

# AUROVILLE TODAY

Number 117, October 1998

## Perspectives upon research

Auroville has been synonymous with research from its very inception. In 1967, for example, Mother commented, "I want to insist that this will be an experiment, it is for making experiments - experiments, researches, studies". Later on she was more specific. "Auroville will be a site of material and spiritual researches for a living embodiment of an actual human unity."

While research in Auroville can include just about everything, Mother wanted it to have a specific orientation - to be geared towards "a living embodiment of an actual human unity". What does this mean? How much of the research presently happening in Auroville fulfils this criterion? Indeed, how much of what Aurovilians term 'research' fulfils even the traditional criteria? For the spontaneous learning process only becomes research when specific questions are addressed, and when the whole cycle of enquiry - experience, reflection, abstraction and the testing of conclusions - is recorded for future reference and communication to others as part of a 'systematic investigation towards increasing the sum of knowledge'. As a community we've never been particularly good at documenting and evaluating the Auroville experience, and there remains in some quarters a strong resistance to anything too "intellectual".

And yet...even the most casual encounter with Auroville is enough to demonstrate how much is going on here, not only in terms of material initiatives and experimentation, but also in the many ways that individuals are confronted by and choose to challenge personal limits. And it is, perhaps, in this sense that Auroville is most truly a laboratory of evolution, with the optimum conditions for carrying out the research programme which Mother laid down for each of us: "The first thing needed is the inner discovery..."



The solar bowl - a dish for cooking dishes

## A much 'esteamed' project

### Gilles on the Solar Bowl

With the exception of the Matrimandir, the Solar Bowl project at the new collective kitchen is probably the most technically challenging project that Auroville has ever undertaken. The aim of the project, sponsored by India's Ministry for Non-Conventional Energy Sources, is to produce steam from solar power for cooking over 2,000 meals a day by employing a technology which is replicable elsewhere in the developing world. How far has the project progressed? What challenges have the project team encountered? And what light does their experience throw upon the meaning of research in Auroville?

"We've had a lot of help from people outside Auroville, but some things we've had to work out for ourselves," says Gilles Guigan, project-holder for both the Solar Kitchen and the Solar Bowl. He and his team were not starting from scratch. In 1967, the Sri Aurobindo Ashram pioneered in India the cooking of large quantities of food using steam. Then, in the

early 1980's, three fixed hemispherical concentrators (or solar bowls) were constructed in different parts of the world: one in the US, one in France and a small one in Auroville built by John Harper. "The French project was the most relevant for us," says Gilles, "as they were using the energy of the sun to produce 'process heat' which is what we need to cook food. Professor Authier, from the French team, visited Auroville to look at John's design and has remained in touch with us ever since."

The Auroville system, in simple terms, consists of a solar bowl which focuses the rays of the sun on to a "receiver" which is always oriented, via a tracking system, to the sun. Thermic fluid is pumped through the receiver where it gets heated up. This fluid then passes into a heat exchanger/heat storage tank where water is converted into steam. The steam is then piped into the kitchen to be used for cooking and sterilising cooking vessels.

The French team have helped a lot in developing the Auroville Solar Bowl. The design of the receiver and the size of the bowl are based upon computer programmes provided by the French, and the choice of a special thermic fluid for transferring the heat is

based upon the advice of Professor Authier. "However, in other ways our design is original," says Gilles. "For example, the American and French designs used a steel construction for the bowl and curved mirrors to focus the rays of the sun."

This is expensive and, since replicability in the developing world is one of our main criteria, we opted for a low-tech design. Our bowl is constructed of prefabricated ferro-cement elements,

onto which we glue almost 10,500 flat mirrors which are cut from ordinary mirror glass." Original designs throw up original problems. The Solar Bowl team had to

work out for itself how to ensure a perfectly regular masonry surface for the sphere, the optimum size and shape for the mirrors and how to prevent the silver backing of the mirrors from corroding. They also constructed an ingenious device, employing a laser beam, for ensuring that the mirrors were accurately aligned.

In other ways, the Solar Bowl team has been able to draw upon valuable experience already gained in Auroville. For example, the

"Basically it should be a city for study, for study and research into a way of life which is both simplified and in which the higher qualities will have more time to develop."

The Mother (30.12.67)

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computerised tracking device necessary to keep the receiver aligned to the sun will be an adaptation of the heliostat developed for Matrimandir.

Most of the design challenges have now been solved. One of those remaining ones concerns the pump which pumps the thermic fluid between the receiver and the heat storage tank. "We have to find a way," says Gilles, "to pump the fluid at different speeds, depending upon how fast it is heating up. But I'm confident that Vladimir at Matrimandir can solve this one."

"I would never have taken up this project if it had not been for the needs of the Solar Kitchen," Gilles continues. "Originally Sylvie Rousseau, our solar scientist, was going to do the scientific side while the rest of us were just going to look after the nuts and bolts. But two weeks before I had to submit the project to the Ministry of Non-Conventional Energy Sources for funding, Sylvie had to return to France due to health reasons and we realised she wouldn't be part of the in-situ team—although she has continued to assist the project from abroad. What was I to do? It was then that I was put in front of the question: Who is doing this project? Me or a higher force? I realized that I was nothing at all in this, that I was just being asked to be a channel for something to be done through me. At the same time I knew, because of John Harper's previous experiment and the continued interest of people like Joel, that this project had been in Auroville's atmosphere for a long time. So I went ahead."

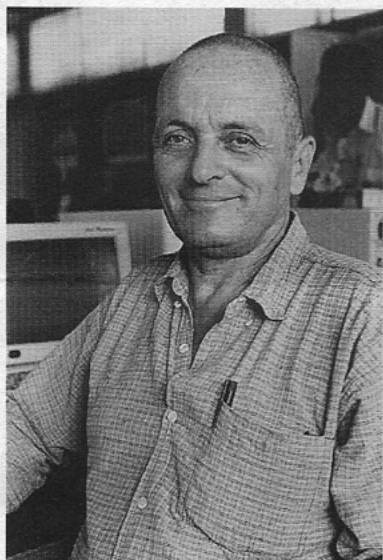
In this context there's a very important statement by Mother. She said that 'what people do not know about Auroville is that there is a pressure from the Invisible. When men make projects they are often unsuccessful because it was not the right thing to do. When their projects are accepted (by the Invisible) they get realized as the Higher Will decides. But when the Higher Will itself chooses, decided, then the thing HAS to succeed. It may seem to falter, but it is certain to succeed.' She also said that the city 'will be built by what is invisible to you. The men who have to act as instruments will do so despite themselves. They are only puppets in the hands of larger Forces. Nothing depends on human beings—neither the planning nor the execution—nothing! That is why one can laugh.'

"This gives a completely different orientation to research in Auroville", says Gilles. "For when I want to do a project my only concern is whether or not the Supreme Will is behind it, not whether I can 'do' it or not. And this is something I think we can all discover."

Gilles notes that this also means we can't plan the development of Auroville mentally. "It doesn't work like that. It's more like a need arises, the right person comes, things fall into place—these are all clues that something else is behind it. At the same time, it does seem that certain fields of research are built into the programme of Auroville. For example, since Mother said that Auroville would be the cradle of a new man and a new society, it's clear we have to work upon ourselves—by quietening our minds and developing our intuition, for example—while evolving new forms of decision-making, government, economy for this new society. Mother also gave us a very specific research programme when she wrote, 'Basically it should be a city for study, for study and research into a way of life which is both simplified and in which the higher qualities will have more time to develop.'

Ultimately," Gilles concludes, "I think any kind of research can take place in Auroville if it's necessary for one's own or for Auroville's development. In Auroville individuals often take up something out of an inner need, whether they are conscious of it or not. And if they need to do something for their progress, they have to be given that opportunity."

