

Auroville Today

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PHOTO COURTESY GIORGIO

The bonfire in the amphitheatre of the Matrimandir on August 15, 2008, Sri Aurobindo's birthday and Independence Day of India. The photo has been taken from the top of the Matrimandir.

Natural dyeing now state-of-the-art

The market is booming. And we are just at the beginning." That's how 28-year old manager Ruby sums up the prospects of *The Colours of Nature*, Auroville's natural dyeing unit. Started in 1992, the unit has seen more downs than ups, but, says Ruby, "we are now confidently looking forward to a very bright future."

The reason? "We've found out how to dye in any colour and guarantee similar quality and colour fastness as synthetic dyes," says Jesus, the unit's founder. "It has been a long process, but in December last year we completed the research. We are now able to produce all colours

using 100% eco-friendly natural dyes. And the colours are as lustrous and fast as those obtained with chemical dyeing."

It's a bold statement. But Jesus is well-known for his tenaciousness and perseverance, so it shouldn't come as a surprise that he finally managed to learn how to fix and enhance the colour of natural dyes.

Birthpangs

"I have a deep connection to nature. I love the colours of the earth. I love to roam outdoors looking at plants, learning about nature," says Jesus. "Many years ago I went to Kashmir to learn how to make silk carpets in the traditional way, using naturally-dyed silk yarn. Then I discovered that naturally-dyed silk didn't exist anymore. It has been replaced by cheaper synthetic dyes that are polluting the environment. It was a great disappointment. The harmonizing, gentle, soft and subtle colours of natural dyes had disappeared."

A few months later he joined Auroville, and brought the idea of dyeing with natural dyes with him. "It had become a passion. I travelled all over India to collect information on traditional dyeing techniques. But it was not easy. Hardly anybody practises this technique any more. The knowledge of natural dyeing, which has been used in India for thousands of years, is in danger of being lost. Recipes are rarely available and there is a long-standing tradition of keeping recipes for dyeing secret. Friends sent me whatever information they could. Then I found some masters with knowledge about traditional dyeing who were willing to train me for a few months. After that I was on my own. I learned by trial and error from books and by experimenting."

Another startling discovery was that those who were still practicing natural dyeing techniques were using shortcuts to remain competitive. "Most of the so-called natural dyers and printers are using synthetic indigo for blue and synthetic alizarin for red colour, instead of natural dyes made from *Indigofera tinctoria* and *Rubia cardifolia* plants. They also often use heavy metals and toxic chemicals to facilitate the dyeing process," explains Ruby. "These processes are cheaper, but also heavily polluting. We decided that Auroville's natural dyeing should only involve environment-friendly materials, and that our effluents should be properly treated in our own wastewater recycling plant."

This high-spirited and ambitious decision led to a slow start. "We began as an R&D unit. It took many loss-making years to discover and develop natural dyeing processes where all aspects of the cycle, from plant growing to the treatment of our wastewater and solid waste are environment-friendly," says Jesus.

The art of indigo dyeing

He began dyeing natural cotton with indigo. "Looking back, I realize I started with the most difficult colour and material," says Jesus. "We ran into problems from day one. Cotton is the most difficult fibre to colour, and natural cotton – cotton grown without pesticides or fertilizers – was scarcely available. Then there was the problem of how to get the dye. Since the discovery of synthetic indigo in 1880, nearly all natural indigo plantations in India have disappeared. It was by accident that we discovered that around Gingee, near Auroville, a few plantations survived, where the techniques for extracting indigo from the leaves of *Indigofera tinctoria* have been handed down through generations."

Then followed years of experimentation. "We had more or less to re-discover the process of indigo fermentation, which had been used in

Aurovilians are an inventive lot: you have to be just to deal with the vagaries and unpredictability of daily life here. But when Mother insisted that Auroville will be a place for "experiments, research, studies" she seemed to have something else in mind. She wanted the Aurovilians to break new ground, untrammelled by the pressures of money and prestige and politics that dictate so much research elsewhere in the world.

Over the years Auroville has had its share of mad-cap inventors and inventions - who can forget those early ideas about making the Matrimandir crystal hover in mid-air? - but generally Aurovilians' inventiveness has been a response to real and pressing needs. In the early years, this resulted in things like a cheap, portable, environmentally-sensitive house (the 'capsule') or a less energy-intensive way of pumping water (the Cretan windmill) or homemade algae cultivation. Today, it's more likely to mean innovative computer programmes or cheap alternatives to air-conditioning or new forms of electric transport.

In this issue we present some of the latest Aurovilian inventions and our not-so-mad inventors.

India for thousands of years. In the beginning we sent our samples to a laboratory to be checked for colour fastness and to determine to what extent our processes were polluting. It took years to perfect, but today indigo dyeing has become our main activity."

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PHOTO: COLOURS OF NATURE

Naturally-dyed silk yarn from *The Colours of Nature*

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Natural dyeing now state-of-the-art

Synthetic versus natural dyes

When synthetic dyes came into the market, it caused a rapid decline in the use of natural dyes, and soon replaced the latter in a few years.

Research, however, has shown that synthetic dyes release harmful chemicals that are allergic, carcinogenic and detrimental to human health.

The dyeing process with synthetic dyes requires the use of salts and chemicals that resist bio-degradation. To separate these substances from the effluent, expensive processes like ion-exchange, reverse osmosis, evaporation, etc. are required. Yet, they still leave both soluble and insoluble waste behind for which appropriate disposal methods are yet to be discovered. The discharges from synthetic dyes continue to pollute both soil and water and, as a result, vast tracts of land and water bodies can be found with traces of colorants, salts, and toxins.

Natural dyes are non-toxic, non-carcinogenic and not hazardous to health. The discharges from the natural dyeing process, such as tannic acid, aluminium hydroxide (end-product of alum mordanting) and natural dyes are less polluting, and can be easily broken down in septic tanks. Any discharge of alum into the soil forms minerals, e.g. gypsum, that are normal constituents of soil and does not affect the salinity.



Preparing natural indigo in Gingee

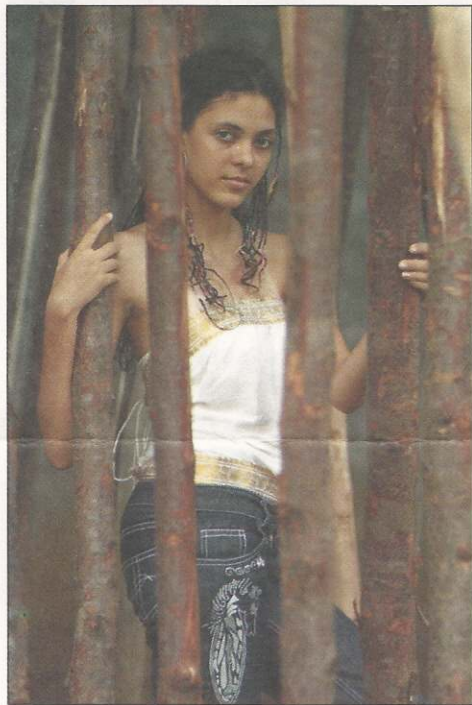


ALL PHOTOS COLOURS OF NATURE

The manjistha colour bath from *Rubia cardifolia* results in a rich red-coloured natural-dyed yarn

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"While we mastered the process for cotton indigo dyeing some years ago, it wasn't until December last year that we clinched the technique for dyeing cotton in other colours," says Ruby. "Earlier, our colours were not lustrous and not colour-fast. We wondered what we were doing wrong. According to reference books, a few hundred years ago many beautiful colours were made in many places in India. Why were we not able to reproduce them?"



An Aurovillian youth modelling the 'GoIndiGo' brand of jeans from *The Colours of Nature*

The solution, it appeared, was in the application of the "mordant". Although some fabrics such as silk and wool can be coloured simply by being dipped in the dye, others such as cotton require a mordant, an element which aids the chemical reaction so that the fibre absorbs the dye. "The mordant prevents the colour from either fading with exposure to light or washing out," says Ruby. "We finally discovered how to use alum, a non-polluting mordant, to fix the colours and make the fabric colour fast. Now can we produce yarn with comparable colour quality as when using synthetic dyes."

The market in India responds. "Through word of mouth, through our films on YouTube and through our website, people come to know about our work. Now we not only sell organic-dyed cotton yarn in any desired colour, but also ready-made jeans under the brand name GoIndiGo Jeans. They can be ordered through the internet and bought in selected shops in Bangalore," says Ruby.

But sales are not restricted to India alone. All over the world, interest in 'natural' products is on the increase. "Take Korea," says Jesus. "I'm scheduled to give a lecture at the International Symposium and Exhibition on Natural dyes in Daegu in September this year."

"Organic" is 'in'. "Natural" is 'in'. "Environment-friendly" is a must. That's how former Aurovillian Loes Overbeek describes the emerging trends in the European fashion market. Loes worked for many years with *The Colours of Nature* to develop the organic textile market. Now she is the organic textiles advisor and production coach to a European clothing brand.

"Increasingly, European brands ask for organically-grown products, manufactured by companies that are doing ethical business. *The Colours of Nature* qualify; they are even ahead of the times. We develop with *The Colours of Nature* organic fabrics, naturally-dyed for a range of children clothing (0-4 years). In harmony with the company's holistic approach to business, the fabrics produced by *The Colours of Nature* are being tailored by a company in north India to get the best possible finish. The fashion line is very successful, particularly as mothers want to care for their babies' sensitive skins and the fabric contains no contaminating pigments."

Loes predicts that in another ten to twelve years much of the market will have turned organic. For organic has a special quality. "Whenever we show the garments to people, there is always the same response. They become silent," she says. "The cloth communicates."

Ethical business

Jesus explains the concept of doing ethical or socially-responsible business. "That our products are organic – grown without the use of pesticides or fertilizers – is the first step. That our production methods are environment-friendly, that we do not pollute the environment and practice water conservation, is the second. The third is that we are a socially-responsible business; we do not employ child labour, we offer good working conditions and decent salaries."

