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SIL news

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In This Issue

Material for the December 2012 issue should be sent to the Editor by:

1 OCTOBER 2012

Dr. Ramesh D. Gulati
NIOO/Department of Aquatic Ecology
Post Box 50
6700 AB Wageningen
The Netherlands
Tel: +31.317.473.542
Fax: +31.317.473.675
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.

From the President: SIL's Future

I've come across two papers that are both comforting and alarming. They concern the futures of scientific societies, many of which, like SIL, are declining in membership because younger people are not joining and staying as fast as older ones retire. The comfort, such as it is, is that we are not alone; there is a general problem and it affects not only smaller and specialist societies but some very large and general ones as well. Schwarz, Hunter & Boersma (2008) on behalf of The Society for Conservation Biology put the matter bluntly: Despite this maturation, scientific societies may now be poised on the precipice of oblivion. Many societies, failing to convince their constituents of the full value of their collective mission, are losing membership, and without members, a scientific society must either become a profit-focused business or cease to exist. The American Fisheries Society (Wuellner & Jackson, 2012) has done what it can to find out the ultimate reasons for its decline through questionnaire surveys of its student members and young professionals.

Helping students in underprivileged countries is one of SIL's main aims, but we need to recruit and retain students if SIL is to survive long into the future.

What is emerging is that the reasons for which we older members joined, are disappearing and if societies are to survive we have to provide better membership benefits or cogent new reasons to join. Most of us joined to get a printed journal that our libraries could not then afford and to gain the contact at meetings that, relatively isolated in our Universities and Institutes, we could not otherwise easily get. Electronics has undermined both of these reasons. Libraries are now able to afford large bundles of journals from commercial publishers as well as to pay subscriptions for Society journals that, having become electronic, are now cheaper in real terms. I find it is now quite rare for me not to gain quick access through the library for almost any paper I want. Furthermore, web sites and networks, email and SKYPE can put people in contact equally easily. The societies that are able to cope with declining membership are those that have built up cash reserves from lucrative, long-established journals with plenty of institutional subscriptions; they are effectively as much businesses as scientific societies, and those whose membership is declining least seem to be national societies whose meetings act as markets for the hiring of post-docs, the key now to a permanent post. The prime benefit required by young professionals in the American Fisheries Society was assistance with job placement. International societies that meet only every two or three years and that do not have established journals are not so well placed. SIL is in this position. But perhaps there are new and cogent reasons to join and I will come to those later.

In the meantime, until our new Journal, Inland Waters, becomes established, our income comes mainly from membership subscriptions that are declining. Currently, despite our cutting expenditure to the absolute minimum, we are still not balancing our expenditure with our income and so are

drawing on our reserves, which are not large. We can probably reduce our administrative expenditure a little more to bring us into balance, but only just. Negotiations are going on about how to do this. Presidents don't usually have to worry too much about the nitty-gritty of the funds but unfortunately our Secretary General-Treasurer, Morten Søndergaard has become ill and I have agreed to take over his duties until such time as he can resume, or until the next Congress; so finances have become an important issue for me. We wish Morten a speedy recovery, but in the meantime if you have enquiries please would you send them to me (brmoss@liverpool.ac.uk).

Members can do two things to help SIL. The first is to ensure the rapid success of Inland Waters by sending it some of their best papers, and the second is to recruit more members. Let me say something more about journal submission first. I wonder if we all realise the extent to which we are shooting ourselves in the feet by the choices we make in sending papers to journals. It was brought home to me when one prominent commercial (non-society) journal sent me a reminder as a reviewer after one week of my undertaking to do the review! Such bullying tactics more than irritated me and my response was not diplomatic. Commercial journals make large profits. They pay neither their authors nor reviewers; they may pay their chief academic editors something but I suspect that on an hourly basis it is little more than someone would be paid for stacking shelves in a supermarket. Commercial publishers behave as if we owe them favours. They rely on mostly public money to support the research that is published but they put nothing back into the culture of science.

In contrast, society journals pay back the voluntary labour on which they depend by ploughing back any profits into studentships and grants and keeping down the costs of meetings. I can see no good reason to submit a paper to a commercial journal until a string (hopefully short) of society journals has turned it down. Society journals help us; commercial journals merely help to keep the numbers in our lists of publications high, but that ultimately does not help scientists or science. It just keeps us as slaves to an increasingly controlling management system in Universities and Institutes. If you want an extended discussion of these issues, the Editor-in-Chief of the Journal of Evolutionary Biology, published by the society of that name, has written one (Moore, 2010). The first imperative for the membership of SIL, if we are to survive, is thus to ensure the success of its journal by sending many good papers to it.

The second imperative is to recruit more members, a message successive Presidents and Secretaries-General have put out repeatedly in recent years. It hasn't yet worked so we have to find new arguments. The authors of the papers concerning the Society for Conservation Biology, the Society for Evolutionary Biology and the American Fisheries Society argue along lines of collegiality, that there should be an inherent loyalty to the group of people with whom we share passionate interests, that it is the right and professional thing to do. But we live in times when competition rather than collegiality is being thrust on us by the way the world has become. Those still in active careers spend much of their time gleaning funds, competing in an ever-widening marketplace, trying to place their papers in the fashionable weekly journals that our administrators have ruled are the most prized, resisting pressures to merge or close our departments to make space for other, very expensive, areas of science that bring in huge overheads on grants. Limnology and freshwater biology used to be represented in almost every British University. They now hang on in a handful, and the national laboratory for freshwater science in the UK used to be five times as big as it is now. The situation may be better elsewhere, but there have been various concerns for some time (Committee on Inland Water Ecosystems, 1996; Lindenmayer & Likens, 2011).

In the problems of the present, however, we must not forget the future. During the current preoccupation with salvaging an economic system that has got itself into serious trouble, and desperate attempts on the parts of every government to stimulate and justify growth economies, our environmental problems, the consequences of economies that treat environmental damage as a virtue, continue to mount. More and more of our biomes are converted to anthromes no longer able to deliver the ecosystem goods and services on which we depend, not least the regulation of atmospheric composition on which an equable climate depends. There are serious concerns about the future availability of phosphate for agriculture, of the side effects of doubling the natural rate of nitrogen fixation through industrial processes, and of ensuring the supply of various rare metals for modern technologies. The human population continues to rise and the Millennial Development Goals are only patchily being achieved. The rising price of gasoline, a raw material on which much more than running our vehicles depends, portends its eventual serious shortage and difficult problems, even extinction, for industries that depend on it.

We point out these things and are barely heard in the corridors of power, but all the indications are that later this century these problems will come very much to the forefront and there will be public clamour for a solution that should have had its roots now, but has barely pushed out even a single radicle. We will no doubt continue to point out the problems, and the conflict between their solution and an economics that treats environmental values as irrelevant. If history is any guide, critics of regimes that are fighting increasingly to maintain their ascendancy, will be muzzled and that is where belonging to collective groups, like scientific societies, that can give mutual support and protection, will become of great importance. If you doubt me, read the editorial, Frozen Out in Nature (Vol 483, March 1 2012, p6)) on the restrictions placed on its scientists by the Canadian government. At least in the environmental field, belonging to a scientific society may not just be professionally desirable and collegiate, it may help keep us out of jail and still able to advocate. Moreover, international groups have much more power in these situations than national ones. Put that to your students. They may well see the future more clearly than an older generation, with its traditionalist values, is able to do. Get them to join us.

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Executive Board Nominations

Elsewhere in SIL News you will find a request from the chair of the nominating committee, Ingemar Ahlgren, for nominations for President, Vice-Presidents and General Secretary-Treasurer of SIL. According to the Statutes, all of us in the first two categories have to stand down having served for two terms, and the Secretary General -Treasurer wishes to hand over responsibility, also after six years. May I encourage everyone to think about this and to send in nominations to Ingemar. Being President or Vice-President is a great honour and I have enjoyed it immensely. SIL has considerable recognition in the wider community and I have been invited to various interesting meetings as a result and have even been asked to comment on freshwater issues by bodies like the British Broadcasting Corporation (BBC). The duties are not onerous; the President chairs the committees for determining the recipients of the Naumann-Thienemann medals, and the Baldi and Kilham lecturers, and presides over the meetings of the International Committee and of the Executive board when there are matters to be discussed. The vice-presidents are generally responsible for publicising SIL and take on responsibilities such as paper and poster judging at the Congress. The work of the Secretary General -Treasurer is a little more time-consuming but SIL provides a part-time business secretary, pays a small honorarium and meets the expenses of attendance at the Congress, all of which help. For all the posts it is also rewarding to feel that one has trodden in the past footsteps of some very distinguished people. So please do contact Ingemar..and don't be reticent to nominate yourself if serving SIL is something that you would like to do.

Brian Moss,
SIL President

SIL Nominating Committee

The SIL Nominating Committee will shortly be seeking nominations for officers of SIL Executive board to be elected before the next congress in 2013

1. President
2. Three Vice Presidents (one of whom should represent developing/tropical countries)
3. Secretary-Treasurer

We urge SIL members to assist us in our search for an excellent, dedicated team to make the new Executive board of SIL.

Members of the nominating committee are: Ingemar Ahlgren (Chair), Carolyn Burns, Paul Del Georgio, Ellen van Donk and Tamar Zohary. (http://www.limnology.org/committees/index.shtml#nominating.)

You may contact any of us for discussion and suggestions.

Please send your nominations by 1 August, 2012 to:

Professor Emeritus Ingemar Ahlgren,
Chair, SIL nominating committee
Uppsala University,
Department of Ecology and Genetics/Limnology
Norbyvägen 18d
SE-752 36 Uppsala, Sweden
E-mail: ingemar.ahlgren@ebc.uu.se.
Telephone: +46-18-355 570
Mobile: +46-70-594 3971

Announcement of Future SIL Triennial Congresses

32nd Triennial Congress of the International Society of Limnology (SIL) Budapest, Hungary, August 4-9, 2013

Hungarian limnologists welcome the opportunity to host the 32nd Triennial Congress of the International Society of Limnology (SIL), from August 4th to 9th, 2013. This will be the first time that such an event will be organized in Budapest, Hungary, in the heart of Europe.