From an interview with Alan



Gilles

## 'TRUTH WILL GROW UP WHILE WISE MEN TALK AND SLEEP'

**Auroville is a new creation willed by the Divine.**

*What we search and create is what we must become, in order to advance the Consciousness. We are the bridge between the two apparently contradictory poles – of matter and spirit – that seek to unify in us and our lives, by means of the consciousness.*

*In the case of the Mother and Sri Aurobindo, the field of research was Consciousness, through the medium of life. The results it produced have allowed us the privilege of an extraordinary life-experience called Auroville. To build Auroville is to build human unity, but through a change in consciousness.*

*The Mother offered us a programme: Research through experience of the Supreme Truth. Elsewhere she even explained how this could work:*

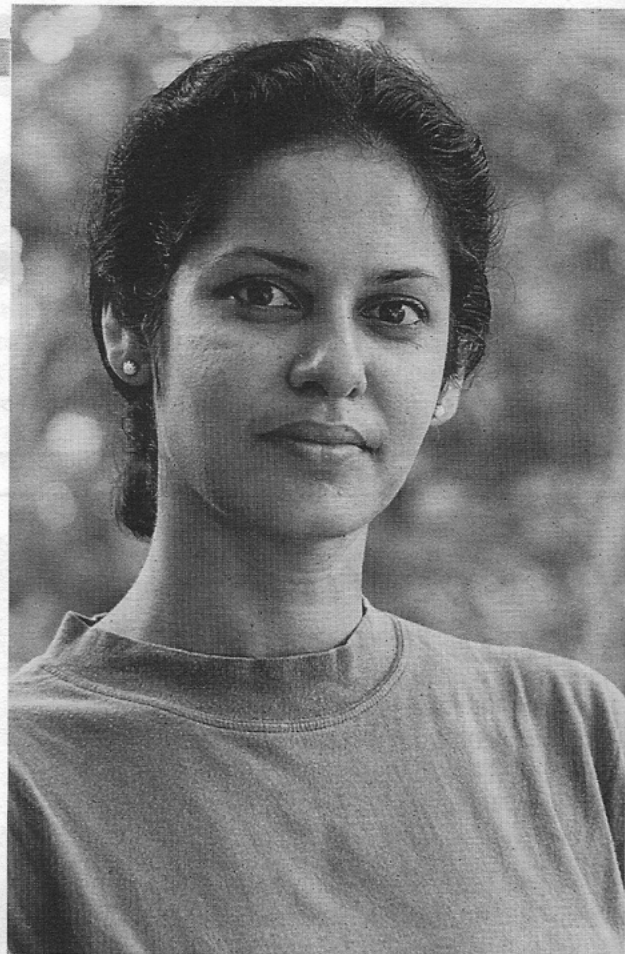
*"In modern civilisation, men work on the surface. The mind is the surface of existence; they work on the surface and try to find the Truth that is behind by studying more and more deeply. Whereas the True method is to enter into direct contact with the inner truth, and impelled by that, guided by that, to make an outer construction which is not a seeking for the Truth, but a creation of the Truth, that is to say, the Truth force realises itself through the human instrument."*

*This changes the picture of research in Auroville. Is it possible then to continue calling development projects research? Is it possible to continue defining academic study and documentation as pure research? Documenting other documentation may only become valuable as waste paper unless it can create conditions for unity. Such research was motivated by the concepts of the 20<sup>th</sup> century. A Research & Development century. But the future, for Auroville at least, must move towards Research & Consciousness. It is up to us not to turn an extraordinary vision, meant to transform every aspect of life, into something quite ordinary.*

*Research also implies verifying knowledge from the past, where the truth left its traces. But the Supreme Truth, as we know, is not something indefinitely stuck in the past. It is something always in motion, re-creating itself through fresh manifestations.*

*The past is relevant for Auroville only as far as it can serve as a catalyst for the future. The past cannot do more than what it has already done for us. Tradition by itself cannot create, because its work is preservation, not change. When the priests arrive, the vast glory of our memory fades. Sri Aurobindo could see how that memory had faded, in the case of the Vedas. His research was to restore its original light, because of its value for the future of humanity. Let us look for a moment at his own method of research, as described in the introduction to the Brihadaranyaka Upanishad:*

*"To listen in the soul to the old voices and allow the Shruti in the soul to respond, to vibrate, first obscurely, in answer to the Vedantic hymn of knowledge, to give the response*



Anu

*the echo and last, to let the response gain in clarity, intensity and fullness – this is the principle of interpretation that I have followed – mystical perhaps, but not necessarily more unsound than the insistences and equally personal standards of the logician and scholar."*

*Sri Aurobindo's interpretations recreate the rishi, not as a priest or a codifier, but as a creator - one who builds with the Truth. He described the Veda as a book of Works. The work was to traverse human limitation and division, by creating a conscious method of self-perfection. The aim was to arrive at unity.*

*In the past, the rishis usually attempted this alone. In Auroville we are invited to realise this experience collectively, in newer, more direct ways, along with the means of manifestation. Only now, as the Mother said, new conditions in the earth consciousness will allow it.*

*The push for the future must surely imply something different from our present myopia with research and development. Even language has advanced its horizons. New buildings to house new institutions would be an unfortunate waste, both in terms of motivation and resources. However, the question remains: how to work with the interface of the world, because that is also necessary. Intuition, perhaps, is the most reliable method.*

*Research is allowing the future to push us.*

*A universal town can only be created by universal human beings.*

*Auroville is not only a laboratory, it is a living theatre of the transformation. Even if we don't know it, to become willing servitors of the divine consciousness is the active process of our research here.*

*That is why one can laugh.*

Anu

*"For millennia, we have developed outer means, outer instruments, outer techniques of life—and eventually these means and these techniques are crushing us. The sign of the new humanity is a reversal of perspective and the understanding that the inner means, the inner knowledge and the inner technique can change the world and master it without crushing it.*

*Auroville is the place where this new way of life is being worked out; it is a centre of accelerated evolution where Man has to start changing his world by the power of the inner spirit."*

The Mother (3.8.68)

## Road making research

Road signs with fluorescent arrows and letters and lights and strips of coloured paper warned the road user in the middle of June that a stretch of the road between Certitude and the Solar Kitchen, opposite the eucalyptus grove, was under construction. It all looked pretty professional, on a scale not witnessed before in Auroville. And professional it was, for Auro-Satprem and Sukrit were experimenting with a new road surface on one of the most travelled roads in Auroville. The experiment involved making a road surface with a mixture of soil, sand and some cement (3-5%). Different ways of applying and ramming the earth mixture, varying from manual applications to motorised mixing and rolling, were used. The re-

sults, so far, are positive, though the costs exceed those of a simple tar road.

The test-piece, a stretch of 30 meters long and 5 meters wide with shoulders and drainage on both sides and a (highly unpopular!) speed breaker in the middle, cost a total of Rs 48,500 (approximately US \$ 1150) or Rs 250 per sqm against Rs 61 per sqm. for the simple tar road which was recently made in the neighbouring village of Kuilapalayam. It requires less energy (only 75 bags of cement were used) but more labour than the tar road. However, the soil-cement road is expected to be more durable and thus more cost efficient in the long run.

Tineke



# A living laboratory

From ferro-cement to industrial waste disposal: Steve on his various research projects

**S**teve Senesac came to Auroville from the US in 1987 with a background in physics and electrical engineering. Initially he was involved in building construction and then architecture (see AVToday No.35) but in the last 5 years he has taken up a number of research projects.

Here he talks about some of them.

The most straightforward classical research I have done in Auroville was research on ferro-cement. This involved first testing ferro-cement roof channels made at CSR and Matrimandir to find out what their load-bearing capacity was and their mode of failure (there were lots of theories at the time). Then a hypothesis was created about how to improve them. This was then tested and refined until finally an optimum design emerged. The results of the research were surprising. For example, it turned out that the two main factors contributing to the basic structural strength of a channel are the size of the bottom steel and the height of the channel, and that the amount of mesh and number of stirrups are much less important.

## An earthquake-resistant design

In a later design, which doubled the span and live load of previous channels at no extra cost per metre, most of the mesh and all the stirrups were eliminated. Even more surprising, the results of two dynamic tests indicate that this design may be quite earthquake-resistant as well. Subsequently a number of papers were presented on this research—which included a set of design tables and a simple but accurate calculation procedure. The last paper published was the proof-testing of the Solar Kitchen roof, which at ten metres is the longest span ferro-cement channel in India, with a load-carrying capacity of 350 kgs. per square metre.

Another project was to design a music studio/auditorium. Here the research involved discovering how to sound-proof an auditorium from the generator and air conditioner, while ensuring a uniform sound inside. This is standard stuff. But I also wanted to be able to 'tune' the auditorium—to create different ambiances for different situations—by hanging resonators in the roof and changing their orientation to suit a particular performance. Unfortunately, this project got killed by internal politics before it got much beyond foundations. My next project also got only half way. This involved converting drawings and paintings into music—I worked with Pierre Legrand and Holger on this—but this got stalled when we failed to get the computer programme to talk reliably to the sound card.

Then came the Auroville CD-ROM project. Here we started with a vision of what we wanted to accomplish—which, basically, was to display information about Auroville as densely and completely as possible while com-

municating something of the magic and serendipity of this place. We took some shots in the dark to see what would work best. I think our first attempt captures the magic part but still doesn't enable the user to access all the original source material. We plan to improve and expand on this in subsequent releases. Holger, Manoj and Akash deserve the lion's share of credit for this work—my role was mainly that of producer.

At the same time I was working on the CD-

implementing a new economic system. Our Auroville organization also has the possibility to be an entirely new system, but at the moment it is more often characterized as our Auroville disorganization. If we were working together more effectively in education we would probably have a pretty unique approach—four or five different school systems running side by side, each emphasizing a particular set of needs. If the people involved (parents and teachers) could better appreciate the different approaches more and learn to work together coherently, Auroville would have a very powerful model.

