July 2005 at Prague crematorium. Vladimír Sládeček was a leading Czech hydrobiologist, and for long-time a SIL representative of former Czechoslovakia and editor of the SIL Proceedings. Vladimír was born in Hořovice near Prague, and had a simple early life. He graduated in natural history and geography in 1949 at the Faculty of Science, Charles University. In 1950, he obtained the academic degree *Rerum Naturalium Doctor* (RNDr.) based on his thesis "Hydrobiological Relations of the Ponds of Padrť with special reference to the Cladoceran *Holopedium gibberum*."

Vladimír was employed for a short time at the State Hydrological Institute of T. G. Masaryk, Prague, where he also worked as a graduate student at the Institute of Chemical Technology in Prague under the supervision of Dr. Vladimír Maděra. On successfully defending his thesis, "Studies of the Biological Treatment of

Sewage by Activated Sludge Processes," he was conferred the academic degree Candidate of Technical Sciences (CSc. – then equivalent of Ph.D). Thereafter, Dr. Sládeček worked at the newly-established Department of Water Technology at the Institute of Chemical Technology in Prague, where he became Associate Professor in Hydrobiology (1956). Since hydrobiology was a new discipline for technical studies, Dr. Sládeček adapted his lectures and seminars such that these were comprehensible and useful for the future water management engineers and other technical people.

By 1968 Dr. Sládeček had an impressive series of scientific publications, for which he received great appreciation from the international scientific community. This also earned him the award of Doctor *Scientiarum* (Dr.Sc.), the highest scientific degree of the Charles University, Prague. This was a prerequisite for his nomination as a university professor in 1985. Dr. Sládeček dissertation – "The System of Water Quality" – was published in 1973 in *Ergebnisse der Limnologie (Arch. Hydrobiol.)* as a modified version "The System of Water Quality from the Biological Point of View."

Dr. Sládeček married Dr. Alena Sládečková (née Vinniková), also a hydrobiologist, specialized in phycology and applied hydrobiology. The couple were life-long co-workers and had three children. Despite being a mother and keeping a household, Alena was always an important source of encouragement and support to her husband in all situations—good or bad, that life brings with it.

Vladimír's professional career was not without difficulties: since he never joined the Communist Party, he had to compensate this by vigorous and hard work as a professional.



*Vladimír Sládeček, 1924-2005*

He kept numerous contacts with both national and international institutions and eminent scientists. Vladimír was capable of tactical communication with people and dealt with each and every issue with earnestness and humbleness. He was often invited to international symposia and conferences for lectures and visits, where he almost always presented not only his own valuable scientific results but also those of his Czech and Slovak colleagues. He helped young trainees in limnology in both conceptual and methodological matters. He always emphasised the quality of the scientific results, their promotion and application. Dr. Sládeček always delighted his audiences with his balanced, lucid and critical lectures and expected the same from others. He was helpful and friendly, but unyielding when he believed he was right. He had a good humour and, when the situation called for, could be ironical.

Dr. Sládeček's had a wide range of scientific interests: early on his scientific career, he devoted his attention to the zooplankton in reservoirs and small bodies of water. He published a series of works on the taxonomy and biology of protozoa, rotifers and crustaceans. However, Dr. Sládeček's lifelong hobby and the main focus of scientific work were the assessment of water quality (saprobiology).

In the 1950s he published several textbooks for the university students, which he later relentlessly updated and extended for revised editions. Because of the critical shortage of original scientific literature in Czechoslovakia after the WW II, Dr. Sládeček co-authored the book "Biological Methods of Water Assessment" in 1959 with Ladislav Hanuška (Editor). Together with Miloš Zelinka he published in 1964 the first Czech textbook of its kind – *Hydrobiology in Water Management*.

## Short History of "Speciation in Ancient Lakes" Group

Ancient lakes represent very special, relict environments on our planet, and they deeply touch not only "purely limnological" hearts of scientists, but the souls of ordinary, public people. The most famous ancient lakes are Baikal (Asia: Siberia), Tanganyika (Africa) and lakes of the Great African Rift Zone, Biwa (Asia: Japan), Ohrid (Europe), Caspian Sea (Eurasia), Khubsugul (Asia: Mongolia), Titicaca (South America) and some others. Except for the long life, ancient lakes are known for the great and unusual diversity of their fauna and flora, which may include up to 60 – 80% of endemic species.

Because literature on saprobiology in post-war Czechoslovakia was available only in the German language (e.g. works by H. Liebmännin), Dr. Sládeček updated and applied a system of water quality assessment, using biological indicators such as saprobity, toxicity and radioactivity. He extended the Pantle-Buck scale of saprobity and tried to find relationships among saprobity, trophic degree, hydrochemistry and aquatic organisms. He used both his saprobiological findings and those of his contemporaries (for example, R. Šrámek-Hušek, Z. Cyrus, M. Zelinka, P. Marvan, J. Rotschein) and his predecessors, and came up with a first, extensive list of aquatic organisms (ca. 5.000 taxons from bacteria to aquatic vertebrates) and assessed their tolerance to and close relationships with waterquality.

*The Sládeček's System of Water quality Assessment* was adopted by the then Czechoslovak authorities as a State Water Treatment Norm (1976-1977). A Sub-Commission of the former Council for Mutual Economic Assistance accepted Dr. Sládeček's Methods of Biological Assessment, and had them published in different languages of the countries belonging to the former Soviet block. Together with H. A. Hawks and E. Fjordingstad, Dr. Sládeček also prepared the European Manual of Water Assessment Methods (1977) for the World Health Organization. A modified version of this was later published in Japanese.

The list of Dr. Sládeček's publications is clear proof of his diligence and hard work. It comprises about 350 published works out of which 250 are original papers. In addition to scientific papers, he published monographs, textbooks, and encyclopedias on aquatic organisms that are still being employed in the fields of science, water management and health care.

## Reports

Preliminary account gives about 7000 animal species dwelling the lakes. The ancient lakes contain up to 30% of unfrozen surface waters of the globe (Coulter et al., 2006).

The investigatorss of ancient lakes have formed an informal, scientific community: "Speciation in Ancient Lakes" (SIAL). The First SIAL Meeting was held in Belgium in 1993 and was initiated by two Belgian biologists, Drs. Koen Martens and Boudewijn Goddeeris, and a New Zealand biologist, Dr. George Coulter. The main aim of this meeting was to review the data on the biology of ancient lakes that have appeared in 40 years since the famous publication of Prof. Brooks (1950). The number of the participants was <50 and the meeting was

Dr. Sládeček presented his works at numerous international conferences and symposia and prepared these for the UNO and WHO. He was a very active SIL member and editor of the SIL conference proceedings for many years. The honoraria enabled him to pay SIL membership fees for about 35 of his professional colleagues in his country. He was also an active member of ASLO, FBA, Czech Limnological Society, and other Czech and Czechoslovak scientific societies. He actively worked in editorial boards of several international scientific journals: *Hydrobiologia* (Dordrecht), *Acta Hydrochimica et Hydrobiologica* (Dresden), *Archiv für Hydrobiologie* (Stuttgart) and *Water Management* (Prague).

Dr. Sládeček received several national (Schulz Medal, Purkyně Medal of the Czech Academy of Sciences, Masaryk Medal) and international awards (Honourable Mention from Syracuse University, USA; Silver Medal of Universidad Nacional Autonoma – Mexico; Silver Badge of Japanese Zoological Society; the Einar Naumann – August Thienemann Medal De limnologia optime merito SIL; etc.).

It was a great honour for us to work with Dr. Sládeček, and we are grateful for his ideas, criticism and encouragement that gave greater purpose to our discussions and our professional careers. Dr. Sládeček will be always remembered as a leading figure in the history of both Czech and international hydrobiology.

### Jan Helešic, František Kubíček and Věra Opravilová

Masaryk Univerzity,  
Institute of Botany and Zoology  
Brno, Czech Republic  
helesic@sci.muni.cz

organized at the field biological station Mont Rigi, University of Liege, Liege. It comprised the main scientific groups from the former Soviet Union countries and from Western countries working on biology of ancient lakes. Dr. George Coulter was elected as the first President of SIAL Society.

The Second International Conference on Ancient Lakes, organized in 1997 at Kusatsu, Japan, dealt with Biological and Cultural Diversities (ICAL), on the coasts of Lake Biwa, Japan. The symposium was organized by Dr. Hiroya Kawanabe, Director General of Lake Biwa Museum, and their second President of SIAL. In addition to biological sessions, other topics discussed included human/lake interrelations (archaeology, environ-

mental history of the lakes, human impacts and conservation, etc.). The meeting was attended by over 200 participants.

