

## Back to the future in Coimbatore, India

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Leave it to a group of smart Indian businessmen to combine such *avante garde* elements with their ancient tradition ! The upcoming Nilgiri Biosphere Botanic Garden and Conservation Centre is a pioneer attempt to integrate many new concepts.

A group of creative and wealthy industrialists and wildlife enthusiasts came together to form a non-profit Society with the objective of establishing a modern zoo to meet the growing demands of their industrial city. Changes in the name of their project reflect the impressive evolution in their perception of the needs of their city, their society, and their environment. The Coimbatore Zoological Park concept (1981) became the Coimbatore Zoological Park and Conservation Centre (1986) which was subsequently modified to the Nilgiri Biosphere Conservation Park (NBCP) (1999). A Master Plan for the latter concept was underway when a series of economic and political "hits" to the city itself motivated a "rethink". An ambitious and detailed concept plan for NBCP had been approved which included collecting appropriate plants for eight thematic zones, preparing the site, and numerous other tasks before even starting to prepare exhibits, so this work has continued.

The project has been designed according to the forest types of the Western Ghats, one of two designated hot spots. The project site is situated on the eastern slopes of the Nilgiri hills surrounded by the Nilgiri Biosphere Reserve (NBR), which is the project's theme. Rich in endemism, the NBR, is perhaps the most widely known mountain part of the Western Ghats. The project will replicate the NBR on its beautiful 250 acre site which is surrounded by hills and naturally undulating, with dramatic variety in its landscape.

South Indian forest types in the Nilgiri Biosphere Reserve add up to eight thematic vegetation zones : Evergreen Zone, Semievergreen zone, Moist Deciduous zone (with 3 belts of Moist Teak Forest, Bamboo Brakes and Mixed Deciduous Forest), Dry deciduous zone, Rain shadow zone, Montane shola zone, and Thorn forest zone. Animals native to the NBR will be creatively and comfortably settled the appropriate zone.

Some of our colleagues are fond of saying "you can have a good botanic garden without animals, but you can't have a good zoo without plants." From the beginning, serious botanical research was established at the Coimbatore facility. Systematic collection, protection, propagation and planting of indigenous plants to re-create the different forest types of the Nilgiri Biosphere Reserve is a major undertaking. Also, all plants should be collected from legitimate sources, as scrupulously as the zoo will avoid illicit dealers for the animals.

Some of the other ongoing works include propagation, germination studies, with 32 species of endemic and threatened rainforest species including *Artocarpus hirsutus*, *Baccaurea courtallensis*, *Dysoxylum malabaricum*,

*Palaquium ellipticum*, *Canarium strictum*, *Vateria indica*, *Hydnocarpus pentandra* and *Cullenia exarillata* with records maintained on all parameters of the process.

- research on the prevalence and intensity of pests and diseases of indigenous forest plantations, so that appropriate pest and disease control measures can be taken

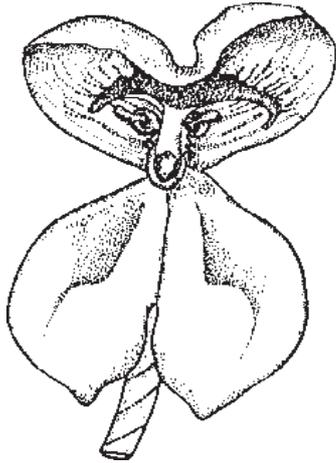
- development of software for plant documentation and management to cope with the enormous quantity of data generated by day-to-day botanic activities. The program ENTADA has been named after India's largest pod-bearing climber *Entada rheedii*.

This work began 1992 and in that time the collection has grown to more than 100,000 seedlings of more than 400 species. Of these, more than 350 species of 40,000 seedlings subsist in the field. NBCP has the distinction have the plants indigenous to the Nilgiri Biosphere Reserve of any other plant conservation area.

In recognition of this, NBCP has been awarded a grant under the BGCI Investing in Nature programme, a part of the National Plant Conservation Programme, an initiative to achieve one of the targets of the Global Strategy for Plant Conservation (GSPC), which aims to insure "60% of threatened plant species to be protected in accessible ex situ collections, preferably in the country of origin and 10% in recovery and restoration programmes."