In looking at our bioregional activities, however, I found that quite a lot had already been done, and the people involved seemed, on the whole, more open to working with each

uniqueness and diversity of Auroville. We have a much wider scope than the average Non-Governmental Organization.

## Tackling industrial waste

In looking at our bioregional activities, there are some gaps. For example, until recently there was no capacity for dealing with industrial waste and pollution. But now Tom from Water Harvest and I have developed a working relationship with one of the biggest industrial water users—a textile mill—in Pondicherry, and we are evolving a number of ways of solving their industrial waste problem. At least two of our possible solutions are, I think, world class. One, which promises a big cost saving, requires further research. The other, which involves burning the waste at a very high temperature in a gasifier, is almost certain to work: we hope soon to do a full-scale test at the Indian Institute of Science in Bangalore to verify this. The advantages of this solution are that it is relatively low-cost, the emissions easily exceed stringent US air quality standards, there is a possibility of reclaiming valuable components of the waste, the ash can be made into cement blocks and safely handled, and the process of burning the waste can be utilized to generate electricity or process heat. Using very conservative figures, we believe that this solution can pay for itself within ten years.

Besides the obvious, what makes this so interesting is that the Madras High Court, in trying to rigorously enforce environmental regulations, has threatened to close down up to 1,000 textile mills, employing one million people. Thus we would not only be helping the environment but the employment situation as well.

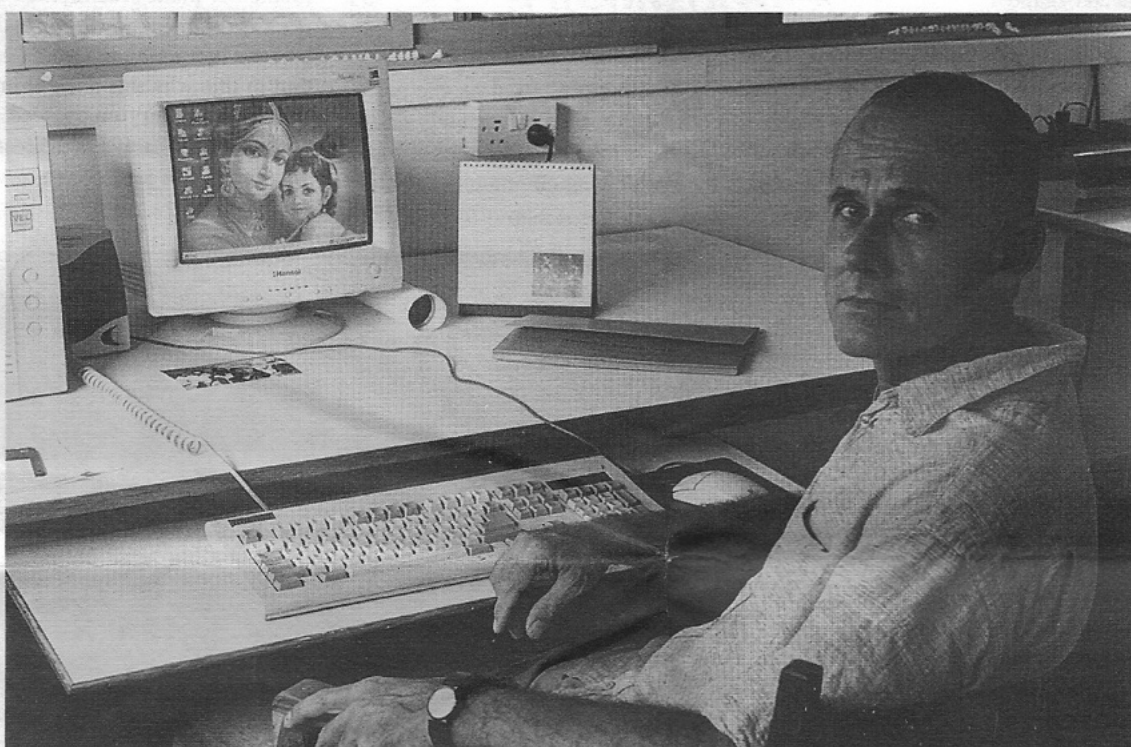
## An example of integrated planning

We're also writing a proposal, in conjunction with IISC (ASTRA), to make a village self-sufficient in energy using biomass. Again, this is an example of integrated planning because we'd like to use the energy from biogas plants and wood gasifiers for small-scale village industries based around indigenous plant and forest products. We hope to do this in such a way as to economically justify converting casuarina plantations into areas of indigenous forest, as well as facilitating more sustainable agricultural cropping patterns.

However, there's a whole other level to all these projects which is even more interesting, because what we really want to do in Auroville is research in human unity, and all these projects give us an incredible opportunity to practice this, a 'living laboratory'. Every day we are faced with challenges concerning how we relate to each other, challenges which often we don't know how to solve. It would be great to bring in people with conflict resolution and similar skills, along with interns, so as to show us how to do it, and so make human unity a more conscious factor in our work. The Charter and the Dream of Auroville are very beautiful, but we often forget them in our daily activities.

It's been very nice to work with the people involved in the bioregional work. I'm very optimistic that "Auroville, the City the Earth Needs" is not very far off. It can happen. It can really happen!

From an interview with Alan



From hypothesis to testing. Steve at his computer and conducting a new channel design test



ROM, I was part of the Concept and Communications Group which was working on a plan for an interim Secretariat. The question here was: if our ideal organization for Auroville is both rational and intuitive at the same time, what kind of building would embody and facilitate such an organization? And what kind of community processes would allow both communication and reception of information? Is it possible to have both a central and distributed decision-making structure that is dynamically reconfigurable, depending upon the situation?

We had some ideas, but this project is held up by lack of funds. Taking a step back, the questions was "What is Auroville doing that would convince someone to donate the two crores (approximately 500,000 US dollars) needed for the Secretariat project?" What I saw was that there is a lot of unrealised potential.

If we were really implementing Mother's idea about the economy, for example, we'd be

other. This seemed the best candidate for illustrating the possibilities and accomplishments of Auroville. The Bioregional Coordination Group was formed, then, with the idea of creating a larger vision of bioregional activities so that we could all see how to fit the smaller pieces together.

## Tackling a number of problems at the same time

It also helped us see that, in our bioregional projects, we could be tackling a number of problems at the same time. It's not just a matter of preserving and expanding the indigenous forest, for example. We also want to better the lives of the people, to stabilize the village structure so that all the talented people don't leave, to preserve the water aquifers, etc. etc. Such a multiple package is well-suited to the



# AUROVILLE'S ENVIRONMENT

**I**n January this year (issue 108) *Auroville Today* gave an overview of Auroville's research in renewable energy. Here we look at Auroville's environmental research and implementation programmes for which Auroville is probably best-known. What are the latest developments? And which new areas of research are opening up?

One of the most serious ecological crises facing countries in Asia is the destruction or destabilisation of their soil-water-vegetation systems. In India alone, 175 million hectares of land—more than 50% of the total land surface—are classified as degraded lands. As a consequence, flora and fauna diversity has been drastically reduced.

In 1968, Auroville was started on just such a degraded plateau. Few trees dotted the vast, open expanse of red earth that was devoid of topsoil and scarred by gullies and ravines, the result of two hundred years of deforestation, bad land management practices and over-grazing.

Auroville's early settlers set about reforesting the barren land. Simultaneously, an integrated soil and water conservation programme for land regeneration was undertaken. Gradually, many indigenous tree species were re-introduced. As the trees grew and micro-climates form, many species of birds and other animals returned, signalling a transition in the ecosystem from semi-desert into young forest. The birds and animals now take care of much of the natural dissemination of seeds. It is estimated that over two million trees and a large number of shrubs, creepers and bushes now cover the Auroville area of less than 20 sq. kilometres.

The regeneration of this barren land and the concern for the environment have quite naturally led to the initiation of a wide number of research activities, some of which are outlined below.

## REFORESTATION: CONSERVING AND PROMOTING BIODIVERSITY

### Applied Research

The indigenous forest type which originally covered the Auroville area is called the Tropical Dry Evergreen Forest. Studies were undertaken by Auroville botanists to survey and map the remnants of this type of forest in Tamil Nadu and Andhra Pradesh. It was found that hardly 1% of the potential area of this forest still exists. Species surveys were then carried out in the remaining forest patches to compare the differences in their biological diversity, and their distribution in relation to environmental parameters such as soil type and groundwater depth.

