

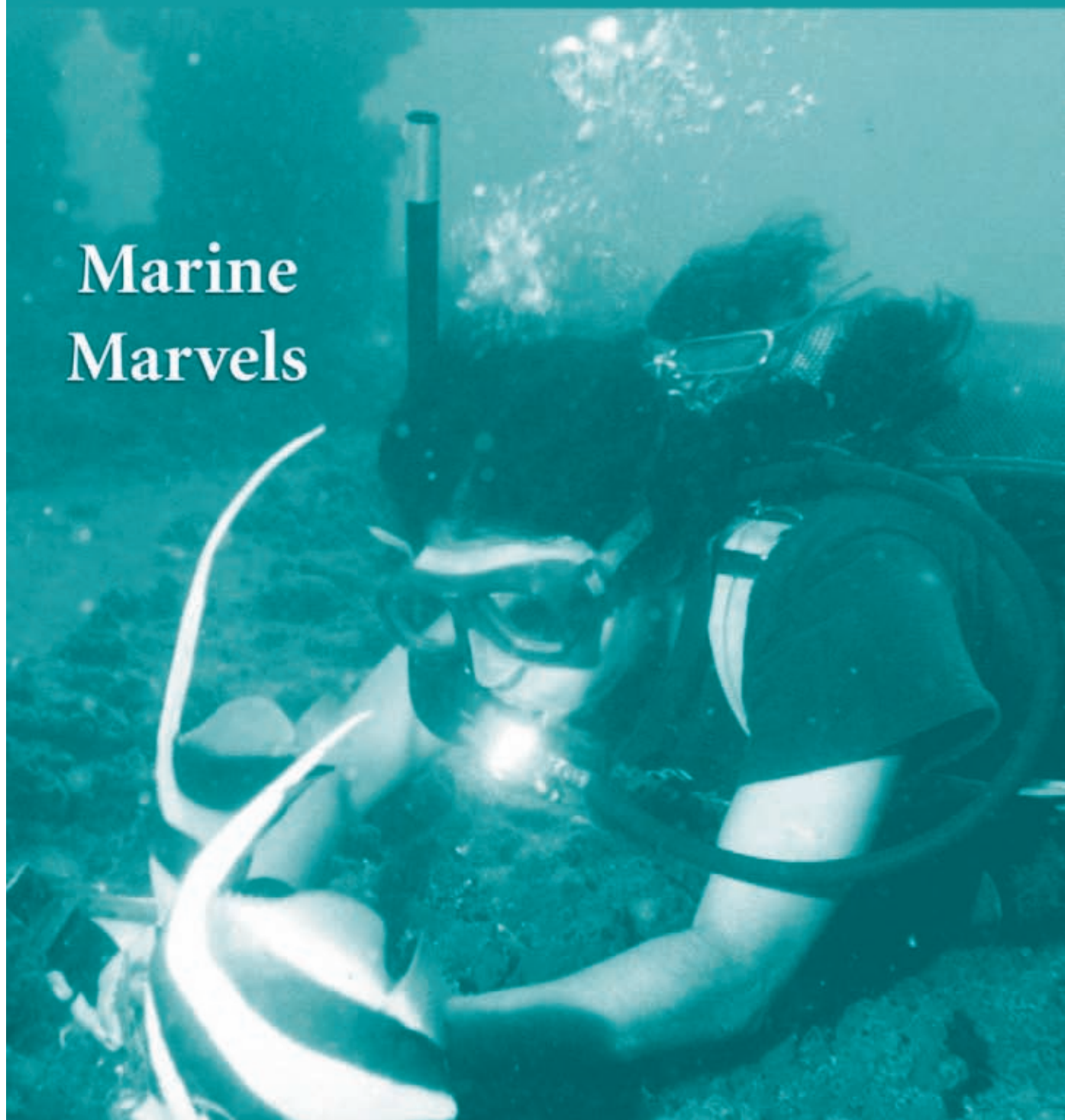
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# The Golden Chain

Alumni Journal of Sri Aurobindo International Centre of Education

## Marine Marvels



Mother said many times: "Whoever gets my touch, whoever has a second of true aspiration, true love for me, he is finished for life, for all lives — he is bound to me. I have put a golden chain round his neck, his heart is bound eternally to me."

It is a thing nobody can see, you yourselves don't see; but it is a fact, it is there. The golden chain is there within your heart. Wherever you go, you drag that chain, it is a lengthening chain. However far you may go, it is an elastic chain, it goes on lengthening, but never snaps. In hours of difficulty, in hours of doubt and confusion in your life, you have that within you to support you. If you are conscious of it, so much the better; if you are not conscious, believe that it is there. The Mother's love, Her Presence is there always.

Sri Nolini Kanta Gupta (to the final-year students of the Higher Course on October 26, 1976)

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Photo taken in the Andamans

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## THE EDITORS' PAGE

by Sunayana '79

Tucked away between the *tabla* room and the resource centre is the quiet world of the aquarium section. We have all, at some time or the other, peeped in and stood amazed at all the variety of shapes, sizes and colours of the fishes which live there. In this issue we will go a little further and read about the experiences of those who have been involved in making this collection and in looking after the aquariums.

Already in the mid-60s there was a small group (Norman, Kake (Promesse), Shilpin and some others) who used to go diving in the sea. When Goupi (Guruprasad) was working on a project with his students of the "Libre Progrès" section this diving group was asked to try out in the sea the working model of a bathyscaphe (submarine) made by the students. This is how the diving group and the interest in marine life got connected to the School. Shortly after that, one or two aquariums were set up in the School, in the "Libre Progrès" or "Vers la Perfection" section, as it used to be called.

Strangely enough, the aquarium section still has a feel of the "Libre Progrès". There are no formal classes and students come to learn and work there purely out of personal choice and love of the subject. Generally, the first contact that a child has with this world of the sea is when he or she is brought by the teachers of the Kindergarten or Delafon to see the fishes. Many come on their own, out of curiosity, to have a closer look when they are older. Most children join the section because a friend or a brother or a sister is already working there and they come from time to time to help or to watch, and they too get fascinated by it all. Some get fully involved and some continue to come on and off.

Once a child shows a real interest he or she is assigned a fixed day of the week. Each group of children comes on its day of the week to clean the aquariums and feed the fishes. This teaches them a sense of responsibility. Children come to work in this section from all levels of the School, from Delafon to Knowledge. Interestingly, all the work is done outside class hours, in the free time of the children.



Not everyone does everything. Some go diving in the sea and they have then to maintain their dive log-book. This writing down of every detail develops their power of observation. Some others who show an aptitude for mechanical works are taught to repair the mechanical devices which are fitted in the aquariums. Some children even come to

draw! Older students sometimes teach the younger ones. This encourages them to acquire leadership qualities and also to know their subject more thoroughly. Many keep up this interest even after they finish their studies, and some, like Aurofilio and Manjula Tiwari, have gone on to study further in the line of marine biology. Over the years a small library has been built up where all those who are interested can read books and magazines connected with this subject.

The love of Nature and the respect for life is a wonderful gift one can give to a child. It may become a passion and lead a person to make it his field of action in life. Today more than ever there is a need to understand the workings of Nature so that we don't inflict any harm on her in our ignorance. Today more than ever we need to learn how to live in harmony with all the beings who live on this planet. The more we know about Nature the more we actually know about ourselves. Because we are still very much a part of her. ❧



## SCIENCE AND SELF-DEVELOPMENT - I

*In the following pages we present the first of two parts of an interview with **Binu Mukherjee '58**. In this section Binu-da tells us about his memories of the Ashram School where he was between 1951 and 1958, his studies at St Andrews University in Scotland, his work as the head of the Physics Department at the Royal Military College of Canada and his research into piezoelectric materials and their interesting applications.*

*The next section, which will appear in our next issue, will discuss the system of higher education in North America, the difference in work culture between Chinese and Indians, the importance of the mind in self-development and the possibility of receiving Mother's help while living outside.*

### **What do you recall of your student days here?**

I had done my matriculation outside and then I joined the Ashram School. The teachers who really inspired me in my studies here were Sunil-da who taught me mathematics and Joshi-bhai who taught me chemistry. I've never met a teacher like



Binu-da with his mother (Shivrani-di) and Dilip Kumar Roy

Sunil-da. For instance, when he taught me three-dimensional geometry I found it very difficult and initially I used to get zeros. But he managed to motivate me to such an extent that if I couldn't solve a prob-

lem I would stay awake the whole night. It was a kind of challenge. It has taught me that if you push your mind to that level at one time in your life you break down barriers. After that things become easy. And Sunil-da helped me to do that.

### **How did he motivate you?**

Actually he did very little. It was just an aura about him. He was not a mathematician, he was a chemist. He had many aspects to his life. He had

also practiced free homeopathy in Calcutta. Here he taught botany and geography too. What we learned here was high level mathematics and he made a tremendous effort to learn from Dr. Venkataraman and he taught us as he learned. So we grew together. And in those days the atmosphere was tight. For instance I used to play a lot of table-tennis and even between games we used to study and not just sit and chat. I hardly read novels because I felt guilty about wasting my time. I was a tremendous reader though, and I read biographies, travel and such things. It was great fun.

At the time, we did at least 4 years of study above the level of the present higher course. We had what was called the Specialised Course which was based on the French system. The subjects we

did were physics, chemistry and maths. Chemistry, which Joshi-bhai taught, and maths, were done very seriously.



Binu-da (centre) with Sahana-di (to his right)



### ***Then you went out to study further?***

And then I went out — with Mother's blessings. In those days of course there was no certificate given so I actually had to write down in great detail what we had studied, the contents of the courses and had them stamped by the School, and Pavitra-da signed all of these. And on that basis I got accepted in universities in both Germany and Great Britain.

I was helped in this by an office of the Madras University run by a friend of Dr. Venkataraman's. It was on his recommendation that I chose to go to St Andrew's University in Scotland. St Andrews is not so well known in India, but it is the equivalent of Oxford and Cambridge in Scotland. St Andrews is also almost as old as Oxford and Cambridge. So it's a very old and classical University. And the people there were among the friendliest that I have met anywhere outside the Ashram.

