



ENVIRONNEWS

INTERNATIONAL SOCIETY OF ENVIRONMENTAL BOTANISTS

Newsletter

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NEW DIRECTOR OF NBRI & PRESIDENT ISEB



Dr. C.S. Nautiyal, an internationally renowned microbiologist took over as the Director of the CSIR's National Botanical Research Institute, Lucknow on 26 November 2010. Consequently, he also became the President of International Society of Environmental Botanists. Prior to this, Dr. Nautiyal was heading the Plant Microbiology Division of NBRI.

Dr. Nautiyal obtained his M.Sc. degree in Botany from Lucknow University and Ph.D. from M.S. University, Baroda in 1982. After spending about 10 years in U.S.A. and Canada, working on various positions like post doctoral fellow to production manager in a biotechnology Company in U.S.A., he moved to NBRI in February 1994 as Scientist in the Plant Microbiology Division and became Scientist 'G' in February 2009. His research interests include plant-microbe interactions, microbial biotechnology and stress tolerant plant growth promoting bacteria.

Dr. Nautiyal is the recipient of several prestigious honours and awards including All India Biotech Association Award, Vigyan Bharti Rashtriya Award, Biotech Product and Process Development and Commercialization Award and Gopal Gaurav Award. He is Fellow of National Academy of Sciences (F.N.A.Sc.) and National Academy of Agricultural Sciences (F.N.A.A.S). Recently, he has been also awarded TATA Innovation Fellowship by the Department of Biotechnology, Govt. of India.

Happy New Year 2011

President & Members of the Executive of International Society of Environmental Botanists

Wish a Very Happy and Prosperous New Year to all

Members of ISEB and readers of ENVIRONNEWS



LETTERS

I am shocked and deeply saddened to see the message. I am at a loose with what to say. I distinctly remember Dr. Chandra asking me a question regarding water pollution at the end of my presentation during the evening of December 10. In my visit to Lucknow with regard to the last three ICPEPs, he has been most kind and supportive of me. I am grateful.

I offer my condolences to his family and wish them my sincere sympathies during this difficult time.

As the Canadian Inuits say, "When you hear the owl call your name, it is your turn to join the God". I hope that I will see Dr. Chandra again, in heaven.

With regrets in this sad moment.

Sagar V. Krupa

Professor Emeritus

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The sad demise of Dr Prakash Chandra is shocking, especially at a time when he was unbelievably active and happy about steering the Conference so successfully. Our heartfelt condolences and wishes for facing the fact with all the boldness one's family needs at a time as this. Not only the first family, but also the extended family that includes us all. May God shower his heavenly blessings on the departed soul.

Dr. Rakesh Tuli

Executive Director, National Agri-Food Biotechnology Institute, Mohali, India.
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It is difficult to find words to express our deepest gratitude for the many kindness that Dr. Chandra has always shown to us. Words cannot express how sorry we all are about the sudden demise of Dr. Chandra that has shaken us so deeply. I can only imagine the shock it is to all of us and especially to the ISEB extended family. Indeed, it was only three days ago that Dr. Chandra and the whole family of ISEB shared the Fourth International Conference, ICPEP-4 together with his outpouring support. He will be missed for his generous and caring nature.

We all know him well for his hard-work and share the honor to work with him. Not only was he a great person at work but was always straightforward and honest in his dealings. Dr. Chandra was an amazing man who touched the lives of many. Everyone who knew him will miss him. His passing will not only leave a void in our lives, but in the hearts of all those who knew him. He will always be in my thoughts and prayers.

I, besides my whole family, stand by to express our sincere condolences for the sudden loss of a great and pious soul who was one of the strongest pillars of ISEB family. May the Almighty God rest his soul in peace and shower His blessings

on his family.

Dr. Mukta Singh

Assistant Professor, Deptt. of Home Science, MMV
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I am deeply disturbed and shocked to hear the demise of Dr. Prakash Chandra. It is difficult for me to say anything at the moment. He had even helped me in person during my recent visit to NBRI, only six days before his demise. He was very agile and very healthy at that time. I just could not believe that he is no more now- within a week's time, with a massive heart attack. He was so dedicated to the service of the ISEB. He will be remembered forever for his long sincere services to ISEB and NBRI.