Budapest, the capital of Hungary, is situated within a 2-hour flight from most European capitals, e.g. from Madrid, London, Stockholm or Athens. Moreover, Budapest's Ferenc Liszt International Airport offers many intercontinental and non-stop flights, and is thus within an easy reach for limnologists from the different coninents. The Congress will take place on the Buda side of the City at the Novotel Budapest Congress (http://www.bcc.hu/en/welcome.html), an excellent convention centre in a peaceful environment, with most conference hotels within minutes of reach.

Budapest is one of the most beautiful and romantic cities of Central Europe. Congress participants can get the most out of their stay by visiting the Royal Palace, the Fisherman's Bastion (Halászbastya), and other historical and architectural attractions situated on Castle Hill in the "Buda" part of the city, or by visiting the neo-Gothic Parliament House, the St. Stephen's Basilica (Szent István Bazilika), and other sites on the "Pest" side of the city. Budapest is known as a city of water and spas, rendered magical by the Danube River which connects the nations and people of Europe, and is thus a perfect location to bring together limnologists of the world. Its hilly landscapes, long history, pleasant climate, rich cultural events, and music prove that the city is indeed a pearl of the Danube. Budapest is one of the nicest cities in Europe, easy to reach, and famous for its hospitality, fine food, tasty drinks, and it has many historical and cultural sites of interest.

The Congress will be broadly devoted to the theme of „Diverse water - rich life", and is tentatively grouped into several thematic sessions:

1. Limnology and global climate changes
2. Biodiversity and molecular genetics in aquatic ecosystems
3. Limnology of humic and saline waters (brackish, soda lakes)
4. Management and modelling of lake and stream ecosystems
5. Catchment impacts and nutrient dynamics
6. Food web interactions in aquatic ecosystems

7. Molecular biology and taxonomy of aquatic species
8. Sediment-water interactions
9. Wetland and littoral ecology
10. Winter limnology
11. Remote sensing and GIS applications in limnology
12. Ecology of invasive species
13. Evolutionary ecology of aquatic organisms
14. Biogeochemical cycling
15. Paleolimnology
16. Biotic Interactions
17. Microbial Ecology
18. Monitoring and status assessment

These are preliminary topics, and the Organising Committee is open to any suggestions for changes or additions. Please note that your suggestions should be sent to the undersigned by e-mail latest by 30 June 2012.

Hungary offers a wide variety of waters, and participants of the Congress will be invited to visit selected sites of limnological interest, as well as some unique historical and cultural sites. Details of limnological excursion will be announced at a future date.

The organising committee is also planning satellite symposia in different parts of Hungary following the SIL congress. Some of the symposia to be held in the eastern Hungary include:

a) Macroinvertebrates of the Carpathian Mountains (including a visit to Transylvania) in Debrecen
b) Wetlands of Hungary in Debrecen
c) Periphyton of shallow ecosystems in Szolnok
d) Fish management in Szarvas
e) Saline lakes in Kecskemét

Other symposia to be held in Budapest and in western Hungary include:

a) Ecology-oriented modelling in eutrophication management of lakes and rivers – state-of-the-art, challenges and perspectives in Budapest
b) Management and ecology of long rivers in Budapest
c) Use of algae for ecological status assessment – 6P: Past, Present, Problems, Possibilities, Perspectives, Prediction in Veszprém
d) Aquatic Birds in Balatonfüred
e) Diversity of eukaryotic microbes in shallow and deep lakes in Tihany
f) Theory and practice – deep and shallow paleolimnology in Keszthely

Please contact the Organising Committee with any questions or concerns, and regularly check the homepage of the Congress (http://sil2013.hu) for updates.

Dr. Péter Bíró
Member of the Hungarian Academy of Sciences,
Director of the Balaton Limnological Institute
Hungarian Academy of Sciences,
Centre for Ecological Research
Chair of the Local Organizing Committee,
biro.peter@okologia.mta.hu

Dr. Viktor Tóth
Balaton Limnological Institute
Secretary of the Local Organizing Committee,
toth.viktor@okologia.mta.hu

Announcement of 33rd SIL Congress, Turin, Italy, in Summer 2016

At the general assembly held during the 31st SIL Congress in Cape Town in August 2010, I presented the proposal to hold the 33rd SIL Congress in Turin, Italy, in summer 2016. The proposal was enthusiastically received by the General Assembly. I hope that the global financial crisis has not cooled the enthusiasm of two years ago. Certainly did not make us change our plans. The SIL Congress remains in the calendar of events planned for 2016 in Turin, as you can see in the screenshot from Turin Convention website (http://www.torinoconvention.it)

An extensive presentation of Turin as the venue of the 33rd SIL Congress is available at the website of Italian SIL members: www.silitaly.it. Now it is too early to sketch out a scientific program and to provide further details on the logistics of the event. However within the network of Italian scientific associations contacts and discussions have already begun to prepare an attractive scientific program. Surely I will provide updates on these issues in Budapest SIL congress next year.

I have no doubts that the 33rd SIL Congress in Turin will be an interesting congress because the Italian limnology has a long history and does not live only on traditions and past glories. The Italian limnology is still very active and productive, despite suffering, like other environmental sciences due to the persistent lack of interest and inadequate funding from the political managers.

During the 33rd SIL Congress in Turin we will have days of exciting discussions during the lectures and the poster sessions. There will be chances for all for scientific exchange of ideas, also at the artistic and gastronomical gatherings.

Arrivederci a Torino.

Roberto Bertoni
SIL Italian national representative
r.bertoni@ise.cnr.it

Turin Convention website (http://www.torinoconvention.it)

SIL Journal

Fellow SIL members and readers of SILnews letter:

We are pleased to report that Inland Waters Volume 2, Issue 1, is now available to SIL members at: www.fba.org.uk/journals/index.php/IW/index.

The content of this issue is included below.

To access the journal simply enter the user name: silmember and password: iw2011. This generic access has been set up for SIL members only, so please do not distribute or change any details under 'My Account.'

The goal of Inland Waters is to foster scientific communication of original work, primarily by SIL members, and especially to provide opportunities for SIL early-career scientists to publish. The journal includes standard manuscripts and focal articles entitled 'Research Briefs.' These short articles are intended to promote communication of emerging issues and are open access.

We appreciate your help in promoting the journal among colleagues and national limnological organizations. Manuscript submission is open to all via the journal website and there is a 'Recommend to Library' button on the journal homepage.

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Thank you,

John R. Jones
Editor-in-Chief

David Hamilton
Senior Associate Editor

SIL Working Group Reports

Group for Aquatic Primary Productivity (GAP)

The Group for Aquatic Primary Productivity (GAP) is pleased to announce its 9th International Workshop. This will be held in Málaga, Spain from September 16th to 26th 2012, with the theme: *The effects of nitrogen pulsed-supply on primary productivity of phytoplankton and marine macrophytes: an experimental approach.*

The local organizing committee is chaired by Félix L. Figueroa University of Málaga and Jesús Mercado of the Spanish Institute of Oceanography (IEO) at Fuengirola.

It is known that primary productivity in the surface waters of the oceans greatly depends on the availability of macro-nutrients which are frequently present at low concentrations. Consequently, phytoplankton growth is coupled to hydrological processes and climatic forcing favoring the nutrient-enrichment of the surface euphotic layer. Thus, in oligotrophic waters microscale or submesoscale changes in nutrient inputs are related to internal waves fuelled by wind pulses or tidal events. The enhancement of biological productivity in some shelf-break regions has been attributed to internal tide mixing, which leads to upward transport of nutrient-rich cool water. This process not only affects the pelagic system but may also influence autotrophic benthic communities.

In this workshop, the overall focus is to study, using experimental approaches, the interactive effects of solar radiation and nutrients (inorganic nitrogen) on primary production or biomass yield in algae collected from coastal waters or cultured in photobioreactors. Studies will also investigate interactions with other drivers such as CO_2 (including impacts of ocean acidification). Working groups will concentrate on different primary producer groups: phytoplankton of

coastal waters; microalgal mass cultures; seagrasses and macroalgae; algae and bacterial-algal biofilms and macrophytes in lakes of differing salinities.

The workshop is being organized through the University of Málaga, including the "Grice-Hutchinson" experimental Centre, with some experimental groups being based at the Spanish Institute of Oceanograohy in Fuengirola. Laboratories are well provided with instrumentation and international participants frequently bring additional equipment with them, providing workshop attendees with opportunities for using state-of-the art technologies in their investigations.

These exciting GAP workshops involve between 60 and 80 scientists who get together for plenary lectures and intensive experimental studies, covering a range of laboratory and field approaches. The workshops provide an excellent opportunity for scientists of disparate backgrounds and experience to work together in interesting aquatic environments and share innovative ideas and expertise. Results of the experimental studies are presented briefly at the end of the workshop, and are later analyzed in detail and published in international peer-reviewed journals.

Full details of this (2012) and previous GAP workshops may be found at http://www.gap9.uma.es

John Beardall (john.beardall@monash.edu)
Vivian Montecino (vivianmontecino@uchile.cl)

Joint Chairpersons of the GAP International Organizing Committee

Plankton Ecology Group (PEG): A brief Report of its latest Meeting in Mexico in February, 2012

The SIL Working Group Plankton Ecology (PEG) held a meeting in Mexico City (Mexico) from 12 to 18 February, 2012. In total, 125 scientists and students from nine countries participated (Belgium, Canada, Ethiopia, Israel, Italy, Mexico, Poland, The Netherlands and the UK). There were 28 oral presentations and 23 poster presentations. The focal theme of the meeting was Global Warming and Plankton, yet many other aspects of plankton ecology were also addressed.

The meeting was opened officially by the Director of the Campus Iztacala of the Universidad Nacional Autónoma de Mexico. The WG Chairman, Dr. Miquel Lürling, in his introduction to the symposium highlighted the significant contributions of plankton ecology to general ecological theory building and the importance of plankton ecology now and in the near future. The first plenary lecture titled "Climate change, plankton and freshwaters: about what should we be worried?" was given by the President of SIL, Prof. Brian Moss (the UK). He started his talk by showing the effects of climate change on ancient civilisations in Mexico and Central America, and then talked about the current and expected near future scenarios in lakes worldwide in relation to climate change. Prof. Moss emphasized that a general scheme might be drawn from the wealth of information on effects of climate change on plankton, but that the details of how a specific species will react or respond is unpredictable, because of several uncertainties including evolutionary responses of the plankton organisms and fish. The plenary talk was followed by seven contributions. The zooplankton response to and energy transfer efficiency in experimentally deepened thermocline in Canada showed that rates of zooplankton production increased significantly in response to mixing and thermocline downward migration. Natural drying up in seven Ethiopian reservoirs significantly reduced cyanobacteria blooms compared with those in six reservoirs that did not dry-up. Contributions from Mexico addressed the role of zooplankton in oligotrophic sinkholes, picoplankton in warm-monomictic and meromictic lakes, trophic interactions between plankton and chironomids, cryptic speciation in some rotifers and intraspecific variability in demography of Asplanchna to temperature regimes.

