

# Matrimandir

AUGUST 2013



The Smile pond in the Garden of Consciousness is freshly filled with water and plants

## **The Garden of Consciousness moves towards Completion**

During the quiet summer month of June the final phase of work was begun to complete the water system that will run the central fountain in the Garden of Consciousness.

You might remember that the 100 square meter tear-drop shaped pool in this garden features a raised central fountain and a cascade of seven descending steps which lead from the pool to a lower water body which is locally referred to as the “Smile” (because its shape resembles a smile!)

In trials carried out to adjust the cascade's flow rate last year we found that, after sitting just for a few days under the bright sun of Tamil Nadu, the water in the pond turned a deep green color! We did expect that the water would eventually turn green, but were a bit surprised at the speed of the transformation. The green color was due to the growth of Algae.

Algae are a normal part of a healthy pond environment, but they can grow excessively, or “bloom,” in response to environmental conditions. There are many kinds of algae including: green, red, brown, and blue-green algae, etc. Algae need nutrients to live and grow, - mainly Phosphorous and Nitrogen. If the Phosphorous concentration is high and if the water is warm, we will have an *Algal Bloom*....the water will turn green!

So the question is how to prevent this greening, this algae growth in the pond? Many of the gardens of Matrimandir are likely to have some water body included in their design, -whether it be the tiny, three square meter pool under the large stone in the garden of Existence, the seven bowl-shaped fountains in the garden of Bliss, the large circular pool with a high fountain in the garden of Unity or this, -the main pool in the garden

of Consciousness. All will face this challenge of combating the growth of algae, of keeping the water clear, transparent and beautiful.

Nature, when she faces this challenge, solves it by using a combination of means. First, she might shade the pool or stream with overhanging branches of trees, blocking off the sunlight which is the energy supply needed for the algae to grow. Some algae will always be there, but, not having a driving energy source, cannot multiply and spread through the shaded, cool waters of the pool. Another technique that Nature uses, always skilful and balanced in her means, is to reduce the nutrients in the water that the algae feed upon. Nature introduces aquatic plants like water lettuce, lilies, water hyacinth and others which absorb for their own growth the Phosphorous and Nitrogen that the algae feed upon. She may also choose to oxygenate the water using lovely waterfalls or rapids to shift the chemical balance in the pool, making it difficult for the algae to multiply.

As our pools are not located in the luxuriant forests or mountain ranges of wild Nature, but are located on an open plane, highly exposed to strong sunlight, we have to really work hard to achieve crystal clarity in the pool's waters. To solve the algal bloom problem of a pond, the overall load of soluble reactive or dissolved phosphorus should be reduced by 50-66%. One of the techniques that we can employ is the application of Consortia Probiotics Technology. These Probiotics are beneficial microorganisms sourced from nature which have proven to be successful not only in farming and animal husbandry, but also in the treatment of polluted soils and water. They can remove nitrogen, phosphorus, and organic pollutants simultaneously. In the Garden of Consciousness, we are going to utilize these microorganisms, selected for their property of absorbing just those nutrients from the water that help the algae to grow.

Our plan is to concentrate these bacteria by inoculating a 5 cms thick layer of sand which covers the bottom of the Smile pond in this garden. All the water of the main pool will be slowly fed through this Smile pond, so that the bacteria in the inoculated sand can feed on the nutrients there and thus help keep the waters algae free. This is the idea, - it is an experiment. The experiment is being guided by an Aurovilian with world wide experience in this field,- in the application of different types of selected bacteria to not only counter algae growth in ponds and lakes but for a host of other applications. We will see in time if the quantity of inoculated sand in the Smile is sufficient to control the algae, or whether the effort has to be extended by using more of these **Consortia Probiotics** placed, say, in the main upper pool. It is a bit of an adventure...we will see how it works out!

On the 19<sup>th</sup> of June we began the experiment by preparing the inoculating solution: Into a tanker containing 5000 liter of clean water we mixed 10 kilos of organic jaggery (from natural sugar cane) and then stirred in 5 liters of Consortia Probiotics. The



A JCB started on June 25<sup>th</sup> to dig the hole for the underground pump room in the Garden of Consciousness

microbes in this solution, - lactic acid bacteria, yeast and purple non sulphur bacteria -, will feed on the sugars we have introduced into the water and multiply producing metabolites like antioxidants. We then slowly fed this inoculating mixture into the sand layer of the Smile pond, just filling enough to cover the sand. Then we covered the entire Smile pond area with a plastic sheet, to block the sunlight, which would otherwise help the algae to grow before we were ready to deal with them!