Kindly convey my heartfelt condolence to his bereaved family and pray that The Almighty give them courage to bear this great loss.

Padma Shri Dr. P. Pushapangadan

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I would like to thank you for a very warm welcome and meeting during the conference. I will never forget your gesture of kindness and hospitality. I was shocked to hear about the death of Dr. Chandra, and I would like to express my deepest condolence to the society and to his family. I know we lost a great person.. but we have to accept that we will all pass in this world.. My kind regards to everyone. Hope to meet you again in another conference.

Prof. Yolina T. Castaneto

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I am really shocked to learn the sad demise of Dr. Prakash Chandra, Treasurer of the International Society of Environmental Botanists, who very successfully handled the financial matters of ICPEP-4 in December 2010. It is more important for me that I joined the society as a life member during his tenure. Dr. Prakash Chandra was a lovable internationally recognized botanist and certainly it is a great loss to the botanists community of the world in particular and scientists in general. May his soul rest in peace with the Almighty in the Heaven.

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We wish you and your family **A Very Happy, Healthy and Prosperous New Year.** The International Conference with all its excitement and problems was a success primarily because of your continuous efforts. Probably that was the high point of 2010! It was sad that we lost a devoted person like Dr. P Chandra. His absence will be felt by us all for a long time.

Dr. P. V. Sane
(Former Director, NBRI, Lucknow)

I wish to congratulate you for having a successful conference. It was the best I have ever attended. Thanks so much for the opportunity given me to attend this conference. I am very grateful. I will attend the next one from Nigeria. God willing.

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Department of Forestry and Wood Technology
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WELCOME NEW MEMBERS

Patron Member

Prof. O.P. Agrawal, President, International Council for Biodeterioration of Cultural Property (ICBCP), Lucknow, India

icbcp1995@gmail.com

Life Members

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NEWS FLASH

- **Prof. Seshu Lavania**, Professor at the Department of Botany, University of Lucknow and Joint Secretary of International Society of Environmental Botanists has been elected as a Fellow of the Linnaean Society of London. (FLS). Prof. Lavania has also been the recipient of Woman Scientist Medal (2007) of the Indian Botanical Society (IBS).
- **Dr. Riti Thapar Kapoor**, a lecturer in Amity Institute of Biotechnology, Amity University, Noida and a Life Member of ISEB attended leadership course for Asian and African Women for Research and Extension in Rainfed Ecosystems held at International Rice Research Institute (IRRI), Manila, Philippines during 6-17 September 2010. The training programme was inaugurated by Dr. Robert S. Zeigler, Director General, IRRI and attended by 21 Women participants from Asian and African countries. The training programme provided an opportunity for the participants to exchange their views and experiences in climate change, rice growing environment, gender issues in the work place and in agriculture as well as to facilitate stronger collaboration among Asian and African countries.
- **Dr. Kapoor** has also contributed many popular science articles in reputed magazines as a science communicator.
- **Dr. S.C. Sharma**, Vice President ISEB was invited to visit Fairy Lake Botanical Gardens, Shenzhen, China from October 20–31, 2010 for discussion on the conservation and documentation of *Bougainvillea* species/cultivars and their usage in the Urban ecology with Prof. Chen Tao a leading Taxonomist and Ecologist. He also visited Xiamen, Omay and Beijing Botanic Gardens for studying the set up of the Botanical Gardens in P.R. China. It is amazing that most of the leading Botanical Gardens in China are in an area of 500-600 hectares with very rich germ-plasm collection of plant diversity for education and eco-tourism.
- **Dr. Sharma** also participated in the Conference on the "Ground Water Management in Uttar Pradesh" at PICUP, Lucknow. He emphasized the urgent need of checking the flow of pollutants and the cleaning the Gomti River which is the Life line for Lucknowites. Dr. Sharma suggested the simple solution for harvesting and recharging of the rain water that the front area of the constructed house should not be made pucca with mosaic or marble floor. The kachcha area will help for absorbing the rain water and raising the ground water level.
- **Dr. D.K. Upreti**, Scientist & Head Lichenology Section, NBRI has taken over as the new Treasurer of International Society of Environmental Botanists. The vacancy was caused by the sudden and untimely demise of former Treasurer Dr. Prakash Chandra on December 15, 2010.
- Department of Botany, University of Lucknow would be hosting the 34th All India Botanical Conference of the Indian Botanical Society in 2011 in the last quarter of 2011 at Lucknow..

