

Gene Pool Garden, Nadugani, Gudalur - A Conservation and Education Centre for Rare, Endangered and Threatened Species of Western Ghats

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The Gene Pool Garden at Nadugani, 12 km from Gudalur in Nilgiri district is a "dream come true" project conceived and implemented by the Tamil Nadu Forest Department under the Hill Area Development Programme. In the Gene Pool Garden the objective is to conserve the entire biodiversity complex of the Western and Eastern Ghats. It is steadily becoming a living reference point for all floral species of the southern tracts. Biodiversity includes totality of genes, which manifests as organism, species, population, and communities that ultimately go to form ecosystems, landscapes and ultimately the biosphere. After a gap of almost 12 years, I visited this place recently, and was amazed to see the assemblage of plant species. The organizational hierarchy seen in the living system, genes, populations, species, community and ecosystems are being dealt in a very scientific way in the Gene Pool Garden. It is a venture worthy of its name.



Genepool Garden, Nadugani

Gene Pool Garden An *Ex Situ* cum *In Situ* Conservation Centre For Plant Forms

Having been associated with the wildlife conservation centre Arignar Anna Zoological Park, Vandalur nearby Chennai, for some time, I was excited to see a plant conservation centre taking great shape though slowly but steadily in a remote corner of the state. The centre is yet to gain popularity and attention that is due to a plant conservation centre. The Gene Pool Garden is an *in situ* cum *ex situ* conservation centre where the native fauna of Nilgiris are being protected and conserved with reverence. Along with *in situ* conservation, the attempts to assemble over 2000 plant species from Western Ghats and Eastern Ghats in the last three years, is a tremendous scientific attempt.

The species available in Western Ghats under various families Leguminosae, Mimosaceae, Orchidaceae, Liliaceae, Zingiberaceae, Rutaceae, Lauraceae, Sapindaceae, Moraceae, Apocynaceae, Acanthaceae, Palmaceae, Cactaceae, Annonaceae, Solanaceae, Verbenaceae,

Euphorbiaceae, Meliaceae, Malvaceae, Anacardiaceae etc. have been carefully collected and assembled from the Anamalais, Nilgiris, Silent Valley, Wyanad and other areas of Tamil Nadu, Karnataka and Kerala. One hundred and fifty-five species of grasses have been assembled in one zone and the attempt made so far is very encouraging.



The Genepool Garden Team

Gene Pool Garden - An Education cum Ecotourism Centre

Like the botanical garden and zoological garden, the Gene Pool Garden should be placed not only on the conservation map of the country, but also on the national and international Ecotourism map. The centre offers immense scope for students from all over, to sharpen their knowledge about the plant kingdom. Undoubtedly, this centre has many constraints, yet it offers vital ecosystem services. This is the best centre for understanding of plant - animal associations. It is a paradise for naturalists, botanists and zoologists. The Gene Pool Garden is like a replica from the story of Noah's Ark, for innumerable plant forms of the South Indian tract.

The Forest Department over the years have assembled all the plants in zones and given names such as Polypetalae zone, Gamopetalae zone, Monochalamydae zone, RET (Rare, Endangered and Threatened) zones, Medicinal Plant zone, Wild Relation zone etc. The Arboretum zone, the Medicinal Plant zone, the Rare, Endangered and Threatened zone, the Shola species zone, the grass zone, canes, reeds and bamboo zone, Conifer zone and Palm zone are attempts worth appreciation. Very recently Xerophytic, Mesophytic and Hydrophytic zones have been created and species assembled.

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The Centre faces many continuous challenges. The small group of dedicated staff with one Assistant Conservator of Forests, one Range Officer, one Curator and a Lab Technician are continuously involved in management, protection, assemblage, identification of the species with some supportive temporary field staff. The Centre faces threat from encroachment, annual fires and other anthropogenic pressures.

The checklist of birds, butterflies and other life forms are under preparation. This centre is also the home of large and small mammals. The museum has some good collection of insects.



Zone Map



Problem of encroachment

The scope of enlarging the gamut of conservation activities is large, which is mainly dependant on more fund flow in the future. With the assistance from Hill Area Development Programme this centre has created the needed infrastructure like the Fern House, Orchidarium, Tissue Culture Laboratory, Library, Auditorium and mini Museum. Infrastructure like roads and signages have also been developed. There is undoubtedly a long way to go, but a good beginning has been made in the area of Rare, Endangered and Threatened and wild relative plant conservation.

Animal Life Forms In The Gene Pool Garden

The Gene Pool Garden is presently the home of myriad insects. There is so much activity all through the day and night. I have never seen such moths and coleopterans before.