Anyway it was a very pleasant experience there. There I chose to do physics, because it was something new and also because my father wanted me to do something practical, something more applied than maths. So I did my Bachelor's degree in physics in three years, my Honour's degree — incidentally I was lucky enough to get the prize at the end of my honours year — and then I went on to do a PhD. In Britain, as you might be aware, if you do a good Bachelor's you don't have to go through a Master's, you can go straight to a PhD, and that is what I did.

I had a very great stroke of fortune when I started my PhD. That same year there was a professor who came from Canada who had been a student of my professor at St Andrews some twenty years earlier. He came back on what is called a sabbatical year (you get a year off after 6 years) to his old institution. And we hit it off very well. One of the reasons we hit it off was because he was very interested in philosophy

and we talked about Sri Aurobindo, Tagore and other things. And when he went back after a year he said, "Binu, I'll have a job waiting for you." So essentially I did not have to look for a job.

### ***Weren't you also offered a job with the BBC?***

Yes, when I was an undergraduate I used to work for the BBC during my summer vacations. Because I had some experience here working in the projector room, the first year I actually helped them with tape recording. I used to go to big concerts to help their chief engineers tape and so

on. And later they found out about my interest in world affairs and so I actually was an apprentice correspondent for some time during the summers. In fact when I finished my Bachelor's degree they offered me this full time position as a correspondent. And I said, "Look, for my own development I would like to do a PhD."

They said "Fine, go and do

a PhD." It's very interesting to note that they said even with a PhD in physics I would be a much better political correspondent. They had this wide view. In Europe, unlike in North America, it is fairly well understood, that the degrees are principally levels of mental development. You use the subject to develop the mind rather than to learn the subject specifically.

It turned out that before I finished my PhD I came here. Here Mother asked me to get married. So I did. At which point I had to decide what I would do about my career. I basically think that if I had not come back and not got married I would probably have preferred to have become a political correspondent mainly because I love current affairs. But once I got married then of course... you know, being a political correspondent puts a lot of strain on the family, because you're never sure where they will send you and so on. Anyway I chose therefore to join a university and that's how I went to Canada.



The University town of St Andrews

### ***Can you tell us something about your work?***

This university where I work — I've been there ever since I arrived in Canada — is a very interesting place. It's a military university — the Royal Military College of Canada, where I am now the head of the Physics Department. It's a little bit like the National Defence Academy here. It is in the fairly small city of Kingston, a very pretty city at the eastern end of Lake Ontario, which is almost big enough to be a sea. It's a very pretty campus. It's a little bit of land that juts out into the lake. We are surrounded by water on three sides....

The advantage of this institution is that it is small. We only have about 800 students, unlike many North American universities where you get between 30,000 and 60,000 students and where you will be teaching to a computer number, where you would never come to know your student. Here even my first year students I know by first name. I invite them home, they come home, have dinner with me etc.... So I can give them a lot more than I would be able to otherwise.

And you know, when you lecture in a classroom, essentially it is only the professor who develops, he is the one who is doing the thinking. A student very rarely thinks in a classroom, he is busy taking notes and so on. It's in the interaction that I can have with them outside the classroom where I can help them to think and to develop.

When it comes to teaching also, I have a lot more freedom than I would have had in a big place. In big universities — and I've got offers to teach from some of them — the classes are so big that they divide them up and you have a bank of professors teaching in parallel. When you are teaching in parallel you have to follow what the others are doing. And as I have a lot more freedom, I can follow much more of what I learnt here in the way I give my courses. That is one big advantage.

So I love being in a small place. And it is also good because it is not a very competitive place and that gives me some time for my other interests. I

still am very keen on world affairs and philosophy and so on.

### ***What about your research?***

Like most university professors I teach and also do research.

In research my PhD had been done under the guidance of one of the founding fathers of low temperature physics. When you study things at room temperature some of the basic physics, basic properties are hidden because of the consequences of the temperature that exists, the thermal energy that exists. So at low temperature where the thermal energies are not there you study physics in a very pure form.

What is also very interesting is that if you look at the properties, most properties are logarithmic in nature. What this means is that the difference in properties that exists between 1000 degrees and 100 degrees, is the same as between 100 degrees and 10 degrees, or between 10 degrees and 1 degree or between 1 degree and 0.1 degrees. So as you go down there is very large change of properties with a very small change in temperature.

Low temperature physics has two important branches basically: superfluid physics and superconductivity. I worked in superconductivity — the property that at very low temperatures some metals, some alloys, lose all electrical resistance. And that's very nice because then you can pass electric current through a wire and there would be no resistance, no losses.

There are some pure physics facets of this that we could not understand and that is what interested me. My interest in research has always stemmed from trying to understand something which has not been understood before. I worked in this area of physics for about 20 years and by that stage I had reasonably well understood what I had been trying to understand. I then began looking for a new area of research. Around 1986 I began my research in piezoelectric materials.



The Royal Military College, Canada

### ***What are piezoelectric materials?***

Piezoelectric crystals are crystals in which the centres of the positive and negative charges are not at the same point. So if you apply a force or pressure on these crystals, if you actually compress the crystals, the distance between the positive and negative charges changes and what this means is that some charge develops on the surface of these crystals. So essentially you apply a pressure and generate charge. So you are transforming pressure into electricity. You can of course put an external circuit and measure the charge. This allows you, in a sense, to measure the pressure, or what we call stress, which you have applied.

The same materials have the converse property which is also very interesting and that is if you apply voltage to these materials that voltage induces the charges to move apart or come closer depending on the direction of the current. So when you apply a DC voltage you simply change the dimensions, you can actually cause a movement. This general class of materials is called transducer materials — transduction is the action of changing one form of energy into another. For example piezoelectric materials transform electrical energy into mechanical (sound) energy and vice versa. These materials have enormous practical value and can be used in a variety of applications.

If the voltage which you apply to piezoelectric material is an AC voltage, in other words, a voltage changing direction, then the movement also changes direction. The material is contracting and expanding, contracting and expanding.... It is basically a vibration. A vibration which is transmitted is a sound wave. By applying an electric field which is varying you can produce a sound wave. Electricity is turned into sound. You have a loudspeaker.

The opposite effect also is true. If you have a sound or pressure wave and this material is in the path of the wave, the pressure is changing and that causes an equivalent change in the charges which are generated so you get an AC electrical signal coming out. You have a kind of microphone that can detect sound.

### ***What are its applications?***

You can use these materials to detect submarines underwater. Underwater you can't use light. Light doesn't travel underwater, you can't see very far. On the other hand sound waves can travel great distances underwater as their frequency is much lower than the frequency of light waves. It's possible to send sound waves from one side of the Atlantic to the other.

So you can use these materials to detect submarines in a passive way where the noise produced by the engines of the submarine can be picked up, this is called passive sonar. These materials act as sensors. The electrical signal that they create can be seen on an oscilloscope and you can detect the submarine. In fact, some armed forces of the world have the sound signatures of all the submarines in the world. So you can not only detect a submarine but you can know which submarine it is.

You need to use active sonar if the submarine is silent: you generate a sound, the body of the submarine reflects it, and you detect that reflected sound. If you use active sonar at very high frequencies you can detect small objects like mines, which, for instance, terrorists may have planted in your harbour. So divers now have on their helmet, a small screen which they can see, which gives them a sonar image of the mine. They can know what particular type of mine it is and go about defusing it.

Naturally underwater applications of piezoelectric materials or sonar also include making pictures of the bottom of the ocean or of marine life. It has also been used to talk to dolphins and whales etc.

The human body is also largely water, so there is a great deal of similarity in something you do underwater and something you do with the human body. If you send a sound wave in the body it will get reflected when there is a change in the medium. Say for instance it hits the kidney, or the liver, or some such organ, it gets reflected. This way you can take pictures inside the body. In particular this "ultrasound" is often used to check on the growing baby inside a pregnant woman's womb.

Again in the medical field it is used to detect kidney stones, and a high-power sound wave can be sent to break up the stones, which means the patient avoids an operation. Unlike X-rays, sound waves do not harm the body.

The medical and the underwater applications are the traditional uses of the piezoelectric technology. Nowadays piezoelectric materials are used in other passive ways as sensors. For example, you can detect vibrations in bridges, and in aircraft. Today most of the modern aircraft have piezoelectric patches stuck on them at various strategic points where the stresses can be very high and then the earliest signs of a defect, the pre-cracking inaudible sound of an atom being displaced, can be detected and necessary action taken.

The latest use of piezoelectric materials is in a very wide range of applications known as smart structures. Here they are used to initiate some action. For example, you can cancel noise. For instance it could be used in an aircraft to cut off the tremendous noise of the engines from the passengers. You can have a piezoelectric material that will first detect the sound and then you can use another piezoelectric material to produce a sound which is 180 degrees out of phase. This is the opposite sound wave. And when you add these two up, it becomes zero. Thus you have no sound. This is called active sound cancellation.

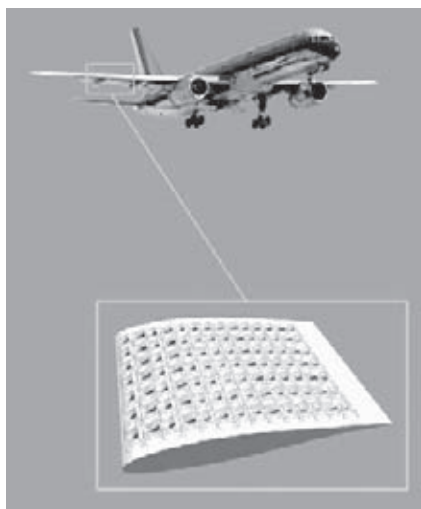
The more expensive Toyota cars in the Lexus model are using these piezoelectric materials to dampen vibration. They have a piezoelectric material that will measure the amplitude of a vibration after a car goes over a bump. And within thousandths of a second another piezoelectric material cancels this vibration by bringing in the contrary vibration that is amplified using hydraulics.

Also for example, the space-station uses a de-

vice called the Canada arm (because it is built by the Canadians). This is a long beam jutting out and it is susceptible to vibration. So we use the same anti-vibration technology to cancel the vibration.