Loes adds. "In Europe and the USA, in Korea and Japan, people are becoming aware of the conditions in which a product is manufactured. Big firms such as Nike were even boycotted when it was discovered that their products were manufactured in so-called 'sweatshops' where people were working in inhuman conditions. These companies now have setup a special department that tries to ensure that there is a holistic business approach – looking into all aspects that go with the making of a product. Also the European Community has recently asked companies to look into the ethics of their business – the awareness is growing. In India it means that grants for product development are utilized without corruption; that the labourers are well-paid and work in good environments; and that the perks are not only going to the bosses of the industry."

An Auroville approach to clothing?

One might think that selling organically-dyed material in Auroville is like preaching to the converted. "Sadly not true," says Ruby wryly. "Auroville units still have little understanding of the concept of organics. In autumn this year we plan a presentation to all the Auroville fashion units showing how far we have got with colour fastness. We will present our colour range and explain that we can naturally dye any material, be it cotton, linen or silk. For we believe they have to change attitude. They are still mostly using chemically-dyed cloth, not organically-grown cotton or linen, and silk that has been cleaned by using chemicals. But if Auroville has to give a message to the world, this should extend to its clothing industry."

Loes goes a step further. "The Auroville fashion industry must start dedicating itself to innovation, for the market is more and more ready. Working together, they should present 'The Auroville approach to Clothing' in international fashion shows, uniting behind the banner of organically-grown, naturally-dyed and ethically-produced products. It's time to move ahead. In clothing as in everything else, Auroville has to set an example." *Carel*

Where natural dyes come from

Natural dyes are obtained from plants, minerals (e.g. ochre, which is obtained from an impure earthy ore of iron and animals) and animals (such as 'lac' which is taken from the insect *Kerria lacca* which is cultivated on *Kusumbh* and *Tesu* trees.)

Most dyes come from plants. Almost all parts of the plants like root, bark, leaf, fruit, wood, seed, and flower can be used to produce dyes.

India has more than 450 plants that can yield dyes and some of them possess medicinal value. For example *Terminalia chebula*, the brightest of naturally-occurring yellow dyes, is a powerful antiseptic which revitalizes the skin, while indigo gives a cooling sensation.

Though there is a large plant resource base, little has been exploited so far. Due to lack of availability of precise technical knowledge on the extracting and dyeing technique, natural dyeing has not commercially succeeded like synthetic dyeing.



Baby clothing in Europe from naturally-dyed organic cotton from *The Colours of Nature*

The natural dyeing process

Natural dyeing with indigo is a 'wet dyeing process'. It takes place in huge terracotta pots buried in the earth. Indigo is combined with water, seeds and lime and left to ferment. Yarn or cloth fabric is first washed in water with soap of high alkalinity, then steeped in the pots of dye (the yarn or fabric comes out green), and then hung to dry in the open. With exposure to air, the green colour gradually turns to blue.

The indigo fermentation process is earth-friendly. It consumes less water than other indigo dyeing methods, and requires no mordants. The fermenting mixture remains in the pots all year, and is checked each day for pH and bacterial concentration (this is done by smell!). When its life is over, the dye mixture goes through a simple water purification process before being reused for agriculture.

In mordant dyeing, cotton yarn is first cleaned of starch and other impurities through boiling. Then it is immersed in the fixing and colour baths, and later cleaned again to remove excess colour. The entire process takes about eight hours.



Jesus helps a Kindergarten child to dye her T-shirt with indigo

Why organic cotton

Conventional cotton is grown using a cocktail of chemicals: pesticides, herbicides, insecticides, and fertilizers. According to *treehugger.com*, conventional cotton is one of the most chemically-dependent crops, "sucking up 10% of all agricultural chemicals and 25% of insecticides on 3% of arable land." That is more than any other crop per unit area. This translates to approximately 0.3 pounds of chemicals to produce enough cotton for a t-shirt, and 0.75 pounds of chemicals for a pair of jeans! And that is not all – according to the World Health Organization (WHO), each year about 20,000 deaths occur in developing countries due to pesticide poisoning, many of which are from cotton farming.

What Savitri means to me

On her recent visit to Auroville, Governing Board member Ameeta Mehra gave a talk about her experiences of exploring Sri Aurobindo's epic poem 'Savitri'

In 1988, when I was just out of college on my second visit to the Ashram, Nirod-da (Nirodbaran) asked me, 'Do you want to learn poetry?' to which I said 'Yes'. He said I should begin with *Savitri*, but that I must first learn about the iambic pentameter and scansion. He showed me how and then said, "Now go and scan these lines, and bring them back to me." He would correct it later and this went on for about a month. All I was doing was this scanning – I didn't understand a word of *Savitri* – perhaps imbibing a little of its rhythm in the process. Since then, there have been others who have introduced me to *Savitri*, but the one I would like to mention is Sri Aurobindo himself.

I had this deep inner aspiration to hear Sri Aurobindo read *Savitri*. I had asked around in the Ashram if anyone had got a recording of Sri Aurobindo himself reading *Savitri*. They all said no. Many months later, when I was in Delhi, I saw a vision involving Sri Aurobindo. We were sitting at a table, and he asked me "So what would you like me to read – *Essays* or *Savitri*?" And I replied, *Savitri*. He began reading *Savitri* in the most musical, soft, clear voice I've ever heard. After the dream, I remembered the canto he read, but was unable to find those lines, not knowing *Savitri* in those days. That experience remains with me to this day – what struck me was his clear, soft, beautiful voice, un-dramatic and quiet.

The first thing about *Savitri* that caught my attention is that it is an invocation of the human soul to the Supreme – an awakening of the human aspiration for the divine consciousness, and it has the power to resonate that seeking and experience in the reader.

That hour had fallen now on Savitri.

*A point she had reached where life must be in vain
Or, in her unborn element awake,
Her will must cancel her body's destiny.*

This is especially relevant to those in the Ashram and Auroville, as they certainly have reached this point in their development, the point when we feel that life itself is vain unless there is something greater than this human ego and human existence as we see it today.

A second aspect of *Savitri* is that its stanzas can be experienced as mantras of healing. Just listening to *Savitri* can heal and invoke energies that are far beyond our normal reach. This is my personal experience. In 2007, I had a terrible pain in my back and wasn't able to get up and do my work. I decided to do something useful. I had Nirod-da's CDs of *Savitri* with me, and spent the next eight hours listening to his recitations.

I must have gone into a very deep slumber. Then, suddenly, I felt there was a golden light on my back. I don't know what it did, but I got up from my bed and felt perfectly well. There had been no pain killers, no medicines whatsoever. This showed to me the power of *Savitri*. When one listens to *Savitri* or reads it, the key thing is aspiration. If there is an aspiration to understand, to go deeper, to call the divine, to call the Supreme, to ask Her help to transform our lives and our nature, to ask Her help to get rid of oneself from oneself so to speak, then there is a help. Like all mantras, *Savitri* has to be invoked; the power of the mantra has to be invoked.

A third aspect of *Savitri* is its help towards the growth of consciousness. *Savitri* creates the conditions for receiving spiritual experiences and developing capacities. If one reads with invocation, the power of that invocation creates a vibration in the body, in the mind, and in the consciousness that brings forward something new. It brings to the seeker new capacities –

for example of poetry – and an intensification of consciousness. That is a great gift of *Savitri*.

Reading *Savitri* keeps the consciousness at its highest point. Whenever one feels that one has come down to the ordinary level, one word or one passage of *Savitri* is sufficient to uplift one from the ordinary consciousness. I believe that is because *Savitri* has been written from the overmind consciousness. There is nothing mental in it. And that explains the impact it has on the human consciousness. Yet, it also makes it very difficult to explain *Savitri*. At the Gnostic Centre in New Delhi, we read *Savitri* once a week, without much explanation, as the intrusion of the mental consciousness causes a lowering of the vibration, perhaps because the mind cannot explain what has come from a much higher level of consciousness.

I discovered a fourth aspect of *Savitri* that is personal to me: *Savitri* creates a new prototype of the woman. The main protagonists of all our great epics so far have been men: Sri Ram, Sri Krishna, Buddha, Christ, Mohammed. But Sri Aurobindo creates a woman as the main protagonist. Why? I think it has something to do with fact that *Savitri* is the first epic poem written for the new species. There is the coming to the fore of the Mahashakti in a human body of the woman, *Savitri*, who conquers death with the supreme power of Love. *Savitri* is a mantra of love, of human love turning divine and the Supreme Love changing the laws of life and death, and transforming it into a Life Divine.

Fifthly, *Savitri* contains some of the greatest passages, describing the human condition. I have not read a better exposition on the nature of the human being and the problem of pain and suffering, and more importantly the way towards equality and bliss here on Earth. *Savitri* not only states the problem but also gives the solution. This exploration into man's consciousness, into the nature of human beings, is something unparalleled.

A sixth aspect of *Savitri* are the passages revealing the supramental world. In one of my favourite passages, Sri Aurobindo writes:

*I saw the Omnipotent's flaming pioneers
Over the heavenly verge which turns towards life
Come crowding down the amber stairs of birth;
Forerunners of a divine multitude,
Out of the paths of the morning star they came
Into the little room of mortal life.
I saw them cross the twilight of an age,
The sun-eyed children of a marvellous dawn,
The great creators with wide brows of calm,
The massive barrier-breakers of the world
And wrestlers with destiny in her lists of will,
The labourers in the quarries of the gods,
The messengers of the Incommunicable,
The architects of immortality.*



Ameeta Mehra with Shradhdhavan at the new exhibition hall at Savitri Bhavan

Note that He has not written in the past or future tense. He uses the present tense. This aspect of *Savitri*, where *Savitri*, reveals a new world, the birth of a new species, of a new consciousness in human form descending down the stairs of birth, is fabulous. Nothing can give you more confidence, a greater sense of the future that lies before humanity, than reading these lines. You feel almost that Sri Aurobindo says here 'tatasthu' – That is done. Now we have to wait for this new world that is already present to manifest fully.

Mother has said that everything is in *Savitri*. The answer to every problem can be found in *Savitri*. All the issues of human existence are in *Savitri*. All the secrets of a Divine existence are in *Savitri*. The future is in *Savitri*. She said to concentrate for a moment and if you do it in sincerity, if you have a real problem, if there is a real question, open *Savitri*. You will come straight to the page that gives you the answer. This is the power of *Savitri*. Every page, every word, has in it the new consciousness. And it evokes that in us.