RECYCLE PAPER TO SAVE TREES

On an average, a healthy mature tree produces as much oxygen in one season as ten people inhale in a year. A tree also absorb 48 pounds of Carbon dioxide per year.

One tonne of recycled paper saves approximately 12 trees. Paper can be recycled up to 12 times before its fibres get too small for further recycling. Thus, by recycling a tonne of paper to its capacity, 144 trees can be saved.

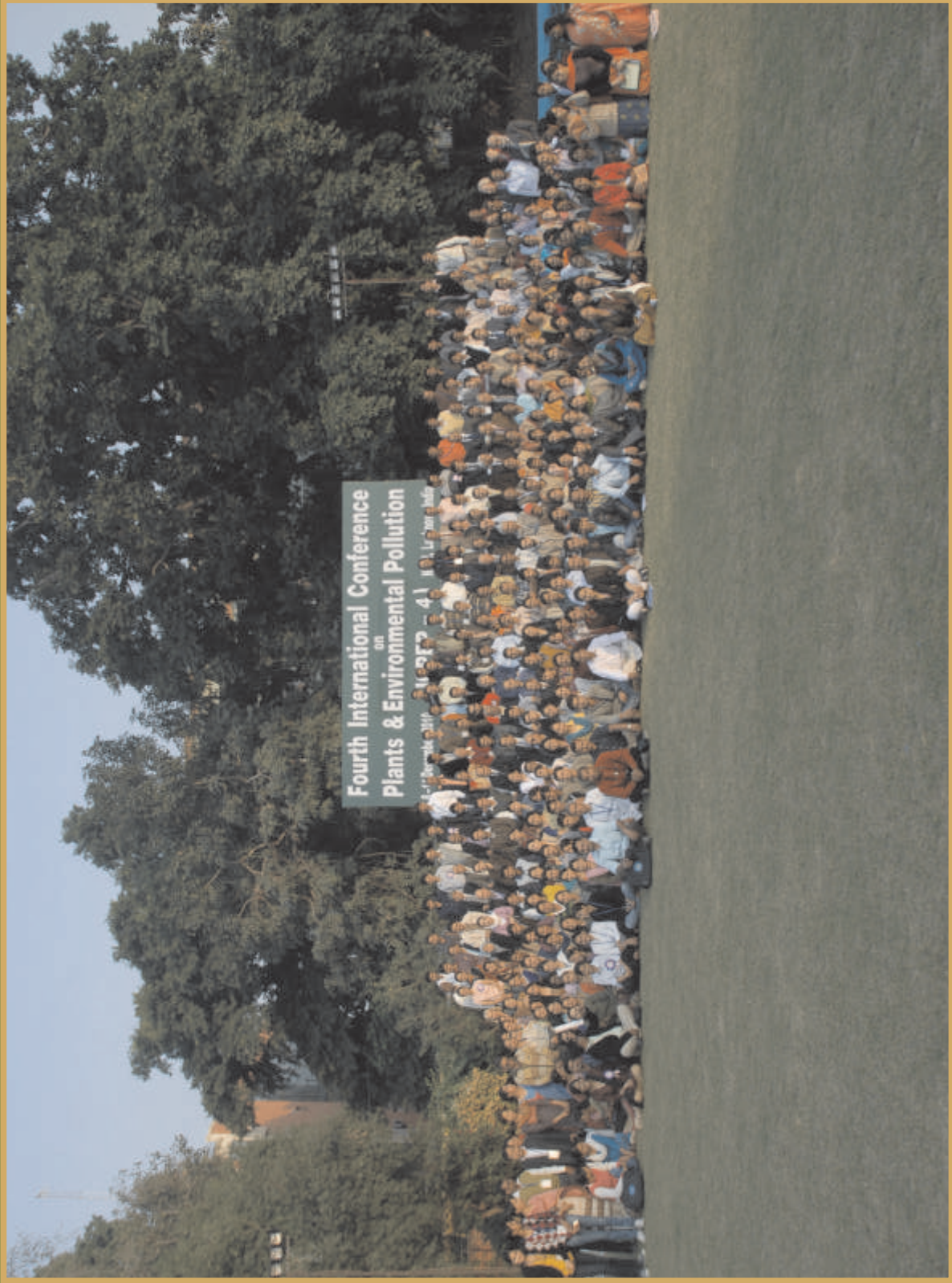
Reema Singhal in Planet Earth

Glimpses of ICPEP - 4









Group Photograph of Participants of ICPEP - 4



OBITUARY

With heavy hearts we regretfully announce the sudden death of Dr. Prakash Chandra, Treasurer ISEB. The sad event occurred in the late afternoon of 15th December 2010 following a massive heart attack. Till a couple of hours before his death, he was working in the ISEB office disposing of important items connected with ICPEP-4.

Dr. Chandra, 73, was working as Treasurer of ISEB since its founding in 1994 and he had been working very hard during the recently concluded ICPEP-4 conference; planning and efficiently managing difficult and complicated financial matters.

Dr. Chandra had been a distinguished environmental scientist. He established a research group on aquatic pollution at NBRI from where he retired in July 1997 after an illustrious service of 39 years.

He has published a large number of research papers in international journals on phytoremediation of heavy metal pollution and was considered an expert on chromium pollution in water bodies. He had visited several foreign countries including U.K., France, Germany, Austria, The Netherlands and Australia and attended several international conferences. Prior to shifting to environmental sciences he had worked on Indian Pteridophytes and carried out extensive plant collection trips to eastern and western Himalayas and South India.

ISEB deeply mourns his sudden and untimely demise and conveys deep sense of sorrow and condolences to his family. We pray that The Almighty give them courage to bear this great loss.

Fourth International Conference on Plants and Environmental Pollution (ICPEP-4) - A Report