There is also a whole new class of applications coming up that belongs to the future. Let me mention just one or two of them. The next generation of aircraft, for example, are going to be designed to have smart wings. As the aircraft flies, there is always a great deal of turbulence under the wing and a great deal of energy is lost in the friction between the turbulence and the wings. If you can reduce it, you can reduce the noise for the passengers and you can also reduce the fuel consumption. So, what they are now planning is aircraft which will have these piezoelectric materials stuck on to first measure the turbulence under the wings. Then there will

be an electrical signal and this will pass through a computer which will send a message to other piezoelectric materials which have been used there for actuation (actuation is displacement). They will force the wing to change shape to reduce the interaction with the turbulence. So this will help to have more efficient airplanes. The same kind of thing can be done with helicopters. For helicopters what has been achieved so far is a 25 per cent reduction in gasoline consumption. This technology is just



Piezoelectric coatings on aircraft can act as flow sensors and actuators for drag reduction.

beginning to see commercial application.

There are some other interesting applications also. By using a suitable system you can develop a piezoelectric rotary motor. In these motors you can control speed and rotation to a very high precision. For example, it is being used by Canon for their auto focus cameras. Now they are also developing minute piezoelectric drills for working on the moon because they want to bring something back from the rocks on the moon.



### ***What is the chemical composition of these piezoelectric materials?***

In most of the applications I've talked about they use ceramic materials. Ceramics are cheap to make — you can make them in a few cents or a rupee or two each. For example, although the entire medical ultrasound equipments with electronics can cost a lot of money, the basic piezoelectric material is very cheap. Ceramic is essentially a type of clay. And you need some particular chemicals to have piezoelectric ceramic. And the particular material that is most commonly used is a mixture of lead zirconate and lead titanate. There is a range of compositions that can be used.

I'm at the starting end of the use of these materials. My interest is basically in understanding and developing methods to learn about the properties of these materials. As explained, if you apply a DC voltage you get an expansion. For a long time it was thought that the expansion you get is proportional to the voltage you apply. But it turns out that the proportionality constant changes. My lab has been instrumental first of all in showing that the properties of the material change as a function of the field you are applying, the frequency, the temperature, the pressure under which it operates.

Then, of course, when you change the composition the properties change. And we are now one of the leading labs in the world, which measures all these properties as a function of all these parameters.

This is a service that we provide. Our basic research has come before that. We have actually developed experiments that can measure very small strains, strains of the order of nanometres because very often the specimens that we get are a millimetre thick and the piezoelectric effect gives a change of dimension of the order of about 0.1 per cent.

There is another development that is taking place. There are now computer-based finite element models that actually model the movement of the piezo-material. So, in order to do this modelling, people need to have the exact properties. They need our measurements to feed into their computer-models. As that has developed, we have developed in parallel. When people want to develop a new device, they bring us together. The American Navy managers are very good at this. We have recently been part of two new efforts to develop high-frequency sonar for detecting mines. So, what these managers do is that they create a group. This group will have me do part of the work. They will also have somebody to make a computer-model, a transducer designer to build the transducer in a device and encase it so that water can't go through. And if you are going to manufacture this in large numbers, you need a company. The Navy managers bring us all together and we get to work.

When we work in teams we have to go to meetings. I have become much more of a manager now. I represent the work that my lab is doing where I have six people working for me at different levels. My most important role is to make our work more known to the rest of the world and to interact with people who use my results. My employees come and go, so the reputation of the lab is linked with me. I'm the one who goes and tells the Navy what we are doing and then they decide whether they want to work with me. I must ensure that I receive the funding support to keep our research going.

And I do this in parallel with teaching. This I find helpful because if you have two things of different types that are of interest and one isn't going well, then you have something else to fall back upon. ☼

*(To be continued)*

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### **THE GC-CD PROJECT**

The GC-CD project has proved to be a much more daunting task than we had earlier anticipated. Although a lot of work has been done, a few of the programs still need to be completed and tested thoroughly, something which is turning out to be quite time-consuming. We regret to inform you therefore that we are now working to bring out the CD only in February 2005 and not in August as stated earlier.

# THE MARINE AQUARIUM SECTION

Gita Dolia '73

There is a small corner in our School which sometimes smells of fish. Some turn their noses and run away. Others, curious, come to investigate, and then remain transfixed, gazing at the marvels of nature.... For indeed in this tiny, immensely active place, some of the creatures of the vast sea have come to live happily in a limited, confined space.

## THE BEGINNING

It all started in 1972 with the building of a *working* model of the bathyscaphe (submarine)



“Hardi” (the Mother wrote the name on the model). The trials of the submarine brought together a few ex-students and students who were already into diving, and some of us students and teachers who began skin-diving to monitor the performance of the submarine. This underwater venture aroused our curiosity further. We started skin-diving at the two jetties off Pondicherry (the New Pier and the Old Pier) which make an excellent artificial reef providing a home for varied tropical sea-life.... We called ourselves “Dauphins associés”.

Just observing and watching marine life was

not enough for us budding, enthusiastic divers. We wanted to share our joy of underwater life with our non-diver friends. These were the first rudimentary steps in marine aquarium keeping.

Efforts were made to keep a sea-horse, an octopus and some invertebrates alive in a bucket of sea-water, with water change twice daily. Then a couple of discarded aquariums were used. But most of our efforts ended in failure as the techniques, knowledge and equipment needed for sustaining sea-life was lacking... till some friends of the School from France sent us silicone glue, reliable pumps, books and magazines on marine life, aquarium techniques and diving. All this knowledge enabled us to make all-glass aquariums with a closed re-circulating filter system and to start a library. Efforts began to identify and classify the marine life scientifically. Lists were made and records kept of day-to-day observations and feeding data.



## MAINTENANCE AND FEEDING

The maintenance of the aquariums, that is feeding, cleaning, checking the filter systems, repairing the pumps, and partially changing the aquarium water with fresh sea water every

month, was done by the team of teachers and students involved actively in the section. The fish were hand-fed according to the requirements of each specimen. We gave them their natural diet such as mussels, hydroids and donax (*chippies*) collected from the sea, or fish and shrimps bought from the fish market. Previously we used to buy or collect this from the sea or the beach daily. Later our non-vegetarian friends and co-aquarists offered us space in their fridge to store some food which would last a few days. A couple of years later a freezer (made by the students of the Refrigeration and Air-Conditioning Dept) served the purpose and now we have a regular fridge to stock food for the fish.

### COLLECTING SEA-LIFE

Collecting of live fish and inverts (invertebrates) for the aquariums was done at the New Pier and Old Pier whilst snorkeling. Sometimes specimens were collected from the fishermen's nets. How did we catch our fish? Well it was a big chasing game, with the diver pursuing the



fish with a transparent plastic bag in his hand and trying to corner a fine specimen between clumps of barnacles and mussels. It would take a long while to catch just one fish.... At times it would end in failure. The fishing technique evolved with experience and close observation of fish behaviour. Custom-made hand nets were used, but the transparent plastic bags remained the favourite.

### SCUBA DIVING

A gift of aqualungs and a second-hand compressor from France launched us into our first scuba adventure in 1975. What a delight it was to stay underwater and be amongst the varied sea-life as one of them.... This diving equipment (though old) enabled us to venture further into the sea and discover new diving sites and collect varied specimens. Much later, our diving equipment got somewhat modernised. A better (but still 30 years old!) compressor, new aqualungs, B.C. (buoyancy compensator jackets) and G.P.S. (Global Positioning System) helped us to dive more comfortably and to fix our dive sites, which were now sometimes 7 or 8 kms out from shore.



### PHOTOGRAPHY

Underwater photography in black and white was first attempted in 1973 by fixing the camera on the glass plate of a diving mask and inserting the whole unit into a water-proof plastic bag. We did get some results but they were not satisfactory. This fired us to design and make a water-tight and pressure-resistant plexiglass box fixed with a removable front glass plate on one end and operated with a sealed glove. The results were beyond our expectations. And for the first time the underwater broken pillars of the jetties and the marine life growing on and around them were clearly seen. A few years later an underwater camera came and colour photos were taken. A record of underwater and



## A SMALL STING

Shilpin Patel '75

During the course of my work at the School aquariums and at sea while diving I have handled many a different species of marine life. And while doing this I have been bitten by a moray eel, stung by an electric ray, a sting ray, a scorpion fish and all the jellyfish species I have come across. With jellyfish I have always dared touching an unknown one, just a wee little bit to feel how bad its sting is. But all of this did not prepare me for the encounter I had a few months ago, in one of our School aquariums.

Sometime ago we had collected an unusual species of anemone from deep within a shipwreck and brought it to our aquariums. The anemone was so uncommon that even the experts contacted over the internet could not identify it. It had a striking tiger-stripes-like pattern on its stinging tentacles. We realized it had a very strong sting as it totally paralysed an octopus who had unwittingly ventured into it (the octopus is one of the tougher characters roaming around the seabed).

For a year this anemone gave us no problems, eating properly and staying quietly in a cave of rocks we had made for it, as it shied away from too much light. Then one day its refuge, its cave, collapsed and the anemone started moving around trying to find another shelter. I knew that if I did not rebuild its cave the anemone would blunder into other aquarium inhabitants and kill them, or else go and hide way behind in the tank where no one would see it or be able to feed it. So I had to take up the job of rebuilding its cave, and once that done I had to bring the anemone back into the cave.

This was fish-feeding time and the kids were creating mayhem feeding fish. Some of them

came around to watch and gave free advice on how to redecorate. As I gingerly picked the anemone from the underside, it turned down, and with its tentacles stung me and pulled my little finger into its stomach — just like that, ZAP — lightning fast. It hurt — a bit. Slowly and gently I pushed it off so as not to injure it, but while doing so it unfortunately sank down well away from its cave. So I had to pick it up again and push it into the cave, and well, ZAP, it caught me again in the same place. This time it hurt more, but even then I took the time to push it well into its cave before somehow getting rid of it there. Both times it had grabbed me and pulled my finger into its stomach. It hurt more now and as the area started to become numb I realised that this was not an ordinary run-of-the-mill sting.