Seeds from these remnant patches are regularly collected and propagated in Auroville. Initially, there were only an estimated 20 species in the area; today about 300 species including 150 indigenous species of trees, have been planted in and around Auroville. Rare and endangered species are conserved with a view to regenerating entire ecosystems, and some 50,000 seedlings are grown each year in Auroville nurseries. Sanctuaries have been established within the forests of Auroville where flora and fauna can propagate naturally without human interference. With the promotion of the bio-diversity of flora, the bio-diversity of fauna has also slowly increased. In 1972 only forty species of birds were found in the denuded forests of the Auroville region, whereas today over ninety-four species of birds can be found. Endangered small mammals such as civet cats, monitor lizards, hyenas, mongooses and jackals have also found a home in the young but diversified forests of Auroville.

### Data bank

In 1993, an Auroville service "Auro-Eco-Dat" was set up by AGRC to store ecological data on the flora and fauna of the Auroville bioregion. *Auro-Eco-Dat* has compiled species lists of plants, mammals, amphibians, birds and reptiles of the bioregion.

### Herbarium

A herbarium has been established at *Shakti*, which aims to represent the indigenous species of the Tropical Dry Evergreen Forest as well as to represent species of the invading flora. The collections also include species encountered in the area bordering the Tropical Dry Evergreen Forest such as the beach, new and consolidated dunes, salt marshes, black cotton soils and others, and species from the Andaman and Nicobar group of islands. The herbarium comprises already well over 4,000

accessions, including plant species that have been listed as "rare, probably extinct" and some of them probably new to science, pending identification by the Kew Gardens Herbarium, UK.

### Seed museum

The seed museum at *Pitchandikulam Bioresource Centre* has catalogued hundreds of different kinds of indigenous seeds. The *Auroville Index Seminum* is a member of the world-wide net of Botanical Gardens and offers all the seeds collected in and around Auroville for exchange with Auroville's correspondents, now close to 700. The *Annapurna* farm of Auroville, as part of *Navdanya*, a national seed savers network, grows 50 different types of grains and millets each year to conserve the diversity of the crops that were once grown in this area.

### Conserving traditional knowledge

The traditional knowledge among the local people in the use of various plants and other bio-resources is slowly disappearing. The *Pitchandikulam Bioresource Centre* aims at documenting this knowledge by establishing community registers in the local villages.

### Outreach

The bioregion of Auroville is subject to increasing pressure on the land for agriculture, fodder and fuel wood, wide-scale erosion, saline water intrusion and a falling water table. It was but natural that ecological concerns in the area of Auroville would extend to Auroville's bioregion, where many groups are now working to tackle these problems.

The primary goal of *Palmyra*, a unit of Auroville, has been to restore the land, to create environmental awareness and develop the skills of the local people towards managing their own resources more efficiently. Supported by the *National Wastelands Development Board (NWDB)* and the *Overseas Development Agency, U.K.* (now *DFID*), over one and a half million trees of different species have been planted and around 60 checkdams constructed. The programme has covered around 2,000 hectares of land. Villagers are actively involved in the process. Special emphasis is given to disseminating *Palmyra's* expertise to as broad a spectrum of people as possible. Exposure visits and training programmes are conducted for villagers, development workers from other NGOs, and government officials.

Other working groups are also involved in outreach activities. The *Auroville Greenwork Resource Centre* has conducted several reforestation, agro-forestry and permaculture design workshops and training programmes. The *Auroville Village Action Group (AVAG)* imparts environmental education in village schools and adult night schools. It has also established Eco-Clubs in many of the local villages. *Shakti* and the *Pitchandikulam Bioresource Centre*, are involved in the protection from further deforestation of 2,500 acres of remnant patches of the Tropical Dry Evergreen Forest in Tamil Nadu.

### The propagation of medicinal plants

India has ancient and well-documented medicinal systems such as Ayurveda and Siddha that rely on natural products, mainly herbs, for treating diseases. Due to the forces of the market economy however, allopathy has come to play the domi-

nant role in the villages of India while the importance of Ayurveda has significantly diminished. And this, coupled with the systematic destruction of the natural habitat, has resulted in the gradual dying out of medicinal knowledge and practices of the traditional village healers.

Auroville plays an important role in revitalising the traditional medicinal knowledge in the area. *Pitchandikulam Bioresource Centre* and *Shakti* are among the sixteen sites in southern India recognised and supported as Medicinal Plant Conservation Parks by the *Foundation for the Revitalisation of Local Health Traditions (FRLHT)*. As Medicinal Plant Conservation Parks, *Pitchandikulam Bioresource Centre* and *Shakti* maintain in-situ ethno-botanical parks and medicinal plant gardens with more than 120 indigenous species. These parks propagate seedlings of indigenous medicinal plants and supply them to over 400 gardens in thirty villages. In collaboration with the Health Centre, the *Pitchandikulam Bioresource Centre* also prepares and distributes herbal medicine among the villages in the Auroville bioregion.

The *Pitchandikulam Bioresource Centre* also identifies the medicinal plant practitioners in each village, systematically documents their knowledge, and regularly uses them as resource persons in training programmes for local villagers. It is hoped that in this way this ancient knowledge will be disseminated and its continuity guaranteed and that the local people will conserve their habitat and directly benefit from their traditional wisdom.



Preparing bags for saplings at Pitchandikulam

## ENSURING SURVIVAL WITH SOUND WATER MANAGEMENT

The potential scarcity of fresh water is a threat that looms large over the world today. Auroville's existence also depends on having an adequate supply of fresh water. Due to the lack of surface water in the region, Auroville and its bioregion have so far primarily depended on water pumped from underground aquifers for their needs. In recent years, however, it has been noted that the groundwater level is steadily falling as the rate of groundwater extraction is exceeding the rate of natural recharge leading to problems of salt water intrusion near the sea.

Auroville tackles these environmental problems on many fronts.

### Integrated watershed management

An integrated approach to watershed management is crucial for successful land regeneration. The first step in conserving the soil and reversing the trends of erosion is to construct bunds (raised earth banks strengthened by plants) and checkdams.

The bunding work is systematically done from the highest to the lowest point in the watershed. Checkdams are constructed where bunds are not sufficient to control the flow of soil and water. They are locale specific and are effective not only in



# TAMIL RESEARCH ACTIVITIES

checking water flow but also in increased percolation and infiltration of water into the ground.

## Rehabilitation of irrigation tanks

Ancient Tamil Nadu had developed a comprehensive policy of managing its water resources. An elaborate system of interconnected irrigation tanks called "erys" existed that successfully harvested and stored rainwater for use in the dry season. With colonisation and industrialisation, these tanks fell into disuse. Villages lost their control and management rights, and the tanks gradually silted up. At the request of the Government of Tamil Nadu, *Water Harvest* assisted by *Palmyra* has undertaken the restoration, desilting and repair of 50 of these tanks in collaboration with the local villagers. Recognising, however, that a lasting solution can only be ensured if the problem is tackled not on a small scale or piecemeal basis, but on the scale of the whole watershed, *Water Harvest* proposes, with the collaboration of *Palmyra*, to rehabilitate and create a system for sustainable management and maintenance of the 196 water catchment tanks in 160 villages which comprise the ancient surface irrigation system of the Kalivelli watershed, the bioregion to which Auroville belongs.

## Recycling waste water

The *Auroville Centre for Scientific Research (CSR)* experiments with small-scale waste water recycling systems combining elements of four different design systems that are being used around the world. Aquatic plants capable of root-zone treatment were the main purifiers in the early designs of *CSR's* waste water recycling systems. Further experimentation led to combining the root-zone treatment with a lagooning system containing macrophyte plants. At present, *CSR* operates 14 small and medium size waste water recycling systems for households, schools and communities. In 1996, *CSR* began a project funded by the *European Community* called *Low Maintenance Waste Water Treatment Systems (LOMWATS)*, in co-operation with *Bremen Overseas Research and Development Association (BORDA)*, Germany and *GERES*, France. This project entailed the construction of four pilot waste water treatment systems in different Auroville communities to further test and improve the combination of root-zone treatment plants with lagooning systems. The project aims to arrive at standard measurements and procedures for setting up and operating plants which are an economically viable option for developing countries.



Saturday morning tree planting

## Tackling salt water intrusion

One of the greatest problems that arises from the depletion of groundwater in coastal areas is the intrusion of salt water into the underground aquifers. Large stretches of the Indian coastline have been rendered infertile due to sea water intrusion. In Tamil Nadu, the problem has reached alarming proportions. A detailed study, funded by *Danish International Development Agency (DANIDA)* was done by *AGRC* in 1994 on the social and economic problems of villages in the Tirunelveli district of Tamil Nadu as a result of sea water intrusion. The findings of this study were then documented in an educational video, *Troubled Waters*, produced by Auroville in Tamil with English subtitles. The video was shown extensively to the farmers in the Auroville area and workshops were conducted to explain the

causes of sea water intrusion. The farmers were taken to the affected villages in Tirunelveli and they were shown that unless they themselves undertook an active part in conserving water, their own land would be rendered worthless in the near future. Spreading awareness amongst the local people of the causes of salt water intrusion is now taken up by the *AVAG*.