As a result of the association with BGCI, the recently issued global strategy and the uniqueness of the collection, the Coimbatore zoo committee has taken a decision to inaugurate the NBCP project by developing a dedicated botanical garden right in the center point of the site. This quarter has been earmarked earlier as a small, conveniently located "site within the site" which could be developed first and opened to the public. With the large number of plants already on hand and the BGCI project, such a garden can be opened within the year. The Anaikatty Wildlife Garden was originally planned to include a small exhibit area for small mammals, reptiles, and amphibians. The concept document for this has been rewritten for a botanic focus first without having to change the basic plan. This part of the project is underway, with an eye to maintaining and expanding it in parallel to the development of the zoo enclosures, which depend so heavily on a very large amount of systematically managed vegetation.

The direction of this mega project thus emerged clearly, to begin with a botanic garden and get on with educating the public about the treasures in the Nilgiri Biosphere Reserve, simultaneously while preparing the more complicated animal exhibits. Thus emerged another, perhaps final, name : the Nilgiri Biosphere Botanic Garden and Conservation Park. The broad aims of the Nilgiri Biosphere Botanic Garden are to utilise the plant resources quickly



and effectively as a start-up project, capitalizing on the biome-specific garden, found nowhere else in India, and in very few places anywhere in the world. This module itself will be a nature and educational recreation spot with an environmental education programme with appropriate infrastructure and activities, and to utilize the facility as a means of introducing and interpreting the high complex conservation park consisting of animals as well as plants to the public.

Conservation education is not new to the staff of NCBP nor is botanic education. Collaborating with the local NGO Zoo Outreach Organisation, a long term associate of the Project, NCBP has organized training in Botanic Gardens education in 1995 with BGCI Education Director, Julia Willison, in Coimbatore, Bangalore and Trivandrum in southern India. ZOO and NCBP collaborate often with NCBP providing venue and local organization for ZOO programmes. Recently NCBP staff created a "Tiger Trail" at the zoo site especially for a "Teachers for Tigers" training workshop for Coimbatore school teachers organized by ZOO and the Wildlife Conservation Society. ZOO has also organized training in captive management of small animals, such as invertebrates and amphibians in collaboration with the Coimbatore zoo. The zoo staff also organise education programmes in the city as well as on site for special events, such as Wildlife Week, Environment Day and Animal Welfare Fortnightly.

Finally, the botanic garden and conservation centre can combine most elements of all the natural history institutions in keeping with David Hancocks' percipient comment. Zoos in India, largely due to some of the foresters and conservation-oriented bureaucrats of post-Independence India, have focused more attention on their native animals in large natural enclosures. It is for the first time in India, however, that there is a commitment to create a botanic garden of locally native plants exhibited naturalistically instead of a hodgepodge of varieties sharing space with topiary, formal lawns, musical fountains and marble statues. The objectives of this botanic garden and conservation centre being conservation, research and education of the surrounding flora and fauna exclusively, it will function as a dynamic interpretation centre of the Nilgiri Biosphere Reserve.

## Managing botanic gardens in India

The first training programme of the Investing in nature Programme – India was held at the G.B. Pant University, Pant Nagar, Uttaranchal, in February 2004. The focus of the workshop was on managing botanic gardens at high altitudes. Such gardens are considered of great importance in India, as the high altitude areas have a great wealth of biodiversity, but are under considerable conservation threats. The training course, which was attended by 25 participants from 18 botanic gardens, covered topics such as specially gardens and eco-tourism, conservation tool and research, technical management, interpretation and garden networking.

During the workshop a special lecture was delivered by Dr. P. Pushpangadan, Director, National Botanical Institute, Lucknow, speaking on the topic "Herbs for all, Health for all", Dr. Pushpangadan emphasized the vital role botanic gardens can play in promoting neglected crops. He stressed the need for good eco-education programmes and the use of traditional knowledge in developing products based on local biodiversity. Investing in Nature is a \$50 million, five-year environmental partnership funded by HSBC, working with BGCI, Earthwatch and WWF. For more information, visit [www.hsbc.com/investinginature](http://www.hsbc.com/investinginature)

Rare and endangered plants conserved in India Ten plant species are being rescued from extinction in the wild, thanks to action by the MS Swaminathan Research Foundation in Kerala, India. The species all play an important role in supporting local livelihoods, but have recently been over-harvested to the extent that they are now under severe threat in the wild. With support from BGCI, through the investing in nature programme, a sustainable management plan for the ten species has been developed and is now being implemented. The involvement of local communities is a key part of the plan, which also includes the *in situ* conservation and large scale multiplication of each species.

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