The Third International Symposium, SIAL-3, titled "Speciation in ancient lakes (Sial-2002): their geological development and natural history" was held in Irkutsk (Russia) from 2-7 September, 2002. It was organized by Baikal International Center for Ecological Research (BICER), Limnological Institute, Siberian Division of the Russian Academy of Science (SD RAS) and the Baikal Museum of the SD RAS at Listvyanka, Russia. One hundred and sixty seven researchers from 16 countries participated in the symposium. Dr. O.A. Timoshkin (Russia) was elected the third President of SIAL, and the new Steering Committee formed included Dr. Koen Martens, General Secretary (Brussels, Belgium), Dr. Hiroya Kawanabe (Lake Biwa Museum, Japan); Dr. George Coulter (New Zealand), Dr. Andrew Cohen (Arizona, USA), Dr. Axel Meyer (Konstanz, Germany), Dr. D.Yu. Shcherbakov (Irkutsk, Russia), Dr. Risto Vainolä (Helsinki, Finland), Dr. Eric Reynolds (FAO UN, Rome, Italy), Dr. Frank Riedel (Berlin, Germany), Dr. Douglas Haffner (Windsor, Canada), and Dr. Jeff McKinnon (Wisconsin, USA).

The proceedings volumes of three SIAL Meetings published in the period 1994-2006 will undoubtedly play an important role in the future investigations of the ancient lakes. The main directions of SIAL activities since the Irkutsk Meeting were: 1) Preparation of SIAL – 4 in Berlin in 2006; 2) Conservation Programme, which includes establishment of natural underwater reserves (Baikal and Tanganyika), elaboration of standard schemes of monitoring, based on landscape-ecological approach; 3) Biodiversity Initiative, which involves inventories, publication of guides and keys to identification of fauna and flora (>10 volumes appeared during 10 years), elaboration of International Centre for Biological Collections of ancient lakes, including storage of DNA in Berlin, Brussels, Helsinki and Irkutsk, and announcement of 2008 as International Year of Ancient Lakes (IYAL – 2008) under aegis of UNESCO, IUBS and SIL. This world-wide action is planned to be supplemented by cultural and scientific events, dedicated to ancient lakes as the "forgotten hotspots" of freshwater biodiversity.

Despite similar research interests SIAL and Ancient Lakes working group of SIL (head, Prof. S. Horie) have functioned independently. After discussions between SIL (late Dr. Robert Wetzel and the SIAL Steering Committee at Lahiti, Finland (SIL 2004) the SIAL activities

were brought under the SIL, which was supported by SIL Assembly. SIAL group was invited to act as the Ancient Lakes Working Group of SIL (ALWG). This group contains 4 Subgroups: 1) Paleolimnological Group; 2) Biodiversity of Ancient Lakes Group (or – SIAL Group); 3) Ecology Group; and 4) Conservation and Monitoring Group. The tentative, elected, co-ordinators of the Subgroups were: Group 1: Drs. Andy Cohen (USA), Frank Riedel (Germany); Group 2: Drs. E. Verheyen and K. Martens (both from Belgium); Group 3: Drs. J. Sarvala (Finland), O. Timoshkin (Russia); and Group 4: Drs. G. Coulter (New Zealand).

The forthcoming ALWG/SIAL events are: 1) SIAL – 4 Meeting will be organized by Dr. Frank Riedel, Free University, Berlin (Germany) (see SIL News); and 2) Special Session No. 1136 entitled "Towards integrated research efforts of ancient lake systems" will be included in the scientific program of SIL 2007. All interested limnologists who want to become SIAL members, please contact us.

## Special Polish Journal of Ecology Issue on Advances In European Freshwater Science

We have the pleasure to announce that the issue 4/2006 of the *Polish Journal of Ecology* ([www.pol.j.ecol.cbe-pan.pl](http://www.pol.j.ecol.cbe-pan.pl)) is a special issue that contains a selection of invited state-of-the-art, reviewed papers presenting: "Advances In European Freshwater Sciences, 2005."

The papers originated from 7 invited lectures and 10 prize-winning student presentations delivered at the European Forum of Freshwater Ecologists, i.e. 4th Symposium for European Freshwater Sciences, August 2005, Krakow, Poland. The papers were edited for publication by guest editors Z. Maciej Gliwicz, Grazyna Mazurkiewicz-Boron and Karen Rouen. The Issue contains the following papers.

Z. Maciej Gliwicz, Grazyna Mazurkiewicz-Boron, Colin S. Reynolds, Karen Rouen – Advances in European Freshwater Sciences?

### State-of-the-art reviews

- Alan P. Covich – Dispersal – limited biodiversity of tropical insular streams
- Francesca Gherardi – Bioinvasions in freshwaters and the Nero dilemma
- Jonathan Grey – The use of stable isotope analyses in freshwater ecology: current awareness
- Jan Kozłowski – Why life histories are diverse

- Winfried Lampert – *Daphnia*: model herbivore, predator and prey
- Lennart Persson, André M. De Roos – Size-structured interactions and the dynamics of aquatic systems
- Thomas Weisse – Biodiversity of freshwater microorganisms – achievements, problems, and perspectives

### Short reviews

- Paul G. Becher, Friedrich Jüttner – Insecticidal activity – a new bioactive property of the cyanobacterium *Fischerella*
- Anna Bednarska – Adaptive changes in morphology of *Daphnia* filter appendages in response to food stress
- Malgorzata Grzesiuk, Andrzej Mikulski – The effect of salinity on freshwater crustaceans
- Simone D. Langhans, Scott D. Tiegs, Urs Uehlinger, Klement Tockner – Environmental heterogeneity controls organic-matter dynamics in river-floodplain ecosystems
- Federico Marrone – The microcrustacean fauna of Sicily and the Central Mediterranean Sea area – current knowledge and gaps to be filled
- Laura Marziali, Valeria Lencioni, Bruno Rossaro – Adaptations of pupae of Chironomidae (Insecta: Diptera) to oxygen-poor habitats
- John F. O'Driscoll, Simon S.c. Harrison, Paul S. Giller – Do trees make a difference? An evaluation of the impact of riparian vegetation on the ecology of nutrient-poor headwater streams
- Zeynep Pekcan-Hekim, Anne Lijendahl-Nurminen, Jukka Horppila – *Chaoborus flavicans* in the food web – competitor or resource for fish?
- Barbara Pietrzak, Mirosław Slusarczyk – The fate of the ephippia – *Daphnia* dispersal in time and space
- Alena Štrojsová, Jaroslav Vrba – Phytoplankton extracellular phosphatases: investigation using the ELF (Enzyme Labelled Fluorescence) technique

This special issue of *Polish J. Ecology* will be available for purchase at the end of December 2006 for about 30 EURO from the Library of the Centre for Ecological Research, Pol. Ac. Sci. on ([biblio@cbe-pan.pl](mailto:biblio@cbe-pan.pl)).

**Anna Hillbricht-Ilkowska**  
Editor, *Polish J. Ecology*

## CYANONET: A Global Network for Cyanobacterial Bloom and Risk Management

### Initial Situation Assessment and Recommendations

Cyanobacterial harmful algal blooms (CyanoHABs) have been increasing globally in number, severity and duration, partly as a consequence of anthropogenic eutrophication. CyanoHABs are capable of producing a range of toxins which have been implicated in, and in some cases proximally responsible for, animal and human poisoning incidents throughout the world. However, recognition of the problems presented by cyanotoxins is variable, and significant geographical and institutional differences exist regarding the identification, monitoring, reporting and risk management of cyanobacterial blooms and toxins. In order to increase CyanoHAB awareness, and to promote education and training, a global project (CYANONET) has been formed which takes into account regional and local characteristics, capabilities and requirements.

The project (Coordinator, Dr. Geoffrey A. Codd, University of Dundee, UK) was created after the UNESCO International Hydrology Programme V Conference in Venice and is part of the UNESCO IHP-VI Action in Ecohydrology. CYANONET aims to provide a global situation assessment of the occurrence and impacts of cyanoHABs, cyanotoxins and risk management responses for the protection of water resources and health. Now at the end of Phase I of the project, CYANONET's Initial Situation Assessment and Recommendations have just been published. This report is available online at <http://unesdoc.unesco.org/images/0014/001425/142557E.pdf> and will shortly be available in printed format.

The CYANONET Report is an initial situation assessment of the occurrence of cyanoHABs (blooms, scums, mats) and cyanotoxins in natural and controlled waters; adverse health incidents (illness, poisonings, mortalities) of humans and animals associated with, or attributable to, cyanobacteria and cyanotoxins; the existence and outcomes of systematic surveys and epidemiological studies of associations between cyanobacteria, cyanotoxins and human health; effects of cyanobacteria on water supply, water body-use and ecological status; the availability and implementation of management measures to reduce adverse effects of cyanobacteria and cyanotoxins; and the availability of educational, awareness-raising and training materials and practices.