Another power contained in *Savitri* is the material certitude of a physical immortality, not in a hereafter but here on earth. It is this supreme revelation and experience that *Savitri* has the power to transmit to those who seek Her.

Finally there is the aspect of *Savitri* as the autobiographical epic of the combined yoga of Sri Aurobindo and The Mother. We know of many instances when Sri Aurobindo read passages from *Savitri* to The Mother, and she would say "Ah! Voila this is what I went through last night!" He wrote what She was experiencing. Similarly, Sri Aurobindo's *Record of Yoga* shows that Sri Aurobindo's own sadhana has been at the basis of his description of the yoga of King Aswapati in *Savitri*. At the Gnostic Centre after studying the 'sapta chathusta' in the *Record of Yoga* with Richard Hartz of the Sri Aurobindo Ashram Archives, we began to appreciate the extent to which the 'sapta chathusthya' is reflected in the yoga of Aswapati, and the yoga that preceded Sri Aurobindo's writing of *Savitri*. 'He drank the Infinite, like a giant's wine' is truly a testimony of his own sadhana in the *Record*. As one begins to go deeper and deeper into *Savitri* one gets a glimpse of the experiences He had.

Ameeta Mehra

In brief

UNESCO

On the occasion of Auroville's 40th anniversary, the Permanent Delegation of India to UNESCO will host an Auroville event in Paris on October 10, 2008. The programme includes a round table conference on the topic "An Emerging World: Its Future Horizons" and a cultural performance by Nadaka and his group.

Visit Dalai Lama

His Holiness the Dalai Lama will visit Auroville on January 22, 2009 to inaugurate the Pavilion of Tibetan Culture and give an address on the theme of "Universal Responsibility and Human Unity". The work to finish the Pavilion is in progress but financial help is required. More information is available at www.auroville.org/thecity/tibet_pavilion/index.htm

Housing shortage

On August 1st, 2008, 60 Aurovilians and 80 Newcomers were requesting housing. A survey completed in May 2008 shows that 70% of those who need a house are in urgent need; while 74% have insufficient funds for basic housing (valued at less than 5 lakh), and 40% have no funds or have less than 1 lakh which could be used for housing. The Housing Service calls for urgent measures to be taken to finance new housing projects.

Auroville Taxi Share

Unity Transport service offers a taxi pooling service. Trips to and from Chennai can now be pooled with Aurovilians and guests. "Dust gets reduced, there will be a substantial saving of fuel and money and you'll have the exhilaration of friendship and sharing along the way," writes Unity Transport service

Child sex abuse

A group of Tamil Aurovilians and staff who work in Auroville outreach schools or health services attended a workshop on child sexual abuse (CSA) in India given by the Chennai-based NGO Tulir. Tulir painted a bleak picture of the current state of incidences of abuse in India and social and cultural taboos on the subject. National statistics from India show that at least 40% of children interviewed were exposed to some form of sexual abuse, this increased to levels of 53% in larger cities such as Delhi. Most striking was the high proportion of perpetrators coming from family members or near relatives and the high level of incidents with girls. Education of children and family members around this subject was seen to be the key to tackling the problem.

Water awareness

A book on water awareness has been produced by Auroville Coastal Development Centre in co-operation with Water Harvest for school distribution. To obtain more information please contact acdc@auroville.org.in

Monkey at the Matrimandir

On August 15th, Sri Aurobindo's birthday, a monkey (of the *Rhesus* genus) was spotted inside the Matrimandir. He was seen scampering up and down the innerskin, and sliding down the handrail of the ramp. On being shoosed out, he headed towards a port-hole that had accidentally been left open and escaped towards the banyan tree.

INNOVATIONS

Natural 'Auropaint'

Auropaint India, located in Udayan near the Auroville community Hope, imports AURO organic ecological paint from the company AURO in the German city of Braunschweig. "AURO is a small enterprise where about forty people are making paints, plasters, wood oils and varnishes, using only vegetable and mineral raw materials," says Jürgen Becker who represents the firm in India. "Contrary of what many people think the name AURO has nothing to do with Auroville or Sri Aurobindo. It is a pure coincidence. The founder of AURO paint, Dr. Hermann Fisher named his company after a doll of his daughter."

Jürgen is a bio-architect, mainly involved over the past 20 years in designing houses made from natural materials. His latest material is the coconut-fibre. He worked for over three

years introducing this as a building material in tsunami-struck Indonesia.

Asked about the difference between normal paint and AURO paint, Jürgen explains that most paint is based on petroleum products. "The solvent that is used is turpentine or alcohol, and the paint has a whole cocktail of chemicals and sometimes heavy metals. It affects the nervous system and affects the brain. It's dangerous stuff that can cause 'painters disease' and provoke asthma and allergies. It is also not bio-degradable and emits toxic fumes throughout the life of the paint. AURO paints and varnishes are free of these health or environment problems. The raw materials that AURO uses are of mineral origin or are derived from organically certified, plant based resources (tree resins, plant oils, vegetable dyes etc). The "solvents" used come from the skin of the citrus fruit. All products are biodegradable and do not pollute the environment.

The paints have been certified in the EU to be carbon-neutral, child-safe, and free of chemicals or heavy metals," says Jürgen.

The American Pavilion in Auroville's International Zone recently bought the paint to protect the steel surfaces of the building. "We have been working with it and the result is good," says the caretaker. "The paint has a very elastic smooth finish. After seeing the quality we will order some more."

The latest development in the AURO range of products is Fresh White. The firm claims that the paint cleans the air. "This is the only photocatalytic paint in the world, and breaks down or neutralizes formaldehyde and VOCs on contact," says Jürgen.

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. AURO paint is more expensive than conventional paint, but in its application it actually



Auropaint used in a children's play ground in Germany

works out cheaper than other conventional paints on the market.

Robert

For info: www.auropaintindia.com

Centre for Scientific Research – looking forward

Tency, one of the founders of Auroville's Centre for Scientific Research (CSR), looks back on 25 years of research and gives his views about the future.



Tency shows off Auroville's newly acquired Oxy-hydrogen machine

Auroville Today: What has been CSR's greatest achievements from a product or market standpoint, and from your personal view point?

Tency: (laughs). We're always a bit sceptical about 'greatest achievements'. We don't fit in that category. We have been doing quite well in ferrocement technology. We were one of the institutions which brought it from the lab to the field. And we have evolved with it over a period of nearly 25 years; from roof channels to door panels, to water tanks.

Now there is a huge amount of work – mainly prefabricated ferrocement

modules for waste-water treatment. Instead of custom-designing a system, we manufacture pre-fabricated modules, which we put on a lorry and install directly on site.

We got a kick-start through the tsunami projects when we were asked to do a few such units. And they nicely combine two areas where we have expertise: ferrocement technology and waste-water treatment. This is also the area where we make our living and manage to set aside funds for further infrastructure, which is needed.

Over the years, we have co-existed with AuroRE. We have quite a

strong bond – we see each other as sister units – and it is difficult to separate the two.

Together we've tested all the possible renewable energy devices which fit in this climatic zone. Through trial and error, we've tried to find out what works and what doesn't.

Our conclusion is that if, as a community, we want to grow towards a more collective system and enter the age of 'energy self-sufficiency', the answer lies in thermal energy. 'Heat' is the one of the renewable energy sources that is available to us here in Auroville 24 hours of the day, seven days a week. We are actively exploring this is area now [see box below].

We are also jointly involved with another CSR unit, Auroville Water Harvest, in trying to draw up a sustainable water scenario for Auroville. We have done all the scientific studies and now we know that our aquifers are being depleted at a serious rate. So we have got two initiatives off the ground: one is to increase the rainwater harvesting capacity in the tanks around the Kaluveli area, and create infiltration fields for letting the rain water infiltrate underground and replenish the aquifers, which are our only water resource at present.

The other one is a personal passion – to do something with the Pondy Sewage farm. We're talking about 15,000 million litres of wastewater a day which is not used and could be a resource, not only for Auroville but for the whole region.

Studies have been going on for the past 7 years. To clean this resource, we know the answer involves primitive plants, algae. Here we are working with Alok of AuroRE and Auroville Water Harvest.

Another activity of CRS are the training programmes. Each month, we receive enquiries and requests from students who have finished

their college degree and who want to do a practical study in Auroville.

Some years ago, the idea of setting up a post-graduate institute came about, combining the expertise of people working in CSR and AuroRE. This has now culminated in the Design, Energy and Water Institute or DEW.

Already this year a group of sixteen students have come and participated in learning and doing hands-on projects.

Does living in Auroville help in innovation and discovery?

There is usually a very long gestation period between when an idea comes up and the first prototypes are built; like the dehumidifiers for example. What is nice about this community and what is unique, is that we are able to test and fine tune our products under field conditions instead of in the lab.

All the systems that we've developed here have had a long testing experience within Auroville.

The fact that the community is willing to play the guinea pig is special. Of course, freak-outs happen, and explosions do occur. Ultimately what comes out is a product which has been through a full-scale testing cycle. No other manufacturer has the possibility to test their products under all conditions, and that includes difficult clients and personnel!

Incidentally, money has never been a major hurdle. We never had an abundance – so we could never spend on crazy ideas – which perhaps was a good thing. Our projects have always been connected with practical self-interest.

What helps you remain an optimistic researcher in Auroville?

There is a beautiful statement made by the Mother in her talks with the children of the Ashram school. Someone asks her about the qualities needed and She replies that enthusiasm and discipline are the two main pillars necessary.

And I am still very enthusiastic!

What are your views on patents and intellectual rights?

This is personal. Everyone thinks a little bit differently.

We have never managed to get a patent. It is not worthwhile – the energy and funds that are needed for that process are immense.

More importantly, for me, to share an invention, something that works, it is a kind of indirect payback to India and society. It is a gesture of gratitude – for having helped and sustained the Auroville experiment over many years.

When we deliver a product, it is paid for. So why should we, on top of that, have a patent? Patents belong to the old world – increasingly things move so fast that a better product is already in the market after a short time.

Any plans to start a manufacturing plant as your products get popular?