Trying to stay calm amidst the controlled chaos which takes place at fish-feeding time at the aquariums, plus a colleague badgering me to prepare the necessary materials for the forthcoming Andaman trip, I mentally went through the first-aid procedures. The only thing I recalled was “Wash off the stung area and scrub off the remnants of the stings”, which I did. Now the whole hand was numbing off and the pain had started to snake up the main nerve of my forearm and towards my triceps area. It was a blunt pain, best described as a giant hammering away on my nerve with each pulse beat. I retreated to our study room, sat down, and started to breathe slowly and deeply, but in my mind the *rudraksha mala* was churning away uncontrollably fast. After a while the pain reached the lymph glands under the armpit and I knew from previous experience that the pain would stop there.

It did, but then I sensed my heartbeat go irregular, and jumpy. Thump, thump then fffflutter or various combinations of this taal. And my

aquarium photos has been kept through the years and also video recordings of the aquariums taken whenever possible.

## EXPEDITIONS

Exploring the shallows of Pondy was not

enough for us now. The coral reefs beckoned and we knew that the Rameshwaram area had a coral reef along its coastline. Some members of our team had dived around this area and were thrilled by the multicoloured reef vibrant with dazzling fish. A plan was formed to bring some of these



breathing became shallow and short. This lasted for maybe half-a-minute or less and passed. Once all was normal I finished off the remainder of the day's work and went home.

All afternoon the pain hammered away, a little less intense, but enough to keep me in a sort of daze. In the middle of that night I started to feel icy cold and started shivering violently. I had to get up and dig out my winter wear and bundle myself up, as if for a polar expedition.

The next day the hand had swollen up and the stung area had developed burn-like blisters. I started off on Dr. Satishbhai's homeopathic doses, but the fever stayed for 3 days and the pain only gradually left my arm, leaving numbness along the nerve. I found that I had developed a mango *gutli*-like swelling under my armpit, the lymph glands having swollen up. I went through our dive books and found that this sting was to be treated like second-degree burn. I also realised that I had shamefully forgotten the latter half of first aid procedures for such a sting: "Soak the affected part in vinegar to neutralize marine stings." I also made a quick Internet search for expert advice on this type of sting and got to know of a poor fellow who had been stung by a common anemone in the Caribbean and died in 4 days due to renal failure. Not a very uplifting find.... This, though, was an extreme reaction, as lots of divers in the Caribbean get stung by this common anemone each year. Only I knew now that my kidneys had also got a good thrashing.

On the 4th day, one of the many blisters on my hand got punctured, so I spread some antibiotic cream, but to no avail. The site got infected. The next day I had to resort to Dilip-da's treat-

ment of antibiotics and anti-allergy drugs — the first of 3 courses. He deduced that I had probably had an allergic reaction to this particular sting, which was possible because Atma who had collected this anemone had casually mentioned that it had a rather bad sting, but then he had had no such reaction.

And so started a long course of treatment. The

burns kept oozing out fluid day after day. It would start to heal over, then it would begin oozing again. After a month, when I thought the worst was over, I strangely developed a blister on my right ankle for no apparent reason. This again looked like the burn blister (but bigger in size, like a small egg) which was affecting my right little finger,

so a parallel treatment for this started. Taking a shower now became a very interesting exercise, as I was to strictly keep the wounds dry.

This ankle blister took a week to heal, and the next morning, lo one more started to erupt just next to the healed area. This sequence kept repeating itself for the next two months. Dr. Satishbhai felt that the body was throwing out the venom in this way and he had to try various homeopathic remedies to heal the wounds. At the same time I kept applying allopathic medications to the wound sites and it took them a whole 3 and half months to heal well enough, so that I could finally wet my hand. Even so the nerve deep inside my upper arm remained numb for a long time and the healed stung areas kept itching away from time to time. For a person who has to do aquarium work and likes to swim at least once a day, this period was a real *tapasya*. All thanks to a little sting.



beauties to our aquariums. First, experiments were tried at the section to keep some small fish in glass jars filled with one third aquarium water and two thirds oxygen. Some jars had sea-water and oxygen. Observations showed that the fish in filtered aquarium water and oxygen survived the

24-hour period required to transport them from Rameshwaram.

Thus our first collecting expedition to Rameshwaram took place in 1977. We took with us glass jars filled 3/4ths with aquarium water and 1/4th with oxygen (so that the fish would

## LES GAMINS

*Ambika Prasad Mallick '93 remembers some diving moments that he will cherish the rest of his life.*

My life with the aquariums began when I was in Delafon and had to come to School to wait for my brother to take me home. For the first few days I sat dumbly looking around, feeling quite bored and hungry, but when I saw that Fili was also there waiting for his brother, things started getting more interesting and we began to play. He was a year after me in class but we were in the same group and so we became very good friends. Catching fish from the pond, climbing trees, chasing-game in the garden, 'I spy' in the rooms and tumbling on the lawn were the regular games, and once in a while some other games that we made up ourselves found place in our lives. We lived so much together that we thought that we should give ourselves a very meaningful name and so after a very serious discussion we called ourselves "Les Gamins." As the days went by we began to go for swimming in the sea on Sundays in the morning and later began to go every day. Of course all this began because our brothers were into sea-swimming and we would tag along like remoras [*a kind of small fish which follows big fish around*].

One Sunday before lunch both of us had gone to the beach near the pier and with two other friends got into the sea for a swim. As we were fooling around in the water we did not notice that we had drifted to a place where the current was quite strong and after two big swells the water that was receding dragged us in. We felt the ground beneath our feet disappear, and panic-stricken we fought and kicked in the water to try to get to the shore. After half a minute that seemed like an hour we scrambled onto shore, exhausted and tired, gasping for air. I don't know from where I got the sense to get into the water without knowing how to swim. All I had learned in group was plank-kicking in A4. Courage is good, being fool-hardy is not.

Soon enough we came to know Shilpin quite well and began to get a thorough lesson in diving apart from all the lessons in wind sailing, surfing and aquarium maintenance etc. This is when I actually learned to swim. One morning at six I went to the pool and Shilpin was there in the diving area. He showed me how to do the breast stroke, but what he actually told me then, is what made the difference to my life. He said that if you want to swim you have to consider the water as your friend and not fight against it. Whatever happens you should never panic and as far as possible keep the minimum of your head out of the water as that reduces the strain of trying to keep yourself afloat, because all mammals will float if they have air in their lungs. If you think you are drowning hold your breath and you will not sink. This to me at that point in my life made a very big difference, though I did realise later that after a lot of exercise the body can get dense and not stay afloat, even if one's breath is fully inhaled.

As we grew up the lessons became more difficult and sometimes very scary. We went regularly to the pier to practice our diving lessons and to get plankton or soft coral for the aquariums. For the first few years Shilpin would get into the water with us but later we had to get in ourselves and he would coach us standing on the beams under the pier. I remember a day when the waves were so big that the swells were hitting the beams under the pier. But still we had to go and get some soft coral for the aquariums. So we tossed for it and it was I who had to get in the water. Mustering all my courage and after asking for the third time "Will I get in?", I jumped into the water. Floating on the surface I looked into the water through my mask and realised how murky it was. I could actually not see more than ten centimeters from the front of my lens. "How in the world am I to get the soft coral from the pillars when I cannot see more than ten centimetres?" I waited for Shilpin's "GO" and I dived underwater. Barely a metre or two be-

survive), oxygen-filling bags from the dispensary, plastic bags for catching fish, torches, and netted baskets. The netted baskets were to be used for keeping the fish that were collected submerged

overnight on the reef.

Apart from the thrill of diving and discovering new diving spots, catching specimens is also as exhilarating though extremely exhausting. We

low the surface and all seemed dark as HELL and very cold and scary. I hung on there for a moment or two trying to gather some courage to go deeper but the thought of going four metres more in that HELL was not possible and so I came back up just in time to see that I was about to crash into a pillar. After another dive I think Shilpin knew that it was not possible to get any soft coral or maybe he actually knew it from before but was testing our courage and skill. Whatever it was he asked me to come out. But how to hold on to the pillars with such waves every ten seconds? Finally with one of the big waves I kicked hard and did a muscle up onto the beam and Shilpin and Fili were there to hold on to me so that I didn't fall back (because doing a muscle-up in the Gym and one at the pier are totally different things). This incident was something that I thought would bring a certain feeling of superiority over Fili, but it did nothing of the sort. I knew his capacity and he knew mine and we never really tried to challenge each other or compete with each other. And if ever that happened, neither of us felt superior to the other. Each of us had our own gifts and we respected that, like two Red Indian blood brothers.

As the days passed we became more sober but never so much as to lose our sense of humour. One day we had gone to Cuddalore to the wreck [*a cargo ship lies wrecked under the sea off Cuddalore*] for a diving trip and we both took our cylinders and got into the water. We somehow had a tendency to stay together, and when we were looking at something, we did not realise that the others had swum away. We tried to catch up with them but took the wrong direction and landed up at the back of the ship near the propeller. I was looking at the propeller and suddenly heard a "HNNNN". I turned around and saw Fili beckoning me. I went up to him and he showed me a fish and asked me something that I did not understand. He tried to ask me the same thing twice and when he saw that I did not understand

he pulled out his regulator and said "Blu a blu zaa ablant". This is almost how it sounded and this I understood because it was supposed to be French. But I started laughing so much that my mask got filled with water. I cleared it and then we had quite a dialogue down there with a lot of "BLs" in between the words when the bubbles escaped. Eventually we laughed so much that we had to come out for a break.

In recent years we had gone to Mahabalipuram for a dive and it so happened that the tank I was wearing had some oil in it. The oil was rotten and gave out a bad smell and harmful fumes, but not knowing this we dived and got down to catching a lot of fish for the aquariums. Towards the middle of our dive I began to feel a little nauseous but I carried on. Then slowly I began to feel quite sick. I held on to my breath for longer durations but it didn't help much. Luckily I was able to hold on till we were about to surface. We were to stay at a depth of three meters for some time and that is when it happened. I pulled out my regulator and vomitted in the water, but without panic, though I had no air in my lungs after the second time I threw up. I noticed Fili looking at me and saw him go a little upcurrent and wait there to see if all was OK. I gave the signal for the OK but still he stayed with me till I came out fully.