An International Steering Committee (ISC) oversaw Phase I of the CYANONET project. Regional responsibilities for the promotion of CYANONET's aims and objectives are being addressed by: William R. Harding (Africa); Sandra M.F.O. Azevedo (South and Central America); Wayne W. Carmichael (North America); Suvendra N. Bagchi (Asia, Western sector); Kunimitsu Kaya (Asia, Eastern sector); Michael D. Burch (Australasia and Oceania); and Geoffrey A. Codd and Hans C. Utkilen (Europe): plus a growing network of National Contacts. Approximately 70 countries in Africa, Asia, Australasia and Oceania, Europe, North and South America were included in the survey, which showed that cyanotoxins occur, and have adverse effects on human and animal health throughout all regions for which data are available. Furthermore, a CYANONET website ([www.cyanonet.org](http://www.cyanonet.org)) with public access has been established (Website Manager, Tomasz Jurczak, University of Lodz, Poland). The Report highlights the wide differences between countries regarding the information available about cyanoHABs and cyanotoxins, and in the availability of management strategies to monitor and control them. Completion of Phase I of the CYANONET survey has enabled the ISC to identify needs and provide recommendations for the next phase of CYANONET. These include: extension of the network of National Contacts where little or no information is available; data collection, situation assessment and information sharing, and development of guidance materials and management tools. By improving global communication and access to information about cyanoHABs and cyanotoxins, countries will be better equipped to make effective management decisions for the protection of water resources and human health.

Codd, G.A. et al. International Hydrological Programme–VI, Technical Documents in Hydrology No. 76, 138 pp., UNESCO, Paris, 2005.

#### F.M. Young

Division of Environmental and Applied Biology  
School of Life Sciences, University of Dundee  
Dundee DD1 4HN Scotland, UK  
Email: [f.m.young@dundee.ac.uk](mailto:f.m.young@dundee.ac.uk)

### The Freshwater Biological Association on the threshold of 2007 – not all bad news

Colleagues outside the United Kingdom have watched incredulously at the fate of the laboratories of the Freshwater Biological

Association. Not surprisingly, there is a good deal of confusion at what has been going on there and what the future holds. Here I try to give some (simplified) history and background, particularly for non-Brits. While the Ferry House has indeed been sold and turned into luxury lakeside apartments – there are some distinctly positive signs for the future, and it could be a more international future for the FBA.

Nineteen-seventy-nine saw the fiftieth birthday of the Freshwater Biological Association, a grant-aided scientific charity with its imposing Ferry House headquarters on the shores of Windermere, and was the zenith in its fortunes. The FBA then had a staff of 140, a turnover of more than £1 million and a membership of around 2000. As well as its Windermere home, it had a large river laboratory on the Frome in Dorset and interests in other smaller, key freshwater sites in the UK and abroad. Just 25 years later, in its 75th anniversary year in 2004, both the FBA's flagship laboratories were essentially empty, and outside the Ferry House stood a melancholic 'for sale' notice. The FBA, from an unassailable position as one of the foremost freshwater laboratories anywhere, had undergone an extraordinary scientific and organisational decline. There is no need for me to stress to this audience the strategic importance of healthy fresh waters, and the fate of the FBA must seem paradoxical even to those with just a passing interest in environmental issues and sustainability.

#### How did we get here?

While the Universities have always accounted for the lion's share of total UK publications in the subject, the development of the scientific study of freshwater biology in the UK is inextricably bound up with the history of the FBA, consistently the most important centre for most of the past 75 years. The first calls for a British freshwater laboratory, to match those already in action on the European continent, came in the late nineteenth century, and not all originated from within Britain. In 1887, in a letter to the British Association, A. Fritsch of Prague hoped that: "...we on the Continent may soon hear that your wealthy country has done her duty by fresh-water biology!" But only in 1929 did the first few young FBA scientists move into three rooms in Wray Castle on Windermere, then used as a youth hostel. The expanding laboratories of the FBA were funded by the UK Government's then Development Commission, and in 1950 the charity took possession of Ferry House, standing in a prime position on the western shore of the lake. The Association was an undoubted scientific success. Through its policy of appointing the brightest and best it

could find, and giving them their head, the FBA pioneered, for instance, research on seasonality and succession of the phytoplankton, the comparative fertility and enrichment of lakes, palaeolimnology and the reconstruction of post-glacial environments, the population dynamics of freshwater fish of lakes and streams, and the chemistry and microbiology of lake water columns and sediments. It undertook innovative field experiments with lake mesocosms, published the keys to the freshwater organisms of the United Kingdom that still make this country a joy to work in as a freshwater biologist, and pioneered and made available to the freshwater world new equipment and techniques.

But the scene was changing, and 1965 saw the creation of the Natural Environment Research Council, primarily to create a more joined-up approach to Government-funded environmental research in the UK, including freshwater biology. NERC took over the funding of the three 'grant-aided charities', the Freshwater-, Marine- and Scottish Marine- Biological Associations. There was a bold new vision of interdisciplinary environmental research. Under NERC, the Association continued to expand (and already in 1962 had acquired a prime site on the banks of the Dorset Frome) and in 1965 opened The River Laboratory. Here the philosophy was of its age, and was entirely different from the individualism prevailing at Ferry House. At the River Laboratory the intention was strategic, to build a team to study all the components of a productive chalk river ecosystem. It was born of the optimism of the International Biological Programme, which confidently expected it would be feasible to measure and model the processes within selected ecosystems, define the basis of their productivity, and to inform the management of natural resources for human benefit. Such a goal was ambitious and challenging in the extreme, and perhaps was beyond the scientific capabilities of the day, although the IBP did stimulate new interest in ecosystem structure, function and management.

Already in the late sixties, however, the science environment was changing again, with government adoption of the 'Customer-Contractor' principle. By 1973, one third of the FBA's income was derived from contracts from its customers, such as the Ministry of Agriculture and Fisheries, the Department of Environment and the Regional Water Authorities, with a proportionate reduction in pure science funds. The purpose, of course, was to prompt (i.e. force) science 'providers' to do more relevant research. One might have expected the FBA to fare rather badly in such an environment, but in fact it responded quite well to the new challenge and its growth continued for much of the seven-

ties. The River Laboratory essentially gave up its search for an ecosystem model of a chalk stream, and turned its hand instead to contract research. One of the results was 'RIVPACS', the globally influential approach to the biomonitoring of rivers. At Ferry House, the wonderful legacy of knowledge of the ecological requirements of algae eventually led to 'PROTECH', an innovative predictive model of use in the management of reservoirs and other lakes.

Despite these and other efforts, however, the continued budgetary cuts and restructuring of the 80's took their toll. In 1987, the FBA Council was forced to declare a state of redundancy and staff numbers were cut to 88. Nineteen eighty-nine was a watershed and, in a cruel irony of the age, the grant-aided charities were all effectively and forcibly 'nationalised', their staff and resources taken into direct management by NERC and, in the FBA's case, into a short-lived Institute of Freshwater Ecology (IFE). NERC paid rent to FBA for the staff to use Ferry House and the River Laboratory, and maintained the library and equipment. FBA was also given a modest grant-in-aid to maintain a small fundamental research programme with a handful of PhD students and post-doctoral researchers. But the community of professional freshwater scientists that had been the FBA's chief resource was no longer its own, and in the main did not fare well inside NERC itself. Amid further financial pressures, and after only ten years existence, IFE was itself subsumed into the Centre for Ecology and Hydrology (CEH) and almost immediately NERC vacated the River Laboratory, relocating its scientists, along with others, to a fine new facility at CEH Winfrith. In 2004, CEH similarly vacated the Ferry House and its nearby Merlewood laboratories, moving their combined staff to the campus of the University of Lancaster to form CEH Lancaster. Even more recently, NERC CEH itself is being cut, and the 'fine new facilities' at Winfrith in Dorset, occupied for barely five years, are to be closed in 2007!

As a result of these momentous changes, the FBA has lost almost all its scientific staff and is in search of a new role. As a small charity, it is still the legal owner of several buildings on key pieces of land, and as the guardian of valuable field research facilities that NERC-CEH still uses from a distance. FBA is also the legal co-owner of several unique, long-term data sets and of one of the best freshwater libraries in the world, including the Fritsch collection. Should the laboratories and other buildings simply be sold off and the FBA left to embark on a worthy, if reduced, life as a learned society? Should the library be split up, FBA retaining its older historical archive, or transferred as a whole

to the University of Lancaster or some other place where it can more easily be consulted? Remember that it is not the institution of the FBA that is most important, but the scientific assets it holds which, once gone, will surely never be regained or replaced.