The fact that we move from product to product is because others take it over. Every 5-6 years, we have to find another product because the guy next door is doing it as well as you, plus a lot cheaper. So it forces us to be in a perpetual education and unending creativity...

My chair is not secure; and forget CEO status!!

Priya Sundaravalli

Oxy-hydrogen machine

As part of the attempts to understand if the energy needs of the Auroville community can be met on a large scale by thermal power, CSR is experimenting with a device called the oxy-hydrogen generator or the 'Brown gas' machine.

Oxy-hydrogen was first discovered by scientist Yull Brown, so it is also referred to as 'Brown gas'. Using pure water as raw material and a small amount of electricity, water is split by a process of electrolysis into a mixture of two gases, hydrogen and oxygen. The oxy-hydrogen gas mixture is combustible and ignites to temperatures between 800 and 3000 degrees centigrade.

What is unique about oxy-hydrogen as fuel is that it burns completely and the by-product is water vapour, making it the perfect renewable energy source.

Some current applications of oxy-hydrogen generators include steel and metal industry

Humvees: ready, road worthy, and 'green'

A fleet of fifteen 'Humvees', EV Future's 800-watt electric two-wheelers, designed in Auroville, and fabricated, and tested under Auroville's harsh conditions will soon be ready. Three are already on the road.

“Three are running, two are in final stages of finishing, and ten are still under construction,” says Akash pointing to skeletal steel frames of the Humvees in various stages of completion. Akash is one of the co-founders of EVFuture, a research and development technology venture that he together started with friend and fellow Aurovilian, Sukrit.

It was exactly a year ago, that Auroville Today had met the two young entrepreneurs, both first-generation Aurovilians. Belonging to a group called 'LADS' – Laboratory of Auroville Designers – they wanted to design electric two-wheelers for Auroville conditions. Today, their models, called the 'Humvee' – “a name inspired by its clunky appearance and all-terrain capability like the American Hummer” – is ready to hit the road.

In EVFuture's workshop cum laboratory in Reve off the Edaiyanchavadi road, an extension of the simple earthen home of Sukrit, Auroville, and their daughter Ishana, the clang of hammered metal, the hiss of the welding flame, and the soothing hum of electric motors being tested breaks the silence of the air. “Most problems have been ironed out and we're in the process of production,” says Sukrit.

“Humvees are 800 watt electric two-wheelers that run on the environmentally friendly lithium-cell batteries, and can reach maximum speeds of 50-60 kilometres per hour,” explains Akash. While they import the main components like the hub motor

(mounted on the rear-wheel which makes chains and gears redundant) and battery cells from China, the rest is all Auroville-designed and Auroville-made. “This includes bending steel pipes for the frame!”

A unique feature of the Auroville-developed Humvee is a sophisticated but user-friendly electronic battery management and display system designed by Akash. “It is currently being tested and fine-tuned in my own Humvee,” he says.

EVFuture is in the process of obtaining the required approvals from the Automotive Research Association of India (ARAI) in Pune. “This process is being held up,” explains Akash. “There are many who believe that electric vehicles are not wanted by certain self-interest groups due to the fact that it will encroach on their market. Many of the products you see listed on our website are sitting in warehouses waiting for ARAI approval. With any luck ARAI will approve many of these vehicles in the coming months.”

All fifteen of EVFuture's Humvees have takers, pre-ordered a year ago by interested Aurovilians. “Actually there are many more who want this vehicle, but we're not ready.” For Akash and Sukrit did not factor in the costs or time that would be involved. Notwithstanding that the new owners pay for the Humvees, each unit has ended up costing more than its listed price. “We have spent a lot more personal resources than we'd anticipated and it would have been nice if there was some support or a generous

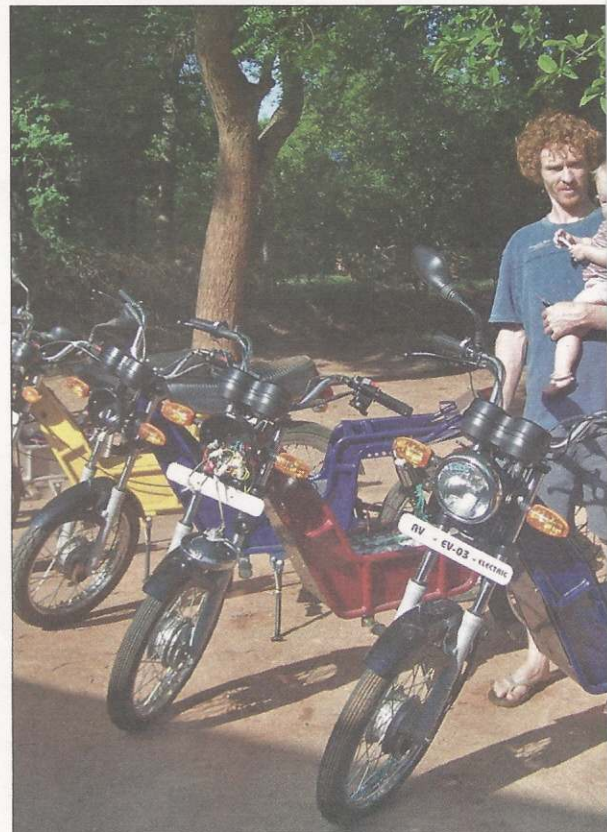
backer,” says Sukrit. “But then this is the way innovations can manifest in Auroville,” he adds sagely. It was EVFuture that launched the solar charging station for electric vehicles opposite the Solar Kitchen on Earth Day 2008, a project funded by Stichting de Zaaier.

Despite EVFuture's financial reality, the duo will soon be delivering what they have promised. “We're committed to these 15 bikes,” says Akash. “Once that's done, we'll sit down to decide if we want to go on producing. Because it is not viable on a small scale; someone else should take this up.”

Already inquiries are trickling in through their website www.evfuture.com which has become India's largest electrical vehicle portal. “We have people from within Auroville and as well as investors from outside including China, who have expressed interest.”

Having extensive information about electric bikes, electric scooters, electric cars, and other one-of-a-kind electric vehicle innovations – the site also provides simple do-it-yourself instruction on how one can convert a regular manual bicycle into electric. “We even sold a limited number of kits,” says Akash. “Ultimately our aim is to help people dream about what we can do with electric vehicles, and to open up possibilities and I think in this we have succeeded.”

Priya Sundaravalli



'Made in Auroville': Sukrit, Ishana and Akash

In perpetual inventiveness

It's cool within the office of Auroville's Centre for Scientific Research (CSR); not cold, but a pleasant chill compared to the outside. Yet, no steady hum of an air-conditioner can be heard...

That's correct. At CSR most of power comes from solar photo-voltaic system and running an a/c is unviable with that," says Alok Mallick matter-of-factly. "We have an environment-friendly option; a home-built dehumidifier. It takes the moisture out of the atmosphere and because of that we feel nice and cool – even though there is only a 2°C difference between the inside and outside. The system uses only 800-1000 watts for a volume of 333 square metres of office space as against about 7800 watts for air-conditioning. Not bad, eh?"

Alok is amongst the newest recruits to AuroRE, Auroville's renewable energy unit, which is headquartered at CSR. A mechanical engineer by profession, he joined AuroRE in 2005. One of his main involvements, for the moment, is inventing 'new things'. "We have been involved in developing the solar streetlights in Auroville, designing changes to solar hot water systems, making a bio-mass-based dryer for Discipline Farm, developing solar driers for some NGOs and doing other mechanical engineering designs," he says.

His most promising project is an air-conditioning system that works without using electricity. "The system is based on thermal energy, which means it uses heat instead of electricity," explains Alok. "The technique, called 'absorption refrigeration,' is well-known. It is used for commercial climate control and for cooling of machinery where excess heat is available. It is also used in refrigerators that burn gas or kerosene to create heat to produce the cold inside the refrigerator. The problems with these systems are due to their use of water and ammonia as refrigerant. I have designed a system that does not use water but uses salt to absorb ammonia. A solar hot water system supplies the necessary heat."

"The savings are tremendous as the system uses no electricity for its functioning and only a minimal

amount for its circulatory systems," says Alok. "If the a/c runs for 6 months a year, the investment pays off in 2½ – 3 years. Thereafter the system runs free of cost." Is the invention patentable? He shrugs. "As far as I know, there is no such system in existence in India or anywhere else in the world. We are thinking of patenting it."

While the design phase of the system is over, commercialisation is not yet happening. "We first want to gain more experience with our prototype before commercialising the product," says Alok.

Virginia Tech he participated in the Solar Decathlon 2002, an international competition to design and build, the most effective and attractive house and a small vehicle powered solely by the sun. He later participated as lead diver and engineer on board a vessel that went on three-month expeditions to the Sub-Arctic and Arctic coastal areas. "The team was studying algae as an indicator of changing global temperatures and environmental conditions," explains Alok.

The next challenging project was to design pedal-powered bio-diesel reactors for a number of remote

tribal villages in interior Orissa. "People there did not have a source of clean water and needed fuel to run a pump to draw water up to the village. There was no electricity, the villages were isolated and not connected by road, and they did not have the money to purchase the diesel for normal pumps. Our team came up with the solution of using oil-bearing seeds from the forest as fuel. We built a system to solar-dry the seeds, extract oil from them, and convert the oil into bio-diesel which in turn could run the pumps. The residual oil cake could be used as a fertilizer. We also made a multi-purpose pedal powered grinder by which villagers could grind down the big oil seeds; with a change of sieve they could use it to grind their grains more easily than using stone-grinders or taking

them all the way to the mills in town"

Auroville fits Alok's environmental and spiritual ideals like a glove. What other plans does he have? "Ideas constantly keep popping up," he says. "The team here stimulates each other. For the eco-community Sadhana Forest we designed and built a machine that looks like an exercise bike. You generate electricity while pedalling and this is then stored into a battery. We just released information on Namuna – the solar electric buggy which we developed here in Auroville. [see accompanying article]. We are busy with creating systems to clean water with algae and using it as bio-fuel. There is no end in sight."

In conversation with Carel

The Namuna - An AuroRE innovation

AuroRE continuously tries to come up with new products. Recently, it released information on *Namuna* – the solar electric buggy that has been seen zipping between CSR, Adventure and a few other places within the township.