Nandita Singh

National Botanical Research Institute, Lucknow

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Environmental pollution is a problem both in developed and developing countries. Factors such as population growth, industrialization and urbanization invariably place greater demands on the planet and its limited resources stretch which are stretched to the maximum. Generation of pollutants by day-to-day human activity is much beyond the carrying capacity of the earth. The trans-boundary nature of environmental pollution makes it even more difficult to manage.

The gravity of the situation demanded concerted and well coordinated efforts by the international community to combat this menace to provide an international forum and also to discuss and deliberate on the problems and to suggest remedial measures to check them, led for organizing the Fourth International Conference on Plants and Environmental Pollution (ICPEP-4). The Conference was jointly organized by International Society of Environmental Botanists (ISEB) and National Botanical

Research Institute (NBRI) from 8th to 11th December, 2010 at NBRI, Lucknow, India.

The Conference was formally inaugurated by Dr. Ram Rajasekharan, Director, Central Institute of Medicinal and Aromatic Plants, Lucknow, in the presence of over 600 delegates from India, U.S.A., Japan, Philippines, Chile, Iran, Israel, Australia, Denmark, Poland, Hungary, Botswana, Nigeria, Indonesia, Mauritius, Taiwan and Italy. Dr. C.S. Nautiyal, Director NBRI and President ISEB, presided over the function and welcomed the guests and delegates. On this occasion, Dr. P.V. Sane, former Director of NBRI and founder president of ISEB, and Prof. Sagar V. Krupa, Professor Emeritus at the University of Minnesota, USA and Advisor ISEB, briefly addressed the delegates and conveyed their blessings to ISEB, ICPEP-4 and NBRI. Dr. K.J. Ahmad, Secretary ISEB, and Organizing Secretary, ICPEP-4, explained the genesis of ISEB and ICPEP. In his inaugural address the Chief Guest, Dr. Ram Rajasekharan gave a well illustrated scholarly talk on lipid

metabolism in plants.