What is the way forward? It is here that the story begins to turn. The FBA as a scientific society has begun a European initiative, through the 'SEFS' conferences that have been so successful. While the Ferry House itself has indeed been sold, the remaining Windermere site has been retained and the neighbouring Pearsall building refurbished as the FBA's Headquarters. The River laboratory seems likely to be repopulated with scientists again, at least in the short term, and under the auspices of a UK Cooperative Research Partnership in Freshwater Biology. There have been discussions in the community of researchers, funders and research 'users' about a new initiative for freshwater biology in the UK and how to nurture and encourage it in the national interest. The 'family silver' of key sites and field facilities has not (yet) been sold off, largely because it is becoming apparent to all that long-term data and access to key sites are essential in environmental science, where we are often researching phenomena with a long periodicity or return time. The FBA's sites are prime examples of places with secure access, a long-term record and field laboratory capabilities that could form part of a national, or preferably international, 'cooperative research partnership.'

One can envisage visiting scientists exploiting the key sites, with their expanded national facilities for field experiments, to answer fundamental and applied research questions. One can hope that the UK's National Freshwater Library will be safely housed and continually updated, in a centre where researchers and students can easily access it, particularly the heritage of older, non-electronic literature, records and illustrations. To achieve this we will need a common sense of purpose and will among the community of researchers, funders and users to break out of the straightjacket of fragmented responsibilities and rivalries that is the present UK system. For fresh water is certainly a big and important issue for us all and we need to attract the best young minds to its science and management. Big, important and complex issues like this require the kind of facilities and resources usually devoted to 'big' science. Good field facilities for freshwater research are already in place at the FBA's sites, funded ultimately by the UK tax payer – will they be saved as (inter)national assets or disposed of before we realise what is being lost?

#### **Alan Hildrew**

School of Biological Sciences,  
Queen Mary, University of London

## Book Reviews

### Long-Term Dynamics of Lakes in the Landscape: Long-Term Ecological Research on North Temperate Lakes

John J. Magnuson, Timothy K. Kratz and Barbara J. Benson, editors) 2006. Oxford University Press Inc., New York. ISBN-13 978-0-19-51369-6. 400p

This book, a Synthesis Volume, is one of six planned on the *Long-Term Ecological Research Net Work Series*, (LTER Publications Committee). It starts with short memorials to the *three special people* (John L. Brooks, J. Thomas Callahan and Thomas Frost) who contributed and led to the establishment of LTER Network and the North Temperate Lakes Program. Ironically, they all passed away within a span of two years, i.e. during the closing stages of the study period.

There is an impressive list at the outset of the acknowledgements of the graduate and postgraduate students, technicians, and others who have been active at the lakes' LTER Site. The North Temperate Lakes LTER Program was initiated in 1980 with the funding from The National Science Foundation's (NSF), Division of Environmental Biology. This LTER Project apparently planned to build further on the long histories of limnological works in the Northern Wisconsin, the United States. The seven heterogeneous lakes included initially in the project lie in the forested landscape of the Highlands Lake District in the Northern Wisconsin (e.g. Trout Lake and Crystal Lake). They are among the wide array of lakes that Birge and Juday studied extensively from 1930 to early 1940s. In 1994, four Southern Wisconsin lakes (Mendota, Monona, Wingra and Fish) were also incorporated in the LTER research program.

The fifteen-chapter book has 38 contributing authors in total. The first chapter, *Challenge of Time and Space in Ecology*, by the editors, illustrates (Fig. 1.2, page 5) how limited are our abilities and scope 'without considering the long-term dynamics at multiple spatial scales'. The available data adeptly illustrate that the duration of ice-cover in Lake Mendota has decreased by 16 days per 100 years between 1856 and 1998. The remaining fourteen chapters are divided into Parts I- IV. The three themes in the book (conceptual approaches to long-term landscape ecology, drivers of lake ecological dynamics, and the orchestration and legacies of the Program) are spelt out ahead of the Part I (Conceptual Approaches: Chapters 2-6). Chapter 2 deals with the water movements across the landscapes,

and has a succinct and realistic summary: "the dynamics and spatial heterogeneity influence lake ecology in ways we are just beginning to understand". Chapter 3, *Geomorphic Legacies and the Landscape Position of Lakes*, illustrates (Fig. 3.9) how a landscape-viewpoint enhances our understanding of lake conditions and dynamics. Chapter 4 (*how isolation of lakes as islands in a terrestrial sea influences biological structure and dynamics of lakes*) considers lakes as islands of water surrounded by inhospitable land. It provides a very good insight into factors that determine immigration of species. Species-area regressions for fish from 269 forested lakes from Wisconsin and Finland (Table 4.1; page 73) reveal that the smaller lakes the more sensitive they are to changes. Use of multiple criteria (abundance, dispersion and mean body size) has helped detect invasions and extinctions of fish species: some 11% of fish species have changed per decade in the five of the lakes in northern Wisconsin.

Questions relating to long-term changes, and similarities or dissimilarities among lakes are addressed in Chapter 5. The climate change is shown to be a causal factor for the shared regional dynamics; however, other regional drivers relate to human settlements and land-use change. Coherence among the lakes is highest for climate-driven factors (ice-period and its duration, surface water temperature). Chapter 6, *Generalizations from Intersite Research*, concerns ecological variability, e.g. the so-called normal variability. Comparing lakes with other ecosystem types leads to questions such as: Are some ecosystems more variable than the others? How do spatial and temporal variabilities between ecosystems compare? Thus, the studies at the 12 LTER disparate systems (deserts, deciduous forests, north temperate lakes, estuaries) show that a comparison has a merit only if applied to the more homogeneous systems.

Part II, *Drivers of long term dynamics*, comprises the climate driven dynamics of lakes (Chapter 7), invasion and establishment of non-native species (Chapter 8) and acid precipitation (Chapter 9). All these external drivers interact with the internal lake drivers and processes (Chapter 10) to affect lake dynamics, e.g. due to recreation by humans as in the north Wisconsin lakes (Chapter 11) and urbanisation and agriculture in southern Wisconsin lakes (Chapters 12). Although none of the LTER lakes had statistically significant slopes for the 21-year LTER period (1980-2000), the ice-on was on average 4.9 days/decade later and ice-off was 3.2 days/decade earlier. The future climate scenarios (Table 7.7) also forecast significant increase in the water temperature of lakes and extreme precipitation events.

Three of the LTER lakes in N. Wisconsin provide a strong predictive framework for understanding the ecological impacts, extirpation mechanisms, and regional dispersal of exotic invaders (Chapter 8). The experimental acidification of Little Rock Lake during 1985-1990 (Chapter 9) was designed by limnologists at the University of Wisconsin-Madison, with the knowledge and framework of ground-breaking works of A.D. Hasler and co-workers, especially on the divided lake basins, namely in Peter and Paul Lake, Michigan. The response of the Little Rock Lake (treatment basin) seemed to have been mediated through striking changes in the food web. The experimental study emphasizes the value of long-term, whole lake manipulation.

Chapter 10 deals with how external chemical inputs influence the abundance of organisms and, in turn, how the internal lake processes influence them. The studies allow predicting the influence of disturbances such as human activity, exotic invasions and climate change. Chapter 11, although a bit out of the ordinary, is a good attempt to link natural and social sciences, i.e. man's activities and responses of ecosystem. Such an approach helps adapt management strategies to protect the valued attributes of a landscape or a region. *The ongoing Experimental Work: Restoration of Lake Mendota* (Chapter 12) is authored, not surprisingly, by Dr. Stephen R. Carpenter and co-workers. The management work of Lake Mendota focuses on eutrophication and sport fishing. The main concerns for future are the declining groundwater table, exotic species invasions and the changing climate.

*Developing and Implementing Long-term Ecological Research* (Part III) was an integral part the LTER Research Program. Chapter 13 deals with the centralized collection and management of core data accessibility and retrieval capability. These studies eased and enhanced analysis of large, complex data sets. Future studies will process greater volumes of data from satellite and instrumented buoys. Chapter 14 (authors Dr. John Magnuson et al.) depicts many participants in action with many photographs of the actual sampling and sampling gear. The chapter gives a breakdown per pentad of the imposing 472 research publications during the LTER Program period (Table 14.2, page 312). Strikingly, whereas the number of papers per pentad impressively rose from the first (1981-'85) to last pentad (1996-'00), the one-author papers decreased by >50%; in contrast, those with four-authors soared by >400%.