Dr. Philippe Juneau (Canada), who gave the second plenary talk, dealt with the effects of temperature and pollutants on the physiology of different phytoplankton species. He showed that in general cyanobacteria are more resistant to pollutants such as herbicides, but that this depends on the interaction with other environmental factors, such as light intensity and water temperature. This plenary lecture was followed by presentations on the genotype dependent interactions between *Microcystis* and *Daphnia* and the sudden occurrence of mystery Microcystis sp. in a lake after eutrophication control. A mesocosm study addressed the effect of small omnivorous fish on plankton in a shallow hypertrophic lake, while a long-term monitoring study focussed on the development of crustacean plankton in a shallow polyhumic reservoir.

In the third plenary lecture, Dr. Ramesh Gulati (The Netherlands) stressed the importance of stoichiometric studies in food chain, and pointed out and that planktonic stoichiometry needs more attention at the PEG workshops. He pointed out that here is some strong and consistent evidence of inverse relationships between *Daphnia* abundance and the seston C:P ratio in both lake and laboratory studies. Hereafter, presentations addressed tadpole predation on zooplankton, a stable isotope study on trophic

Life In the Plankton of the Modern World

Life in the plankton is calm,
The weather is pleasant, like balm.
We are rocked by nice breezes,
We don't suffer from sneezes,
And there seems no great cause for alarm.

We elegant algae drift through the bright water,
When the light, N and P are in adequate quarter.
We shine, brown or green,
With our oxygen sheen,
Like a Mexican with fine escarlata

The queen of our realm is a flea,
Called Daphnia or Moina, she,
Like a siren, her golden hair combing,
Sieves out all small algae while roaming,
And has little real need of a He.

Her children appear many fold
When the algae grow, after the cold.
She swims and she feeds,
Phones and tweets she don't need,
And her story Gliwicz has oft told.

So the planktonic life, you might love.
No grant-getting, no push and no shove,
But be careful, it's not all it seems.
In the water the danger quite teems
And it's best to be eagle not dove

For Microcystis, there's no rest.
All it does is subject to test
They grow it in labs in glass dishes,
Though just to grow free are its wishes,
And they'll say that its death would be best.

It's no better for filtering grazers,
Though their parthenogeny amazes.
They catch them and measure their size
And observe when their helmets might rise,
And write papers to get many praises.

So whatever you do is a worry.
Life's full of stress, rushing and hurry.
The nutrients are scarce, or the light is too bright,
Or the fishes will eat you, except in the night,
And existence is nothing but flurry.

Yet over the years and the ages,
Co-evolved ecological sages
That lived well together,
Through the changes in weather,
And avoided competitive rages.

Until in the last million years,
A new species has heightened our fears,
And battles and argues and fights,
And counts all the papers it cites.
Makes life tricky all round it appears.

So is there a way out for all
Now that life is so full of appal?
There's the call of the quiet akinete,
Or ephippia, our needs might just meet,
To a bed of soft sediment fall.

No way! Too quiet, too boring
To lie on the lake bed just snoring.
Let's stay in the mad world of samba
And tango and rumba, caramba
And let all our spirits be soaring!

Brian Moss
Plankton Ecology Group Meeting,
Mexico City, 2012

dynamics in different zones of a lake experiencing different anthropogenic influences, effects of allelochemicals of *Hydrilla* on life history characteristics of *Simocephalus* and the potential role of water hyacinth as a refuge for cladocerans against visual predation.

On February 15th a mid-meeting excursion was organised to watch the Monarch butterflies, which migrate all the way from Canada and the US to their winter refuges in central Mexico near Valle de Bravo. This was followed by a cruise on the Valle de Bravo, a drinking water reservoir which supplies water for about 12% of the Mexico City's 26 million inhabitants. It is a high altitude (1830 a.s.l.) waterbody located in the State of Mexico (19°21'30"N, 100°11'00"W). Due to human influence, such as the recreational and aquacultural activities and settlements around this reservoir, the nutrient load to the lake has increased considerably, causing a shift from the oligotrophic to eutrophic conditions now. Toxic cyanobacterial blooms, particularly those of *Microcystis* spp., have been recorded from time to time in the reservoir. At present, the measures to improve the waterquality have produced the desired effects.

The fourth plenary talk on February 16th was given by Dr. Miquel Lürling (the Netherlands) on climate change and cyanobacterial nuisance. He showed that cyanobacterial dominance at higher temperature is not caused by a direct temperature effect on cyanobacterial growth rates and that cyanotoxin (microcystins) production was reduced at higher temperatures. Subsequently, the effect of light stress on *Microcystis* was illustrated. Other presentations addressed zooplankton diversity patterns in eight lakes in central Mexico, the geographical distribution of *Lecanidae* in Mexico, a study on in situ oxygen consumption of zooplankton and the effect of temperature on fatty acid profiles and life history characteristics in *Moina*.

The oral presentations were concluded with three special contributions. Prof. Henri Dumont (Belgium) talked on turbellarians vs. plankton as well as addressed predation effects of pelagic flatworm on *Cladocera*. Prof. Maciej Gliwicz (Poland) presented some interesting data from the mesocosm experiments relating to foraging by planktivorous fish on patchily distributed *Daphnia* and stressed the importance in a warmer world, i.e. of decrease of water viscosity at higher temperature could increase the impact of fish on zooplankton. Prof. Moshe Gophen (Israel) dealt with long-term zooplankton dynamics in Lake Kinneret, Israel, unravelling effects of gradually increasing water temperature over the years and fish predation on the lake's ecosystem.

At the end of the oral sessions, there was a group photo event at the Botanical Gardens of the University Campus Iztacala. It was an interesting experience for many participants to see a large number of live desert plants, and their meticulous maintenance by the University Campus staff. The academic- in charge of the Botanical Gardens explained the various methods that were adapted to conserve some of the rare endemic plant species of Mexico.

The poster session was comprised of 23 good to excellent presentations, where some of the students used the newly available tools such as the i-Pad as a presentation aid. The overall picture was one of enthusiasm of the young students of limnology, predominantly Mexican, whose works emerged from thorough description of plankton ecology in their study systems. The Mexican enthusiasm and potential is likely to improve our knowledge of the ecology of plankton organisms in this region.

The participants of the PEG Working Group meeting discussed the results presented, noting that modelling was rather under-represented, but also touched upon facets as the role of a limnologist in society. Whereas some pointed out training the young people in scientific methodology and reporting findings employing rigorous scientific methods, the others liked to stretch it to more active approach of decision making. Again, the meeting showed that in these days of fast scientific progress in diverging disciplines, umbrella meetings such as those of the working group PEG are extremely important in integrating different aspects of plankton ecology. The organizing committee of the PEG meeting is also very pleased that the proceedings of the present meeting will be published in a special issue to Inland Waters, the new quarterly SIL Journal. For this an editorial committee consisting of five guest editors (S.S.S. Sarma, Miquel Lürling. S. Nandini, L. DeSenerpont Domis and Ramesh D. Gulati) was formed. The Meeting was concluded with the closing remarks of the newly installed Director of the Campus Iztacala, Dr. Patricia Dávila Aranda. The organizers thanked her for her kind words and support for this event. Vote of thanks was proposed by Dr. S. Nandini. The entire report of the meeting subsequently appeared in the Gazette of the Campus and is available for reading at: http://gaceta.iztacala.unam.mx/404.pdf

Participants to PEG Meeting in Mexico-City (February 12th-18th 2012).

At the conference dinner on February 17th, the participants enjoyed the poetic description of limnology by Prof. Moss and the traditional Mariachi music by the professional artists. During this event, there was a award ceremony (in charge: Dr. Philippe Juneau and Dr Marcelo Silva Briano) for the best poster presentation by students.

The WG is also very pleased to announce that Dr. Andrzej Górniak (hydra@uwb.edu.pl) offered to host the next PEG meeting during 2014 at the Institute of Biology of the University of Bialystok, Bialystok, in northeastern Poland. It is open to all those interested to propose the organisation of a PEG meeting too. These meetings are generally thematic in nature and have the objective to both discuss and prepare critical review papers emerging out of the meeting deliberations.

A post conference excursion was organized with a visit to the world famous Teotihuacan pyramids (dating back 100 BC). The trip provided an opportunity for some of the participants to interact further.

As a spinoff of the present PEG meeting, SIL president Prof. Moss spent a few extra days at the university after the meeting and gave a 40-hour Course "Temperate Limnology for Tropics" to selected Mexican group of students and faculty members who work on limnology. Prof. Dumont also delivered a special talk on "Xenobiology" to some of the local participants during the course. During the course period, some 15 of the local participants subscribed to the SIL as its members.

Lastly, the PEG is a very informal scientific organization and a fraternity whose primary interests are to both exchange ideas and information and encourage an integrated approach to science of plankton ecology. We look forward to seeing many of you at the WG's household meeting at the next SIL Congress in Budapest, Hungary, in August 2013 (see for more information elsewhere in this news letter).

Miquel Lürling
PEG Chairman
miquel.lurling@wur.nl or m.lurling@nioo.knaw.nl

S.S.S. Sarma & S. Nandini
sarma@unam.mx, nandini@unam.mx
Meeting Organizers

The recent progress in Ecohydrology development and implementation in UNESCO Ecohydrology Centers

1. Ecohydrology - a transdisciplinary science - for integrated water management and sustainable development in Ethiopia

Ethiopia is an African country of great cultural and historical background. Good natural conditions in most of the country, with fertile soil and high precipitation are a great asset and have potential for food production covering the existing needs. However, dynamic demographic growth and rural land- use overgrazing lead to degradation of the landscape and hydrological cycle. The research done in Gumera River basins and Asella River valley within the project "Ecohydrology - a transdisciplinary science - for integrated water management and sustainable development in Ethiopia" financed by Ministry of Foreign Affairs of Poland and developed in cooperation with Ministry of Water and Energy of Ethiopia and NGOs (Zalewski et al., 2010), demonstrated that the major environmental impacts, such as deforestation, land overgrazing, erosion and nutrients overload by livestock, intensify stochasticity of the river outflow and input of minerals, organic matter, nutrients and micro-pollutants such as PCDD, PCDF and dl-PCB (called also dioxins) to rivers and lakes.