Namuna literally means "an example." It is also used to refer to "a character." And a character it is.

The prototype *Namuna* is a hybrid vehicle with automatic transmission. It has the capability of running entirely on solar electricity, or on liquid fuel (petro- or bio-based), or on a combination of both. This hybrid feature – both unique and useful – was developed in Auroville.

Namuna has some unique features. When driven in the sun it uses the energy directly from the solar-panel, bypassing the battery. If the power requirement is greater than the demand – when under fast acceleration, on sandy roads, in case of an over-load or while driving in the shade – the motor gets its additional power from the battery bank. The shift between power from the panel and from the battery happens smoothly without involvement of the driver. When one drives slowly or when the vehicle is parked in the sun, the net excess power gets stored in the battery.

After field testing for 2000+ kilometres in Auroville, the prototype has shown to be able to withstand the rugged terrain.

The future models, however, will be solar/electric powered and not be hybrids. This will make the vehicle somewhat lighter and it will perform even better. It will also be zero polluting. As a backup, a recharge option for the grid or any other alternative energy source will be provided. Like the first prototype, the drive will be fully automatic. It will not have A/C or other "fully-loaded" frills. Instead it will have a rather simple look that will highlight its typical qualities – robustness and reliability.

The top speed of the vehicle is 60 kilometres per hour on a good road with the solar electricity generated by it being enough for ordinary use. The range is approximately 50 kilometres on a fully-charged battery. The battery takes about 5 hours to charge in the full sun.

AuroRE intends to make about 10 vehicles in the future. These are strictly 'for Aurovilian consumption only'. The approximate cost of the vehicle – including the on-board

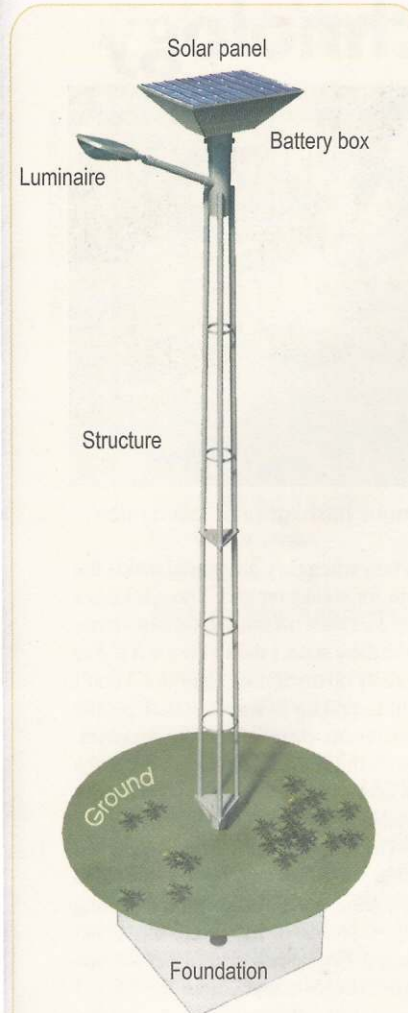


A spin on the *Namuna*. Alok taking Governing Board member Ajoy Bagchi on a test drive. "We are still working on its looks" writes AuroRE.

solar panel and back up option – is estimated to be around Rs. 2,50,000, of which 50% is the cost of the solar panels. Orders will be taken on a "first come first serve basis". Construction will commence after payment for all the 10 vehicles has been made. Delivery time will be

approximately 6 months. AuroRE, however, warns: "We are not a car manufacturer. We want to make a few vehicles just out of our sheer passion for innovation, research, and creativity."

From the AuroRE announcement on the Intranet.



The solar street lamp, AuroRE's latest development. An elegant design with its foundation buried into the ground, the lamp uses bright and powerful LED lights. The solar panel with its tamper-proof and storm-resistant battery box makes it ideal for remote locations. 30 such lamps have been installed in Auroville so far.

Chineses in Auroville

(cutting and welding), jewellery making, incinerating waste and bio-hazards, food-processing, and as fuel for cooking.

Three years ago, when Tency heard about the oxy-hydrogen generator, he became very enthusiastic. It led him on a long search for contacts in India and South East Asia. Finally, he got in touch with Jacky Lin, a Chinese inventor based in Taiwan who had created a commercially-viable oxy-hydrogen generator, and established the Epoch Energy Technology Corporation. Alok of AuroRE met Jacky Lin at a conference which led to three machines being donated to Auroville for field testing and development of new applications.

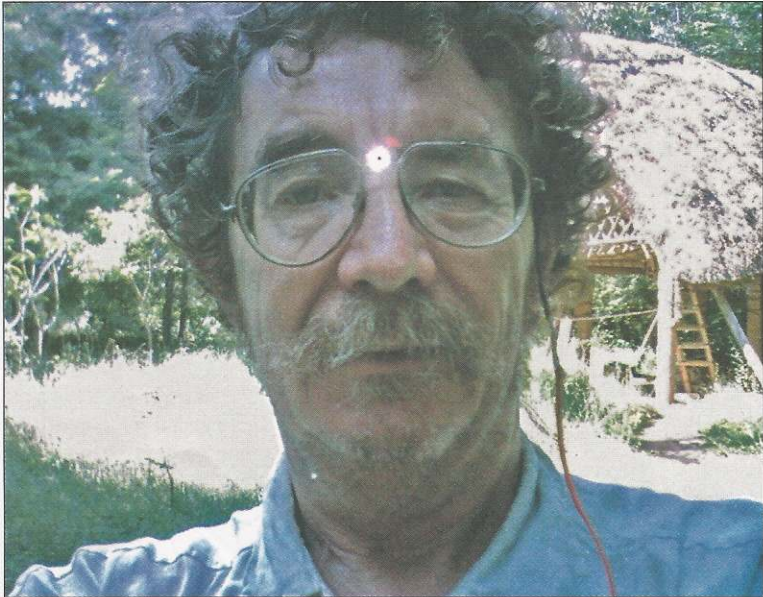
Before the end of the year, CSR hopes to receive a three-member delegation from the company who will demonstrate the various possibilities of the oxy-hydrogen generator.



with EVFuture's Humvees

Innovation Unlimited: Well-being through technology

Hans belongs to a class of inventors who are both original and quirky and have a deep connectedness to Mother Earth. His aim is to leave behind a low ecological and economic footprint, and promote a simple and sustainable living.



Hans and his LED-enlightened 'third eye'

Meeting Hans is like meeting a character out of science fiction, one may even say a bionic man of the future; but this one is full of humour. In the middle of his spectacle frame, sitting squat upon the bridge of his nose is a shiny square shape. "Oh, that," he says with a smile, catching my stare. "I call it my enlightened third eye."

He promptly pulls out a wire from under his collar, plugs it into the back of his glasses frame and, lo and behold, a golden light beams out. "It is very useful, especially in India where one always has power cuts. I use it for work, reading in the evening, and when I'm out in nature and on the beach." As it consumes only 0.1 watts, Hans believes that

it is the right choice for global warming. The device to power this hangs from his neck – a flat biscuit of a cell phone battery. "It's DC current so it won't harm the body."

Hans settled in Auroville in 1995. "Towards the end of the eighties, I decided to move from Germany to a country which was warm throughout the year." He was searching for a spiritual community next to the equator because of 'winter-depression' in Europe. He looked towards the East but "India just didn't attract me." But earlier, Hans had come across an article on Auroville in a German magazine. "Suddenly I remembered this, and decided to visit Auroville. But only very briefly!"

His original plan to stay three days extended to three weeks. "I could imme-

diately feel the power of the place, both at the Ashram and in Auroville," he says. "But in the beginning it was very strange for me to see people kneeling at the Samadhi." Now he attends almost every Darshan.

Hans's first contact with Auroville was overwhelmingly positive. "Not only was there better weather with the sun available 300 days a year, it felt like a place one was free to do something without bureaucracy. Okay, now I know one can't do everything ones likes in Auroville – there are rules to follow here also."

What did he want to do? "My first idea was electric vehicles," he replies. "With all the sun I thought this would be most appropriate." But then something happened that led Hans towards bio-electronic healing. "A friend of mine came down with amoeba attack, and another friend came by with a special instrument he had from Switzerland called a 'Zapper'. It emitted a healing frequency that could be used to cure many illnesses. And indeed my friend was completely healed after using the 'zapper'. Being a technician, I knew how easily one could generate frequencies electronically, and that's how it all started."

This was Hans's first product – the Auroville 'Zapper'. With a catchy slogan, "Have a doctor in your pocket" it was quite successful. But Hans faces a problem with Auroville shops. "They prefer not to sell technical products because most of their staff are unable answer the questions that customers ask," he explains. "That's a pity because Auroville is known for alternative technology." Instead, he has decided to explore online options for selling his

products. "But being a single person unit, I cannot do everything and I would like help with the marketing."

In 1998, Hans began Innovations Unlimited. Now, ten years later, while it physically remains a simple one-man workshop in the Silence community, the number of innovations has grown. For example, one of Hans's other interests is LED flashlights. He was one of the first people to recognize its importance regarding energy-saving, and came up with the earliest prototypes in Auroville. As he also believes strongly in reusing things, his products often use discarded material. His most recent is the nano coconut, a lighting device, which combines nature and technology using empty coconut shells and LED lights. He calls it the 'coco-mouse' and it does have a surreal resemblance to the furry brown critter, complete with shiny eyes and nose.

One of Hans's many products is a device to assist in relaxation and falling asleep. It is attached to the multi-purpose Zapper, and called the 'mind-machine'. Hans explains, "Neuroscience tells us that in a normal alert state, the human body is in beta frequency (13 to 30 Hz), while in a relaxed and meditative state, one is in the alpha frequency (8-13 Hz). The latter is ideal for falling asleep." The idea is that when you tune his mind-machine to the latter frequency, sleep will inevitably follow.

He goes on to explain how there is one frequency below alpha, the theta level (4 to 7 Hertz) which is a state of deep unconsciousness. "It's a state yogis



Nano coconut flashlights or 'coco mice'

get into when they are buried inside the earth for weeks on end. Though I am a little curious what one would experience in the theta state, I didn't dare test it. For I usually do my testing alone and I don't want to end up in a state where people think I am dead!" For the moment, Hans's mind-machine offers only alpha and beta settings, though it is technically possible to generate theta waves.