The Part IV (Chapter 15) gives a chapter-wise synthesis. The summary reveals that the

hydrological template is apparently a powerful framework for studying the lake status and dynamics. The nitty-gritty of the conclusions drawn is that landscape ecology and lake ecosystem ecology complement one another, the knowledge of groundwater inputs and flows being central to our understanding. The Appendix, a 34 –page reference list (some six hundred in total) and the Index add to this coherent piece of work on dynamics of lakes in the landscape.

This extended review underscores the importance of similar, comparative studies on disparate ecosystems in other temperate regions, where limnology as a discipline has generally received serious setbacks, drifted or disappeared. The LTER Program has substantially contributed to changing the view of the greater ecological community on the importance of long-term research. The book has certainly profited and built on the classical but prudent and pioneering works of Birge and Juday. I am confident the book will encourage many a limnologist to use landscape as an integral part of lake studies. Last, I congratulate John Magnuson and co-editors and chapter authors, who have all shown great skillfulness and originality in preparing this book in a handy format with its colorful hard cover. I highly recommend this book to all those who are interested in long-term researches on lakes, and are confronted with lake-management issues originating beyond their lake boundaries.

**Ramesh D. Gulati**

NIOO/Centre of Limnology  
The Netherlands  
r.gulati@nioo.knaw.nl

## Restoration and Management of Lakes and Reservoirs

Third Edition (G. Dennis Cooke, Eugene B. Welch, Spencer A. Peterson, and Stanley A. Nichols, 591 pages, 2005, Hardbound, CRC Press, Taylor & Francis Group, Boca Raton, FL, USA, ISBN 9781566706254, £74.99)

This third edition of the well-known book *Restoration and Management of Lakes and Reservoirs* makes an excellent addition to the library of professional lake managers, government employees, academics, and students interested in the field of lake restoration. The updated version is replete with the theory behind different management strategies, suggested approaches and things to consider when undertaking restoration and/or management actions, and potential outcomes of different strategies. The book is well-balanced in that it presents examples of cases where both positive and negative outcomes of management measures were observed, and explain the causal factors for the successes and failures. Numerous

case studies, both new and old, are used to complement the theoretical discussion around lake restoration and management.

The book is primarily focused on controlling factors that cause eutrophication. Thus, a major part of the book deals with methods for controlling internal and external nutrient loading, nuisance algal blooms, and luxuriant macrophyte growth. The book does a good job of introducing to the reader the principles of basic limnology in its introductory section. It expands upon the basics when necessary, such as in the sections on biomanipulation (Chapter 9) and macrophyte biomass control (Section III). The authors treat very well the importance of controlling the nutrient inputs from the surrounding drainage basin, and often return to this point while addressing the more manipulative methods, such as dilution and flushing, hypolimnetic withdrawal, phosphorus inactivation, and sediment removal. Although there is a considerable discussion on mechanical, chemical, and biological methods for controlling eutrophication problems, the authors do not shy away from advocating the ‘do nothing’ approach to lake and reservoir management. This point is particularly emphasized when dealing with difficult aquatic plant community restoration scenarios (Chapter 12).

Although the authors draw upon international examples of water management and restoration, the book is clearly biased toward lake and reservoir management in the American context. The principles that are presented in the book can be applied to lakes anywhere, but discussions around permitting, government rules, and availability of grants are almost exclusively American. If nothing else, the comments that pertain only to the USA can be used by international readers as a flag that they should investigate regulations in their particular jurisdiction.

In summary, this updated edition of the Cooke et al.’s *Restoration and Management of Lakes and Reservoirs* is an excellent compendium of basic limnology and different approaches available to a lake or reservoir manager interested in controlling eutrophication problems.

**Geneviève Carr**

UNEP GEMS/Water Programme  
Gatineau, QC, Canada  
genevieve.carr@gemswater.org

## The Tilapia Trail; The Life Story Of A Fish Biologist

Ro Lowe-McConnell, 2006. MPM Publishing, Ascot., ISBN: 0-9545596-4-9. Soft cover, pp. 296.

“Today when a young scientist can leap into a plane and arrive at a well equipped laboratory,

complete with modern sampling devices and computers, to study some aspect of a specialist subject, it is difficult realize what was then involved in such a prototype enterprise. There was neither a laboratory nor a fishery department in Nyasaland (now Malawi),” writes Ro Lowe-McConnell about her first fishery research project in Africa that started in 1945. In *The Tilapia Trail*, a book of her life story, she narrates how, as a 24-year young woman, immediately after the end of World War Two, she sailed to South Africa. From there she travelled with her fourteen boxes of research equipment by train and road to Lake Nyasa (Malawi). Actually, she was destined to become a member of the East African Fisheries Organization (EAFRO), which Barton Worthington was planning to set up on Lake Victoria, but until that project would begin she went to Lake Nyasa to continue the fisheries survey that had been started, among others, by Ethelwyn Trewavas. In the next two years Ro did her famous ecological work on the “Chambo” species complex of closely related tilapias now placed in the genus and subgenus *Oreochromis* (Nyasalapia). In a vivid and often humorous way she depicts her life, research and the people she met on the shores of Lake Nyasa.

After a leave of several months in the UK, she returned to East Africa in November 1948 to start her work at the newly built EAFRO laboratory at Jinja, Uganda. Her main research concerned the biology of tilapias in Lake Victoria and many of the smaller lakes in Uganda, Kenya and Tanzania. The latter involves accounts of exciting safaris and meetings with many interesting people. During this period she laid the foundations for future tilapia research in these areas, where species introductions, that later sadly changed so much in these water bodies, were only just beginning.

Because at that time the UK’s Overseas Research Service still had a marriage bar for women, Ro had to resign from EAFRO when she married the geologist Richard McConnell in December, 1953. Richard’s work brought the couple to (British) Guyana in South America, where they lived for six years. In another book, called *Land of Waters* (The Book Guild Ltd, Sussex England), published in 2000, Ro fascinatingly narrates her adventurous life in that beautiful country. The description of this important episode in her life is brief in *The Tilapia Trail*, but her love for that part of the world is clearly shown in the delightful chapter “South America revisited – my other life”.

In the period after 1962, while living in Sussex and working as an Associate at the British Museum (Natural History), Ro became involved in many tropical fish projects and international

meetings. She received numerous guests in her wonderful home near the Downs and became a central person in tropical freshwater biology. In her modest and inspiring way she describes this period of her life until the present.

Though knowledgeable in many tropical fish communities, tilapias play a central role in Ro's life and in *The Tilapia Trail*. She studied them in their natural habitats and as introduced species in South America and in many other places. In the last chapter of the book, Ro reviews the growing importance of tilapia, particularly *O. niloticus*, in fish culture. During the past decades this species has been introduced into more than 90 countries, and in 2002 the yield of this "aquatic chicken" reached more than a million tons per year. However, the introductions have also led to an alarming loss of natural tilapia stocks due to competition and hybridization. For instance, in 1981 when Ro and Ethelwyn Trewavas visited the Athi River in Kenya in search of pure stocks of the native *O. spirulus niger* all they could find there were hybrids with species escaped from stocked dams.

*The Tilapia Trail* itself is a very interesting, enjoyable and richly illustrated hybrid between a scientific report and a personal account by a prominent tropical fish biologist, who shows that fish biology can be a lot of fun. Sometimes descriptions of interesting events are too short to satisfy the reader's curiosity. An index would have made consultation of the book more convenient. However, we should be grateful that Ro did not keep the greater part of her notes hidden in the tin trunks in her study.

#### Frans Witte

Section Integrative Zoology  
Institute of Biology Leiden  
2300 RA Leiden, The Netherlands  
f.witte@biology.leidenuniv.nl

## Tragedy in Mouse Utopia: An Ecological Commentary on Human Utopia

J.R. Vallentyne, 2006. Trafford Publishing,  
Victoria BC, V8T 4P4, Canada. ISBN 1-4120-  
5633-0. 198p

*Indifference to behavioral needs of the young caused Mouse Utopia to self-destruct. Can Human Utopia avoid a similar fate? Yes. How? By confronting the Sorcerer. Will we? In time?*

#### About the Book

In 1968, John B. Calhoun, American behavioral ecologist, introduced eight mice into a technologically designed walled enclosure that fulfilled

all the wants and needs of mice except migration in and out. Over a 4 year period the population exploded into a colony of 2200 mice, and then slowly and inexorably declined to extinction. Deprived of motherly love early in life, and denied access to social roles later in life, young mice grew up without knowing how to behave as mice. This book examines whether a similar fate could be in store for human utopia.