On July 4<sup>th</sup>, after two weeks of fermentation and bacterial growth, the plastic cover was removed, the excess of Consortia Probiotics was pumped away and the Smile pond was then refilled with fresh water and a



Concreting the floor of the Underground room in the Garden of Consciousness on July 17<sup>th</sup>

collection of water plants were added to help keep the pool's temperature down. Now the experiment begins...first to keep this Smile pond healthy and clear under the hot Indian sun, and then to use it for the much bigger job of cleansing the waters of the main pond of this garden! We will let you know how it goes!

All this, described above, concerns the treatment of the water, the experiment to keep it clean. But how do we plan to move the water, to create the fountain and cascade which is the main feature of this garden? To do this we need a pump and a "balancing tank" which will hold at night the volume of water (a few cubic meters) which is in motion in

the cascade system during the day, but which must be stored at night when the cascade system is turned off. After considering several options throughout the last year we have decided to create an underground space for this buffering tank and pump room. At the same time, we will use this space to house the electrical controls for not only this pump, but for the lights of this garden and also for the lights of the adjacent two gardens, Existence and Bliss. This will be a mini control room for the first three gardens of Matrimandir. Detailing all this, considering the different scenarios, – the drainage of the main pool, monsoon flooding rains, the flow from the Smile to this water buffering tank, – was a complex process that took our team many months to finalize. But then the day came to start to build it all. On June 25<sup>th</sup> we called in a JCB (mechanical digger) to make a quick job of excavating the first few meters of the space needed to build the underground control room. All in all, some 28 cubic meter of earth was removed, making a hole in the upper edge of the garden of Consciousness some 4.5 meters deep. When finished, a few months from now, the room will be accessible via a trap door in the garden, between two Champak trees, but will otherwise be invisible to the casual passerby.

It is wonderful to see all this fresh activity in the Garden of Consciousness, - this last phase of construction will bring this garden very close to completion. Within a few months we should be able to stand on its sandstone and pebble pathway bordered by flowers and enjoy the sight of the main pool, full to the brim, with its waters cascading down seven steps to the Smile pond below.



A Pathway in the Garden of Consciousness

## Update on the garden of Bliss

In mid July the cladding of the seven low walls of the garden of Bliss came to completion. The plateaus between these walls will soon be planted with a variety of flowering plants, all related to the concept and atmosphere of Bliss, or Ananda. The most important among these will be the hibiscus given the significance of "Ananda" by the Mother. These hibiscus plants, fairly tall, will form an enclosing belt around the central raised platform. When entering the garden one will gradually move upwards, from one plateau to another, slowly discovering the central secret, - the circular white platform with its seven gentle fountains.



The completed concentric walls in the Garden of Bliss

The two outermost plateaus have already been filled with compost and planted, but before planting begins in the innermost plateaus there are two works which need to be done: the final completion of the sunken paths which surround the central raised area, and then the creation of the 14 meter wide circular central platform itself. It is on this platform, to be covered in white sand or quartz chips, that the seven small, quiet, circular fountains will be placed. Experiments have been underway for the last few months to create a simple, appealing surface for these fountains, which range in size from 80 centimeters in diameter to 200 centimeters in diameter. The largest of them will also incorporate a concealed musical element, so that the movement of the water will produce a gentle musical sound to add a special audible element to the very quiet and serene atmosphere of this space.

Each garden is different; each has its own character and atmosphere. Watching them grow and develop, one is constantly surprised as nature begins to display here some of her colorful riches, and, slowly, the special atmosphere of each garden begins to grow and to manifest.



The benches on the rim of the Amphitheater with their luminous supports of light are being added, gradually bringing to this twenty acre garden area a new and very pleasant dimension.

## Lighting the Matrimandir Gardens

Those attending an early morning concentration at the Amphitheatre, or perhaps walking in the evening in the gardens of Matrimandir as the sun goes down will have seen some developments in the lighting of the area over the last months. The benches ringing the upper rim of the Amphitheater, and the sandstone steps of the mini amphitheater in the garden of Unity have been attractively lighted, bringing these areas out of the darkness and creating safer conditions for those using these areas at night.

Slowly, as the gardens surrounding the Matrimandir come more alive, these touches

of light are being added, gradually bringing to this twenty acre garden area a new and very pleasant dimension.

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