Dr. Raichura of the Sri Aurobindo Ashram Health Centre has provided Hans with specifications for the healing frequencies, and Iris from the Quiet Healing Centre has shared her knowledge on colours and colour therapy. "I always test all my products first on myself," says Hans, "and I can say this device works well."

"My interests are in discoveries that intersect the borderline of technology and medicine, areas which challenge the belief systems of the regular scientific community."

Mass-production is not on the charts, but he is open to giving independent advice on energy saving as well as creating customized products to meet individual needs.

Priya Sundaravalli

REFLECTIONS

This is an amazing and frustrating place

Lyle first came to Auroville in 1991. He was working in Lesotho, a small country in South Africa doing development work. Auroville gave him 'a good balance to the work he was doing there'. He met his partner, Simone, in 1994, and in 1999 joined Auroville.

"How has it been for me? Auroville is compelling. Mother's aims are magnificent, and to work with people who aspire to these ideals has been a great privilege. I have not experienced another place that contains this atmosphere."

My work at the Financial Service is both interesting and frustrating. Auroville finds it difficult to come to terms with money. We don't agree on how to implement Mother's basic principles regarding money, and people have strong opinions. Personal maintenances (stipends) are a strong bone of contention. A maintenance is enough to cover recurrent costs, but what do you do when, for example, you need a new fridge or your moped needs major repairs? A person living on a basic maintenance has to depend upon other means. This situation creates confusion and sometimes resentment. It weakens our overall commitment to Auroville and contributes toward a high turnover in work placements.

At any given time about 220 people are on a full maintenance and about 100 on a part time maintenance. This is a large proportion of our work force of 900-1,000 workers. Imagine a country where every fourth person is working for the government. Where would the money come from to run the country? This is what we face in Auroville.

We are also stuck in a circle of stagnation. Without people we cannot raise our material conditions, without basic material conditions we cannot attract people. At Transition School each year we are very concerned because we do not know how we will fill gaps in the coming year. New and skilful people will only come when we can offer them the security of reasonable housing, worthwhile work, and work at a liveable maintenance, which incidentally is a basic human right.

Auroville does not generate enough money to grow. In fact our financial growth rate adjusted for inflation has stagnated over the past few years. One reason is that the type of person who is attracted

here is mainly a person with spiritual aspirations, which is usually incompatible with the entrepreneurial spirit. Here a person has to invest his own resources to initiate a business. If the business is not successful the person loses his personal investment, as they would outside of Auroville; but if the business is successful, the proceeds and the assets belong to the community. Not many entrepreneurs are inspired by this scenario. My friends in the USA think I am absolutely crazy building a house that is not mine! I'm not saying that we should turn toward this capitalist model. I'm only saying that we haven't agreed upon another model that is equally compelling for people with the capacity to grow Auroville materially.

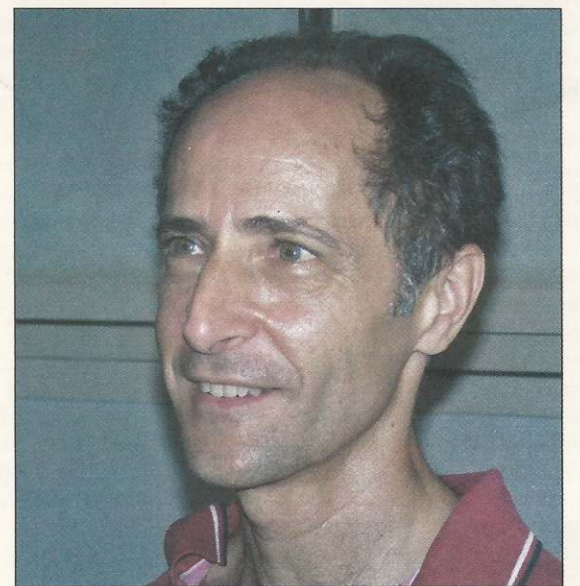
But there are some things we could change. We should be looking at means to increase this proportion. We have a historically negative attitude to "making money". This needs to change. We do not have a clearly articulated process for starting up a business. People have to run around trying to find answers to basic questions. We don't have mechanisms for entrepreneurs who are interested in Auroville and might be willing to donate, but who are not ready to join. Getting loans is more difficult than it should be because there is no mechanism for units to pool reserves. And we cannot take commercial loans.

Another difficult area has been to agree upon what it means not to exchange money in Auroville. At an individual level it is simple and builds the community. Glenn repairs my bicycle and Clair teaches me French. Neither asks for anything. There is a camaraderie that is built. But, at a community level it becomes more complex. When we provide "in-kind" maintenances (e.g., a lunch at a community kitchen, an electrical subsidy, or clothing) instead of cash, we limit personal freedom to choose. For some Aurovilians this is critically important. We all have different levels of resources available to us. Someone who is less well off than me is more personally limited by an in-kind system.

Secondly, every time we establish a new "in-kind" scheme, like offering lunches at various locations in Auroville, a new list has to be drawn-up, and funds need to be transferred accordingly. If it were static, it would not be difficult, but it is always changing. Right now we have several such lists (electricity subsidies, lunches, health insurance, and the Pour Tous distribution centre for example). This increases our administrative costs. Some people feel that this is unimportant or less important than moving toward a no-exchange of money economy, and it may be so. But, our resources are not unlimited; we need to discuss both the benefits and the costs.

Aligned with our economic problems, perhaps even contributing to them, is our inability to rapidly and effectively respond to organizational problems. In the last 8 years I have seen a decline in community participation in organizational issues. There is a concentration of power, a lack of clarity regarding the roles of various working groups and a lack of accountability to the Residents Assembly. We are losing our voice as a community. At the same time, we are growing older as a community and not enough young people are coming forward. It is important now that structures, processes, and mandates are put in place so that our experience is clear and transparent and beneficial to the next generation.

It would be good if working groups presented an Annual Work Plan to the Residents Assembly. These should state the objectives, the activities, and the resources required for the year. And then we should develop mechanisms for systematic reflection. Without a forum for reflection and assessment we diminish our opportunities to grow. Often, we discard rather than refine. This is not in accordance with Auroville's Charter which tells us to be the bridge between the past and the future. We can't be that bridge if we burn it.



Lyle

I realize that this sounds as if Auroville is not functioning well. At the larger level we have difficulties. But at the activity level there is plenty to inspire us. My work at Transition School has been amazing. Auroville's children have a wonderful openness. They are genuinely interested in learning. Equally inspiring is the team of people that I work with. We are at Transition School for love of the work, not for money. We know that we have to respect each other all the time, even when we disagree. There is also an organic hierarchy where people who are capable and willing naturally take on responsibility. We all agree on the mission and the principles. We give each other the freedom to work within an agreed curriculum in whatever manner best suits the individual teachers. This gives the teachers great motivation and satisfaction. We feel we are here for Auroville and the children. We have no formal administration. The twenty-five odd teachers and staff meet every Friday, and in the 8 years I have been at the school we have never failed to come to a consensus about any issue. I have worked within many organizations and I have never seen this anywhere else. Possibly it could only happen in a place like Auroville.

Dianna

A festival of Kabir

Four documentary films, three live concerts, two morning satsangs and one midnight jagran presented the 15th century mystic poet Kabir to a wildly enthusiastic Auroville audience.

Can you name a 15th century mystic whose poems are sung today? Europeans will shrug their shoulders. Indians won't. They will immediately mention Kabir, the poet whose poems even now, 600 years later, in common parlance. Nearly every north-Indian is familiar with the signature line *kahai Kabira suno bhai sadho* — 'Kabir says, listen brother sadhu!' and his poems and sayings are in Hindi textbooks.

Within the heart a mirror

But no face shows

You'll see the face

When the heart's doubleness goes

It was the initiative of the Bharat Nivas group to organize a festival of Kabir. They invited Shabnam Virmani, the director of *The Kabir Project* of the Srishti School of Art, Design and Technology in Bangalore, to present the world-première of her project in Auroville. Shabnam willingly complied. Together with American Kabir scholar Dr. Linda Hess she presented her four films on Kabir. She also brought folk singer Prahlad Singh Tipaniya from Malwa in Madhya Pradesh, Hindustani Thumri singer Vidya Rao from New Delhi, and Sufi folk singer Mukhtiar Ali from Pugal in Rajasthan to present three evenings of music of unbelievable intensity.

"Kabir was born in Varanasi into a class of weavers recently converted to Islam," writes Linda Hess in the introduction to her translation of the book *The Bijak of Kabir*, the sacred book of the Kabir Panth, the Indian sect devoted to Kabir. "He learned the family craft, probably studied meditative and devotional practices with a Hindu guru, and developed into a powerful teacher and poet, unique in his autonomy, intensity, and abrasiveness."

"Kabir emphatically declared his independence from both Islam and Hinduism and vigorously attacked the follies of both. While living in the holiest Hindu city, he attacks in his poems the kingpins of Hindu society; and living in a country which was then ruled by Muslims, he saw fit to ridicule the religion of the emperor. Kabir's abrupt and jagged style is a technique to jolt and shock people into facing things, to push them over the edge into an understanding that they fear and yet profoundly long for. It also corresponds to, and tones the mind up for, the actual experience of a sudden, unifying insight."

"If Kabir insisted on anything, it was on the penetration of everything inessential, every layer of dishonesty and delusion. The individual must find truth in his own body and mind, so simple, so direct, that the line between 'him' and 'it' disappears. Kabir is a *nirguna* poet, who sings the praises of the impersonal and formless God. Yet, in many of his verses, Kabir sings about Ram — not the anthropomorphic Ram, the deity of popular Hindu mythology, but the Ram within each of us." Sri Aurobindo would call this the inner divinity.