Part I compares the suicidal effects of runaway growth in mouse utopia to a similar sequence of events in human utopia. Part II describes our dependence on the biosphere. Part III shows how the runaway growth of technology and population is creating havoc in our species and the biosphere. How an inner life-force symbolized as "the sorcerer" causes populations to self-destruct by satisfying internal desires beyond their useful times. As the sorcerer's apprentices, we have been preparing the ground for a crisis of crises beyond human control. Part IV describes how the sorcerer works and how to control his destructive traits. Political, spiritual and behavioral opportunities are identified that could be overlooked, misinterpreted or ignored in steering a course toward coevolution of humanity and the biosphere.

Victor J. Crapnell: "Interesting, yes; and scary!"

Johnny Biosphere: "This book is remedial reading for some ecologists, most employees of environmental protection agencies, and most forward looking businessmen and politicians."

Economist Tom Muir interviews ecologist J.R. Vallentyne on *Tragedy in Mouse Utopia: The Sorcerer Lurks Within*.

**Muir:** Dr. Vallentyne, you claim that the global course of "human utopia" since the 14th century has been following the four year march to extinction of a mouse colony provided with everything that mice could want. You seem to dismiss the "magic of the marketplace". What about human innovation and invention? Men are not mice!

**Vallentyne:** My comparison is not between men and mice. It is between the behavior of mice and humans when both are driven to excesses by a runaway cycle of growth of technology and population. The marketplace accelerates the runaway cycle by feeding human desires rather than limiting human growth.

**Muir:** Yet another global treatise on this subject in addition to Malthus, *The Club of Rome*, and *Global 2000*?? Don't you think the public and political reaction will be to shrug and move on?

**Vallentyne:** Possibly, but I have added three new dimensions to the discussion: (1) a runaway

cycle of intertwined growth of technology and population, jointly; (2) a change of context from an era of "upward causation" in which exponential growth is normal, to an era of "downward causation" in which continued growth is suicidal; and (3) the psychological-behavioral nature of the problem in both mice and humans. Malthus, it seems, is not yet entirely dead.

**Muir:** What makes you think that we may be on the brink of globally disastrous feedback from the biosphere? I do not think that you are even close to evaluating the influence of different time scales in your analysis.

**Vallentyne:** Look around. Biospheric feedback is here now and increasing! Differences in time scales create the problem!

**Muir:** What do you have to say to the eternal optimist and the resigned pessimist?

**Vallentyne:** Nothing. Realists and pragmatists are needed.

**Muir:** If destruction takes place in 500 to 1000 years, who cares?

**Vallentyne:** Nobody - except humanitarians, environmentalists, most women and all children.

**Muir:** Does our global technological society have to crash? Isn't it possible that human society will ignore your work?

**Vallentyne:** My book poses these questions, but does not presume to answer them. My aim has been to identify contexts and probabilities that shape the answers.

**Muir:** You describe "a sorcerer within" as a mastermind of the cravings behind the seven deadly sins. Isn't that just a little bit far-fetched?

**Vallentyne:** Not at all. The notion of the sorcerer has more in common with our perceptions of reality than science or psychology can ever convey. Naming the mastermind of the cravings could be key to controlling the sins.

**Muir:** Given the inability of individuals to overcome the inertia and change the direction of politicians, how can you possibly conclude that our only real hope lies in faith?

**Vallentyne:** Faith is not unique to religion. It is inherent in the nature of life. As Dostoyevsky noted in *The Brothers Karamazov*: To a realist, faith does not arise from miracles; miracles arise from faith.

**Muir:** Has Calhoun's experiment ever been repeated?

**Vallentyne:** Yes, it is being repeated right now; in human utopia!! For an update on human utopia, read Scott Wooding's insightful book *The Parenting Crisis*.



**Muir:** What is the bottom line of your book? What is the take-away message?

**Vallentyne:** At a personal level: Do unto the ecosystems that you share with others as you would have others do unto the ecosystems they share with you. Politically: Put the concept of the biosphere (or ecosphere, if you prefer) into the charter of the United Nations.

### About the Author

John R. Vallentyne ("Dr. Jack", a.k.a. Johnny biosphere) grew up on and in the Grand River in the outskirts of Brantford, Ontario. After an undergraduate degree in biology at Queen's University in Kingston, Ontario, he completed a Ph. D. degree at Yale under the direction of G. E. Hutchinson. He lectured in biology at

Queen's from 1952 to 1958 and at Cornell from 1958 to 1966. In 1966 Dr. Jack moved back to Canada to help to establish new centers of freshwater research in Winnipeg, Manitoba, and Burlington, Ontario.

Dr. Jack served on the Editorial Board of a multi-million dollar investigation of *Pollution in the Lower Great Lakes* from 1966 to 1970. In 1978 he was instrumental in shifting the focus of the Great Lakes Water Quality Agreement from water quality to an ecosystem approach to water quality. As Canadian Co-Chair of the Great Lakes Science Advisory Board (1986-1992) he promoted the elimination of toxic chlorinated chemicals and an increased focus on human and biospheric health.

Among awards, Dr. Jack received the Journal Fund Silver Pen Award for Learned Publication 1955-1959, a Guggenheim Award for study in Italy in 1964-65, the Rachel Carson Award of the Society of Environmental Toxicology and Chemistry in 1992, and a Lifetime Achievement Award of the American Society of Limnology and Oceanography in 2002. He has authored over 100 scientific publications including a 1974 book *The Algal Bowl: Lakes and Man* now available in revised and expanded form, co-authored with David W. Schindler and published by the University of Alberta Press as *The Algal Bowl: Phosphorus and the Control of Eutrophication in Lakes*.

This book contains Dr. Jack's diagnosis of the human over-growth syndrome, and a prescription for the coevolution of humanity and the biosphere.

## ELL Symposium 2006

11-15 September, 2006, Tartu, Estonia

The European Large Lakes Symposium (ELLS) 2006, which took place from 11 to 15 September, 2006, in Tartu, Estonia, focused especially on the ecosystems of European large lakes and their ecological and socioeconomic impacts. ELLS has followed up in the tradition of International Lake Ladoga Symposia (1993, 1996, 1999 and 2002). These symposia not only improved our understanding of the structure and functioning of Lake Ladoga but also of the large, northern lake ecosystems in general. Since the problems relating to the processes of eutrophication, threats, protection and uses are much the same in all these large lakes, the need for an international exchange and discussion of scientific results from these lakes has grown. ELLS provides a platform for (i) discussing the new scientific findings regarding the functioning of large lake ecosystems under the influence of anthropogenic and climatic stressors, (ii) enhancing the communication and exchange of ideas among scientists, water management authorities and politicians, and (iii) fostering international cooperation in research investigations and management of both national and transboundary European waterbodies.

ELLS 2006 was organized by Centre for Limnology, Estonian University of Life Sciences, Tartu, (Chair Tiina Nges), University of Joensuu, Finland (Vice-chair Markku Viljanen), and Peipsi Centre for Transboundary Cooperation, Tartu Estonia (Gulnara Röll). It will be of interest for the SIL news readers that Estonia has more than 1200 lakes that cover over 4 % of the country's area. Among these, Lake Peipsi (3,555

## Recent Meeting Reports

km<sup>2</sup>, mean depth 7.1 m), which is the largest lake in Estonia, is a transboundary freshwater body between Estonia and Russia. Both Lake Peipsi and Lake Võrtsjarv (270 km<sup>2</sup>, mean depth 2.8 m) in Estonia have been investigated for their limnology for about 40 years. The Centre for Limnology (formerly Võrtsjarv Limnological Station) was established in 1954 and has been responsible for Estonian lake research ever since).

The six themes with their respective keynote speakers at the ELLS 2006 were:

1. Climate change and anthropogenic impacts on large lakes ecosystems (Dr. Glen D. George, U.K).
2. Food web interactions and dynamics (Dr. Alois Herzig, Austria).
3. Modeling tools in large lakes research (Dr. Thorsten Blenckner, Sweden).
4. The Water Framework Directive and large lakes (Dr. Anne Lyche Solheim, Norway).
5. Socioeconomic aspects of water resource and catchment management (Dr. Ragnar Löfstedt, U.K).
6. Policy support systems for the sustainable management of large lakes affected by global changes (Dr. Ramesh D. Gulati, The Netherlands).

A short workshop on scientific writing and presentation for the young researchers was also organized.

The Symposium was attended by 170 participants from 20 countries, with about two-thirds from Estonia (56), Finland (33)

and Russian Federation (28). The peer-reviewed, accepted Papers will be published as Symposium Proceedings in *Hydrobiologia*.