The RET Zone

The Gene Pool Garden is an attempt to check floral and faunal declines. The area is presently free from pollution. Except for the activities of illegal encroachment around the Gene Pool Garden, the threat is minimal. This site is also an ideal place to plan for many reintroduction trials of Rare, Endangered and Threatened species. The plant species assemblage and multiplication programmes are continuous efforts. The introduction of species from Eastern Ghats in a small zone is also a good venture. The Gene Pool Garden is a centre to study the effects of fragmentation and habitat loss. It is time that the area of Gene Pool Garden is increased, so that a viable corridor for plant and animal dispersal, mobility and colonization is brought into action. Biogeographically and ecologically the location of Gene Pool Garden is significant.



The ACF In-charge of Genepool Garden with CF in the mist chamber.

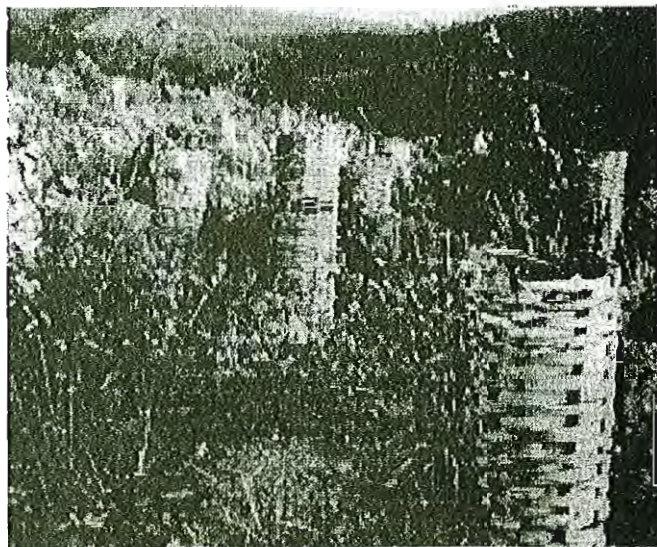
Objectives of The Gene Pool Garden

The Western Ghats region consists of 6000 species of

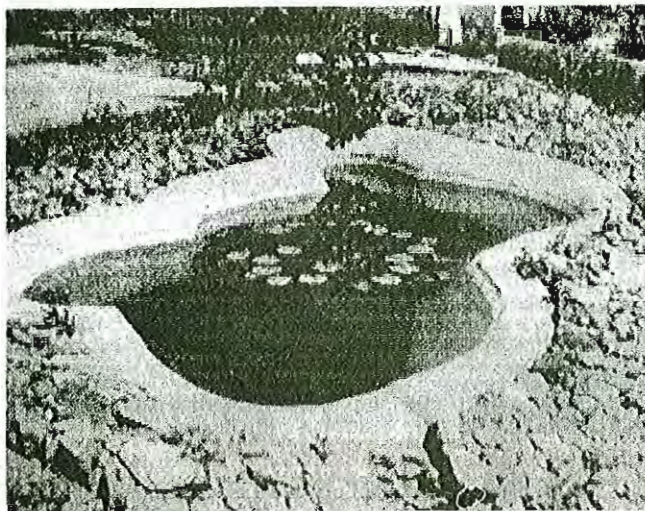
Different "Zones" in the Gene Pool Garden



Grass Zone



Timberatum Zone



Hydrophyte Zone



Bamboo & Canes Zones



In situ Conservation Zone



Medicinal Plants Zone

flowering and non flowering plants. Out of this around 1045 are considered to be endemic to this region. The Gene Pool Garden will very soon complete the collection and assemblage of all these plants.

The four objectives of the Gene Pool Garden are

- ◆ *In situ* conservation.
- ◆ *Ex situ* conservation of endemic and endangered plant forms.
- ◆ Reintroduction and recovery programme of endangered species.
- ◆ Propagation of fast disappearing plant species.
- ◆ Education and research and awareness.

Education and research are the areas which need continuous support. The research scholars and educational institutions and other scientific organizations are yet to make full use of this facility.

