



# Auroville Outreach

A newsletter from Auroville international township

January 2002

## Minister dedicates solar bowl collector

After a long delay between initial commissioning and ironing out of the last technical hitches, finally the huge 15m diameter solar bowl concentrator on the roof of Auroville's Solar Kitchen, one of the largest of its type in the world (first written up in the July 2000 issue), was dedicated in September 2001. The ceremony, conducted by Shri M.Kannappan, Hon'ble Minister of State for Non-conventional Energy Sources (MNES), Govt of India, was attended by Dr E.V.R. Shastry, Adviser, MNES; a number of other dignitaries; and members of the

Indian Press, various technical contributors, friends of Auroville and Aurovilians. (Shri N.Ramachandran, Hon'ble Minister of State for Finance, Govt of India, had accepted to preside over the function, but had to cancel at short notice because of an urgent need for his presence elsewhere.)

After a brief visit to the bowl and other solar installations on the roof of the Kitchen, the VIPs sat for a welcoming address by Mr. Bala Baskar, Secretary, Auroville Foundation (standing in for Shri Kireet Joshi, the Foundation's Chairman), then heard a technical presentation by Aurovillian Gilles Guigan, Principal Project Investigator, followed by a speech by

Auroville is an international township in Tamil Nadu, South India, founded in 1968.

Inspired by the vision of Sri Aurobindo and The Mother, over 1,600 people from India and some 30-35 other nations are building a township dedicated to an experiment in human unity, with the eventual hope of contributing to international understanding and the evolution of human consciousness. Nearly 5,000 of the 40,000-plus local people living in the dozen-or-more villages that comprise the Auroville bio-region are also involved in the project, providing their skills and labour.

The township, projected for 50,000 people, will radiate out from the central Matrimandir and its surrounding gardens in 4 zones, the International, Cultural, Residential and Industrial. A large forested area, the Green Belt, will eventually surround the entire township area.

Present activities in Auroville include wasteland reclamation and reforestation, organic farming, village development, education, health care, renewable energy, appropriate building technology, arts and culture, handicrafts and small-scale industries, architecture and town planning.

As described by its founder, Auroville aspires to be "a universal town where men and women of all countries are able to live in peace and progressive harmony, above all creeds, all politics and all nationalities."

For more general information visit the website: [www.auroville.org](http://www.auroville.org)



*Shri M.Kannappan, Hon'ble Minister of State for Non-conventional Energy Sources, Govt of India, seated second left.*

Dr. Shastry in which he reviewed the growth of non-conventional energy sources in India and welcomed the initiative of Auroville in developing the bowl concentrator. His speech was followed by an address by Shri Kannappan in which he congratulated Auroville, and particularly its Centre for Scientific Research (CSR), on the achievement of setting up the solar bowl. He also highlighted Auroville's other work in the field of renewable energy usage, noting specially that Auroville has the highest concentration of photovoltaic systems in India providing power for residences, farms and commercial units, as well as for the Matrimandir.

The last speaker was Tency Baetens of CSR, who thanked MNES for their sponsorship and the Minister and other dignitaries for their attending the dedication, specially noting everyone's happiness that the Minister himself hailed from Tamil Nadu!, and also thanked all those who had contributed to the project by way of technical advice or their work, including people like Dr C.L. Gupta from the Sri Aurobindo Ashram, the late Dr Sylvie Rousseau, Aurovilians Gilles Guigan, John Harper, Suhasini Ayer and many others.

Finally, after a visit to the Matrimandir, the dignitaries enjoyed a lunch at the Solar Kitchen, appropriately cooked using steam produced partly by the solar bowl (local cloud cover having prevented exclusive use of the bowl).

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## Auroville Horse Tournament 2001

The Auroville Horse Tournament 2001 or AHT 2001, was organized by Auroville's Red Earth Riding School (RERS), located in Kottakarai, and took place between

Aug 31st and Sept 2nd last year.

RERS, which has 15 horses, provides daily riding classes in dressage and jumping at different levels to anyone who loves horses and wants to learn riding or participate in competitions. The Aurovilian couple who run the school, Eric and Katelijne, came a few years ago to Auroville from a background of horse breeding and show jumping in



Belgium.