**Tiina Nöges**

Centre for Limnology, Tartu, Estonia  
tiina.noges@emu.ee

## The First International Conference on The State of the Gulf Ecosystems: Future & Threats

5-7 March 2006, Al-Ain, UAE

The Biology Department and the College of Science and Research Affairs, both of the UAE University, Al Ain, and the Canadian Society of Aquatic Ecosystem Health and Management (AEHMS Canada), jointly organized the First Gulf Ecosystems Conference. The UNESCO Doha Office and several local, environmental and other agencies sponsored the conference. The Conference covered both freshwater and estuarine-marine ecosystems in the Gulf area (aquatic environments, including wetlands as well as coastal and marine ecosystems) with respect to their future, and especially regarding the challenges faced by them due to 'local' human impacts and the global environmental change. The health of Gulf marine ecosystems is being compromised, especially due to the impacts from over-harvesting, coastal land reclamation, oil exploration and spills, and the activities relating to urban development. The deterioration of terrestrial ecosystems in the region includes loss of both faunal and floral biodiversity, soil and sediment degradation and nutrient losses.

Leading environmental and research scientists from 29 countries attended the Conference. Over 100 papers (73 orals and 29 posters) were presented during the 16 sessions. In addition, well-known experts presented ten plenary invited papers, which discussed issues concerning aquatic ecosystem health and management, pollution and other hazards that affect the Gulf Ecosystems, both coastal waters and wetlands of various types and sizes. The effects of marine water desalination, use of treated sewage water for agriculture and the biotechnological studies, to increase the water holding capacity of the soils, were among the focal points of discussions. Two workshops, one on Renewable Resources Management and the other on Regional Cooperation and a Gulf Ecosystem Health and Management Agreement (GEHMA) were organized.

## **Tonolli Award Recipient, Summer 2006**

The Tonolli Fund of SIL was created in 1985 through a donation from Vittorio and Livia Tonolli, well known limnologists at the Istituto Italiano di Idrobiologia in Pallanza, Italy. The purpose of the Fund is to provide assistance to young limnologists from developing countries. In recent years, the awards committee for the Tonolli Fund had used the Fund primarily for supporting post-graduate degrees students (MS, M.Sc., Ph.D.) in the field of limnology.

Applications for the Tonolli Award are reviewed twice per year. For summer 2006, the committee had chosen Catalina Gonzalez Rueda to receive an award for graduate studies in limnology. Catalina was born in Bogotá, Colombia, where she attended the National University of Colombia and graduated in biology in 2004. Latin American students specializing in science conduct thesis work for the bachelor's degree. To meet this requirement, Catalina studied the algae of volcanic hot springs in Boyaca, Colombia. She also served as co-author on a publication of the National University of Columbia dealing with the biodiversity of the Jaboque Wetland. The project was oriented toward ecological restoration of the wetland. While studying the algae of Jaboque, Catalina developed skills for culturing of algal taxa for experimental purposes.

Catalina will conduct her masters' work at Université du Québec a Montréal, Canada. The study involves lake nutrient biogeochemistry and plankton ecology, i.e. to identify the forms of inorganic and organic nitrogen

The conference recommendations reiterated the need to educate and train the personnel to implement ecosystem management; establish a regional committee for an integrated network of marine protected areas; implement trans-boundary analysis of marine environment of ROPME Sea Area; promote and train students, researchers, and public; and encourage ecotourism. The conference stressed the need for bioremediation, developing a technology for absorbing oil spills on water, and monitoring the sediment contaminants. The panel discussions during the conference recommended conducting regional seminars, training workshops and organizing courses about ecosystem approach and management in solving environmental problems.

## **Awards and Prizes**

that sustain large blooms of Cyanobacteria in Lake Champlain, Quebec. Although it is already known that phosphorus limits the algal biomass in this lake, she will examine whether the composition and structure of the community of phytoplankton depend on the availability of different forms of nitrogen. Interestingly, the increase in the proportion of organic nitrogen to total nitrogen in the lake, which is related to the recent increase of livestock raised in the drainage basin, seems to have led to the appearance of blooms in the lake. This study will be carried out using cultures of Cyanobacteria isolated from the lake, as well as measuring stable-isotope data in different organisms that will allow Catalina to follow the lake's nitrogen dynamics.

Students who want to work for a graduate degree in limnology are urged to consult the SIL website for further information on the Tonolli Award. The Tonolli Committee of SIL seeks applications, particularly from limnology-oriented students in developing countries, for support of degree-related research in limnology. See the SIL website for application forms.

**William M. Lewis, Jr.**  
August 29, 2006

## **Robert G. Wetzel Water Quality Award established**

The American Institute of Hydrology announced the creation of the Robert G. Wetzel Water Quality Award at its 25th Anniversary Celebration in Baton Rouge, Louisiana, 22 May 2006. The award commemorates the

The AEHMS Canada will encourage the follow-up activities and help to organize "The-State-of-the-Gulf Conferences" every 2-3 years. Several countries (Bahrain, Iran and Kuwait) offered to host the second Gulf conference planned for 2008. The UNESCO Doha Office will prepare an inventory of research projects for the Gulf region.

The accepted, peer-reviewed papers will be published as conference proceedings in the AEHMS Journal: Aquatic Ecosystem Health and Management.

Conference Co-chairs:

**Dr. Waleed Hamza** (UAE)  
W.Hamza@uaeu.ac.ae

**Dr. Mohiuddin Munawar** (Canada)  
<http://www.aehms.org>

career and significant contributions that former SIL General Secretary and Treasurer Robert Wetzel (1936-2005) made to the profession. Dr. Richard Marzolf made a thorough set of remarks outlining the educational, service and research contributions of Bob, and of his SIL service-related activities, in particular. Carol Wetzel and son Paul Wetzel were present to accept a plaque establishing the award. Contributions to the award endowment may be made to the American Institute of hydrology ([www.aihydro.org](http://www.aihydro.org)).

## **Symoens Prize for Tropical Limnology**

In 1992, the Belgian Royal Academy of Overseas Sciences set up a fund for a triennial Symoens Prize of 2,500 Euros (about 3,100 USD), named the 'Jean-Jacques & Berthe Symoens Prize for Tropical Limnology,' a memoir of great scientific value on a subject related to tropical limnology.

The Prize was awarded for the fourth time in 2005 to the laureate Dr J.D. Mbega (Gabon) for his work Biodiversité des poissons du bassin inférieur de l'Ogooué (Gabon) [Fish Biodiversity of the Lower Ogooué Basin (Gabon)]. The fifth Prize will be awarded in 2008. Information for the Award in 2008 may be obtained at: Royal Academy of Overseas Sciences, rue Defacqz 1, boîte 3, B-1000 Brussels, Belgium. Tel. 32-2-538 02 11. Fax 32-2-539 23 53. E-mail: [kaowarsom@skynet.be](mailto:kaowarsom@skynet.be). Website: <http://www.kaowarsom.be>

# Working Groups of SIL and their Contact Persons as of May 2006

## Ancient Lakes

**Dr. Oleg A. Timoshkin**, Chairperson  
Limnological Institute  
Siberian Branch  
Russian Academy of Sciences  
Ulan-Batorskaya, 3  
P.O. Box 4199  
664033 Irkutsk  
RUSSIA  
Phone: 3952 42 82 18; Fax: 3952 46 54 05  
E-mail: tim@lin.irk.ru

## Aquatic Birds

**Dr. Joseph J. Kerekes**, Chairperson  
Environment Canada  
Canadian Wildlife Service  
45 Alderney Drive  
Dartmouth, N.S. B2Y 2N6  
CANADA  
Phone: 902 426-6356; Fax: 902 426-4557  
E-mail: joe.kerekes@ec.gc.ca

## Aquatic Invasive Species

**Dr. Vadim Panov**, Chairperson  
Zoological Institute of the  
Russian Academy of Sciences  
Universitetskaya Nab. 1  
199034 St. Petersburg  
RUSSIA  
Phone: 7 812 3233140; Fax: 7 812 3282941  
E-mail: rbic@zin.ru  
Web: [http://www.zin.ru/rbic/projects/sil\\_wgais/](http://www.zin.ru/rbic/projects/sil_wgais/)

## Aquatic Microbial Ecology

*(Formerly: Microbial Activities and the Carbon Cycle in Fresh Waters)*

**Dr. Meinhard Simon**, Chairperson  
Inst. of Chem. & Biol. of the Marine Env.  
University of Oldenburg  
P.O. Box 2503  
D-26111 Oldenburg  
GERMANY  
Phone: 49 441 970 6361;  
Fax: 49 441 798 3438  
E-mail: m.simon@icbm.uni-oldenburg.de