The first step of ecohydrological restoration of the Asella lake, impacted by siltation, nutrient and dioxin enrichment was application of geofibers for land erosion control (Fig. 1.A). The second part of the system was construction of a water facilty for the cows that wasseparated from the river, to facilitate manure collection and its digestion for further use as fertilizer in agriculture (Fig.1.B). The third element comprised construction of "an infiltration dam" to enhance sedimentation in the impoundment and permit slow transfer of partially purified water through gravel basis to steady supply vetiver grass (*Chrysopogon zizanioides*) wetland toward reducing the PCDD, PCDF and dl-PCB, nitrogen and phosphorus concentration (Fig.1.C). Sediments deposited in the reservoirs can be used for eroded land restoration and as fertilizers for food and bioenergy production.

Proposed ecohydrological holistic approach was based on the use of ecosystem properties as a tool to reduce threats (Zalewski, 2000; Zalewski, 2011) and our earlier experiences for the Central Poland rivers (Zalewski et al., 1998; Wagner et al., 2009). Above solutions take into consideration creation of positive socioeconomic feedback between society and restored streams/lake systems including health aspects.

The progress in research and implementation of ecohydrological biotechnologies in Ethiopia (Ecohydrology & Hydrobiology 2010, Vol. 10, No. 2-4) has provided a background for establishing African Regional Center for Ecohydrology by 2013.

2. The Erasmus Mundus Master Course (EMCC)

About the ECOHYD EMMC

The Erasmus Mundus Master Course (EMCC) in Ecohydrology is a unique international master course focusing on a new vision for restoration of aquatic ecosystems and long-term sustainability. The Ecohydrology approach was developed and has been refined within the International Hydrologic Program (IHP) of UNESCO. Actually, its importance is recognized by the 193 counties comprising the UNESCO General Conference, i.e. "Ecohydrology for Sustainability"-one of the five major themes of the Phase VII of the IHP-UNESCO.

The Ecohydrology EMCC is supported by a consortium built with help from the know-how at Institutes and Universities, e.g. the UNESCO Institute for Water Education (IHE, Delft, Netherlands), the University of Lodz (Poland), the University of Algarve (Portugal), the Christian Albrecht University of Kiel (Germany) and the University of La Plata (Argentina) and several institutions as European Regional Center for Ecohydrology u/a UNESCO Polish Academy of Sciences, International Center for Coastal Ecohydrology u/a UNESCO and other research institutions from Europe, Latin America, Asia and Australia are associated partners to this course, contributing with advanced study courses and promoting students exchange.

Aims of the course

The EMCC in Ecohydrology will create highly specialized professionals in the area of Integrated Management of Aquatic Ecosystems and Resources (IMAER) based on the Ecohydrology approach and principles. Such professionals will have a profound understanding about the ecological and hydrological processes and their crucial and integrating role in ecosystems functioning, as basis for designing and

implementing long-lasting sustainable and restoration solutions for aquatic ecosystems.

3. Other activities of the UNESCO Ecohydrology Centers

Due to long-term efforts of Prof. Peter E. Hehanussa last year the Asia-Pacific Centre for Ecohydrology (APCE) was opened in Cibinong, Indonesia. The Center, led by Gadis Sri Haryani, carries out research on Sediment Deposition System on Saguling Reservoir, West Java, since 2011 and organizes Focus Group Discussion about Ecohydrology approach in Indonesia. The recent developments in Ecohydrology will be presented on Ecohydrology Special Session during EcoSummit2012 (www.ecosummit2012.org) by UNESCO Ecohydrology Centers.

Maciej Zalewski,
European Regional Center for Ecohydrology u/a UNESCO
Polish Academy of Sciences
e-mail: mzal@biol.uni.lodz.pl

Luis Chicharo,
International Center for Coastal Ecohydrology u/a UNESCO
e-mail: lchichar@ualg.pt

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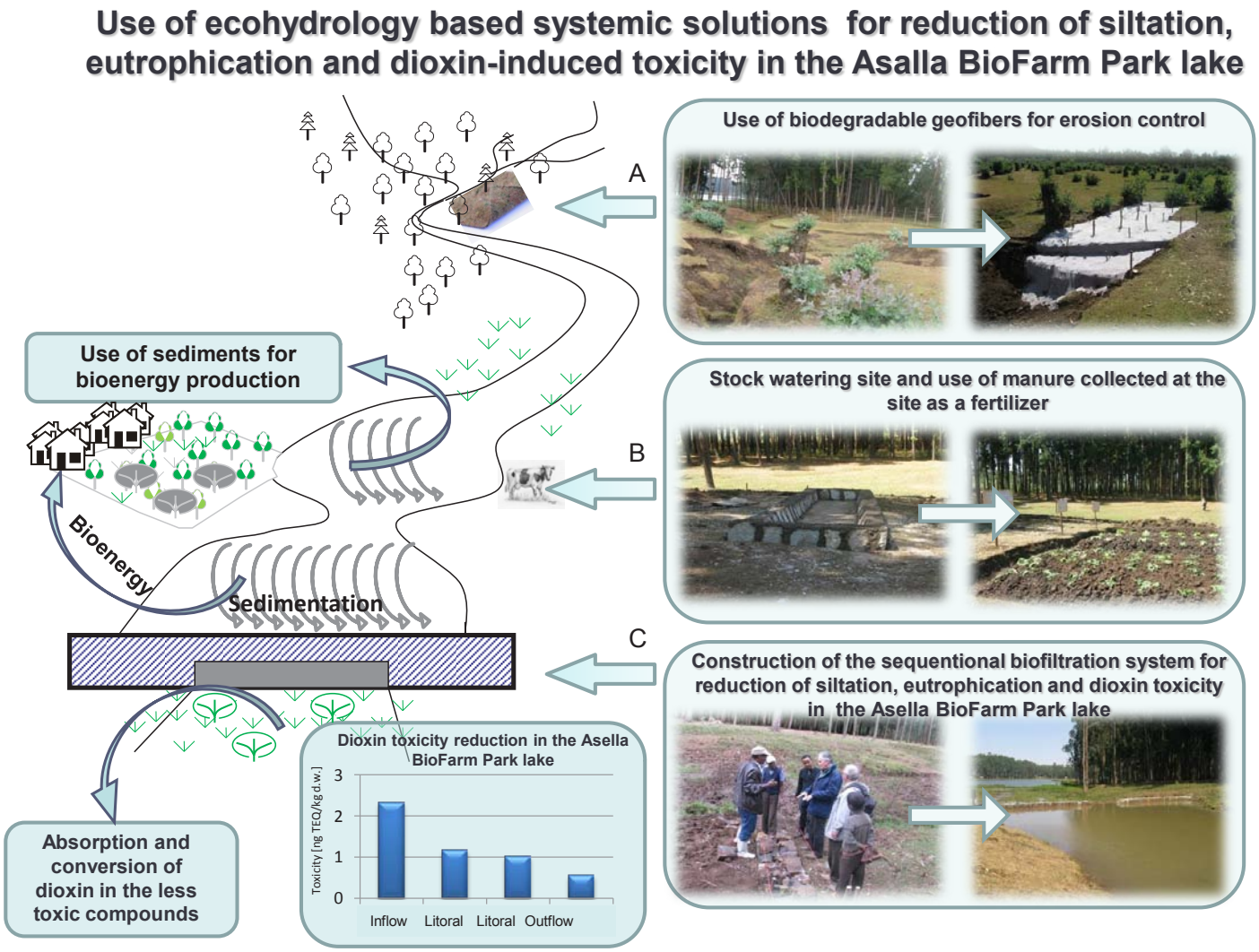

Fig.1. Ecohydrological system solutions for reduction of siltation, eutrophication and dioxin-induced toxicity (modified from Zalewski et al. 2010).

The LakeLab – A new experimental platform to study impacts of global climate change on lakes

Coping with climate change remains the key environmental challenge for science, policy and the public. "Unfortunately, our understanding of the responses of lakes to climate change is still hugely insufficient," says Dr. Mark Gessner, head of the Experimental Limnology Department of Germany's Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB). This is worrying because fresh water is not only a vital resource for the very existence of life, it also makes a disproportionately greater contribution to the rapidly declining global biodiversity than land and the oceans (Dudgeon et al. 2006).

"What we need is climate-change experiments conducted under conditions as realistic as possible," emphasizes Gessner. "Only in this way can we capture the natural complexity of ecosystems while adhering to the standards of experimental science". This requires major infrastructure. Therefore, the IGB has built this year a large enclosure facility in Lake Stechlin – a well-studied, clear-water lake situated 80 km north of Berlin (Fig. 1). The facility, named The LakeLab (Fig. 2), was made possible chiefly through funding from the German Federal Ministry of Research and Education. Twenty-four cylinders serve as experimental units (Fig. 3). Each of them measures 9 m in diameter, reaching down to the sediment at about 20 m depth and enclosing a water volume of 1250 m^3.

Lake Stechlin – a source of inspiration

Lake Stechlin is a dimictic and oligotrophic hardwater lake formed 12,000 years ago when the glaciers of the last ice age receded. With its maximum depth of 69.5 m, it is one of the deepest and clearest lakes of the southern Baltic lake district. Surrounded by mixed forests and an undeveloped shoreline, Lake Stechlin has inspired artists and scientists alike. Theodor Fontane, a famous German writer of the 19th century, was enchanted by the mystic lake with its many bays. He made it widely known through his novel entitled "The Stechlin", which appeared in 1899 and has since been translated into many languages (Fontane 1995). Later, in 2003, Fontane's fondness of Lake Stechlin prompted two systematicists of the IGB to name a newly described species of whitefish, Fontane cisco (*Coregonus fontanae*), in the writer's honour. The small fish restricted to deep water is endemic to the lake.

Limnologists have been inspired by Lake Stechlin since 1957. "The long-term data sets that we have compiled are among the most comprehensive and reliable ones of their kind in the world," says Dr. Peter Casper, who has conducted research on the lake since 1983 and has promoted the idea of the LakeLab for years. "It is the exceptional data base, the lake's oligotrophy and dimictic mixing regime, and the proximity of a fully equipped laboratory that were the key reasons for choosing this location for the LakeLab."