All these little incidents are things that I will not forget but there is something still more to all this which neither of us will forget. We both grew up and finished Knowledge and chose our own paths in life but after so many years when I go diving with him there is always something between us that makes me feel very comfortable, which I don't feel with anyone else. It is not something that I can explain but maybe it is a natural instinct that both of us have developed together, and so we know what the other will do and how he will do it. We know how to react to each other or maybe it is just that in the water we grew up together as one person.

caught clown fish, damsel fish, butterfly fish, sea-anemones. The submerged basket experiment failed... so there was more hectic catching on the last day... we packed the fish and anemones in

the jars with oxygen... raced against time to catch the train... the fish were checked every hour... all were doing well for about 12 hours... then the nightmare... the train was running late by two

hours... the fish started dying... we went on putting more oxygen in the bottles... finally only two clown-fish and two anemones survived the hectic journey. This was our first collecting trip.

Then our techniques for keeping and transporting the collected specimens evolved slowly.



The fish caught were kept alive in buckets of sea-water which was changed twice with fresh sea-water and aerated with an air pump. For transporting by train, some specimens were packed in plastic bags filled with oxygen; some were brought in plastic jars with sea-water and aerated with battery-powered pumps. Subsequently



many trips were made to the Rameshwaram area to collect live corals and other invertebrates.

In 1984 our first collecting trip to the Andamans took place. It is a paradise for nature lovers, be it plants, birds, reptiles or sea-life. We

discovered fishes and inverts different from the ones found in the Rameshwaram area and the reefs thick with coral growth. Staying at the Youth Hostel at Port Blair, living on the minimum, we lived our underwater life to the full. New species were added to our collection, some transported by air to Chennai, others brought in ships, surviving the three-day journey.

Then in 1985 we made our first and only trip to Lakshadweep. These are a chain of sun-kissed islands surrounded by coral reefs. It was a totally different experience from that of the Andamans. The islands are flat and small... the water is crystal clear. Staying at the Youth Hostel at Kadmat, situated right in front of the beach and the inviting waters, we forgot the world. We dived and dived, witnessed Olive Ridley turtles hatching, drank in the gorgeous sunsets... and also collected specimens for the aquariums. Two turtle hatchlings were also taken. They all survived the trip back by ship and train.

## **SHELLS AND OTHER PROJECTS**

Apart from diving, collecting specimens, making underwater photographs, maintaining aquariums and keeping records, surfing, beach-combing and collecting shells fascinated some of us. We took regular beach walks and the shells collected were cleaned and classified. Under Fred Pinn's (a shell expert) guidance and with his help the aquarium section put up an exhibition of the shells collected from the Bay of Bengal and participated in the production of a book on the shells of Pondicherry.

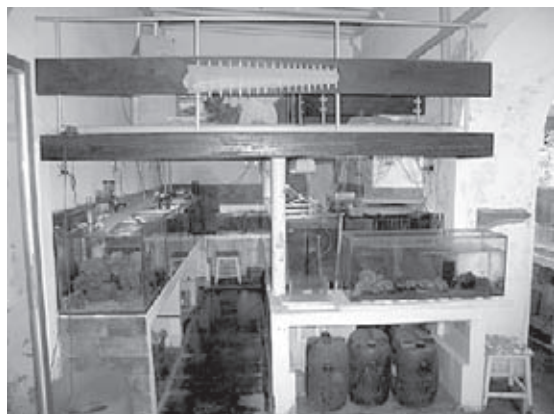
During the course of these years the aquarium section displayed many varieties of fish and invertebrates. Olive Ridley turtles were raised for two years then released into the sea when they outgrew their tanks. Mangroves were grown. Filtration systems were improved to enable us to keep live corals successfully.

## **RENOVATION**

With the completion of the renovated Hall of Harmony and the School courtyard, a plan for the Aquarium Section was drawn up. Slowly we started emptying our aquariums. We dismantled



a few and lodged our most precious specimens, 13-year old anemones, corals and some fishes, in 3 aquariums. All these plus our library was kept in a room adjacent to Tarun-da's tabla room (formerly Sisir-da's bathroom). This was in November 1998. The garden area was extended and the new aquarium set-up was shifted more eastward in the same block. New aquarium designs and techniques were tried out. Also a mezzanine was built over the area. All this took about a year.



We shifted back the three aquariums in November 1999.... Since then slowly and steadily new aquariums have been built with their own unique filter systems.

Today most of the aquariums are ready. Fishes and invertebrates from Pondy, Rameshwaram and the Andamans are exhibited. Many new observations have been recorded in the course of these years.

### AND FINALLY...

This was an extremely brief sketch of the Aquarium Section's 30-year history. It does not depict the trials, errors, frustrations involved in any unusual and unique venture.

It is said that the complete marine aquarist has many parts. He has to be part marine biologist, ecologist, nutritionist, electrical and mechanical engineer, plumber, craftsman, interior decorator. He becomes a diver, a surfer, a photographer, a beach-comber and sometimes even an artist and a poet. We, the teachers and students (past and

### From the Marine Aquarium Section to all those who have helped...

To all those who have supported the Marine Aquarium Section's work and diving activities during the last 30 years, a big "THANK YOU". You have given us books and magazines, opening the gates of knowledge. And you have also given us materially, pumps and filters for aquariums, diving equipment, so that we could bring here the living treasure of the seas. Friends, relatives, well-wishers, students, ex-students — too many to be named — you know who you are; and without your generosity we would not have achieved what we have achieved now. *Un grand "MERCI" du fond de notre cœur à vous tous.*

present) who have been actively involved with the growth of the Marine Aquarium Section, have learnt for ourselves that this saying is entirely true.

And in the end, the joy has been ours, for we have given joy to others. Children as well as adults have all been mesmerized by the sheer beauty,



form and uniqueness of the sea creatures which they would perhaps never have seen for themselves. Students have had an opportunity not only to see and admire, but to learn about the creatures exhibited (and also those not exhibited). They have learnt to respect, protect and preserve the living treasures of the sea. ☸

# EXPEDITION TO THE ANDAMAN ISLANDS

*Atma Reddy '81 and Dilip Patel '76H*

## THE GEOGRAPHY

The Andaman and Nicobar islands are set like jewels in a turquoise sea, towards the eastern edge of the Bay of Bengal, very close to Burma. They comprise of some 300 islands, mostly uninhabited and thickly forested. The timber from these forests once accounted for more than from all of the rest of India combined! Fortunately nowadays there is a ban on logging, though the “development” of the islands, undertaken enthusiastically



by the Indian Government, is taking a heavy toll on the fragile ecology.

A number of islands are out of bounds as they form part of marine parks, but the threat still exists from illegal logging, fishing and sand mining.

The islands are blessed with lots of rainfall and the lush evergreen forests boast orchids, ferns, cycads, mangrove and hardwoods.

The marine life is equally rich: the coral reefs are staging a slow comeback after the devastating effect of El Nino, the warm ocean current, which wiped out 80% of the coral. To add to their natural wonders, the islands possess an active volcano,

limestone caves, ancient tribes, endemic bird species and the infamous Cellular Jail where the British incarcerated political prisoners (Sudhir-da, Mona-da's father being one of them).

## OUR TRIP

Earlier this year, in March, six of us ex-students went to these islands to collect fish and invertebrates for our School aquarium. The six of us were: Gita Dolia, Dilip Patel, Jagat Kandoi, Fili, Jignasu Dolia and Atma. It goes without saying that we had a whale of a time!

We were fortunate not to have had any rains, or any problems with any of the government bodies — thanks to the 18-month-long effort by Shilpin and Gopal Dalmia to get the required permits in advance (catching and removing fish is banned in the Andamans since a few years).

We really had a month full of memorable experiences! With our rented motorcycles we would go to various places everyday, and dive, spending between five and seven hours in the water every



day. We can mention here only a sampling of the marine life we saw.

## CLOSE ENCOUNTER

*Dilip Patel '76H*

I had remained near the anchored dugout to explore the waters beneath, teeming as they were with live coral and reef fishes, whilst the others in our party swam further away for a dive. I felt lost, as if in a warm turquoise cosmos, swamped by wave upon jade green wave, bearing with it myriad marine life forms. One very quickly exhausted all superlatives as the fish swam past — and what fish: the Maker had, it seemed, broken all rules governing colour harmony — orange and lime green, deep purple and bright red, fluorescent pink and electric blue, only to change to other colours with a sudden twist of the flanks. And as if the colours weren't enough, the shapes too came in an endless variety: some comical and quaint, others a lesson in balanced beauty. Forming a perfect backdrop to these caparisoned actors was the coral reef, itself rivalling the fish in variety, shape and colour. I drifted along, drunk with this excess of beauty, when, as in all good



plays, the villain made his dramatic and chilling entry. He was a banded sea snake disturbed in his search for food when my lumbering form appeared. He approached head on to investigate. I froze, even though I knew that in spite of being ten times more poisonous than their land cousins, sea snakes rarely bite. Then fright slowly gave way to admiration for this shiny ribbon of sinuous grace. Seeing me retreat, he went his way and I, mine, though chastened somewhat by this dark interlude in an otherwise fairytale world.

## SIGHTINGS

The Andamans are full of interesting places with equally interesting names like: Pongibalu, Aberdeen Jetty, Grub Island, Jolly Boy Island, Tarmugli Island, Twins Island, Interview Island, Koormadera, Mahuadera, Bamboo Flats etc.

One such place was North Bay. We set off at 6 a.m. (sunrise was at 5 a.m.) for Phoenix Bay to catch a vehicle ferry to Bamboo Flats. From there we rode the bikes about six to seven kilometres to North Bay. The last kilometre of the way was a foot trail along the edge of the water with sections of the narrow path going over rudimentary bridges made with thin branches (for people on foot) that looked too weak to support a bike and rider. But somehow



we got to North Bay where we hid our bags and keys in the lush forest vegetation, hung our food from a creeper to keep it safe from stray dogs and entered the water in a hurry.

As mentioned, the corals are growing back in that area after being almost wiped out by El Nino, so they were of all kinds of shapes and colours, with fish of every hue you can dream of swimming among them. All of this with the bright sparkling sunlight undulating over it in waves.