The overall organization of AHT 2001 was in the hands of the South India Equestrian Association, of which RERS is a member. RERS had requested some months earlier that the next tournament be held in Auroville, and the response was overwhelming. For the first time ever, all the existing riding clubs of South India, without exception, were present at the event (for complete list see end of article). Yearly, 4-5 tournaments normally take place, usually in either Madras or Bangalore, sometimes in Hyderabad. Since there were no complaints and all participants liked the tournament in Auroville very much, it is possible that there will be another AHT here in 2002.

The event was very well organized, as Katelijne and Eric had the needed

experience from their horse tournaments in Belgium. It began on Friday afternoon, Aug 31st, with dressage tests and lasted until Sunday evening, Sept 2nd. Katelijne and Eric had never expected so many horses and participants to come to Auroville. Overall, 350 entries were registered for dressage and show jumping in 4 age-groups: children (aged 6-11), youth (aged 12-16), juniors (aged

17-21) and seniors (over 21 years). The youngest participant was Ayasha aged 6 years, and the oldest Frederik at 62 years. Both received a special 'age-allowance'!

The Aurovilians formed a good team, especially the Auroville youth, who did a fine job in preparing breakfast and catering for lunch and the buffet. Overall, 40-50 Aurovilians were directly involved in the event as participants or organisers. Some Auroville units gave their products as donations to be sold, to help finance the tournament, while at the same time promoting them. For example, 'Gekko' sold hats and shirts and toys, Ganesh Bakery sold snacks and cool drinks, 'Colours of Nature' sold T-shirts dyed with natural colours from plants, and a big box of incense was donated for sale. Many other donations were received by



sponsoring companies, mainly from Pondicherry and Madras. In total, 78 beautiful South Indian horses of different breeds shared the ground for 3-4 days using temporary stables, 3 riding arenas and 2 warm-up lawns. The dressage arena measured 60 x 20 metres (the international size). Jumping heights were 60 cms for children and juniors, and 1.20 metres for adults. The jumping parcours built by the judges was tough. Two judges were well known dressage gold medal winners in South Asian horse tournaments. Two horse vets were present: the race course vet from Madras who is an old friend of Auroville, and a vet from Hyderabad.

Early morning at 6:30 am the dressage competitions started, and the atmosphere was quiet and concentrated with few spectators. This was in contrast to the afternoon jumping event, which was a real spectacle. Sunday afternoon saw a huge crowd, many from the surrounding villages, who were experiencing such an event for the first time. There were probably around one thousand people watching the afternoon jumping competitions. Luckily most horses were used to the noise, the clapping, shouting, and loudspeaker announcements, but some got a little nervous and difficult to handle. Overall it was an impressive show, and credit goes to Red Earth Riding School for organizing the event!

#### **List of participating riding clubs:**

Chennai Equestrian Academy; Madras Riding School; Bangalore Amateur Riding Institute; Embassy International Riding School, Bangalore; Equestrian Centre for Excellence, Bangalore; Princess Equestrian Academy, Bangalore; Mysore Mounted Police; National Police Academy, Hyderabad; Lawrence School, Lawdale, Ooty; and Red Earth Riding School, Auroville.

## **Manfred: researcher par excellence**

In keeping with the fourth point of Auroville's Charter, which establishes the township as a site of "material (and spiritual) researches", some remarkable pure research on the material plane is being carried out here by one of its residents, Manfred Lehnert (below), who hails from Germany.



Manfred, who joined Auroville in 1993, has a Physical Engineering Diploma plus decades of practical experience in the design of engine components and other engineering projects, cryogenics (working with liquid helium), vacuum technology, silencers for cars and motorcycles, reactors/catalysers for cars, water heating systems, welding and soldering techniques and anti-corrosion systems. Now he is actively working in Auroville on four projects.

#### **Solar sea water desalination**

Today Auroville's potable water sources are on the verge of becoming

affected in the coastal zones by intrusion of sea water. Manfred's research aims at obtaining drinking water from polluted or saline water by solar distillation. The use of two inexhaustible sources of water and energy - the sea and the sun - is well known, and has been applied since 150 years in, for instance, Chile. The design is simple: a glass house covering a basin with sea water. The sun heats up the water, which then evaporates and condenses against the inside of the cooler glass roof, finally trickling into a distiller catchment channel.