The LakeLab – exploring uncharted waters

By the 1970's, lake enclosures had been recognized as an important tool of limnological research. This followed the recognition that laboratory experiments fell short of answering central questions in limnology. For example, how do aquatic communities in their complex environments respond to increased canthropogenic stresses? The largest enclosures used ever were the three "Lund tubes" installed in Blelham Tarn in the English Lake District – 49.5 m in diameter and 16 m deep. They served for a decade to study phytoplankton, leading to the conclusion that natural plankton communities can be maintained over extended periods if the enclosures are sufficiently large to limit the influence of periphyton growing on the enclosure walls (Lund & Reynolds, 1982).

A shortcoming of the Lund tubes emphasized by Lund & Reynolds (1982) was their small number. This precluded replicated experiments, a tribute paid to the substantial costs and effort associated with the large dimensions. "The power of enclosures resides in the fact that they facilitate experiments under fairly natural conditions at relatively large scale, while meeting the requirements of modern experimental design," concludes Mark Gessner, who is not fully convinced the trade-off argument holds any longer: "If financial or

Fig. 1: Aerial view of Lake Stechlin, 80 km north of Berlin, Germany. ©M. Feierabend, Berlin

Fig. 2: The LakeLab under construction in early spring 2012. ©IGB

other resources are limiting, it would seem preferable today to forego enclosures and instead conduct un-replicated whole-lake experiments – or else be content with multiple smaller experimental units."

Generous funding by Germany's Federal Ministry of Education and Research (BMBF) made it possible to build the LakLab in Lake Stechlin. Each of the 24 enclosures is equipped with a profiler whose sensors continuously record depth profiles of seven standard limnological parameters: temperature, pH, oxygen concentration, redox potential, electrical conductivity, turbidity, and light intensity. In addition, a fluorometer can differentiate up to four major algal taxa based on pigment composition of the phytoplankton communities. "The automated recordings are a tremendous asset", says Dr. Hans-Peter Grossart, a microbial ecologist at the IGB and one of the driving forces behind the project. "Data can now be collected at high frequencies and throughout the year, even during periods in the winter when a thin ice cover makes sampling of the lake virtually impossible."

Experimental scenarios – building on prior knowledge

Comparative time-series analyses have shown that the thermal properties of lakes are closely coupled to meteorology (Livingstone et al. 2010). Hence, climate change will have a direct impact on the internal physical conditions of lakes, resulting in higher surface water temperatures (Coats et al. 2006), earlier ice-out in spring (Bernhardt et al. 2012), increased stability of stratification and altered mixing depth in summer (Kirillin 2010) . Temperatures of deep water layers and the timing of winter freezing are also influenced (Livingstone et al. 2010). Ecological consequences ensue (Adrian et al. 2009). However, the mechanisms underlying these physical and ecological changes are complex, because meteorological drivers strongly interact with internal lake processes.

Time-series analyses of temperature data show distinct signs of climate change in Lake Stechlin even now. Over the last 50 years, the average annual temperature of surface water has increased by 1.5 °C.

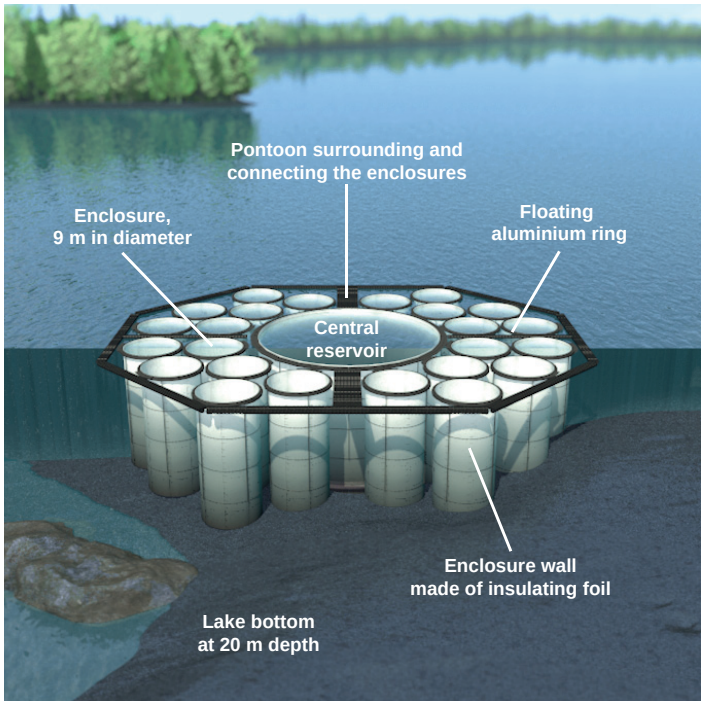

Fig. 3: Schematic view of the LakeLab, a large enclosure facility built in Lake Stechlin, Germany.

Moreover, the duration of summer stratification has increased; due to relatively warmer winter temperatures, the summer stratification now starts earlier than in the past; and the number of days with winter ice cover has notably decreased. "Our model calculations indicate that this trend will be further amplified by the end of the 21st century," says geophysicist and modeler Dr. Georgiy Kirillin at IGB, who uses a lake simulation model (FLake) to describe the physical conditions of Lake Stechlin (Fig. 4). The model predicts that climate change will flip the currently dimictic regime of Lake Stechlin to a monomictic one within the next 80 years.

Although model simulations and time-series analyses are powerful to elucidate patterns and to generate hypotheses about climate change effects, these approaches provide insufficient evidence for establishing firm cause-and-effect relationships. IGB's enclosure facility in Lake Stechlin is meant to fill this knowledge gap. The first experiment conceived for the LakeLab was started in spring 2012. The goal is to increase hypolimnetic water temperature in spring by transporting warm surface water to deep layers where it mixes with cold water. The resulting warming of the hypolimnion mimics a situation expected around the mid-century, according to Georgiy Kirillin's model simulations. An expected side effect is deepening of the thermocline in summer.

The LakeLab – an open platform for research collaborations

Gaining a comprehensive understanding of lake responses to global climate change by combining experiments with models and long-term observations requires a critical number of researchers. Therefore, regional, national and international scientists are invited to contribute ideas, expertise and manpower to ensure success of the LakeLab. The first formal collaboration has been established with partners at

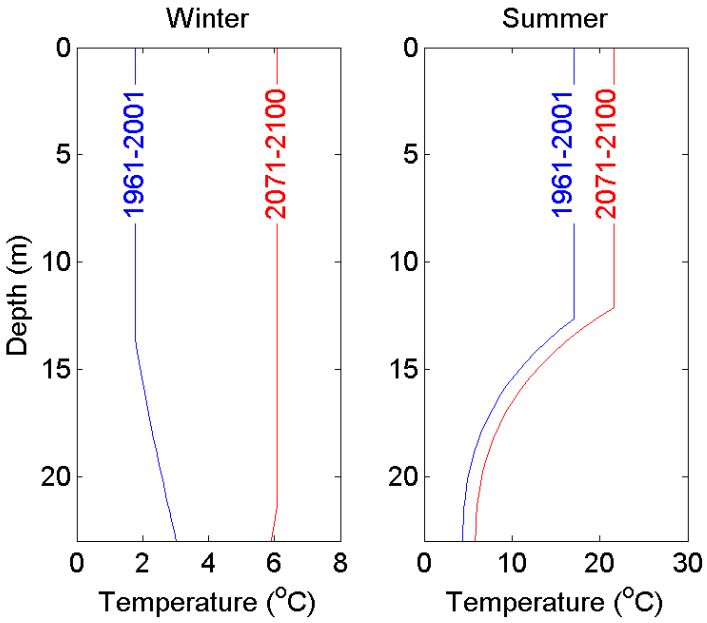

Fig. 4: Mean winter (January–March) and summer (June–August) temperature profiles in Lake Stechlin as provided by the lake model FLake (Kirillin 2010), based on local meteorological conditions between 1961 and 2001 (blue lines) and a regional climate scenario (red lines). Weather data recorded by the local weather station on Lake Stechlin were kindly provided by the German Weather Service (DWD) and the German Federal Environment Agency (UBA). The climate scenario data RCAO MPIB2 (Räisänen et al. 2004) were provided through the PRUDENCE data archive (http://prudence.dmi.dk).

the Leibniz Institute for Baltic Sea Research (IOW) in Warnemünde (Germany) and the University of Pannonia in Veszprém (Hungary). This has resulted in a multi-investigator research project entitled «TemBi – changes in the biodiversity of microbiota driven by climate change». The recently launched project receives special funding from Germany's Leibniz Association. Data and insights generated by this project, and others in the future, will serve a double purpose: 1) they will advance scientific knowledge on climate change impacts and 2) they will inform environmental policy with a view to improve lake management in the face of climate change for those following Fontane's footsteps.

Acknowledgements

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Text: **Dr. Martina Bauchrowitz**
Communications LakeLab
martina.bauchrowitz@igb-berlin.de

Contact: **Prof. Dr. Mark Gessner**
Department of Experimental Limnology
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB)
16775 Stechlin, Germany
stechlin@igb-berlin.de

Links: www.igb-berlin.de
www.lake-lab.de
www.flake.igb-berlin.de

The Center for Wetland Ecology (CWE)

The extremely important role of water resources management in The Netherlands and Flanders (Belgium) is a logical consequence of the location of this European region in the delta of the rivers Rhine, Meuse and Scheldt. Water resources management is a prerequisite for protecting these densely populated and economically active areas against flooding and for ensuring sanitation and a healthy water quality for agriculture, nature and recreation. Research in water and wetlands in this area therefore has a long tradition of integrating disciplines such as hydraulics, ecology, microbiology, biogeochemistry and environmental economics. Fundamental research is being carried out in numerous research groups covering a wide range of disciplines in universities and academic research institutes. This research has a very strong academic output and is well-known internationally because of its quality and quantity. At the same time, there are many researchers working on applied issues of water resources management in research institutes, government agencies, water authorities and consulting firms. This applied sector of water and wetland research is also well-known worldwide and is involved in many projects where wetlands and water bodies are (re)constructed in terms of geomorphology, hydrological flows and hydroperiod, as well as biota.