We saw a group of fifteen hump-headed parrot fish. They are dark blue-green fish about three feet long with a big bump on their heads and parrot-like beaks. They chew the coral with their beaks and digest the invertebrates inside, excreting the powdered coral in

## THE OCTOPUS

*Filidauro '94* (filidauro@yahoo.com)

When we were not entertained by one of Jigu's numerous phobias, or by one of Gita-di's equally long list of health related issues she often and unexpectedly falls prey to, or by one of Jagat's uninterruptible monologues on how he would have organized everything if only it were left to him, or Dilip's intricate accounting techniques (I should have paid less attention to the former and more to the latter), or Atma's lulling recount of what he saw in a previous dive but forgot to show you, WE WENT DIVING!

I can't say diving ever gets boring, but sometimes, when we get stuck at an uninteresting patch of coral just because somebody found something interesting and the rest of us have to stick around as we always dive as a group, I have to occupy myself.

Grabbing somebody's calf from behind trying to simulate a shark bite got very dull by the end of the month-long trip as I could no longer get the same reaction. So I would wander around and indulge in one of my favourite activities underwater, and that is interacting with the locals.

To someone who has never stuck his head underwater with a mask on, the amount of life under the sea both in terms of the number of different species as well as the total amount of



living organisms is unthinkable, and their colours and shapes are just out of this world.

There's always plenty to do underwater. You can touch an anemone and watch it shrink, tickle its soft underside and watch it relax, caress an eel's tail-end with a close watch on its mouth, tempt the same with a fresh mussel as far out of its hole, grab a puffer-fish and watch it puff up, startle a cuttle-fish and watch it squirt ink, rub a trigger fish hiding in a hole and make it snort, or fight with a clownfish that's protecting its eggs.... Things can actually get pretty busy down there !

Anyway on this particular day, on one of our last dives in the Andaman Islands, when we were done catching the bulk of fishes we needed

long plumes as they swim. It is this powder which forms the bulk of the dazzling white beaches! These fifteen fish were very curious and kept swimming up and down coming close and then getting too scared and swimming away, obviously torn between curiosity and fear.

Another memorable sight was that of the schools of thousands of Fusilier fish. These fishes are very streamlined, five to six inches long, bright blue with a yellow stripe on each side.

They normally hovered in mid-water all more or less equidistant from their neighbours and picked up plankton from the water, but as soon as Fili swam at them they would all turn in unison and head in the same direction with





for our aquariums at the School, we went for a pleasure dive right in front of the Youth Hostel where we were staying, with the intention of only catching things we found exceptionally interesting.

We hadn't even swum out to where the reef gets interesting and Atma and Jigu were already lagging behind trying to catch something I didn't really care about, so I wandered on my own wondering which would be the next creature I would befriend, when I spotted a giant octopus underneath me, hiding in the coral. His head the size of a coconut and his eight tentacles (I didn't count) tucked in behind him but that could otherwise reach out to a metre and a half, he sat there breathing steadily, staring up at me. Short, thick, ribbon-like strands on his head made me think he was a male — 'lost my razor fish, no time to shave,' etc... There's always an excuse!

Octopi are very clever creatures that are also extremely curious but very shy at the same time, and every time I dived down to him to get a closer look he would shy away and hide beneath the coral, only to come back into place the moment I resurfaced. I tried hiding behind various blocks of coral and getting close to him, but every time he would come out just enough to keep me in sight without being seen more than necessary. Almost running out of ideas I gesticulated wildly to get his full attention while gradually moving back to the limit of the water visibility of that day. I then took a very deep breath and dived down below the coralscape into a sandy

channel. From there I swam around the octopus's lair and approached him from behind, to find the funniest sight I had seen in a long time. The octopus was there, looking away in the direction he had last seen me, standing toes pointed making himself as tall as possible, and shaped like the Eiffel tower. His right eye sticking out at least two inches above his left eye, which his pulpy head allowed him to do, was so funny that I burst out laughing underwater. Startled by the sound and the bubbles he turned white and shot back into his cave, inking his pants with fright.



I was still chuckling to myself about the incident when Atma's voice came resounding over the surface "Stop fooling around and come help me catch these Anthias." And thus ended what could have turned out to be a fine friendship between the Octopus and I.

equal spacing between them, as though they were doing March Past and someone had shouted *à gauche marche!*

We also saw a school of small metallic damselfish which are about 1 to 2 inches long. There were at least 2000 of them all stretched out in a band in mid-water — about 6 feet wide and 2 feet deep — and so long that you could not see the end of the band. They also moved in unison so that when they were facing upwards they would

all be sparkling bright blue and then, all at once, they would head down and change to metallic peacock green!

We went for a night dive during our stay and saw hundreds of blood red sea urchins with long black spines crawling all over the coral. Many of them had tiny blood red shrimps diving, camouflaged, among the spines. These urchins and the hatchet fish and squirrel fish make up the night shift — therefore we do not see them dur-

## TURTLE NESTING

*Gita Dolia '73*

One of my memorable experiences of this trip, apart from the diving and all the fun we (unique specimens) had living together, was the turtle nesting.

We had met Ambika Tripathi, a researcher on marine turtles at ANET (Andaman and Nicobar Environmental Team). During the course of our conversation, we told him about our forthcoming trip to Mayabandar and Diglipur. He suggested that we visit a nearby turtle project site (where turtles come for nesting; their eggs are then collected for hatching and later the hatchlings released into the sea). He also offered to arrange for us to do a "turtle walk" with his project helpers. We pounced on the idea.... And circumstances and situations arranged themselves so well (though not without a few hiccups) that we got a lift till Rangat....

There is a Jarawa (local tribe) Reserve between Port Blair and Rangat. All vehicles have to ply in a convoy and cross waterways in a vehicle ferry accompanied by armed guards. The lush forest on both sides of the road had lots of different types of orchids in full bloom. Although we were cramped in our vehicle, the ride was worth the trouble because we saw Jarawas and even met a boy speaking in Hindi begging for titbits from passengers.

At Arroro, Cutbert Bay, where the turtle camp is situated, one of Ambika's helpers guided us to the office situated on the beach about half an hour's walk away. Walking in the sunset on a flat and white beach, with the sea a shimmer of gold and pink, one is surrounded by a sense of timelessness and vastness and one feels so much in harmony with the universe....

Formalities done, we waited for the high tide to set in — that is when the turtles come for nesting. We lay on the beach under a bright starlit sky, watching the numerous shooting stars... wishing... chatting... dozing....



The guides woke us up from our slumber. (Atma offered to stay back to look after our bags.) We walked awhile using our torches very discreetly, so that the turtles were not disturbed by any unusual light.... Then we spotted one already in the process of laying eggs. It was an Olive Ridley turtle. Excited, with cameras clicking away, we just stood in wonder at those leathery, shiny, soft, pinkish eggs, dropping now and then in the nest hole....

To call Atma to witness the egg-laying would have taken an hour at least, and we consoled ourselves by the thought that he had seen turtle-nesting in one of his previous trips to the islands, so we decided not to call him.

Once the turtle starts laying she is oblivious to any disturbance. Tears streaming down her eyes, she continued to lay for a while.... Then flicking the sand with her hind flippers she started covering the nest. When enough sand was thrown in, she started thumping on it, pressing it hard.

Then slowly, turning back towards the sea she swam away.

Touched by this experience I looked up, thanking the starry heavens; just then a shooting star acknowledged my sense of gratitude.

I had seen the hatching of Olive Ridley turtles in the Lakshadweep Islands; and the Andamans fulfilled my dream of seeing a nesting. An old wish (amongst thousands of other wishes) was fulfilled.



## KING COBRA!?!

*Dilip '76H*

Gita, Jigu and I were relaxing at the ANET (Andaman and Nicobar Environmental Team) camp late one evening when the telephone rang: a Bengali settler in a nearby village was asking for help to remove a snake that had crept into her hut. Manish Chandi, the resident snake-catcher, was away, so were Atma and Fili (resident Ashram snake catchers) and therefore it was left to us to decide what to do. Jigu must have thought that here was his chance to prove his mettle and put to practice the training he had had under Atma, so he volunteered to look into the matter.

Soon an anxious bike-mounted foursome (including Nelson, an ANET member) was speeding into the dark night towards the afflicted village.

A loud commotion greeted us there — scores of excited children and adults were crowding around both inside and outside the hut where the snake had been discovered. We appealed for calm — but it was like a cat left loose amongst pigeons — and we entered the tiny hut to investigate.

There, behind a makeshift shrine to Durga, lay in thick coils a large snake. It was beautifully coloured, pale yellow and brown and marked with black bands, and quite unperturbed by the cacophony around it.

With his snake-handling stick Jigu moved Durga's picture to better identify the snake and reacted with mild alarm. Gita and I too sensed that this was no ordinary guest — it was the

King himself and best left alone. Even Atma would hesitate to handle this beast, or so Jigu thought.

Gita, meanwhile, in her chaste Bengali, was trying to appease the assembled party which kept demanding that we should remove the snake immediately. She tried to explain to them that the snake was none other than a King Cobra and therefore very "*khotornaak*". She managed to clear the crowd inside the hut with this news and we were left to ponder our next move. The King, now uncovered and disturbed by our torchlights, was uncoiling and looking for a way out. Finally after a lot of trial and error, and to the accompaniment of high pitched shouts from the crowds, it squeezed through a gap in the bamboo screen wall and slithered to the ground.

Meanwhile, Atma and Fili had been alerted at ANET and they must have been halfway when the snake, though docile and silent, had enough of the pandemonium and slid away into the forest immediately behind the hut. Only then could we appreciate the size of the snake (three inches in girth and ten feet long at least) and were happy that the incident ended without harm to man or beast. Atma's frustration though at not being there to see the King in the wild was uncharacteristically evident as was his anger at us for not having brought our cameras! I have a feeling that, as some sort of consolation, Atma nurtures the belief that what we, questionable novices at best, saw was a regular cobra and not the King cobra, and we in turn have no hard evidence to corroborate the fact....



ing the day. And when you switch off the light you see phosphorescent plankton emitting light as they bounce off your arms and body like blue sparks!

