

## Conserving biodiversity for sustainable development\*

The principal themes of the international conference on 'Conserving Biodiversity for Sustainable Development' (INCCBSD 2013) were: Man, society and biodiversity; Biodiversity conservation strategies; Biodiversity for sustainable energy development; Biodiversity and climate change; Molecular diversity and system biology; Disease, epidemiology and biodiversity; Bio-threats and biosecurity; Biodiversity informatics; Biodiversity, human intelligence and innovation; Biodiversity research. About 100 participants from India, Sri Lanka and Japan participated and presented their research findings as oral and poster presentations. The conference was inaugurated by J. K. Tewari (Ministry of Environment and Forests, Bhubaneswar), in the presence of Sunil K. Sarangi (NIT Rourkela), Krishna Pramanik (Chairperson and Convenor, INCCBSD 2013, Department of Biotechnology and Medical Engineering, NIT Rourkela).

The inaugural function was followed by the keynote lectures, invited lectures and technical sessions, wherein different aspects of biodiversity and its conservation for sustainable development were discussed. The diversity of amphibians and reptiles of India represents almost 6% of global herpetofaunal biodiversity with 865 extant species (340 species of amphibians and 525 species of reptiles). The Western Ghats of India has maximum amphibian diversity (160 species, 85% endemics), followed by the North East India (125 species, 42% of the diversity as endemics). Studies on faunal resemblance showed that diversity in the Western Ghats has sister lineages in Sri Lanka as well as in the Eastern Ghats; NE India has a predominant Indo-

Mayanmese fauna. An attempt was made to explore the interface between culture and biodiversity amongst flora, fauna, ecosystems and agricultural biodiversity, spreading over to links with lifestyles and place names. The cultural similarity was established on the basis of a study conducted in a Sri Lankan biodiversity 'hotspot' with other Asian countries such as Japan, and cultural similarity was established among India, China and Sri Lanka. In the talk on the 'Loss of plankton diversity: spoil environmental perditions?', an assertion was made that aquatic organisms are highly sensitive to environmental changes compared to terrestrial organisms and they serve as bio-indicators for the interpretation of environmental changes. 'Culture collections of micro-algae and cyanobacteria: the Indian scenario in the globe' focused on collecting, maintaining and distributing algal species/strains and preserving algal diversity *in situ*, which serve as libraries. Algal collections are indispensable for every region/country looking at their exploitation for biochemicals, biofuels, biofertilizers, etc. The 'Assessment of the bioresources of Malkangiri district, Odisha, for sustainable utilization' depicts that about 20% of all species is expected to be lost within 30 years as approximately 27,000 species become extinct every year under current scenario and 50% or more will be extinct by the end of the 21st century. Extensive exploration, critical studies and database management to save our precious natural resources are the need of the hour, which are possible only when smaller areas are investigated intensively. Origin of life (4550 Ma), existence of life during Proterozoic Eon with sedimentary signatures, as well as its extinction in the realms of mass extinction and change in climate were also discussed. The utilization of remote sensing and GIS to support conservation and sustainable management of sacred groves in Kodagu district, Karnataka, was discussed. It was emphasized that human activities are a threat to biodiversity in a number of ways such as habitat loss, introduction of exotic species, changes in climate and biogeochemical cycles,

pollution and over-harvesting, etc. Human actions can be linked to a rapid increase in the rate of species extinction and loss of biodiversity. An emphasis was given for conservation of biodiversity involving both *in situ* and *ex situ* strategies for the protection, propagation and conservation of phyto-diversity.

Several other topics on biodiversity and their conservation for sustainable development (as both oral and poster in technical sessions and poster assessment session respectively) such as: Use of biotechnology for plant biodiversity; Mangrove biodiversity and its conservation; Sacred groves: a conservation strategy; Relationship between modern pollen grains deposited in the sediments and extant vegetation of Koriya district (Chhattisgarh, India); Impact of biodiversity on man and society were discussed by fellow participants. Various talks on tissue culture and micropropagation studies conducted on diverse group of plants concerning their propagation and conservation were delivered. Studies regarding the ethnobotanical importance of a variety of plant communities and wild mushroom collection in ethnobotanical perspective were also discussed.

During the valedictory function on 18 August 2013, four best poster (presentation) awards were announced. The Award winners were M. F. Quamar (Birbal Sahni Institute of Palaeobotany, Lucknow), Santosh Kumar (Indian Institute of Advanced Research, Gandhinagar), Tarun Belwal (G.B. Pant Institute of Himalayan Environment and Development, Almora) and Saheli Saha (NIT Rourkela).

The conference provided a good opportunity for the scientists and young researchers of India to interact with well-known senior scientists from within the country as well as experts from Sri Lanka and Japan.

**M. F. Quamar**, Quaternary Palynology Laboratory, Birbal Sahni Institute of Palaeobotany, 53 University Road, Lucknow 226 007, India.  
e-mail: quamar\_bot@yahoo.co.in

\*A report on the three-day international conference on 'Conserving Biodiversity for Sustainable Development (INCCBSD 2013)', held at NIT, Rourkela from 16 to 18 August 2013. It was organized by the Department of Biotechnology and Medical Engineering in association with Post Graduate Institute of Science, University of Peradeniya, Sri Lanka; Cafet-Innova Technical Society, Hyderabad; Jindal Steel and Power Ltd, Tensa and Tubed Coal Mines Pvt Ltd, Latehar.