## Herbal desalination

Salt water intrusion also occurs when, due to the depletion of groundwater, wells turn brackish due to the concentration of salts in the lower levels of the aquifers. In 1995, *Auroville's Greenwork Resource Centre* documented an experiment in Ongole, Andhra Pradesh on the herbal desalination of wells based on a formula described in ancient Indian scriptures. The study noted that this desalination experiment had met with 50% success, in rendering water in wells that had turned brackish suitable for drinking.

## PROMOTING SUSTAINABLE AGRICULTURE

Commercial agriculture, to meet market demands, promotes uniformity of products and makes use of chemical inputs to increase yields. The insistence on uniformity has led to a loss of genetic diversity, while the use of chemical fertilisers and pesticides has led to the degeneration of soil. In India and other developing countries the situation is worse, because due to ignorance, chemical pesticides tend to be overused leading to high levels of toxins in the food. Opposing this trend in agriculture, Auroville is experimenting with organic farming which favours natural inputs and sustains the fertility of the land thus promoting genetic diversity and maintaining the ecological balance of the environment.

Experiments in ecological agriculture in Auroville are a synthesis of many different natural methods such as "French intensive", which utilises raised beds and dense spacing of plants to eliminate weeds and conserve water, bio-dynamic, permaculture, etc. *Annapurna* experiments with dryland farming that has traditionally been practised in this region, in promoting genetic diversity of grains as part of *Navdanya*, a national seed savers network, and producing hybrid livestock. Drip irrigation systems and sprinklers are used in many farms such as *Siddhartha*, *Service Farm*, and *Discipline*, and the use of wind or solar energy to pump water is also common. Residential programmes for students from all over the world are conducted by the *Farm Group* for training in sustainable agriculture.

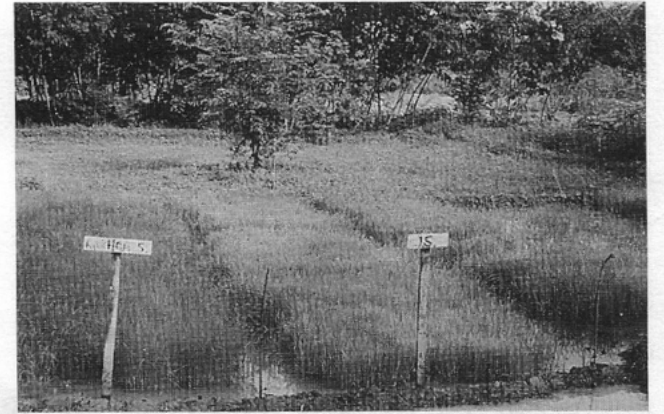
## Biological Pest Control Research

*Palmyra* has been conducting entomological pest control research since 1993. The research has involved a detailed entomological study of pests, and finding biological agents such as parasitoids, predators and pathogens which destroy pests. This entails the classifying of the more than a thousand different insects, and the experimental work of breeding under special laboratory conditions predators of the pests which can be introduced as part of bio-control.

*Palmyra* also conducts research on the manufacture of biological control agents from neem and other locally abundant species to destroy pests that affect cashew, rice and other seasonal crops. Sample plots, maintained in Auroville, are screened into sectors using the new bio-pesticide, conventional pesticides, and control plots for comparison of data. This research is funded by the *Department of Science and Technology, Government of India*. Production and distribution centres for bio-pesticides have also been opened up in a couple of the villages with the collaboration of local villagers. These bio-pesticides are sold to farmers by entrepreneurs so the project takes on a life of its own and continues beyond the extent of the project funding.

## Organic Compost from Urban Waste

The *Auroville Health Centre* has taken up a project to make compost for the local farmers from the urban waste of Pondicherry. For quite a few years now, local farmers have been importing unprocessed waste from Pondicherry for composting their fields. As this unprocessed urban waste also includes medical waste, this has led to serious health problems in the region, including an outbreak of typhoid. In response to this situation, the *Auroville Health Centre* initiated a programme, with funding from the *German Development Corporation, GTZ*, to educate the general population and the farmers of the village of *Kuilapalayam* on the problems of waste, the need for proper waste disposal and the manufacture of good compost.



Testing various types of rice

## Organic Cashew Production

Having become convinced of the viability of organic compost, some farmers from *Kuilapalayam* approached the *Auroville Health Centre* for finding alternatives to the chemical pesticides that are being used in cashew cultivation. This has led to the *Auroville Health Centre* working with 20 local farmers in 1997 who agreed not to spray chemicals on 20 acres of their cashew topes (in consolidated blocks of 4-5 acres) for one year. In return, the *Health Centre* provided them with good compost at a highly subsidised rate, green manure seeds free of cost, and bio-pesticides made by a local entomologist from indigenous plant extracts. Courses in bio-dynamic farming as a well-developed package of potent organic farming practices were also offered to the farmers. The yield in the year 1997-1998 will serve as the baseline data for future experiments.

## INSECT BREEDING

The room is small. Shelves cover the walls. Each shelf carries several plastic buckets, covered with cotton cloth. "The buckets contain a culture of eggs of a certain type of moth (*Corcyra cephalonica*). In a period of three days, adults moths develop and breed eggs, which we collect and sieve to remove scales and other debris. Some of the eggs are re-used for a second generation of moths. We collect the remaining eggs." Ravi Bhalla, a researcher in ecology who works at *Palmyra*, shows a half full test-tube which seems to contain something like dust. "We have about 8 cc of eggs here," continues Ravi, "and each cc has about 16,000 eggs, which makes our daily harvest about 128,000 eggs. The next step now is to paste the eggs on cardboard and expose them to ultraviolet light for about 45 minutes, which will kill them. Then we keep the cards in chambers where they are exposed to females of a small wasp called *Trichogramma chilonis*. These females lay their eggs in the eggs of the *Corcyra* moth. Finally these cards, called *Tricho* cards, are stapled to crops such as sugarcane, where the wasps emerge and feed on the pests such as stem borers. In this way, we create a biological pest control, which can be very effective, provided that farmers nearby do not resort to pesticides. Wasps are highly susceptible to pesticides and a farmer using pesticides a few fields away can kill all the biological control agents."

Ravi has just finalised a research into the standardisation of methods for breeding two types of spiders: the giant crab spider (*Heteropoda venatoria*), which is effective for domestic cockroach control and the *Argepe* spider which is a predator of paddy pests. This research has now been finished. Says Ravi: "At present our projects are still funded by the Department of Science and Technology of the Government of India. We are trying to make the production of *Corcyra cephalonica* and *Trichogramma* commercially viable and are getting in touch with sugar mills and commercial insectaries to explore the possibilities in their sales."



# "He kept insisting it wasn't a big job ..."

A portrait of Ponnuswamy

**P**onnuswamy was born in Pettai, one of the surrounding villages, and joined Auroville when he was a young boy. At present he is in charge of Auroville's Electricity Service and the Telephone Service. Recently he spoke with Auroville Today about his life and his experience of Auroville over the years.

When I was studying in the village school, my friends and I used to come to the Matrimandir site, where next to the Banyan tree there was a hut with a doctor. We went to him to get syrups, just because it was something we had never tasted before. And then we would go around Matrimandir. To us, coming straight from the village school, it was something new to see all those 'vellakaras' (white people). I was 12 years old then.

I did not know anything about Auroville. My father did not want me or my brother to work in Auroville, even though, subsequently, my brother Rajaram worked for over 20 years in Auroville at the Matrimandir Nursery and at Abri as an electrician. Our family used to be quite well off. My father was headman of the village, but his business partner cheated him, and he lost all his money. He had to sell all his land to repay his debts, and he became worried. My brother felt responsible and had to start working. My mother worried about my father: after he lost all his money, nobody respected him anymore as headman of the village. I was still young when it all happened, but I felt the atmosphere at home was not happy anymore. It was very quiet in the house, we never went out, we did not celebrate festivals, they would not buy us clothes when school year started, or purchase new schoolbooks.

I wanted to come out to Auroville, looking for the joy which was missing at home. In 1973 I stopped school. I went to see my friends Ramalingam and Gerard Marechal for work. Gerard took a measuring stick and measured me: 1.25 m, and so my starting wage was fixed at Rs. 1.25! For two years I did different kinds of work. Because I was the only one in the construction team who could read and write Tamil they asked me straight away to be the storekeeper at Matrimandir. At that time, lots of concretings were going on. People used to come from different parts of Auroville, and the Ashram. Sometimes the concretings used to go on all night and often continue into the next day.

Coming to Auroville was something new for me: new people, new things, lots of people working together. We used to get food from the community kitchen. After work we went to sports. It used to be really fun. And I loved Auroville.