## CONCLUSION

We had made a few collecting trips to the Andaman Islands in earlier years. Then as now, different islands were explored, different specimens collected. But unlike our previous expeditions, this trip was marked by an important convenience: the Fisheries Dept, Port Blair, kindly gave

## THE MANTA RAY

*Atma '81*

Towards the end of the trip — when the others had left for Pondy and only Jagat, Dilip and I remained — we arranged to go to two far-off islands which were three hours away by boat. We were told that at sunrise we could see Manta Rays swimming in the channel between the two islands.

So we set off at two a.m. — there was a sliver of a moon and the sky looked like it was loaded down with stars and had sunk closer to us. The water was rich with phosphorescence so we were leaving a ten meter long wake of blue light. We passed through some unknown school of light-emitting creatures which were about the size of tennis balls and scattered at different depths. After a while, everyone went to sleep, including the boat boy, so I was left holding the rudder. And for my efforts I was rewarded by the sight of a large orange ball that swept across the sky starting at the horizon. It exploded midway into three fragments which in turn continued till they had reached three quarters of the way across the sky before dying out slowly. We reached the is-

lands exactly as the sun rose to find a huge swell breaking. There was a strong current in the channel, and the water was very clear.

We swam across the channel and along it several times, but to no avail.

On the fourth sweep, however, when we were about to give up, I suddenly sensed something and looked up at surface level, and got a small shock to see that a two-metre manta had come close to me and was swimming slowly by, obviously very curious and unafraid. It had large very intelligent and expressive eyes. I held my breath so as to not scare it by the sound of my blowing and turned around to signal to Jagat, who was a little way behind. He did not see me or hear my signals and I watched it pass both Jagat and Dilip by, while neither of them looked up to see it!



us their aquarium facility to stock our collection and even provided the oxygen necessary for the final packing (though things did not go without a hitch: the flight was delayed by five hours and we had to go back to the Fisheries Dept, unpack and put in fresh oxygen). This helped us bring some beautiful specimens of marine life to our

aquariums in the School.

Our visit to the islands was a richly rewarding experience but the dark shadow of impending ecological disaster was a sad and constant reminder that we need to act fast to save India's only healthy coral reefs as well as all the other natural wonders of the islands. ❧

*When someone cannot sleep, cannot be restful because he is too excited and nervous and his nerves are ill and weakened by excessive agitation, he is told to sit in front of an aquarium, for instance — an aquarium, that's very lovely, isn't it? — before an aquarium with pretty little fish in it, goldfish; just to sit there, settle down in an easy-chair and try not to think of anything (particularly not of his troubles) and look at the fish. So he looks at the fish, moving around, coming and going, swimming, gliding, turning, meeting, crossing, chasing one another indefinitely, and also the water flowing slowly and the passing fish. After a while he lives the life of fishes: he comes and goes, swims, glides, plays. And at the end of the hour his nerves are in a perfect state and he is completely restful!*

*But the condition is that one must not think of one's troubles, simply watch the fish.*

**The Mother**

MCW: Vol 5, p 224



# A LITTLE GET-TOGETHER AT LONDON

*Sunayana '79*

**T**he Auomira Centre at London looks from the outside like any other house on that street but when you step inside you can feel the distinctly special atmosphere. A little garden separates the main



house from the Shrine Room where Sri Aurobindo's relics are installed within a square-shaped marble structure. On the second Sunday of every month the

devotees gather here. They spend some time in doing cleaning and garden work after which there is a meditation around the Shrine. The session ends with a lunch.

The meeting on 27th June, however, was a bit special. It was actually the end of the month, but a get-together was organised because Sumitra-di and Bernard were visiting London and some of the former students felt it would be a good idea to ask Sumitra-di to talk to them about life in the Ashram in the early years. We were to meet around 4:30 pm but by the time everyone was there it was much later than that. The group was a mixed one: there were the former students who live in London but there were also other devotees and, of course, Mr Manek and his wife who look after the Centre. Pratim '85 (Toto) and I were the visitors.

We began the session with a meditation in the Shrine Room. The atmosphere of peace is so strong there that it is almost a physical sensation. You can almost hear and see that peace. By the time the meditation was over, a slight drizzle had started. We crossed the garden and came into the hall. Then Sumitra-di spoke to us of how they

interacted with the Mother every day and how Ashram life was organized in quite a different way in those early days. Many of us asked her questions and many other details came up in our little digressions.

After this discussion, which took us back to the Ashram of the 40s and 50s, we had a wonderful Indian dinner. I was seeing Pragna Patel '80 after nearly twenty-five years and when we laughed and chatted no one would have believed that when we were in boarding together we used to fight like two cats. There were others too whom I was seeing after ages. There was Minakshi '73H who used to be in Minku-di's boarding and Jayabharti Patel '68. Even though I had met the others more recently, it was still a joy to see Anjana Sharma '67, Pravina '77, Kusum '71 and Mounnou '69 who had come with her daughter. Younger and less well-known to me were Srimoyi '93 and Somkanti '96. Of course, Vilas '70 was there but now it seems as if she is more a part of Pondicherry than of London.

We stayed for a while and chatted and caught



up with the news of our friends. We took some pictures to share this get-together with everyone. Then it was time to say goodbye, but we knew that it was only an Aurevoir. ❧

# DARSHAN HISTORY

We are all familiar with the four Darshan days (21<sup>st</sup> February — the Mother's birthday, 24<sup>th</sup> April — the day of the Mother's final arrival in Pondicherry, 15<sup>th</sup> August — Sri Aurobindo's birthday, and 24<sup>th</sup> November — the Siddhi day). We all know how the pulse of Ashram activities rises with the coming of a Darshan day: visitors arrive, programmes and talks are held, new publications are released. Darshan day itself passes in a whirl of crowds, queues and (hopefully) conscious concentration. The early morning meditation, the quiet queuing up, Darshan in the Mother's and Sri Aurobindo's rooms, special lunch in the Dining Room, then in the evening, March Past and the Playground meditation — this is a routine we know well.

But what were the earliest Darshans like? And how has the Darshan procedure evolved over the years? **Raman Reddy '75** has researched the subject. He presents here original texts — to evoke those sacred moments — along with his explanatory notes.

## EARLY PERIOD

Although in the text below references are made to Sri Aurobindo and the Mother, they were still known then as "Aurobindo Ghose" and "Mirra". It was only towards **the end of 1926** that the disciples began referring to them as "Sri Aurobindo" and the "Mother"<sup>1</sup>. At the same time, the text below would still be a description of the "**Darshan**" of **15 August 1924** in spite of Sri Aurobindo being called "A.G.", because he was considered a Guru by at least a few people around him, and definitely by Purani. But it would not be a **joint Darshan** of "A.G." and "Mirra", because "Mirra" was still not elevated to the same status as "A.G." by his disciples, though she had a prominent place beside him.

## Sri Aurobindo's 'Darshan' on 15th August 1924

[9.15 a.m.]

From early morning the Ashram is humming with various activities: decorations, flowers, garlands, food, bath, etc. All are eager to go the Master for his Darshan. As the time passes there is a tide in the sea of rising emotion. It is "Darshan" — we see him everyday, but today it is "Darshan"! Today each sees him individually, one after another. In the midst of these multiple activities the consciousness gets concentrated. Today is

"Darshan" — not of a human being but of some Supreme Divinity. Today is the rare chance of seeing the Divine.

There he sits — in the royal chair in the verandah — royal and majestic. In the very posture there is divine self-confidence. In the heart of the Supreme Master, the great Yogin — a sea of emotion is heaving — is it a flood that mounts or a flood that is coming down on humanity? Those alone who have experienced it can know something of its divinity. Those who have bathed in it once can never come out of that ocean. He sits there — with pink and white lotus garlands. It is the small flower-token of the offering by the disciples. Hearts throb, prayers, requests, emotions pour forth — and a flood of blessings pours down carrying all of them away in their speed. Lack of faith, all doubts get assurance. All human needs the Divine fulfils and, after fulfilling, his grace overflows. Love and grace flow on undiminished. The look! enrapturing and captivating eyes! Who can ever forget? — pouring love and grace and ineffable divinity. If the transcendent Divinity is not here, where else can it be?...

[4.00 p.m.]

At 4 p.m. all gather at the usual place — the verandah. All sit there full of hope in silence; one or two whisper to each other. The mind of the com-

1. See last issue (15 Aug 2003) of *The Golden Chain* for article on Sri Aurobindo and the Mother's names.

pany is silently repeating: “When will he come? May he come.” It is 4.15; the old familiar and yet new “tick” behind the door! Slowly the door opens: the Master steps out first, behind him the Mother in a white creamy sari with a broad red border. He sat in his usual wide Japanese chair. The Mother sat on the right side on a small stool. For a short time, about five minutes, there was complete silence!

Then he glanced at each one separately. The minutes were melting into the silence. There is again a wave of emotion in all, all bathe again in an ocean of some divine emotion. How wonderful if the whole Eternity would flow in this experience!...

[6.30 p.m.]

When the Master came for the evening sitting emanating joy he asked with a smile, “What do you want today? — Silence or speech?” As if he had come to confer whatever boon we asked. For a time it was silence that reigned. Then from that silence a flow appeared to start. The hearts of the disciples were tip-toe with expectation, for today they were hearing not human speech but words from the Divine. To hear with human ears the Lord speak! What a fulfilment!...

**A.B. Purani**

*Life of Sri Aurobindo (1995), see pp. 196-198*

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*The small gathering of disciples on the upstairs verandah of the Library House at about 7 p.m. on the Siddhi Day (24 November 1926) witnessed what could be called the first joint Darshan of Sri*

*Aurobindo and the Mother. On this day, Sri Aurobindo formally told his disciples that henceforth the Mother would take charge of them, though informally she had already begun guiding some of them in their sadhana. He also elevated her to an equal status by saying that she would “represent [him] and do all the work”.*

### **The Siddhi Day — 24th Nov 1926 — The First Joint Darshan**

Then the great day arrived. In the afternoon, it was in fact already getting dark, all of us had gone out as usual. I was on the sea-front. Suddenly, someone came running at full speed and said to me, “Go, get back at once; the Mother is calling everybody.” I had not the least idea as to what might be the reason. I came back running and went straight up, to the verandah facing the Prosperity room. Sri Aurobindo used to take his seat there in the evening for his talks with us or rather for answering our questions. As I came up, a strange scene met my eyes. Sri Aurobindo was seated in his chair,

the Mother sat at his feet, both of them with their faces turned towards us. I looked round to see if all were present. Satyen was missing and I said, “Satyen has not come. Shall I call him in?” The Mother spoke out, “Yes, all, all.” All were called in, everybody was now present. We took our seats before Sri Aurobindo and the Mother, both of whom were facing us. The whole scene and atmosphere had a heavenly halo.