If you say Hindu, I'm not that

Muslim? Not that either

Both hold hidden truth

I play in both

In the six centuries since his passing, Kabir's poems have grown in number, finding expression in other languages and new metaphors. Stirred by the truth expressed in the poetry, scores of anonymous poets, seekers and singers have added to this body of verse. Others, known as 'poets of the Kabir tradition', composed songs inspired by Kabir which subsequently became part of Kabir's growing repertoire. The poems of these saint-poets are still being sung by thousands of rural *bhajan mandis* (singing groups) in all night *satsangs* — spaces where the spiritual and musical fuses to create a moment of immersion in the truth expressed in these songs.

"While there is evidence that both Hindus and Muslims were ready to assault Kabir physically during

his lifetime, they have since his death been ready to assault each other over the privilege of claiming him as their own," writes Linda. "A famous legend about Kabir shows his Hindu and Muslim followers massed for combat after his death, each side determined to take charge of the body. But before the first blow is struck, someone removes the shroud to discover that a heap of flowers has replaced the cadaver. The two religious groups divide the flowers, and each goes off to bury or burn its half according to prescribed rituals."

The legend has relevance even today. Kabir songs are sung all over north India by Hindus and Muslims alike, by folk and classical singers, and in Pakistan by singers from the Sufi tradition. Apart from travelling to various parts of north India, the Kabir project team also visited Karachi where two Sufi singers shared their views on Kabir. "Our perspective, our very way of seeing began to drift," writes Shabnam in her book *Kabir in Pakistan*. "Fixed ideas of nation, identity, self, other, us, them, this, that, yes, no, began to melt." This encounter was powerfully recorded in her first film *Had-Anhad: Journeys with Ram and Kabir*. The Pakistani *qawwal* singer Farid Ayaz, who sadly could not make it to the Kabir Festival, summarized his relationship to Kabir as follows: "To say that I am Kabir's 'fan' would be rubbish. The word doesn't do justice to the sacred bond, the feeling of utter devotion that a lover has for his



Mukhtiar Ali and Prahlad Singh Tipaniya leading the all-night jagran at SAWCHU. Shabnam Virmani, director of *The Kabir Project* breaks into spontaneous dance.

beloved, a disciple for his guru. Call it *chahat* (longing), call it *uns* (love)!"

Everyone came from one place

And took the same road

Half way along, you fall into doubt

Suddenly: twelve roads

Love-devotion, perhaps better called by its Indian equivalent *bhakti*, was also a major element in the live performances in Auroville. Prahlad Tipaniya exalted with the intensity of his songs; Vidya Rao intensely moved the being with her refined vocalisations of Kabir's poems in classical Hindustani Thumri style; and Mukhtiar Ali, who took care of the last evening, aroused the audience with the fervency of his emotion. In true Indian tradition, the festival was concluded with an all-night jagran in the SAWCHU building. While the rains poured down, Prahlad and Mukhtiar took turns in delighting the audience.

They all draw water at the river banks

No one draws where there is no bank

No-bank is the bank of Kabir

The one who draws there, becomes pure

Does the message of Kabir have relevance today?

"Yes," says Linda. "Since the 1980s, there has been a marked tendency by secular groups to appropriate Kabir, because he spoke so trenchantly against sectarianism, hypocrisy, violence, and caste, especially untouchability. His voice can be potent in supporting what today we call pluralism, tolerance, the equality and dignity of all."

For religious groups, such as the Kabir Panth and other Kabir sects, Kabir is a divine figure, and they heavily defend the way they regard him. In the 1980s, for example, an Indian television producer tried to do a serial on the life of Kabir. After the first few episodes, he was slapped with dozens of lawsuits instigated by Kabir organisations for whom Kabir is a divine incarnation. They objected to the fact that Kabir was portrayed as a human being who grew up with his family in a normal way. This shut the serial down."

Kabir doesn't belong to any religion. The Sufis from the Islamic world claim his voice with as much passion as do Hindus in India. But this is not palatable to some people. Says Shabnam, "At the end of a showing of my film *Had-Anhad: Journeys with Ram and Kabir* in Godhra in Gujarat, the audience declared the film anti-nationalistic and anti-Hindu. I have a distinct feeling that when I show this film in Karachi in November this year, orthodox Muslims will be equally upset."

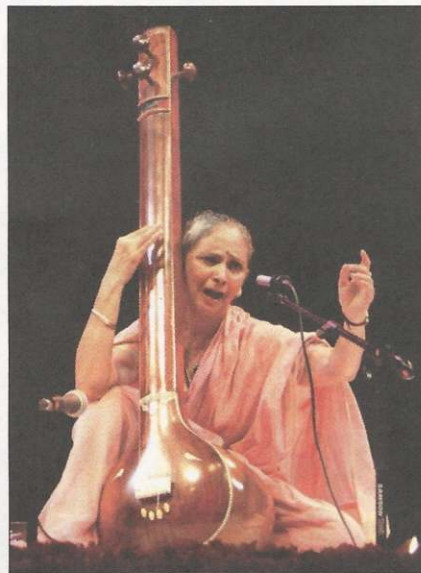
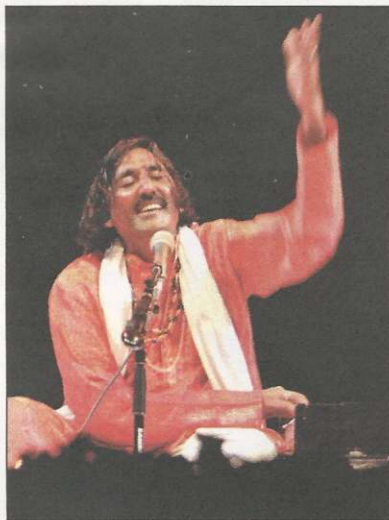
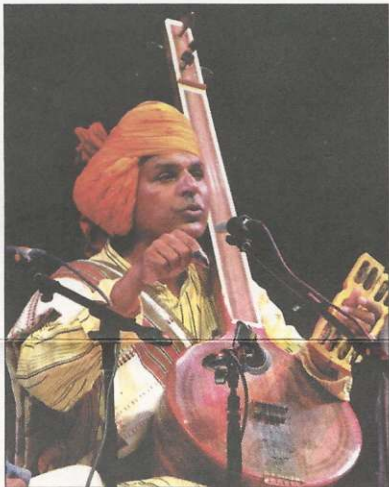
Prahlad confirms. "Some of my colleagues recently were singing Kabir in a place in Madhya Pradesh where Hindu fundamentalists hold sway. They sabotaged the programme. They fear that the voice of Kabir threatens their Hindutva ideology. They even want to erase Kabir from school textbooks, because his voice is too uncomfortable."

"But none of these attempts is bound to succeed. Kabir thrives in the oral tradition of Indian and Pakistani singers and his voice is simply too great to be erased," says Linda confidently. Judging by the response of the Auroville audience, her observation is spot-on.

The Bharat Nivas group must be complimented for bringing Kabir to Auroville, revealing aspects of India that few Western Aurovilians know exist.

Carel

The film *'Had-Anhad: Journeys with Ram and Kabir'* shared 1st Prize at the One Billion Eyes Documentary Film Festival organized by the Prakriti Foundation in Chennai, two days after the Auroville festival.



Clockwise from left: Mukhtiar Ali, Prahlad Singh Tipaniya, and Vidya Rao.

Brother, where did your two gods come from

Tell me, who made you mad

Ram, Allah, Keshav, Karim, Hari, Hazrat

so many names.

So many ornaments, all one gold

it has no double nature.

For conversation we make two —

this namaz, that puja

this Mahadev, that Muhammed

this Brahma, that Adam

this a Hindu, that a Turk

but all belong to earth.

Vedas, Korans, all those books

those Mullas and those Brahmins —

so many names, so many names

but the pots are all one clay.

Kabir says, nobody can find Ram

both sides are lost in schisms

one slaughters goats, one slaughters cows

they squander their birth in isms.

In brief

Early Auroville film shown

In the 1970s, French journalist Jean Pierre Elkabbach was one of the first Western journalists to report on the Auroville project. His 118 minute documentary broadcast on French channel "Antenne 2" in 1973 shows what Auroville was like then: a few houses in a red desert, some school facilities like Last school, the Pyramids and the Yogurt Pots, and Matrimandir under construction. The film, which includes interviews with Roger Anger, Kireet Joshi and Aurovilians Ruud Lohman, Ange, Jean Pougault, Vincenzo, Rod Hemsell and others, was shown recently at the Cinema Paradiso.

ICIS Online Courses

The International Centre for Integral Studies, a unit of the Gnostic Centre, New Delhi, will start two courses: 'Paradigms of Psychological Knowledge — A Historical and Cross-Cultural Perspective' by Suneet Varma, Professor of Psychology at the University of Delhi, and 'An Introduction to the Vedas in the Light of Sri Aurobindo' from October 2008 by Vladimir Yatsenko, a Vedic Scholar from Auroville. The course duration is 14 weeks and they are conducted online through a classroom management platform. For information visit www.integralstudiescentre.org

SACAR and IGNOU

On August 15th, the Sri Aurobindo Centre for Advanced Research, in a nationally televised function with chief guest Dr. Karan Singh, signed a memorandum of understanding with the Indira Gandhi National Open University (IGNOU). SACAR will be offering a variety of programmes at different levels as part of IGNOU's School of Interdisciplinary and Trans-disciplinary Studies. IGNOU is the largest university in the world in terms of enrolment, serving nearly 1.8 million students in India and 32 other countries through 21 schools of study, 58 regional and 46 overseas centres. It focuses particularly on distance education, chiefly through correspondence, videotape and telecasting. SACAR will be its first online programme. This collaboration puts Sri Aurobindo's thought and vision on the national and international stage at university level, something which up until now has remained elusive. For more details on the SACAR's online programmes, visit: www.sacar.in

Auroville Exhibition UK

AVI UK organised a well-attended Auroville exhibition at the Nehru Centre, the Cultural Centre for the Indian High Commission, in London. The exhibition was opened on August 11 by Sraddhalu, Sonia Dyne and the deputy director of the Nehru Centre, Rajesh Srivastava. It featured photos by Ireno Guerci, John Mandeem and Martin Littlewood, and a display of books and products from Auroville.

Botanical Gardens training

The Global Warming Awareness programme offered to schools at one day visits to the Botanical Gardens has so far catered to 25 village schools and four teacher programmes. The programme has been filmed and documented and

Pregnant women unwelcome in Auroville?