Good, fundamental knowledge on the mechanisms behind the ecological functioning of wetlands and water bodies is especially indispensible in the current era of climate change, especially because land and water management may have to undergo drastic modifications to mitigate the consequences of higher temperatures, more frequent peak events in rainfall and river discharge, more intense and longer droughts and higher sea level flood peaks. To tackle the current and predicted problems, it is of vital importance that the worlds of fundamental scientific research on wetlands and water bodies and of water and wetland resource management and policy work together in a two-way exchange of ideas and information as closely as possible. The Center for Wetland Ecology (CWE) wants to contribute actively to this interaction.

The CWE is a network of fundamental science groups in universities and academic research institutes working on the ecology, biogeochemistry, microbiology and hydrology of wetlands and water bodies. The network was established in 2000 and has developed active collaborations by carrying out joint research projects bridging at least two participating research groups.

The network formed by the CWE includes the following academic institutions in the Netherlands and Belgium:

- Utrecht University, Utrecht
- Radboud University Nijmegen

- Netherlands Institute of Ecology (KNAW), Wageningen
- University of Amsterdam (uVA)
- Wageningen University and Research Centre
- University of Antwerp, Antwerp (Belgium)
- University of Gent, Gent (Belgium)
- University of Leuven, Leuven (Belgium)

For the period 2010-2015, the CWE aims at enhancing the interaction between the worlds of fundamental research and management implementation regarding wetlands and water bodies (freshwater, brackish-water and coastal) in The Netherlands and Flanders. To achieve this, the CWE will provide a scientific platform by organizing two symposia per year, each oriented around a well-delineated scientific theme, for a combined audience of scientists (the CWE itself) and practitioners active in the water sector (i.e., representatives of water authorities, consulting firms, government agencies, applied knowledge institutes). It is envisioned that these activities will give practitioners a continuing opportunity to follow the latest developments in science and to get to know the researchers who are active in this field, while the scientists are exposed to the applied world of practice. At the same time, the CWE can act as a partner representing the science community in initiatives from the applied water sector to tackle scientific questions arising from new water-related policies or new plans to modify water resources management in response to mitigation and adaptation programs. The 'Water Mosaic' initiative of STOWA (Foundation for Applied Reseach in Water Management) is an example where the CWE is a natural partner to articulate questions together with stake holders into problem descriptions that can be tackled by scientific research. Website: www.wetland-ecology.nl; see also www.uu.nl/science/EB

Prof. Dr. Jos T.A. Verhoeven
Ecology and Biodiversity
University of Utrecht
H.R. Kruytgebouw, N310
Padualaan 8, 3584 CH Utrecht, The Netherlands
+31 30 253 6851 j.t.a.verhoeven@uu.nl

Fig. A number of examples of sites and experimental setups where CWE groups collaborate: European streams, a large-scale remediation experiment with lakes (Volgermeer), mesocosm an laboratory incubations.

Obituaries

Obituary: Béla Entz (1919-2012)

Béla Entz, an internationally well-known limnologist, died in Tihany, Hungary, on the 26th of April 2012, at the age of 93. A couple of months ago, Béla Entz was still actively involved in the work of the Balaton Limnological Institute at Tihany and continued to improve his knowledge on all aspects of hydrobiology and limnology. His love of Lake Balaton highlighted his passion for nature, and this was also apparent in his professional career.

Béla Entz was born on December 26th, 1919 in Budapest. At the age of 10 his family moved to Tihany, near Lake Balaton, when Béla Entz's father, Professor Géza Entz, was appointed director of the Hungarian Biological Research Institute. His life-long interest in limnology and hydrobiology began here in Tihany where he spent his childhood.

Shortly after the WWII he returned to Tihany, initially as a young researcher working on Lake Balaton. Language skills (Bela was nearly fluent in 8 languages) and his growing professional recognition facilitated his travel abroad to international congresses and meetings. In the politically troublesome 1950s, more precisely from 1953 to 1955 and 1959 to 1960, he was the director-in-charge of the Biological Research Institute. Some year later, from 1966, he worked for the Food and Agriculture Organization of the United Nations Development Programme (FAO-UNDP) in Ghana, Africa, as a limnologist at the Volta Reservoir for 3 years. Following an invitation from the FAO-UNDP, he became a project manager of the Lake Nasser Development Centre Programme until 1974. Later, he declined long-term foreign invitations to help his family and children to acclimatize and pursue their studies. Nevertheless, shorter trips allowed him to work in Egypt, Kenya, Lesotho, Somalia and Italy as an expert of the FAO-UNDP, UNESCO (United Nations Educational, Scientific and Cultural Organization), and UNEP (United Nations Environment Programme), and he led Hungarian fishery professionals in a study tour around the world. Meanwhile, between 1975 and 1983 he held the position of senior research fellow of the Balaton Limnological Research Institute until his retirement in 1983.

His professional interests concentrated on the spatial and temporal changes of the physical properties (temperature, ice formation, transparency) and chemical conditions (oxygen saturation, chemical parameters of water and sediment, the relationship between water quality and living organisms) of water and sediment, and he also studied the fish habitat through work conducted in Hungary and the Philippines. His works include among the first research on underwater springs and their effects on winter lakes, and pioneering studies on climate change in shallow freshwater lakes. These works were published in scientifically acknowledged national and international journals (>100 articles) and in his book "Balaton in Change". He was also the editor and editor-in-chief of several Hungarian (Annales Instituti Biologici Tihany, Hungarian Hydrobiology) and international journals, and gave lectures on limnology, hydrobiology and ichthyology in several Hungarian universities. During these years, he supervised a large number of undergraduate and postgraduate students and mentored many young researchers, both in Hungary and abroad. He was a fellow of a number of important and respected Hungarian and International Societies, including membership of the International Society of Limnology (SIL) since 1948 and represented Hungary between 1948 and 1965.

Well beyond his retirement he continued to work on various aspects of limnology, including on lake water quality problems. Moreover he continued lecturing at the Agricultural University of Gödöllő, the Technical University of Budapest, and Miskolc University. He was constantly working as a a language interpreter, educational lecturer, and managed a scientific library started by his grandfather and continued by his father. He donated a good portion of these books, manuscripts and imprints to the Museum of Natural History in Zirc, and more valuable manuscripts were donated to the Hungarian National Museum of Natural History.

Béla Entz will be remembered not only for his scientific works, but also for his wit, friendliness , fascinating stories, overall knowledge of life, and as a stimulating and very interesting person.

Viktor Tóth
Balaton Limnological Institute, Tihany, Hungary

Obituary: C. Warren Bonython (1916-2012)

C (Chevalier) Warren Bonython was born 11 September 1916 in Adelaide, South Australia. He died on 2 April 2012 after a short illness, aged 95. Our deepest sympathies are with his wife Bunty (Cynthia) and their children Simon, Veryan and Alice.

Warren studied chemical engineering at the University of Adelaide, graduating with a B. Sc. in 1938. In 1940 he took a position with Imperial Chemical Industries (ICI) Australia Limited, conducting research into salt making and managing the Dry Creek Saltfields. During the twenty years he was at Dry Creek his research spanned a wide range of topics of interest to solar salt-makers, but he returned several times to the subject of evaporation: looking at the effects of increasing salinity on the rate of evaporation, considering how the management of brine flow through a solar saltfield could best be managed to maximise the evaporation from the available area, and methods of artificially increasing the evaporation rate of crystalliser brines using dyes.

His 1956 work on evaporation rates from the brines of Lake Eyre

during its wetting and drying led to the development of the modern series-flow solar saltfield layout and paved the way for development of the numeric models now used in saltfields around the world.

Warren retired at 50 from ICI in order to pursue a wide range of other interests, some related to solar saltfields and many more to the conservation of Australia's arid lands and salt lakes. During this "retirement" Warren served as Director for Dampier Salt Limited (1968-1979) overseeing the design, construction and early operating years of Australia's largest solar salt works at Dampier in the Pilbara region of North-West Australia. He also served the government of Australia in 1964 as a Colombo Plan Advisor to the government of Ceylon (salt production) and as a member of the Uranium Advisory Council from 1978-83.

I, like many other people who have worked in the salt industry, was informed by Warren's research. Even in his later years he was happy to provide students and researchers with copies of his papers and advice on salt making. He kept his links with the Dry Creek Saltfields and every year (providing he was in South Australia) Warren attended the annual Salt Harvest Festival, dressed in a brown woolly jumper that made me think he had just dropped in from a bush walk. I always enjoyed sitting near the gas heater in the huge Nissen Hut during the Festival, listening to him tell stories about his expeditions and discussing his concerns about our fragile Outback "backyard". It was in matters of nature conservation that his true passion could be seen, and he had me hooked...

Warren undertook extensive walking expeditions through much of South Australia's inland – the Flinders Ranges, Lake Eyre and the Simpson Desert. While he is often described as being (along with his friend Terry Kreig) one of the first Europeans to walk around Australia's largest salt lake (Lake Eyre) at the age of 66 in 1982, there were so many other adventures that it is hard to consider for which he is best remembered: his crossing of the Simpson Dessert on foot in 1973 pulling a 250 kilogram sled on a trek that lasted 32 days could be a worthy candidate, as could his climb of Mount Kilimanjaro in Africa at age 75.

He has long been credited with conceiving the 1,200 kilometer-long Heysen Trail, one of Australia's premier wilderness experiences. He raised the idea in 1969 and then chaired the resulting Long Distance Trail Committee from 1971-78, spending those years on the tedious and often frustrating task of working with state and local authorities to develop a framework for the management and operation of an extensive long-distance trail. In 1978 the Trail became officially a project of the Department of Tourism, Recreation and Sport and physical works began.

His appetite for committee work was prodigious. The committees he donated his time, energy and enthusiasm to included scientific and academic societies and many conservation organisations. He was president of the Royal Geographical Society of Australasia SA Branch (1959-61), long serving South Australian chairman of the Water Research Foundation of Australia (from 1961-76), a foundation committee member of the Australian Solar Energy Society, a member of the first executive of the Australian Conservation Foundation (1965-73), president of the Conservation Council of South Australia (1971-75), president the National Trust of South Australia (1971-76), member of the Australian Heritage Commission (1976-91), chairman of the Evaluation Panel for Natural Areas in South Australia, a member of the Australian Heritage Commission (1977-91), president of the Royal Society of South Australia (1980-81), chairman of the Reserves Advisory Committee to the Minister of Environment and Planning South Australia (1981-84) and president of the Council of the National Parks Foundation of South Australia (1985-89).