I started out living near the Matrimandir, first in a hut near the generator room and later on in the Camp. Seven of us shared two rooms. Then I moved to Revelation for a few years until Meenakshi came to Auroville. Meenakshi called me and other children who had left their villages to join Auroville to start Ilaingarkal school. We did not know her. We were about 16 then. Who was this lady from Madurai, what did she want? At that time we were going to Aspiration, and doing sports. When Meenakshi called us we just went to have a look and somehow we liked it. When I met her for the first time, I felt immediately an inner contact with her, and I told her I would like to stay there. We each had our own room in Ilaingarkal. I lived there for nearly six years. And that's where I met my wife Kanta, who was working there

**D**uring that period, I also worked for Narad in the Matrimandir Nursery. He gave me the responsibility to look after the library. For several months I used to keep a register, writing down the Latin names of the plants there and then Mother's name for them. Narad is the one who taught me how to drive a tractor. I used the tractor to get loads of compost from the surrounding villages, for the Matrimandir gar-

dens, for Charlie, and for the Centre Kitchen vegetable garden

I even learned about photography, from Rakhal. He took lots of photos around and from the top of Matrimandir. He taught me how to develop and print the black and white films in the dark.

Somehow I wanted to acquire more technical skills. Together with Gilles, Lobsang, Rama, Gaje, first in Fraternity, and later in Aurelec, I started learning about electronics. Most of what I learned came from Gilles and Mathias: Mathias for practical knowledge, like how DC's work, and Gilles for the theoretical part of electronics: how to make drawings and how to test a card. This was the beginning of Altecs.

**T**hen through a student exchange program I went to the States for 3 months. When I came back, Manou who was working for Auroville Electrical Service (AVES) asked me to help him because he wanted to leave India for some time. Altecs was shifting to a new building where they mainly focused on production, but a few of my friends and I were more interested in doing research and development work in electronics. So I told Manou that if he could give a room to my friends for experimenting with electronics, I would help him. That's how I started working at Abri.

In three months Manou taught me the administrative side, how to correspond with TNEB (Tamil Nadu Electricity Board) officials, how to deal with the staff. For the first few years it was quite all right to run the electricity service, as I had already some background in electronics and it was fun to learn more about electricity. I wasn't much involved in the planning side of it, that was all done by Manou. When he left I got help from a retired government employee from Andhra Pradesh, to draft letters and deal with officials. In the beginning I had a problem dealing with TNEB officials. In their eyes I was just a 'tambi' (Tamil word for younger brother and quite often used to indicate a junior). They expected a certain presence, someone bigger, to deal with official matters. But for the practical work I was

okay. We had about 270 service connections and there wasn't much paper work. But around 1993 everything started to accelerate! Lots of new communities started coming up.

Since I was already working for the Electrical Service, Claude approached me, asking whether I could also take up work for the Auroville Telephone Service. The right set-up was already there. He came several times to discuss it, and I always refused. I already had enough work. But he kept insisting that it wasn't a big job and finally I told him I would try, that if it didn't work, I'd give it back to him. In the beginning, working with the Telephone Service was quite fun. There were only 150 telephone numbers.

I did not have many applications to do at that time or much running around, everything was all set up. But slowly more and more people starting applying for a phone connection, and more and more work started coming in. I had to take on another accountant, and employ new people to do the running around. I had to make another set-up. I could not use the AVES staff anymore and I needed another computer and a space, because I needed to keep separate accounts. Then people wanted to have many numbers, like one for e-mail, one for fax, one for International calls, one for local numbers, quite understandable from their side, but they could not understand why it took time.

Since a few years people in Auroville want to get their things done immediately. Previously people used to come and sit with me to discuss the work. Nowadays, they expect prompt and efficient service like they were used to in the West. They

ring up and expect me to solve their problem within the next 10-15 minutes! This is just not possible given the bureaucratic set-up in India. It is possible to do some repair work, but is impossible to get the people from the TNEB to come when you want. They have their procedures, their own style of functioning, they have their own speed, so you have to cooperate with them. If one wants to get anything done one has to start with the lowest official in their hierarchy. If you ignore the hierarchy, they refuse to cooperate with you anymore and they can make your work difficult. And they are backed by labour unions, at every level, so they are protected. With the Department of Telecommunications it is the same story. And then, you work with one official for some time, you build up a good understanding with him, and then he gets transferred after a year, and you have to start all over again. These are some of the problems that I face. But more frustrating than that is that many Aurovilians do not understand any of this.

Aurovilians nowadays are not tolerant of Indian conditions. For instance, people are so used to having electricity now, they can't live without it even for one hour. They always phone me immediately, even disturbing me at home at 10 PM in the night regarding current or telephone problems. I have to attend to the calls. I can't say that it is my time off. That is why I have stopped going to Pour Tous and other public places. When they see me, people talk to me about their complaints, about their electrical connections, about their telephone connections. They don't care that you have taken some time off your job and don't always want to discuss business!

For a few years my work was all right, but now I do not feel so good about it. I need help, I need someone to share this work with me. It's a thankless job. I have learned lots of things, how to deal with officials, how to talk, lots of knowledge. But it does not leave me much time for myself or my family. I see my kids just before they go to school, and when I come home, they are already in bed. I used to study and play tabla, but since I started this work I had to stop because I never have the time to practice. When I reach home now, I'm tired, I take my bath, eat and go to bed. I can't go on like that for ever and people don't understand that.

And if I would quit, what would I do? I would just start doing something totally different, like photography, tractor driving or mechanical work.

**U**p to now, I have seen Auroville grow and change in three stages. First, from the beginning till 1978, it was a wonderfully sweet time. Then there was the 'Society Period' when it was a struggle even to get food. Then from 1988 up to the present, we have the 'Foundation Period'. I still miss that first period of Auroville. If I had not seen the beginning of Auroville, I would have said that the present situation is normal. But for me it is not normal. There is something missing in Auroville today. I can't put my finger on it. But I still would like to see Auroville at the sweeter stages. Nowadays you don't even see people smiling when you pass them on the road. In the early years we used to have more fun. We used to laugh and play together and forget all our burdens. In those days I used to work harder physically than I do now, and after work it was nice, meeting people, eating together, playing games, going out for walks in the moonlight...I miss all that....

From an interview with Tineke

## Subscription Information

Subscription rates for 12 issues of Auroville Today are the following: for India Rs 250; for other countries Rs 1250, Can \$ 51, FF 195, Dm 60, It. Lira 61,000, D.Gl. 65, US \$ 38, Uk \$25. This includes the postage by airmail. Please send your contribution (or your supporting contribution of double the amount) either to the Auroville International centre in your country (add 10% for admin. and bank charges) or directly to Auroville Today, CSR Office, Auroville 605101. Cheques should be made payable to Auroville Fund, specifying: 'Contribution for Auroville Today'. You will receive the issues directly from Auroville. Personal cheques are preferred to bank cheques. Please do not send postal money orders or cash. Subscribers will receive a reminder when their subscription is about to expire.

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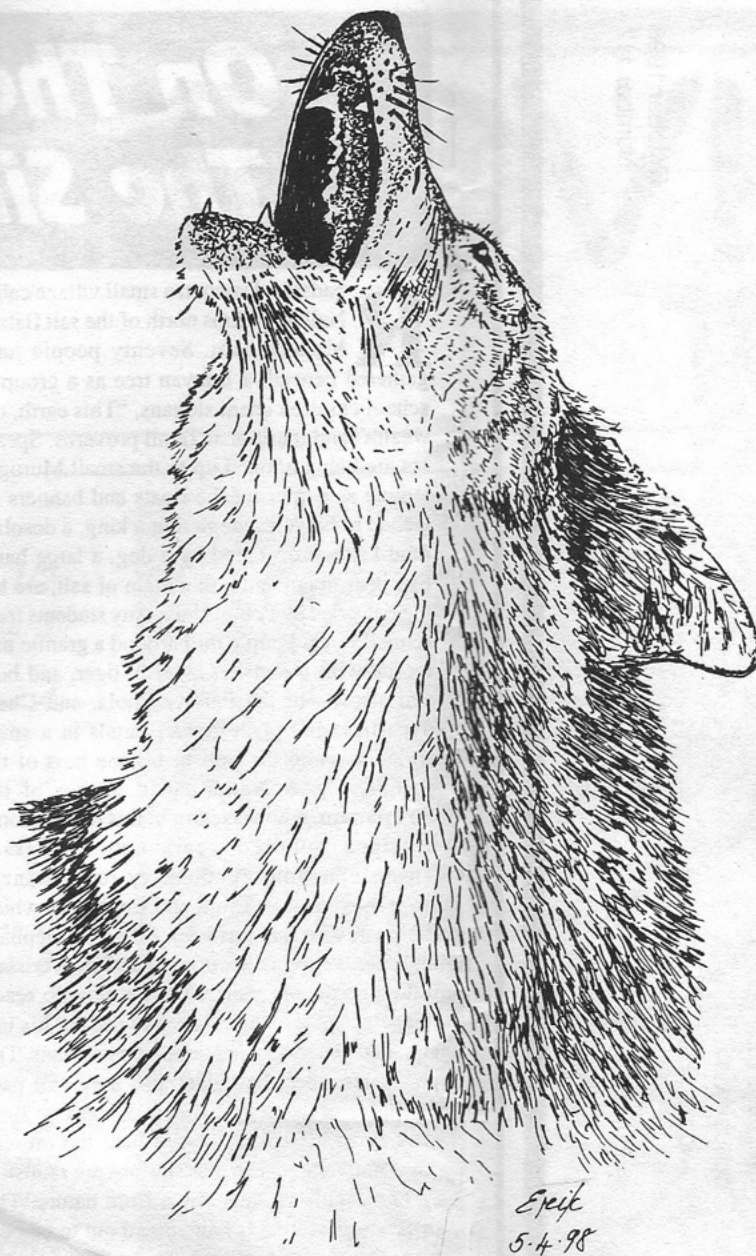
## Screen Print India Awards for Lumière