The conference provided a vibrant interactive forum for serious deliberations on the pressing problems of pollution and the role of plants in its amelioration. The issues raised during the Conference focused on global climate change, fresh water, dwindling forests, biodiversity losses, GM food, emergent ecological disturbances on plants, environmental issues and other factors in environment and plant relation.

The deliberations during the Conference revolved around the following themes:

1. Climate Change
2. Environment and Biodiversity
3. Environmental Biotechnology
4. Plant Response to Environmental Pollution
5. Environmental Impact Assessment
6. Bioindication and Bioremediation
7. Plant Microbe Interaction
8. Waste/water Management
9. Other Environmental Issues

The keynote lectures were given by Dr. P. Pushpangadan, former Director of

NBRI and presently Director General of Amity Institute for Herbal and Biotech Products Development, Thiruvananthapuram and Prof. Viney P. Aneja, Head, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, USA. Dr. Pushpangadan emphasized the impact of climate change on Biodiversity with special reference to medicinal plants. He reported how the disturbances in seasonal cues has shown striking variation in phenological events like vegetation pattern, phenology and distribution which is effecting harvester's and cultivator's requirements and condition to grow/collect medicinal plant species.

Prof. Aneja discussed impact of agricultural emissions on human and regional health. He deliberated how agri-emissions vary in space and time and how they interact within the various processes and media. According to him the research priorities include the quantification of point and non-point sources, the biosphere-atmosphere exchange of ammonia, reduced sulphur compounds, volatile organic compounds, greenhouse gases, odours and pathogens, the quantification of landscape processes and the primary and secondary emissions of particulate matter.

The session on "Climate Change" dealt with the issue of deteriorating air quality and changing climate and its impact on different ecosystems. Emphasis was on changing scenario in agriculture, forest, grassland and aquatic system and assessment of carbon stock in plants and soil. Quite a few presentations were made on the impact on biodiversity and the methods to mitigate the effect of climate change.

The lectures in the session on "Environment and Biodiversity" mentioned the alteration in biodiversity at the local, regional and global scale due to the changing chemical status of the environment. Emission of gases and particulate containing toxic substances

adversely affect the vegetation e.g., algae, lichen, ferns, trees etc. and even microbes. Loss in diversity has many unfavourable implications related to biogeochemical cycles. It was clearly emphasized that the current problems of pollution and global climate change is affecting the biodiversity which in turn is affecting the community stability.

A session on "Environmental Biotechnology" was held to understand the genomic basis of the responses and adaptation of plants/forest trees to climate change and environmental pollution in order to develop and use genetically improved plant varieties and to conserve and sustainably manage well adapted, genetically diverse and healthy plant/forest genetic resources.

The highlight of this session was a Panel Discussion on "GM food", where the panel discussed on the opportunities, effect and challenges of the Genetically Modified (GM) food crops. Dr. Rakesh Tuli, Executive Director, National Agri-Food Biotechnology Institute who was the key speaker at this session strongly defended the application of GM technology in enhancing agricultural productivity and disease control.

The fourth session was on "Plant Response to Environmental Pollution" where talks were focused on the interaction of elevated pollutants with different media and their impacts on plant system.

The session on "Environmental Impact Assessment" dealt with the assessment of environmental impact on the Ecological integrity of water, soil and air environment and their effect on the Biological Systems. Discussions were also held on the beneficial and deleterious effects of pollutants coupled with local and regional meteorological variables.

In session dealing with "Bioindication and Bioremediation" various presentations discussed the role of plants like algae, lichen, mosses, soil and microflora, ferns, as well as the

plant parts (leaf, pollen), and even enzymes for biomonitoring air, water and soil pollution. This session also highlighted the phytoremediation and bioremediation capacity of different plants and microbes, which could be used for remediation of pollutants especially metals/metalloids.

The seventh session was "Plant Microbe Interaction" emphasizing the role of microbes in the changing environmental conditions. There was an interesting report on the role of *Escherichia coli*, a known pathogen, as a natural plant growth promoting soil bacterium. Deliberations were also held on the importance of microbes in biodegradation of difficult to degrade pollutants like metal, pesticide and other agro-chemicals.