Warren was made an Officer of the Order of Australia in 1980, in recognition of his services to conservation, awarded the John Lewis Gold Medal for Exploration by the Royal Geographical Society of Australasia in 1984 and was recognised as the Australian Geographic Adventurer of the Year in 1990.

The honours are well deserved, there is no doubt. Warren Bonython will be a great loss to us all. But Warren, what I will miss most is listening to you next to the heater in the Nissen Hut at Dry Creek. Ave atque vale, and keep your boots dry…

Peri Coleman
Delta Environmental Consulting, Adelaide Area, Australia.

Obituary: Carol D. Litchfield (1936-2012)

Carol Ann Darline Litchfield (née Ross) was born in Cincinnati, Ohio on October 10, 1936. After her M.Sc. studies at the University of Cincinnati (1960), Ph.D. studies in biochemistry at Texas A&M University (1969) and post-doctoral studies at the University of North Wales, she joined the faculty of the Department of Microbiology at Rutgers – The State University of New Jersey (1970-1980). She then moved to industry, and from 1980 until 1992 she worked for DuPont, first as Head of Environmental Toxicology at DuPont's Haskell Laboratory, and later as Senior Scientist for its bioremediation subsidiary. In 1993 she returned to academic life when she joined the faculty of George Mason University, Fairfax and Manassas, VA, as an Associate Professor of Microbiology, first in the Department of

Biology, later in the Department of Environmental Science and Policy.

"Salt" is the keyword in nearly all Carol's work in the past two decades. The vanity license plate "SALT BUG" of her car proclaimed what her interests were. As my own studies on salt-loving microorganisms led me first to the exploration of the Dead Sea and later of solar salterns as biotopes, I came into contact with Carol quite early in my career as a "halophilic" microbiologist. I first encountered her in 1992 at the symposium on "Halophilic Bacteria: Research Priorities and Biotechnological Potential for the 1990s", held in Williamsburg, VA, where she presented the opening lecture. By that time she already had done extensive work on the taxonomy, physiology and ecology of halophilic microorganisms. One of the highlights of that work was the discovery and description of Halomonas elongata, isolated from a saltern on the island of Bonaire, and now the model organism for studies on moderately halophilic bacteria. Unfortunately, she did not attend the remainder of the congress, so that we did not have the opportunity to talk to her. My first true interaction with Carol was at a symposium on saline lakes held in Beijing in 1994. We happened to be the only microbiologists there, so inevitably we started discussing science. Those discussions led to a fruitful collaboration that, in addition to numerous mutual visits, brought us to the salterns of Newark - California, Eilat - Israel, Useless Point - Western Australia, and Sečovlje – Slovenia for joint sampling trips. The application of techniques of polar lipid analysis, assessment of community metabolic potential, and pioneering the use of 16S rRNA-based molecular methods in the study of solar saltern microbiology led to the publication of nine joint papers.

Carol also had a great passion for the history of salt making and all aspects of the history of salt. As an active member of the International Commission on the History of Salt (CIHS) she studied salt production in the past at different sites worldwide.

Carol was an avid collector of rare books, documents, and artifacts relating to salt manufacturing through the ages. She spent much time and money, first in antiquarian bookshops and later using eBay and other internet sites, to locate and purchase new items for her collection. Carol and her late husband Carter (1932-2007) maintained two apartments: one being the living quarters, the second being the "library", half occupied by Carol's books and documents on salt, half by Carter's collection of books on lipid chemistry and on the history of fat processing industries. On a typical working day Carol would, after finishing her teaching and research at the university, drive to the "library", have a swim in the swimming pool of the apartment building, then work with Carter for 1-2 hours in the library, and finally drive to their living quarters to prepare dinner.

Carol has been active in many professional associations. Together we served on the board of the International Society of Salt Lake Research, on the International Committee on Systematics of Prokaryotes (ICSP), and on two of ICSP's taxonomic subcommittees. She was President of the Society for Industrial Microbiology (2007-2008), and shortly before her death she was awarded the Charles Porter prize of that society for her achievements in applied microbiology and her exceptional service. She further was an active member of the Society for Industrial Archaeology, and together with Carter she participated in many of the society's excursions. She was elected Fellow of the American Academy of Microbiology.

At the end of each year, Carol and Carter used to send their friends and relations the latest issue of "The Litchfield Times" - "All the news about Carol and Carter that's fit to print". Altogether there have been 50 issues, spanning half a century of a happy and productive life. The newsletter was always accompanied by an underwater photograph of some interesting fish or other marine animal taken by Carol in the past year during one of her diving expeditions. Carol was an enthusiastic diver, who, until the last year of her life and in spite of two hip replacements, made yearly diving trips to the Caribbean, Egypt, Indonesia, and other coral reef sites around the world.

In the beginning of 2012 Carol was diagnosed with pancreatic cancer, which had already spread to her liver. She passed away on the night of April 2-3. A memorial service was held for Carol on 27 May at the Unitarian Universalist Church of Arlington, VA .

We will all miss her.

Aharon Oren
Institute of Life Sciences
The Hebrew University of Jersusalem
Jerusalem, Israel

Carol Litchfield sampling the saltern evaporation ponds of Newark, California (left) and Eilat, Israel in 1997 (right).

Carol Litchfield at the Halophiles 2004 symposium, Ljubljana, Slovenia.

Announcements

13th INTERNATIONAL ROTIFER SYMPOSIUM
ROTIFERA XIII
(November 18-24, 2012)

Organized by

DEPARTMENT OF ZOOLOGY
NORTH- EASTERN HILL UNIVERSITY
Permanent Campus, Umshing, SHILLONG-793022 (Meghalaya) INDIA

INTERNATIONAL ORGANIZING COMMITTEE

Patron:	**PROF. A. N. RAI** **Vice - Chancellor** **North-Eastern Hill University** **SHILLONG-793022, INDIA**	
Convener:	**PROF. B. K. SHARMA**	**INDIA**
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	DR. (Mrs) S. SHARMA	**INDIA**
	PROF. S. K. CHAKRABORTY	**INDIA**

Major Themes of the 13th Rotifer Symposium

1. Taxonomy, Biodiversity, Zoogeography & Bar coding
2. Autecology & Population Ecology
3. Feeding, Trophic Interactions & Behaviour
4. Molecular Biology, Phylogeny, Genetics & Biochemistry
5. Aquaculture & Mass Production of Rotifera
6. Biotechnology & Bioinformatics
6. Ecotoxicology & Indicator Organisms

Venue: North-Eastern Hill University, Shillong-793022, Meghalaya, India

Registration fee:	**Before June 30, 2012**	**After June 30, 2012**
Foreign delegates	**300 US $**	**350 US $**
Accompanying persons	**100 US $**	**120 US $**
Indian delegates	**6500 INR**	**7000 INR**
Local delegates	**3500 INR**	**4000 INR**

(Registration fee excludes boarding and lodging)

How to reach Shillong: **Shillong** is well connected to **Guwahati city** by rail, air and road (National Highway 40), and it takes 3-4 hours to cover the 103 km distance by taxi, which is readily available. Guwahati, a metropolis city, serves as the gateway to northeast India: it is well connected by rail, road and air.

Presentations: Invited lectures, oral lectures and poster presentations will be organised in different technical sessions. Participants are requested to kindly indicate their preference for oral /poster presentations.

DEADLINES

Preliminary registration of participation (for foreign delegates)*	**December 30, 2011*** (completed)
Preliminary registration (for Indian delegates)*	**April 30, 2011*** (ongoing)
Registration, remittance of registration Fee, and submission of abstracts	**June 30, 2012**
Acceptance of abstracts	**July 31, 2012**
Intimation of travel details and Confirmation of accommodation	**October 15, 2012**
Arrival of participants	**November 18, 2012**
Departure of participants	**November 24, 2012**
Submission of manuscripts (for peer-review):	**January 30, 2013**

***IMPORTANT NOTE**: All **foreign delegates** and **Indian delegates** are required to submit a **formal note of consent**

Publication of the Symposium Proceedings: The proceedings of **Rotifera XIII** will be published as a special issue of ***International Journal of Hydrobiology***. All manuscripts will be peer-reviewed according to the procedure set out by the Journal: **Special Guest Editors: Prof.** B.K Sharma, Prof. H. J. Dumont and Dr. R. D. Gulati

Contact for Rotifera XIII

PROF. B. K SHARMA
CONVENER, ROTIFERA XIII
Department of Zoology, North-Eastern Hill University, SHILLONG – 793 022, Meghalaya, INDIA
+913642722314 (Work), +913642222294 (Home) +919436110599 (Mobile)
Emails: rotifera2012@gmail.com, profbksharma@gmail.com
More details available at: http://www.nehu.ac.in,

Polar Ecology Conference

I would like to announce that a Polar Ecology Conference will take place in Ceske Budejovice, Czech Republic, from September 30th to October 4th, 2012. and We hope that the conference topic is interesting for you. We will be happy to welcome you all.

Please, find more information on the conference web: http://polar.prf.jcu.cz/conference.htm

Registration deadline: June 20th 2012

For further questions regarding the conference organisation and program, please do not hesitate to contact me!

Jan Kavan (winterlimnology@bio.uio.no)
Head, Organising Committee

International School on "Mountain Ecology and Global Change"

The International School on "Mountain Ecology and Global Change" will take place in Innsbruck between 24 and 28th September 2012 and will be chaired by Ruben Sommaruga (University of Innsbruck, Austria).

Mountain ecosystems are important on a global basis and are particularly susceptible to the effects of diverse global changes. At present, there is an accumulating evidence that global changes such as e.g., in climate, in land use, and in atmospheric nitrogen pollution are strongly affecting mountain ecosystems, even remote ones. One of the main values of this International School is a unique opportunity for participants to receive a multidisciplinary overview about the on-going research on aquatic and terrestrial mountain ecosystems in different parts of the world. Thus, the main objective of this School is to provide the participants with a state-of-the-art overview on the research done in mountain ecosystems and to foster cross-disciplinary links through discussions in an informal atmosphere.

The International School invites postgraduate researchers (Ph.D. students) and young postdocs having diverse specializations ranging from limnology, environmental sciences, geography, ecological sciences to conservation biologists with interest in mountain ecology and global change. All participants will need to be proficient in both written and spoken English.