On August 27th, 1998, at a ceremony held in Bombay, two silver trophies (second prizes) were presented to "Lumière", Auroville's silk-screen printing unit, for "Excellence in Screen Printing 1997" in the categories of "visiting and invitation cards and paper stationary" and "sticker labels". Lumière competed for the prize with more 4000 entrants from all over India. Says a proud Suzanne, executive of Lumière: "The price is a benchmark for Lumière, acknowledging it to be among the best screen printers in India."

## India The Mother

is a recent publication containing a selection of Mother's words from 1916 to 1973 on India. The extracts strike at the heart of what ails India, and indicate how India can overcome her perilous situation and fulfil her destiny. The book is a companion volume to **India's Rebirth**, a selection from Sri Aurobindo's writings and talks, which deals with the same topic. The book has been prepared by Michel Danino and a team of researchers with the collaboration of Sujata Nahar, and contains extracts drawn from **Mother's Agenda** as well as from books published by the Sri Aurobindo Ashram. The book is a must for all the lovers of India.

**India The Mother:** Available from Institute de Recherches Evolutives, 142 Blvd de Montparnasse, Paris, France; Institute de Recherches Evolutives Canada, CP 41 Chambly, QC, J3L 4B1 Canada; Mira Aditi Centre, 62 Sriranga, 2nd Main, 1st Cross, T.K. Layout, Saraswatipuram, 570 009 Mysore, India. Price (in India): Rs 90.



A jackal in full cry

Drawing: Eric

## Shikra: A new magazine

"No one knows why these great assemblies of the Brotherhood are called but we can make a few guesses. Maybe they come for re-unions with old friends and family members; to gossip and exchange news. They introduce the youngsters to the tribe. It gives the younger generation a better chance to find mates. They make new friends, play together and sing together. And they take the opportunity to tune up their communication skills."

No, this is not an Auroville News report about a new Aurovilian sect. This is an extract from an article on jackals taken from a charming new magazine called **Shikra**. **Shikra**, which is edited by Dietra, is primarily aimed at increasing environmental awareness in school children, but it can be enjoyed by everyone. The magazine is a blend of well-researched information—the first issue features the banyan tree and the jackal (beautifully drawn by Eric)—and lively cartoons by Emanuele.

**Shikra** will appear quarterly. Future issues will feature owls, snakes, insects, as well as the shikra itself (a kind of hawk). If you would like to receive a copy, please send a contribution by cheque to Auroville Fund, specifying for **Shikra** Environmental Awareness quarterly. Further information about **Shikra** can be obtained from Dietra, Avian-Rehabilitation, Gratitude, Auroville.

shikra

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## Have you already ordered THE AUROVILLE ADVENTURE?

Recently, **The Auroville Adventure** left the press. This attractive book contains a selection of articles that have appeared in Auroville Today during the last 10 years, providing a unique and in-depth look at the "adventure" of Auroville that continues to unfold itself. The book highlights Auroville's main aspects and activities such as environment, villages, spiritual dimensions, economy, education, Matrimandir, town planning and architecture, organisation, arts, how the world looks at Auroville and how Aurovilians experience life in Auroville. **The Auroville Adventure**, like Auroville itself, can be read in many different ways. For example, as a fact file about different projects and attitudes current in the community. But it also gives an insight into where the community energy is flowing at present and where it is stuck. **The Auroville Adventure** has something of the

texture, the 'feel' of Auroville itself. There's a kind of subtle rhythm or movement—from the prosaic to the inspired, from philosophy to experience—and, in the process, something of the integrative Auroville dynamic emerges, allowing readers to find their own doorway into this unique experience. If you haven't yet done so and would like to order a copy of **The Auroville Adventure**, and/or wish to send a gift-copy to a friend or acquaintance, please return the order form enclosed with this issue of Auroville Today to us. In case the order form is missing from the issue, please send us a letter with your instructions and an accompanying cheque made payable to Auroville Fund specified "Auroville Today". You can also remit it through the Auroville International Centre in your country. You'll find a list of the Centres and their addresses in the subscription box elsewhere in this issue. The book is priced at Rs 250 (India) and US\$ 15 or it's equivalent (all other countries). The price includes packing and mailing (by air-mail to all foreign countries).

Address: Auroville Today,  
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email: avtoday@auroville.org.in  
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## Sri Aurobindo World Centre for Human Unity takes off

On the occasion of the 30th anniversary of Auroville and in commemoration of the 125th birth anniversary of Sri Aurobindo, it was decided to establish the Sri Aurobindo World Centre for Human Unity at Auroville. On February 1, 1998, a seminar took place in Bharat Nivas to elicit ideas and inspiration for the Centre, which was attended by dignitaries from all over the world (see AVToday # 110, March 1998). A five year "Activities and Building Programme" has since been prepared and sent for funding. The activities include "The Auroville Arts Festival 2000" and subsequent annual art festivals; a programme for annual national and international seminars and workshops; a programme to create educational videos; a feasibility study for a sustainable water resources management; an "Auroville Outreach" programme; a programme for the Last School Open Campus; a programme for the development of linguistic studies; a programme to create a sociocratic organisational pilot project; a publications project; and an electric transport research project.

## Bharat Natyam in Pitanga

"I love dancing," said a smiling Ilona after her first public Bharat Natyam dance performance. Ilona is a German graduate student who is working on a thesis on Tamil culture. Her performance "Om Shakti Om" in Pitanga at the end of August was the result of a yearlong exploration of language, music and dance in the Tamil world. She had chosen as the central theme of her performance "Shakti", the Divine Mother, the Goddess, the primal form of life sustaining energy, the eternal female, but also representing herself as the dancer who, in the course of her dance, takes on the role of a devotee in search of herself and God. Some dances were performed together with the young Amirtavarshini, but Ilona's forte came out best in her solo pieces, which were choreographed and sung by her teacher Hemalini.

The Construction Programme proposes to develop the first nucleus of what will ultimately become a very large Convention Centre, using the existing buildings of Bharat Nivas and adding new ones within walking distance from them.

The programme envisages the adding of guest facilities by expanding "Fraternity Youth-Camp" and building a 32-room guest house for faculties and high level trainees; building a Conference Centre attached to the guest house; improving facilities for cultural events and gatherings; building a Secretariat for Auroville's entire Administration; and completing the Pavilion of Tibetan Culture.

The total outlay for the five year project will come to Rs 14 crores (approximately US\$ 3.5 million).

The Ministry of Human Resource Development of the Government of India has meanwhile made available 'seed money' for the Centre to the tune of Rs 25 lakhs (US\$ 8,500) to enable it to start initial research and publication activities.

♦ **USA (1):** AVI U.S.A., c/o Megan, Thomas, P.O. Box 601, Sausalito, CA 94966, U.S.A. tel: (1)-415.788.2876, fax: (1)-415.332.5979, email: aviusa@aol.com ♦ **USA (2):** Auroville Information Office, 1183 Wittenberg Road, Mt. Tremper, NY 12457, U.S.A. tel: (1)-914.679-5358, fax: (1)-914.679-5853, email: avinfo@aol.com

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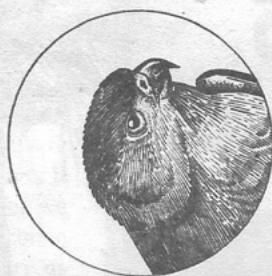
Editorial team: Tineke, Roger, Jill, Carel, Bindu, Bill, Annemarie, Alan. All photos, unless otherwise attributed: John Mandeen. Layout & DTP: Martin Beeck. Proofreading: Barbara. Printed at All India Press.