In the "Waste/Water Management" session the lectures dealt with the eco-technologies for waste and water management through plant system.

Deliberations were also held on the eco-friendly technologies for recycling the municipal and hospital solid waste.

The session "Environmental Issues" took up the matters related to importance of ecosystem services, environmental education, development of eco-friendly technologies, disaster management, biofuels, biopesticides etc. Presentations were also on the Legislations and Policy for sustainable development. Role of mass-Media in generating environmental literacy among masses was also discussed.

A valedictory function was organized after the scientific session on the afternoon of 11th December, 2010 wherein Dr. C.S. Nautiyal, Dr. P.V. Sane, Dr. K.J. Ahmad, Prof. S.V. Krupa and some of the participants expressed their views about the outcome of the Conference. Conference recommendations compiled by the Apex and Advisory Committee was read by Prof. Krupa who finalized them after taking inputs from the delegates.

Conference recommendations:

1. There is a need to identify: (a) the

- key and emerging areas of the environmental concern associated with the mission of ISEB, and (b) recognize the leading scientists internationally in the areas of present and predicted future concerns, establish a linkage of communication and cooperation and seek their advice on a regular basis.
2. There is a need to emphasize environmental education and outreach at the local level by providing the required scientific communication with: (a) the public media, in particular as it relates to both urban and rural communities, and (b) informal and formal education at all levels ranging from young children to post-graduate students at the college level.
 3. There is a need to highlight the benefits of “traditional knowledge” by the exchange of ideas, for example through *EnviroNews*, a quarterly newsletter of International Society of Environmental Botanists.
 4. There is a need to create opportunities for better interactions among students attending the conference (perhaps a student discussion session to share their academic experiences).
 5. There is a need for the continued development of modern methods of plant production as it relates to environmental pollution and communicating their advances and application to the user community, the rural population.
 6. There is a need to actively sustain the very important and effective role that ISEB and ICPEPs have played in environmental conservation in India and other developing countries. Such an objective can be achieved in the future by the responsive and close collaboration of emerging younger generation of scientists at NBRI and other institutions dedicated to the mission of ISEB, with the guidance of senior scholars that have been so successful in making ISEB recognized internationally.
 7. There is a need to initiate and organize the quadrennial ICPEP (ICPEP-5) in 2015 to maintain continuity, transfer and exchange of knowledge with the associated scientific and user community as they evolve.

BOOK REVIEW

Sen “trees” of Mumbai

Edited by

Prof. Sharad Chaphekar, Dr.Chandra Kant Lattoo, Mugdha D. Karnik

The book conceived and edited by Prof. Sharad Chaphekar and his colleagues is an excellent publication on the relic trees of Mumbai. The historical, botanical and horticultural descriptions of the old surviving trees in Mumbai is a treatise for the Tree Lovers and Environmentalists especially for Mumbaikars. The pictures of the trees captured by the noted photographer Shri Sanju Hinge are perfect images. The authors, who are well known in their respective fields, have worked very hard and meticulously to bring out this publication. The book is Green Gold of Mumbai and Nature Lovers would like to keep it as a Coffee Table Book for seeking knowledge on the arboriculture. The book will also help the city planners and horticulturists for the construction of the ecology in the urban areas. There are many trees

described in this book e.g. *Adansonia digitata*, *Amherstia nobilis*, *Barrintonia asiatica*, *Brownea grandiceps*, *Couroupita guianensis*, *Callophyllum inophyllum*, *Mesua ferrea*, *Theobroma cacao* etc. which we rarely find in other cities. There are several centurion trees described in this book which have witnessed the transformation of Bombay to Mumbai and Mumbai to Navi Mumbai. These trees are heritage of Mumbai. These trees are Old Guards for saving the Culture and Environment of Mumbai especially in the era of global warming leading to the climate change. The book is a saga of the trees blended with the poetic English, aesthetics and authentic botanical descriptions. Trees change the landscape of the cement concrete jungle of the multistoried buildings and the town planners can use this

book to select the trees for punctuation in the residential areas for the bio-aesthetics.