Auroville's Entry Service has put on hold the Newcomer process of pregnant women and women with small children.

An Italian family, father, mother and two young sons, want to join Auroville, but four months after their arrival they still do not have Newcomer status. Why?

Their sons, 15 months and 2.5 years old, need to be cared for, and this prevents the parents from taking up full-time work for Auroville. Antonio, the father, explains, "For the Entry Service working part-time is not an option. They are also not open for solutions like I can work more hours and my wife less, or that my Newcomer period can be extended." Cinzia, the wife adds, "I had read on the Auroville website that it would be better to wait until your children are three years or older before joining Auroville. But after visiting Auroville two times we did not want to wait any longer." Cinzia and Antonio are doing their best to fulfil the criteria, but it is not easy. Soon, Cinzia will be a swimming instructor at La Piscine offering lessons in the morning, while Antonio will work every evening as a baker at Auroville's new pizzeria.

In limbo land

Penny, a new mother, worked in Auroville part-time for over six months. She was told she could only be announced once she took up a bigger workload for Auroville. "But I did not want to leave my daughter with a babysitter or an amma." While Penny feels that the Entry Service did their best for her, giving her a visa to stay on, she felt as if she was in "limbo land". "I would have been much happier to have a longer Newcomer period, as happened in the past.

"The first thing people ask you in Auroville, once they notice you've been around for a while, is 'Where do you live?' and 'Are you a Newcomer/Aurovillian?'. I finally decided to say I was a 'Newcomer-in-waiting', because I didn't feel like a guest – especially as I was working part-time and was well-integrated in the mother/child community." When Penny managed to take up more work she was announced as a Newcomer.

These examples are not exceptions. There have been more cases involving pregnant women and women with very young children. And it is not confined to families arriving from the West.

A young Tamil woman from Chennai (who wishes to remain anonymous) who married an Aurovillian, also faced a similar situation when she got pregnant. "After my marriage, I started working as a teacher in an Auroville school. A year later when I was ready to start the Newcomer process, I was pregnant. The Entry Group told me that they couldn't process my application and that I'd have to wait until I delivered and my child was 3 months old. It was such a ridiculous and discriminatory response and I remember feeling both angry and sad at the same time. Was pregnancy such an unwelcome state in Auroville? Didn't the Mother love children?" Without any 'official' status, she continued to work at the school until 3 months before her delivery, and then rejoined the Auroville workforce when her child could be taken in by the crèche. "While all this is in the past, it still hurts," she says.

The issue of pregnancy and newcomer status has divided Auroville. A discussion started on Auroville's Intranet, and people responded with their viewpoints. "I have read everything on the Auroville Intranet concerning the Entry Group and their mandate and did not find this exclusion policy in any document," writes one participant. "This leads me to believe that this discrimination against women, children and families is not part of your mandate. Auroville is not an ashram, it is a township growing into a city. This also includes families and children. If you were coming into this world right now, wouldn't you want to be born in Auroville? I sure would!"

The Entry Service's point of view

The Entry Service responded in Auroville's weekly newsletter, the News and Notes. "It is being said that The Entry Service does not allow pregnant women 'entry' in Auroville. Putting it that way

makes it sound rather cut and dry... we try our best to explain to the pregnant newcomer that being pregnant demands constant attending to the body's needs and the constant flux in hormonal changes etc. It demands a great deal of energy too. Then there is the entire post-natal care, the baby's needs, and much more! The brief duration of the one year newcomer period simply does not allow any proper assessment of a pregnant newcomer. The one year newcomer period is a 'trial' period during which a newcomer becomes increasingly aware of the challenges of her choice of joining Auroville. During this time the enormous load of child-bearing tends to add to the stress.

"Therefore, it is more in order to help the pregnant newcomer concentrate on her advancing pregnancy and imminent arrival of her child, in most cases her first child, that we put their Newcomer process 'on hold'." "However," they pointed out, "we continue to extend the visa. This certainly shows that the Entry Service takes a sympathetic view of this issue." The Entry Service stresses the fact that since December 2006, when the new Entry Service was charged to take office on behalf of the Residents Assembly, there has been no instance where a pregnant newcomer was not allowed to join.

The Entry Service admits it is in a dilemma. "... there has to be a clear policy whether a pregnant newcomer's attending to the needs of her baby is 'valid work for collective' or not. Our present provisional mandate only refers to collective work as a mandatory requirement for joining, without throwing enough light on the nature of the work." It has promised to organize a seminar on the issue very soon.

Auroville responses

An Aurovillian responded, "For most mothers being pregnant and giving birth is easily the most exciting and spiritually uplifting period in their, mostly, young lives. To reduce the period of pregnancy and the 'post natal care' and then what was

is described as a 'period of constant flux of hormonal changes' to something that should best be experienced outside of Auroville is, in my eyes, a slap in the face of an aspiring young family or in some cases a single parent."

Avoid pregnancy during Newcomer period

But others do not see the present entry-policy as negative. One Aurovillian noted, "Two options we have are: 1. A pregnant Newcomer need not follow the Newcomer process; by the end of newcomer period they automatically become Aurovillians, no questions asked, no community feedback required because they should not come under any form of stress. 2. During the Newcomer period pregnancy and childbirth are to be avoided.

"It is obvious that the newcomer process cannot go together with pregnancy and childbirth, so to me the answer to the issue is very clear. The option two I have mentioned previously will be my choice." The writer fears that if we go for option one, "we can rapidly increase the number of children in the community by attracting large numbers of pregnant woman. Also we can make pregnancy a royal bypass to the entry process."

Tamar from South-Africa applied to join Auroville five years ago. She was pregnant at the time and informed the Entry Group. "At that time the probation period was two years. The first year I took care of my baby and was not involved in collective work. The second year I started a children's playgroup and worked in the Kindergarten. I had no problem whatsoever with the Entry Group. But I can understand that they do not want people taking advantage of Auroville." In Tamar's view "taking advantage" is coming here to raise your children when you have no affinity with the Auroville ideal. "For instance, a single mother can have a lifestyle here that would not be possible in the West."

Hopefully the seminar will throw new light on the issue.

Robert

THE MUSIC SCENE

For twelve years, Krishna tried with different groups to make a fuller expression of his music. But it was only two years ago, when Mishko – originally from the Réunion Islands, and now lives in Pondicherry – came onto the Auroville music scene that the situation changed. "Mishko has had a massive influence on all the musicians in Auroville," says Krishna. "He has brought a level of professionalism which was lacking in Auroville, and he has raised everyone's level.

"I became friends with him and I studied with him, and I asked him if he would like to play a concert with us. He agreed. At the same time, Lowell Harrison, a blacksmith interested in natural farming came to live in Solitude; he was also a drummer. So it began to fit nicely. I then asked Matthew, the saxophonist, if he would join; then came Kirupa, who is an exceptional Carnatic violinist from Sri Lanka. So we managed to get together and started to play. However as Kirupa could not join for this tour, we had Karthik who joined us from Chennai."

Krishna has composed almost all the songs in the band's repertoire. "They are very much a reflection of my personal experience in Auroville, of my personal evolution living and working so close to nature and a spiritual inquiry."

Most of the songs seamlessly weave Tamil and English lyrics together. "My work on this music is not separate from my farm work – without the farm, I couldn't do the music, and without the music, I couldn't do the farm." Perhaps this is why Krishna considers the song 'Pasumai', which roughly translates as 'the tender greenery of budding plants', as the group's signature piece.

Emergence calls its music 'Acoustic Indo-Pop'. "The Indo refers to the Carnatic element, primarily violin and vocal, and 'pop' is the catchy tunes to which the songs are set," explains Krishna. The music is multi-layered and has a strong element of

An international debut

Two years ago, Joanna, our Polish guest editor, reported on the guitarist-singer-farmer Krishna of Solitude farm. This summer, his band *Emergence* made their international debut at the Glastonbury Festival in England.



Emergence in Glastonbury

jazz brought in by Matthew's saxophone and Mishko's bass.

In March last year at his wedding party, Emergence gave a concert as part of the festivities. Many people showed up, not necessarily known to the groom or the bride. "Of course we didn't mind. One girl who gate-crashed the party liked our music so much that she told us she would get us a gig in Glastonbury. We just said 'Okay, thank you.' Six

months later, she actually wrote to me saying she had a spot for us at Glastonbury, as well as a whole bunch of other stuff lined up!"

This meant, for Krishna and Lowell, immediately getting in to action regarding the other aspects of such a tour. "Bands don't get paid to play in Glastonbury," explains Krishna. "They don't even get food or accommodation. All you get is the backstage passes, space to put your tent down, and the

entry ticket for the festival which is about 170 pounds! Just getting a slot is big recognition.

"Glastonbury is a massive summer music festival happening on a big farmland in Somerset England. It is a celebration of music – all sorts of music from Jazz, to folk, to rock. This year's main attraction was a famous rapper from the USA. There are hundreds of bands playing and people come to camp out and listen to music. This year there were a little under 200,000 people. I remember how, as we came over the hills leading to the grounds, it was like coming upon a medieval army camp ready to go to war. There were thousands of tents, marquees, and colourful fluttering flags. But also hundreds of cars parked reminding you that you were in the 21st century!"

Money came from several sources: from AVI Germany, an organization in the USA promoting culture, as well as from private individuals. "At Solitude, we don't charge; we thrive on goodwill," says Krishna. "All those who come to the farm give us so much. It is a very dynamic network of people. If we need anything, we just write to them and they send it – anything we need; even money!"

Krishna is convinced that this is the way Auroville should go. "Goodwill cannot be tapped if you charge money – and there is so much goodwill in the world."

From what Krishna has seen, *Emergence* is "very well-received outside Auroville" but of Auroville audiences he says wryly, "They are a tough cookie to crack; the folks here can be really fickle! Don't ask me why."

But on the last Sunday in July, watching the audience at the Sri Aurobindo auditorium groove and rock away in the aisles, there was little sign of the fickleness Krishna mentioned. The music was electrifying – the fusion of Carnatic, jazz, and rock, and with the earthy and tender 'Auroville-born' bilingual songs, particularly haunting.

Priya Sundaravalli

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