Infrastructure for Conservation

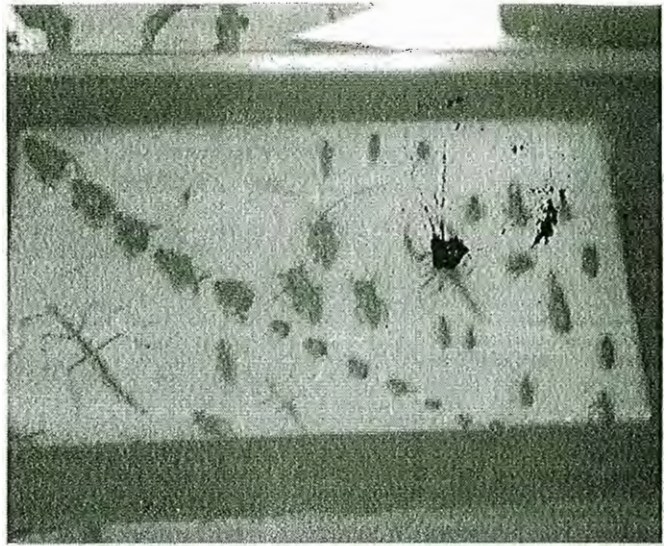
Today the Fern House, the Green House, and Orchidarium are full of activities. Over 100 species of ferns have been collected. The herbarium is rich and specimen have been scientifically collected and catalogued. The existing tissue culture laboratory can be put to good use by institutes interested in micro propagation of Rare, Endangered and Threatened species.

The Gene Pool Garden Needs Support

It is just not a centre for botanical study, but also a centre for study of plant-animal associations. I wish all the CAMP (Conservation Assessment and Management Plan) workshops on plant threat assessment be held in such a place. I wonder why the Centre has not been put to full use. Those associated and interested in nature should not miss this great study site. There is no accommodation available now. One has to stay at Gudalur (or) Nadugani and visit the Gene Pool Garden which anyway is only a short drive from Gudalur.

This place requires more pooling of experience and expertise to plan for rescue programmes of threatened habitats and taxa. Since the centre aims at assemblage of species in taxonomic priority, it should get the highest financial support as the conservation efforts taken here are matched as nowhere else in the country. This could well become a Kew Garden if it gets required support. This centre could also be an information cum education centre for politicians, planners, land owners, researchers, farmers and general public. The school children, parents and teachers should make efforts to visit this centre. Biology, particularly Botany can become an easy subject for students if they frequently visit this centre. Educational tours of students should, without fail cover this centre.

A massive decline of all plant forms has taken place all over in the Western Ghats. Only species-specific conservation measures can put an end to this decline. This place aims to monitor the performance of all endangered species. This centre needs the support of all involved in nature conservation activities.



The insect exhibits are appealing



The rock collections are interesting



Acknowledgements

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Nature treks

Captive Elephant Management Workshop

The Elephant Welfare Association (EWA) is happy to inform you that they have associated with RSPCA, London to hold a workshop on Captive Elephant Management at Trichur city, Kerala, the southern coastal State of India.

The summary of the conference is given below and more details shall follow. Also please let us have more addresses of other interest groups. This will enable us to reach out to other professionals.

Dates: October 25, 26, 27 & 28th of 2002.

28th will be a field visit to an elephant stable in temple with 60 elephants and a Christian church festival with more than 40 elephants.

Place of workshop: TRICHUR (Thrissur), Kerala, India - easily connected by air and rail.

Registration: includes lunch and two coffee/tea sessions each day.

1. US\$ 150/- (for western participants)
2. US\$ 40/- (for participants from range countries)

Topics include : Reproduction, Diseases, Behaviour, Musth, Physiology, Nutrition, Training, Tranquillization and Work.

Articles: Abstracts due by 15th September and Articles by 08 October 2002. Send to :

Dr. Jacob V. Cheeran
135, Nehru Nagar
Trichur - 680 006 Kerala, India

Tel: 91 - 487 - 252647, 352843, 421518
Fax: 91 - 487 - 421508, Mobile: 98460 30518
email <workshop@vethealth.net>

The 1st International Congress on Zookeeping

Vogelpark Avifauna, Netherlands,
4th - 8th October 2003.

Call for Papers

The organisers of this landmark meeting invite submission of abstracts on all aspects of zoos and zookeeping. The conference programme will include oral and poster presentations, video sessions and workshops.

The conference language will be English.

Abstracts for oral and poster presentations should be written in English and no more than 600 words long.

Short descriptions of 5-minute video presentations on enrichment, enclosure design, husbandry techniques and specific collections are welcomed.

These should be sent to:

Andrew Bagnall,
ICZ Programme,
Chester Zoo, Caughall Road,
Upton-by Chester, Chester
CH2 1LH, United Kingdom

Or e-mailed in RTF or MS word format marked 'ICZ Programme' to: a.bagnall@chesterzoo.co.uk

Deadline for submissions is 30th September 2002

For specific programme enquiries contact
a.bagnall@chesterzoo.co.uk

Editor's Note : We have heard that there will be some sponsorship for candidates from developing countries.