This book will motivate the Environmentalists to bring out such publications for other metropolitan cities e.g. Delhi, Kolkata, Chennai, Bangalore.

I heartily congratulate Prof. Chaphekar and his learned team members for their dedication in bringing out this wonderful publication for the benefit of the students, general public as well as professionals.

Dr.S.C.Sharma

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CONFERENCES

National Symposium on Emerging Trends in Plant Sciences

3-4 March 2011, Varanasi, India
Contact: Dr. Shashi Pandey
Organizing Secretary
Department of Botany
Banaras Hindu University, Varanasi, India
E-mail: etps.bhu@gmail.com

2nd International Conference on. Biotechnology and Food Science (ICBFS 2011)

1 to 3 April 2011, Bali Island, Indonesia
Website: <http://www.icbfs.org/>
E-mail: icbfs@cbees.org

First International Conference on Food and Environment - The Quest for a Sustainable Future

21 - 23 June 2011; New Forest, UK
Contact: Beverley Copland
Wessex Institute of Technology
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18th International Botanical Congress 2011

23-30 July 2011; Melbourne, Australia.
Contact: IBC2011 Congress Secretariat:
PO Box 5005, South Melbourne VIC 3205
AUSTRALIA
Phone: +61 3 9682 0500 Facsimile: +61
9682 0344
Email: info@ibc2011.com website:
www.ibc2011.com

17th Annual International Sustainable Development Research Conference Moving Toward a Sustainable Future: Opportunities and Challenges

May 8-10, 2011; Columbia University, New York, NY, USA
Email: ISDR17@ei.columbia.edu
Website: isdr17.ei.columbia.edu

2011 International Conference on Environment Science and Engineering - ICESE 2011

1 to 3 April 2011
Bali Island, Indonesia E-mail: icese@cbees.org
Web address: <http://www.icese.org/>

International Conference on Environment and Industrial Innovation

June 4-5, 2011; Kuala Lumpur, Malaysia.
Website: www.iceii.org
E-mail: iceii@cbees.org

12th International Conference on Environmental Science and Technology (CEST2011)

8-11 September, 2011; Rhodes, Dodecanese,
Greece cest2011@aegean.gr
<http://www.gnest.org/cest>

19th International Conference on Modelling, Monitoring and Management of Air Pollution

19 - 21 September 2011; Malta, Malta
Contact name: Alice Jones
E-mail: wit@wessex.ac.uk

International Conference on Energy Systems and Technologies

14-17 February 2011, Cairo, Egypt
Contact: info@afaqscientific.com



BOOKS

Advances in Urban Ecology

Integrating Humans and Ecological Processes
in Urban Ecosystems By Marina Alberti
Springer 2008
ISBN: 978-0-387-75509-0
Price: € 92.95

Advanced Environmental Monitoring

Kim, Young J.; Platt, Ulrich (Eds.)
Springer 2008
ISBN: 978-1-4020-6363-3
Price: € 169.95

Air Quality and Ecological Impacts

Edited by Allan Legge, Biosphere Solutions,
Calgary, Alberta, Canada
Elsevier 2009
ISBN 13: 978-0-08-095201-7

Biomass Assessment Handbook - Bioenergy for a sustainable environment

Eds.: Frank Rosillo-Calle, Sarah Hemstock,
Peter de Groot & Jeremy Woods
Earth scan 2008
ISBN: 9781844072859
Price: £44.00

Ecosystem Geography

Bailey, Robert G.2nd ed.,
Springer 2009
ISBN: 978-1-4419-0391-4
Price: € 39.95

Sustaining the World's Wetlands

Richard Smardon
Springer 2009
ISBN: 978-0-387-49428-9
Price: € 56.95

Bringing Ecologists and Economists Together

Söderqvist, T.; Sundbaum, A.; Folke, C.; Mäler,
K.-G. (Eds.)
Springer 2011
ISBN: 978-90-481-9475-9
Price: € 99,95

Biodiversity Conservation: Problems and Policies

Series: Ecology, Economy & Environment, Vol. 4
Eds. Perrings, C.A.; Mäler, K.-G.; Folke, C.;
Holling, C.S.; Jansson, B.-O. Springer
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