BY AIRMAIL  
BOOK POST

# AUROVILLE TODAY

CSR Office  
Auroville 605101  
Tamil Nadu, India



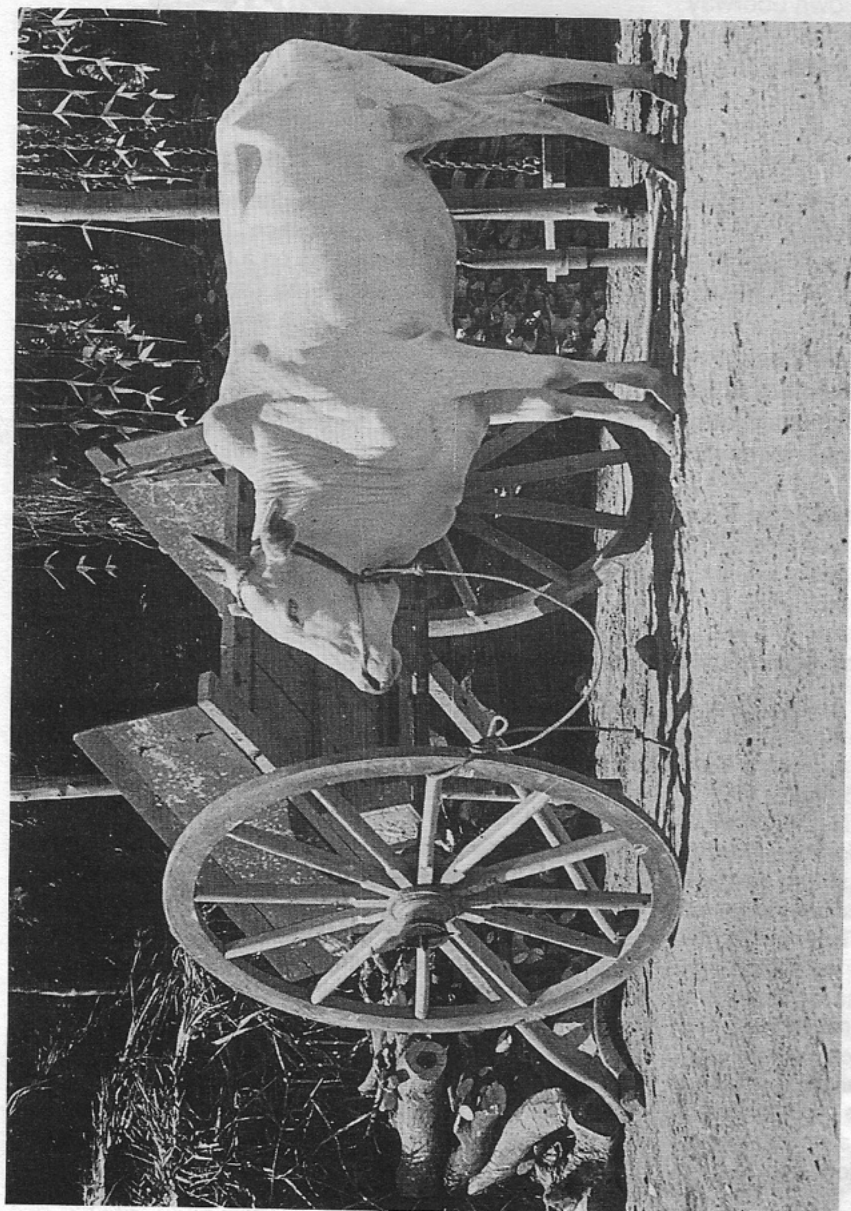
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KRISHNA TEWARI  
AUROMODELE  
AUROVILLE

October 1998  
Number 117



A traditional wooden-wheeled bullock cart

# On The Trail Of The Sirupanam

Roadside. Dawn in a small village called Nallur, 10 kms north of the salt flats of Marakkanam. Seventy people have gathered beneath a Banyan tree as a group of school children chant slogans, "This earth, our wealth" and traditional Tamil proverbs. Speakers are being hooked up to the small Murugan temple as papier-mâché floats and banners attached to bicycles, depicting a king, a desolate mud-kitchen occupied by a dog, a large harp-like instrument and a mountain of salt, are being unloaded by Pondy University students from a small truck. People mill around a granite memorial with the insignia—fish, tiger, and bow and arrow—of the Pandya, Chola, and Chera dynasties, and place flower petals in a small shrine housing the polished stone bust of the Sangham poet Nathathanar, author of the *Sirupanam*, who was born in this hamlet some eighteen hundred years ago. Professor Thangappa from Pondicherry reads stanzas from this poem in Tamil and English in which the poet, who has just been gifted an elephant and chariot, gives directions to his impoverished fellow bards and their wives on how to reach the palace of a local king renowned for his unequalled generosity to poets and musicians. The poem describes the landscapes they will pass through and the people they will meet on their journey to his court, located near the present day Tindivanam. The descriptions are realistic, and rich with similes drawn from nature. The tresses of a woman's hair spread out to be perfumed are compared to the open fan of a peacock's tail, her bronze-brown skin to that of a young mango leaf. Piled logs are compared to sleeping camels and children are described playing with their rattles made of oysters filled with pearls. The local king's generosity and courage in a culture that considered such values paramount (as in the story of the king who covered a wet shivering peacock with his cloak) is unequalled by the magnanimity of any of the other South Indian kings whose generosity and kingdoms are also described.

Finally, when two decorated wooden-wheeled bullock carts with turbaned drivers emerge from the village, it is time for the flag-off, presided over by Mr. Bala Baskar, Secretary of the Auroville Foundation. The caravan of car, vans and bicycles that accompanied the two carts was to pass through some fifteen villages where the participants were received with great hospitality, sometimes welcomed by drummers and dancers. As Marti, one of the participants, described it "Nadukuppam, Omiper, Kilapakkam, Grannakalmedu... small out of the way villages. The interaction with the local people is a delight. Many of them are overjoyed to see our noisy procession of musicians, sign bearers, bullock carts, tyre vandis, padayatras, motorbikes, the SAIHER van and a creaky old bus. We are welcomed by the lighting of camphor on a leaf floating in vermilion water surrounded by drummers and nataswaras. These people are astonished that we are honouring their simple traditional ways of life in an age where TV, video and modernization reign supreme."

Workshops attended by the villagers, participants and different functionaries including the Director of the Tamil Nadu State Archaeology Department, were organised. The three-day event - three months in preparation - was funded by UNESCO and organised by Meenakshi, the director of a day and night school programme, started 23 years ago in Auroville, to help local youth gain an understanding of their own culture, language and heritage.

"Ten years ago I discovered that wooden-wheeled bullock carts - quite common in Auroville's first years - had been replaced by rubber-wheeled vandis and could no longer be found in our area. A wooden-wheeled bullock cart has its own music and rhythm and back then,

early morning drivers singing traditional songs en-route to Pondy were a common sight. They would return late at night.

Encouraged by researchers, scholars, universities and associations I started organising this project and established a network to study the ancient trade routes from the salt flats of Marakkanam to Tindivanam. The whole trip would have taken a week, and only two roadworthy wooden-wheeled bullock carts could be found, so we decided to travel the distances between villages by whatever means of locomotion was available, but to enter and walk through the villages on foot. The villagers were very pleased that



Meenakshi

such a wide variety of people were interested in their culture and traditions. In the village of Uppu-Velur a teacher told us that, sparked by our interest, they had rediscovered their own history and that the village had once been an important rest stop for salt cart caravans, complete with inns, lotus tanks, and ponds of which only a few remain in use today. Two scholars from the Tamil Nadu Department of Archeology were with us and added their knowledge to the discussions we had with the villagers. Another woman from the nearby Javadi Hills was an expert in healing herbs and was able to collect bags of them in the scrub jungles of Marakkanam, whose properties she then explained at a meeting held in the higher secondary school.

In the same area we came across a still standing plot of ancient trees that the villagers protected and respected as a sacred grove. Upon our arrival at the Gidangil Shiva temple on the outskirts of Tindivanam, close to the original site of the king's palace, we were met by a band and twenty festooned wooden and tyre-wheeled bullock carts belonging to the Bullock Cart Workers Development Association based in Villapuram. We passed a resolution that for at least short distances of five kilometers between villages, animal drawn transport should be used to reduce fuel consumption and encourage and provide agrarian employment for such trades as carpenters, blacksmiths etc.

I feel the project was a success, a grassroots people's project that gave us a greater awareness of our bioregion first described in Sangham poetry, and it created valuable links with many local people. Our next Heritage School project, also funded by UNESCO, will be held in Auroville in December, before the harvest festival of Pongal, and will be a celebration of the many aspects of traditional Kolam drawing."

Roger