As at today, three prototypes have been installed in the Petite Ferme settlement, occupying altogether 6 sqm. The first results are encouraging. Every square metre can give 3-5 litres distilled water daily, which can be used for batteries and in specialised production projects (see item 2 below). The Auroville beach area would be ideal for installing a bigger solar sea water desalination plant, involving an area of 100, 200 or even 500 sqm. For example, 100 sqm could yield 150,000 litres of distilled water annually on top of the 150-200,000 litres of rain which would, anyway, normally fall on that area. But before building such a big plant further research is needed.

#### **Biodegradable soaps & cleaners**

Manfred's biodegradable liquid and solid soaps and cleaners are made from plant oils - such as palm, coconut or pongam oil - and natural essences using distilled water, and can replace the harmful chemical washing powders generally available on the market.



*Prototype test rig for solar distillation*

These natural soaps clean just as effectively, but keep the environment healthy. They contain no synthetic detergents, chlorine-based bleaching powder, enzymes or other chemicals, and the living organisms existing in waste water treatment plants are not affected by them.

Manfred now produces natural liquid soap and a multi-purpose cleaner (see photo) for floors, toilets, wash basins, etc, all available in Auroville's Pour Tous outlet. Other soaps are also under development, including a liquid hand soap.

### **Plant oil as a substitute for harmful diesel oil**

Manfred has been experimenting with cultivation of the 'Pongamia pinnata' tree, whose pods give a plant oil known as "kuringee", "pongam" or "honge" oil, which on filtration can directly substitute for diesel in diesel engines. Some of these experiments have been conducted in engines run by Prof.U.Srinivasa of SUTRA project at the Indian Institute of Science in Bangalore, with whom Manfred is in regular contact. Experiments in such substitutes and blending have been going on throughout the world since the 1940s, but are only now finally drawing serious attention.

Manfred's project aims at promoting the production and application of a renewable bio-degradable plant oil from the indigenous Pongamia pinnata tree to replace the harmful, non-renewable fossil diesel oil at a reasonable cost. Use of this alternative could reduce CO<sub>2</sub> emission (responsible for global warming) and air pollution (it contains no sulfur and creates less particles such as soot). This plant oil is bio-degradable, and therefore presents no danger to soil or water through leakages during transport, storage, etc. It can also become a substitute for chemical fertilisers when



the oil-cake is used as organic fertiliser. Sale of the oil cakes could help reduce the oil price.

The oil is a renewable source of energy which can be used without sophisticated technical preparation, because the tree can be grown locally on wasteland, along roads and as fencing, as well as in plantations. It needs little financial input, makes use of local oil processing capabilities, and meanwhile can generate employment for the rural population. Moreover, it is expected to provide a possible solution for the expected exhaustion of mineral oil at some future point.

The project, which is supported by Stichting De Zaaier, a Dutch foundation, would include the planting and cultivation of the oil bearing trees in Auroville, as well as the oil processing and the distribution of the bio-fuel within the township and its environs. Additionally, the monitoring of the converted engines, and possibly the measuring of the exhaust gases, would be undertaken.

### **Low-cost light roofing**

The aim of Manfred's 4th project is to develop lightweight, low-cost 'fibre

reinforced concrete' (FRC) roofing tiles as an alternative to normal roof tiles, and specially to potentially poisonous asbestos products. If successful these should give the following advantages:

- no need for sophisticated technology, therefore initial investment is low.
- low energy consumption for production.
- light weight of the roofing material means its supporting structure can be cheaper.
- use of locally available plant fibres instead of costly steel.
- small scale fabrication for local use can generate employment for unskilled labourers.
- climatically advantageous, because the very thin tiles don't store the heat, therefore rooms cool down fast in the evenings.
- possibility of using colour pigments to create greater variety of materials (lighter shades would reflect the heat better).

Tests on the first 45 x 45 cm roofing tile samples have been encouraging.

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