The School programme consists of 60 min lectures (45 min talk+15 min discussion) on topics related to aquatic and terrestrial, mountain ecology given by members of the Alpine Ecology Research Centre from the University of Innsbruck and guest scientists from Belgium, France, Switzerland, Spain, the UK, and USA. The lectures will cover a broad spectrum of subjects and will include a general introduction to the topic, as well as its state-of-the-art.

Applications will be evaluated by the Scientific Committee and successful applicants will be notified by e-mail about admission by 25th July 2012.

On-line registration, program, and more information is available at: http://www.uibk.ac.at/ecology/intschool

Contact: **Ruben Sommaruga** (ruben.sommaruga@uibk.ac.at)

2012 North American Lake Management Society International Symposium and Conference to be held in Madison, Wisconsin (USA)

The North American Lake Management Society (NALMS) is pleased to announce that the 2012 International Symposium and Conference will be held in Madison, Wisconsin (USA) from 7 - 9 November. The theme of the Symposium is "Lakes in the Landscape: Values, Vision, and Action." These three aspects of lake management will form focal areas within the Conference, with noted keynote speakers addressing each of these important areas of land and water management. Dr Stephen R Carpenter of the University of Wisconsin-Madison Center for Limnology is among the noted limnologists who will address the Conference during the event.

The areas of Values, Vision, and Action reflect not only the way in which humans see the natural world, but also the fundamentals of ecosystem management. Values imply not only the intrinsic value of waterbodies on the landscape but also the additional value that humans place on lakefront living, water for drinking and other economic purposes, and the need for sustained financing for lake management as a basis for protecting or restoring waterbodies, emphasizing that link between ecology and economics. Similarly, Vision is necessary for goal setting and measuring progress toward achieving successful interventions that enable and ensure adequate supplies of clean water for meeting human and ecosystem needs. Action should be the end result of the process of establishing value and creating a vision. The highlight of this day will be a community-focused day-long session on the Madison Lakes, Lake Mendota and Lake Monona, which not only creates a link with the 2005 NALMS Conference in Madison, but also to the legacy created by Birge and Juday, during their time at the University of Wisconsin.

Abstracts for this Symposium are being accepted at: https://nalms.conference-services.net/authorlogin.asp?conferenceID=3171&language=en-uk.

Interested persons should contact NALMS through the Society website, www.nalms.org, for further information.

IS.Rivers – 1st International Conference on Integrative Sciences and sustainable development of rivers. 26-28 June, 2012, Lyon, France

Organized in Lyon for its 1st edition, the IS.Rivers International Conference focuses on the sustainable management of the world's rivers, especially European ones. The IS.Rivers conference concentrates on state of the art management strategies and lessons learned from individual case studies. Particular consideration is given to the integration of physical, ecological and social perspectives of the different stakeholders involved in river management (governance, economy, culture), which is reflected in the title of the conference ("Integrative Sciences for rivers").

IS.Rivers in a few words:

2.5 days of conferences in three parallel sessions including 100 oral presentations, a look at 55 rivers of 32 different countries, specialized workshops, technical tours, a scientific poster exhibition and 2 plenary conferences.

Registration Now Open!

Register before April 30th, 2012 to benefit from the early registration rate. For more information and the preliminary program: http://www.isrivers.org

8th International Symposium "Use of Algae for Monitoring Rivers" The European Water Framework Directive: Implementation and beyond

The organizing committee welcomes all participants to the 8th International Symposium "Use of Algae for Monitoring Rivers" which will take place in Alcalá de Henares (Madrid) from 19 -22 June 2012.

Since the pioneering European Symposium in 1991 in Düsseldorf, algae have become relevant organisms in monitoring programs of surface waters status in Europe but also in many countries around the world. The Madrid symposium will give the opportunity to share all the advances in the field since we last met in Luxembourg three years ago. In a friendly setting, we shall be able to discuss which challenges we need to face in order to make a significant progress towards the full implementation of the European Water Framework Directive; the experience of participants from countries other than Europeans will contribute in a decisive way and enrich such discussions.

The symposium will be held in Alcalá de Henares, a historical and lively city located close to Madrid. Alcalá is the birthplace of Miguel de Cervantes, the writer who created Don Quixote de la Mancha. The city is also home of one of Europe's oldest universities (founded in 1499) and one of the earliest examples of a planned-university town. Both Alcalá and its university were declared in 1998 a UNESCO World Heritage Site. The venue of the symposium will be the university's ancient assembly hall, Colegio de San Ildefonso, host of the most important Spanish literary award ceremony, the Cervantes Prize. Alcalá with its university is a place for science and knowledge but also a place to enjoy its historic and cultural heritage as well as its tasty food and wine!

For more information please visit: http://www.uamriver2012.com

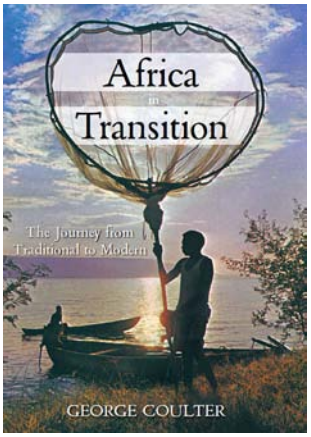
Looking forward to meeting you in Alcalá de Henares!

The Organizing Committee of UAMRIVER 2012

Book Review

Africa in Transition, The journey from traditional to modern in Africa.

George Coulter. Hardcover: 352 pages. Publisher: Book Guild Ltd Pavilion View, 19 New Road, Brighton BN1 1UF, UK.
ISBN-13: 978-1846246326. Price £ 17:99



Contrary to his renowned work in African lake and fisheries sciences (Coulter 1963, 1977, 1991, 2003), George Coulter has now put the African people more central to the narrative. This intelligible book is mainly about the drivers that lie underneath the tremendous changes in the human culture and circumstances in Africa since the 1950s. Africa in transition clearly intends to elucidate recent intensifying but confusing international debates on poverty alleviation and sustainable development in Sub-Saharan Africa. Drawing on a near 35 years of first-hand experience plus 20 years of consistent involvement, Coulter's analyses are clear and point out the main issues that play in changing Africa. The book has three parts.

In the first Part, various research and development undertakings, as far back as the 1950s, across different Sub-Saharan countries, are put in perspective. With great eye for detail, Coulter concisely reports and reflects on the circumstances, working conditions and the ins and outs of his projects with, e.g. the Tongu and Fante tribes in Ghana, the Unga swamp People in Zambia and the Tutsi and Hutu tribes in Burundi. Without being autobiographical, this part encompasses an entertaining personal record of engagement with beguiling and often challenging aspects of introducing new and western techniques for problems with fisheries in African settings.

The second part treats the reader with new insights into the heroic travels and endeavours of D. Livingstone and H.M. Stanley, the first explorers that revealed a great deal of East and Central Africa to the western world. A profound understanding of the region, its magnificent lakes and exceptional people, and a great personal interest for collecting and combining peoples' experiences, helped the author to successfully combine important historic sources with the memories of a few very old Africans into a unique chronicle. The author remarkably bridges the main historic phases that have shaped the region and its people 125 years ago with the sociocultural settings of new generations of the 21st century. Coulter's historical account gives us unique and new information of great interest and significance.

The last part is about developing Africa moving away from traditional to more modern ways of life styles. The observations from the first 2 chapters that signal this transition are discussed and point up to new distressing views.

The author emphasises that, the complex change of African communities and sectors of society seem unevenly, broadening socioeconomic inequity and cultural impoverishment. With Africa overall enjoying surprising high economic growth rates over the last decade, the modernisation goes together with a worsening life standard for a growing number of Africans in both urban and rural areas.

The reader is witness to a typecast exercise that poses the traditional rather resilient social harmony throughout Africa opposite the modern more western individualistic life histories. The perceived and real differences and developments in doing, thinking, routines, attitude, perception and mindsets are practically being clarified in this manner. Coulter reveals important complexities and subtly aims at the misconceptions that often form major flaws in the approaches of international aid agencies dealing with Africa's two salient paradigms: sustainable development and poverty alleviation.

Contrary to most other works dealing with these paradigms, this chapter does not frustrate but forms an integrated view on the complex African development over the last 50 years. The author plainly reveals issues which Africa and the Western world have to consider when trying to alleviate poverty and liberate talent and enterprise on the continent under more humane conditions. With know-how and without passing judgement, Coulter provokes the reader with the realisation that true sustainably managed nature including prosperous people, both in developing and developed countries, seems further away from reality. Now, Africa has come in transition and current settings have an uneven impact on the Africans and their resources.

Coulter tends to be sceptical of certain resource development programmes to Africa but avoids the familiar positions among the old "African experts" of either expressing contempt or excusing failure. Africa in Transition stimulates and Coulter remains fresh and inquisitive. Being a true scientist, he holds up a mirror to us by questioning why do most internationally assisted initiatives that seem excellent in intent have weak outcomes? Why did simply providing aid, money or technology not work? What are the underlying reasons? What have we seen shifting in African fashions of thinking? Can we learn from the past and the foreseeable circumstances of the governments, economies and sociocultural settings and do a better job?

Coulter remains confident and stresses that outsiders should help but only if they understand and recognise Africa's rapidly changing mind set and culture and work with it. Coulter concludes that the obligation to pull together and understand ecological, sociological, cultural and economic drivers would be a good start, the creation of unrelenting participative commitment by diplomats, academics, business leaders, entrepreneurs, aid workers and volunteers would be a crucial next step.

The book entertains and educates. Analytically sharp and plainly revealing important flaws in the foreign aid industry that so far showed little consideration the book raises the necessary questions to those that are involved in the future development of the continent Africa. Readers that live, work, visit or simply are interested in this African region around Lake Tanganyika will experience how her people have contributed to its magnificent grandeur and beauty. Coulter, again, delivers a milestone for our comprehension. Africa in transition is an admirable and highly recommended read that couldn't have come at a better time.

Victor T. Langenberg
Victor.langenberg@deltares.nl
DELTARES Knowledge Institute
P.O.Box 177, 2600 MH Delft
Netherlands

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Limnology Jobs and Studentship Notices

Notices on the availability of limnologically-oriented jobs and graduate student opportunities are now accepted for publication in the *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 both 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 or by fax to the attention of Gordon Goldsborough at: +1 (204) 474-7618.

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The International Society of Limnology (formerly International Association of Theoretical and Applied Limnology; Societas Internationalis Limnologiae, SIL) 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

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.