## Biodiversity

**Dr. Hiroya Kawanabe**, Chairperson  
Lake Biwa Museum  
1091 Oroshimo, Kusatsu  
Shiga 525-0001  
JAPAN  
Phone: 81 775 68 4812; Fax: 81 775 68 4848  
E-mail: kawanabe@LBM.GO.JP

## Biological Monitoring

*Chairperson to be determined.*

## Periphyton of Freshwater Ecosystems

*Chairperson to be determined.*

## Aquatic Primary Productivity (GAP)

**Dr. John Beardall**, Co-chairperson  
School of Biological Sciences  
PO Box 18, Monash University  
Wellington Road  
Clayton, VIC 3800  
AUSTRALIA  
Phone: +61 3-99055611; Fax: +61 3-99055613  
E-mail: John.Beardall@sci.monash.edu.au

## Dr. Vivian Montecino

Co-chairperson  
Universidad de Chile  
Facultad de Ciencias  
Dept. de Ciencias Ecologicas  
Las Palmeras # 3425  
Casilla 653, Santiago  
CHILE  
Phone: +56 271-2049; Fax: +56 272-7363  
E-mail: clorofil@uchile.cl

## Conservation and Management of Running Waters

**Dr. Philip J. Boon**, Chairperson  
Scottish Natural Heritage  
2/5 Anderson Place  
Edinburgh EH6 5NP, Scotland  
UNITED KINGDOM  
Phone: 44 131 446 2412; Fax: 44 131 446 2405  
E-mail: phil.boon@snh.gov.uk

## Ecology

**Prof. Maciej Zalewski**, Co-Chairperson  
International Centre for Ecology  
Polish Academy of Sciences  
90-364 Lodz Tylna St.3  
POLAND  
Phone/Fax: (+ 48 42) 681 70 07  
E-mail: sekretariat@mcepan.lodz.pl

## Dr. Richard D. Robarts

Co-Chairperson  
National Water Research Institute  
11 Innovation Blvd.  
Saskatoon, SK S7N 3H5  
CANADA  
Phone: 306 975-6047; Fax: 306 975-5143  
E-mail: richard.robarts@ec.gc.ca

## Macrophytes

**Prof. Jacques Haury**, Chairperson  
Agrocampus Rennes  
Lab. Ecology and Crop Protection Unit  
UMR INRA-Agrocampus Rennes  
Biology, Ecology & Quality  
of Inland Water Bodies  
65, rue de Saint-Brieuc, CS 84215  
F-35042 Rennes Cedex  
FRANCE  
Phone: +33 02 23 48 55 39  
Fax: +33 02 23 48 51 70  
E-mail: Jacques.Haury@agrocampus-rennes.fr or  
Jacques.Haury@rennes.inra.fr

## Physical Limnology

**Dr. Sally MacIntyre**, Chairperson  
University of California-Santa Barbara  
Marine Science Institute  
Santa Barbara, CA 93106-6150  
USA  
Phone: 805 893-3951; Fax: 805 893-8062  
E-mail: sally@icess.ucsb.edu

## Plankton Ecology (PEG)

**Dr. Miquel Lüring**, Chairperson  
Aquatic Ecology and Water  
Quality Management Group  
Wageningen University, P.O. Box 8080  
6700 DD Wageningen  
THE NETHERLANDS  
Phone: +31-317-482689 or 483898  
Fax: +31-317484411  
E-mail: miquel.luring@wur.nl

## Saline Inland Waters

**Dr. Brian V. Timms**, Chairperson  
School of Environmental and Life Sciences  
University of Newcastle  
Callaghan, NSW 2308  
AUSTRALIA  
Phone: 61 2 4921 7229; Fax: 61 2 4921 6914  
E-mail: brian.timms@newcastle.edu.au

## Wetlands

**Dr. Brij Gopal**, Chairperson  
School of Environmental Sciences  
Jawaharlal Nehru University  
New Delhi 110067  
INDIA  
Phone: 91 11 617 2438; Fax: 91 11 616 5886  
E-mail: brij@nieindia.org

## Upcoming Events

### SIL2007 in Montréal

12-18 August 2007, Montréal Convention Centre, Group for Interuniversity Research in Limnology and Aquatic Environment, Societas Internationalis Limnologiae, and Society of Canadian Limnologists

<http://www.uqam.ca/SIL2007>

### Symposium for European Freshwater Sciences 5 (SEFS5)

8-13 July 2007, University of Palermo Italian Association for Oceanology and Limnology, Freshwater Biological Association

<http://www.sefs5.it>

## Attention: Manufacturers of Limnological Equipment and Publishers

*SILnews* accepts advertisements for equipment and publications that will be of interest to SIL members.

*SILnews* is distributed three times a year to more than 3,000 members and libraries world-wide. If your company is interested in acquiring advertising space in *SILnews*, please contact the Editorial office for rates at richard.robarts@ec.gc.ca or use the mailing address indicated on the front page.

A complimentary copy of *SILnews*, in which your advertisement appears, will be sent to you once it has been published. *SILnews* is posted on the SIL web site at <http://www.limnology.org> after it has been published and your advertisement will appear there.

## Limnology Job and Studentship Notices

Notices on the availability of limnologically-oriented jobs and graduate student opportunities are now accepted for publication in *SILnews* and displayed on the SIL web site at <http://www.limnology.org>. There is no charge for the service at this time, which is available to SIL members and non-members.

Persons submitting notices should note the four month lead-time for the print edition of *SILnews*; those advertisements with short deadlines should be directed to the web site only.

Submissions should include:

- a short title describing the position (job or studentship);
- location and duration of the position;
- closing date for applications;
- a short paragraph describing the position, including any citizenship, educational or employment prerequisites; and,
- information on where potential applicants may obtain further information, including names of contact persons, telephone numbers, fax numbers, e-mail addresses, and web site addresses, where appropriate.

Submissions may be edited for length and clarity. Those deemed inappropriate to the SIL mandate will be rejected at the discretion of the *SILnews* Editor or the Webmaster. Submissions for the print edition of *SILnews* should be sent to the editor at the address on the cover of this issue.

Submissions for the SIL web site should be sent by e-mail to [webmaster@limnology.org](mailto:webmaster@limnology.org) or by fax to the attention of Gordon Goldsborough at: +1 (204) 474-7618.

## Are you moving?

Please send your change of address to:

**William M. Lewis, Jr.**

c/o Ms. Denise Johnson  
The University of North Carolina at Chapel Hill  
School of Public Health  
Department of Environmental Sciences & Engineering  
CB# 7431, 124 Rosenau Hall  
Chapel Hill, NC 27599-7431 USA  
[denisej@email.unc.edu](mailto:denisej@email.unc.edu)  
Phone: 919 843-4580; Fax: 919 843-4072

**The International Association of Theoretical and Applied Limnology works worldwide to understand lakes, rivers, and wetlands and to use knowledge gained from research to manage and protect these diverse, inland aquatic ecosystems.**

## SIL Officers

### PRESIDENT

**Gene Likens**

Institute of Ecosystem Studies  
Box AB  
Millbrook, New York 12545, USA  
E-mail: [likensg@ecostudies.org](mailto:likensg@ecostudies.org)

### EXECUTIVE VICE-PRESIDENTS

#### Winfried Lampert

Max-Planck-Institut für Limnologie  
Postfach 165  
D-24302 Plön  
Germany  
E-mail: [lampert@mpil-ploen.mpg.de](mailto:lampert@mpil-ploen.mpg.de)

#### Brian Moss

School of Biological Sciences  
Derby Building  
The University of Liverpool  
P.O. Box 147  
Liverpool L69 3BX  
Great Britain  
E-mail: [brmoss@liverpool.ac.uk](mailto:brmoss@liverpool.ac.uk)

#### Chris Gordon

Department of Zoology  
University of Ghana  
Legon, Accra  
Ghana  
E-mail: [cgordon@ug.edu.gh](mailto:cgordon@ug.edu.gh)

### ACTING GENERAL SECRETARY AND TREASURER

#### William M. Lewis, Jr.

Professor and Director  
Center for Limnology  
216 UCB, CIRES  
Boulder, CO 80309-0216, USA  
E-mail: [lewis@spot.colorado.edu](mailto:lewis@spot.colorado.edu)

### EDITOR, *SIL NEWS*

#### Ramesh D. Gulati

NIOO/Centre of Limnology  
Post Box 1299  
3600 BG Maarssen  
The Netherlands  
Fax: +31.294.232224  
E-mail: [r.gulati@nioo.knaw.nl](mailto:r.gulati@nioo.knaw.nl)

## For Your Information

*SILnews* is now on the SIL web site in PDF format. The newsletter is created in Adobe Acrobat, Version 5. To open, use Adobe Acrobat Reader.