Sri Aurobindo held his left hand above the Mother’s head and his right hand was extended



Upstairs verandah of the Library House where Sri Aurobindo gave Darshan from 1922 upto 1926.

to us in benediction. Everything was silent and still, grave and expectant. We stood up one by one and went and bowed at the feet of Sri Aurobindo and the Mother. After a while, both of them went inside. And then, Datta who had been among us, suddenly exclaimed at the top of her voice, as though an inspired Prophetess of the old mysteries, "The Lord has descended. He has conquered death and sorrow. He has brought down immortality."

From this time onwards, Sri Aurobindo went into retirement, that is to say, did not come out any more for his evening talks. The Mother made her appearance and it was with the Mother that we started our contacts.

**24 November 1926** **Nolini Kanta Gupta**  
*Collected Works, Volume 8, p 203*

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*The following Darshans gradually set the tone and routine for the next few years.*

## **21 February 1927**

*The first big occasion after the Siddhi Day was the Mother's 39th birthday on 21 February 1927. The occasion was marked by the distribution of a Darshan message which later became the first chapter of The Mother. Sri Aurobindo himself did not appear in public, according to the available documents of that day.*

## **15 August 1927**

*The first Darshan Sri Aurobindo gave after his retirement was on his birthday, 15 August 1927. Anna Bogonholm Sloane, an American disciple, describes her experience of it:*

"The God that is growing in me began to vibrate to the Master while I sat awaiting my turn to see him. He put his hand on my head and I began to feel the heat in my head as I walked downstairs."

*The following quote from Sri Aurobindo's letter to the French Govt confirms the Darshan in his own words:*

"When she [Mrs Sloane] arrived I had already decided to retire into seclusion and could not

see her. She has seen me only once on August 15th...."

*Mrs Sloane's papers also bear testimony to a notice distributed before the Darshan, saying that no one would be allowed to speak to Sri Aurobindo.*

## **24 November 1927**

*The next Darshan of Sri Aurobindo was on 24 November 1927, the first anniversary of the Siddhi Day. The Mother's answer to Daulat Ram Sharma (through Champaklal) is proof of Sri Aurobindo's intention to come out in public:*

*When are we to expect Sri Gurudev to appear in public?*

On the 24th instant Sri Aurobindo will "appear in public" for a few hours.

**9.11.1927** **Mother** (through Champaklal)  
*Champaklal Speaks, 1976 edition, p 240*

*Bansidhar, who came to Pondicherry on 8 November 1927, vividly recalls having attended this darshan.*

## **21 February 1928**

*The Darshan of 21 February 1928 has been recorded by several disciples — Amal Kiran, Vasudha, Chandulal and Kapali Shastri. The practice of three Darshans a year was thus established and continued till Sri Aurobindo's accident on 24 November 1938.*

## **Four Darshans Schedule**

*A fourth Darshan day was added on 24 April 1939 to mark the anniversary of the Mother's second and final coming to Pondicherry in 1920, after the disciples had missed the two Darshans of 24 November 1938 and 21 February 1939 due to Sri Aurobindo's accident. The schedule of four Darshans a year was maintained by Sri Aurobindo and the Mother up to 24 November 1950. After Sri Aurobindo's passing on 5 December 1950, the Mother continued giving Darshan on these days, though from different locations, till her last Darshan on 15 August 1973.*



## PLACE OF DARSHAN

### Meditation Hall Upstairs

My first Darshan was in the **Meditation Hall upstairs**.

There is a big sofa there even now — Mother and Sri Aurobindo used to sit on it and give us Darshan. At that time we were very few in the Ashram, and very few visitors were permitted for



Old photograph of the Meditation Hall upstairs. Nolini Kanto Gupta is beside the sofa from which Sri Aurobindo and the Mother gave Darshan from 1927 to 1928.

Darshan. The day previous to the Darshan, or two days in advance, the list of the names of all those who would be going for it was made and put up in the hall downstairs for everyone to read. One copy of it used to be with Sri Aurobindo at Darshan time. According to the order in which the names were written in the list, we had to go, and when Sri Aurobindo saw a new person coming he took up the list to see who that person was. I have still with me the list of the names of the people who went for Darshan on 21st February 1928. I should have brought it to show to you.

I was to go for Darshan with my brother. We took flowers — we could offer flowers. From outside the Hall, from the staircase steps we could see what the previous person was doing but we would enter the Hall only individually. Each one was allowed some time to make his offering and do Pranam to both Mother and Sri Aurobindo. Generally the Darshan would start at about 6 or 6.30 in the morning. It did not last very long as there were not many people, but still it lasted two or three hours as people were allowed some time. Since we used to see Sri Aurobindo only thrice a year, we were not hurried on.

On the day of my first Darshan there were about 65 people — sadhaks plus visitors. In the afternoon Mother would distribute among the sadhaks the garlands received at Darshan time. She gave each one of us a garland. And then at night we used to get soup from her, as on all other days. But on Darshan days we used to decorate with flowers a canopy over her seat.

That very year or the next, the Darshan room was changed. The Darshan was held in the **small room at the further end of the upstairs Meditation Hall**.

21 February

Vasudha

*Mother India, August 1975, p 639*

### Meditation Hall to Darshan Room

*Sri Aurobindo and the Mother's Darshan was held in the Meditation Hall upstairs from 15 August 1927 to 15 August 1928. The venue was changed to the small room on the east (the room that finally came to be known as the Darshan room) on 24 November 1928, because the Meditation Hall was "still not dry after the recent repairs". New joists of teak wood had been placed to buttress the ceiling by Chandulal, the Ashram engineer. Regarding the decoration of the seat in the new Darshan room, Barin wrote to a young disciple in Bengal that a canopy had been built over it, spending about Rs 15*



Meditation Hall upstairs in the Meditation House. To the right is what is now called the Darshan room.

*for its frame and Rs 35 for the flowers. The canopy, done in the style of Khajuraho's Jain temple, was wrapped in blue embroidered cloth and strewn with flowers. Ninety people came for the Darshan.*

## Darshan Room<sup>2</sup>

The Darshan-days were then three times a year. I felt a great excitement as a boy which is but natural. But this joy had no external background. Why I felt so unspeakably happy, I cannot analyse or say. The previous night I could not sleep well. I often crept downstairs (when I was in the Boulangerie house) where J. and others were busy bedecking the ornate canopy of wood covered with beads, flowers and other ornaments. Under these the Mother and the Master were to sit for giving Darshan to people. Early morning I would reach the Meditation Hall, now all covered with mats for people to sit on; a board with typed sheets stood at one corner. Here the names of persons going up for Darshan was put up. And each followed his turn in the order mentioned in the list. There was no bustle, no crowding, no talk. It was an atmosphere of silence, aspiration and expectation.

The doors of upstairs were opened at 8 o'clock. And one by one we would go, offer garlands and flowers to our Master and the Mother. After bowing to each in turn some of us bowed at the throne between them, when both of them would put their palms on our heads in benediction. The Mother was all in smiles, queenly and indescribably sweet and we

could feel that she was the Mother of whom the Master has spoken in his book. The Master was grand, Shiva and Krishna in one, the supreme Purusha of whom the Mother has acclaimed as the Lord whose presence would transform our Night into Day.

In the afternoon, the Mother would distribute garlands (which we had offered to her in the morning). Sometimes she distributed messages as well. When I went for this garland distribution on my first visit, the Mother was distributing Sri Aurobindo's message: "The sadhak has no personal hopes...." When I went up to her, she handed me a garland and, waiving her index finger, said with a smile, "No message for you."<sup>3</sup>

**Romen Palit**

**24 April 1931**

*Breath of Grace,*  
pp 99-100 (1973)



Sri Aurobindo and the Mother's Darshan in the Darshan room on 24th April 1950. Photograph taken by Henri Cartier-Bresson.

## Darshan Procedure

*The Darshan procedure changed over the years. When the Darshan was held in the Meditation Hall upstairs (15 August 1927 to 15 August 1928), the queue stopped at the top of the staircase. Each disciple then entered the hall and bowed down at the feet of Sri Aurobindo and the Mother. For a few moments, the disciple had the privilege of being alone in the presence of Sri Aurobindo and the Mother while they blessed him. When the venue was changed to the Darshan room on 24 November*

2. Sri Aurobindo and Mother gave Darshan in this room from 24 November 1928 to 24 November 1950.
3. Mother did not give the Darshan message to Romen because he was only eleven years old in 1931. The Boulangerie, where he lived, is opposite the main Ashram building and is one of the four houses that comprise the School building.

1928, the queue went into the Meditation Hall upstairs. Each disciple then entered the Darshan room and received the physical touch of Sri Aurobindo and the Mother while the others waited outside. Af-



The Mother's chair in the Meditation Hall upstairs from where she gave Darshan from 1951 to 1962.

ter Sri Aurobindo's accident on **24 November 1938**, a garland and offering box was placed in front of the room and the disciples could no longer touch their feet. The Darshan seat, which had stood at the back of the room, was now moved closer to the door, so that the disciples could see them better from outside the room. Lallubhai, who came to the Ashram in February 1938, describes the change with much regret: "It became a march-past." Indeed, the members of the newly formed Ashram Physical Education Department saluted and filed past Sri Aurobindo and the Mother on **24 April (only)** from 1947 to 1950.

### **Mother's Darshan in the Meditation Hall Upstairs**

From **21 February 1951** to **21 February 1962** the Mother gave Darshan in the Meditation Hall upstairs. The queue proceeded in the same way as

it does now during the April and August Darshans. The disciples first visited Sri Aurobindo's room, then entered the Meditation Hall from the door nearest to the Darshan room, and received the Mother's blessings at the other end of the Hall. The chair Mother used is still kept in the same place.

### **Terrace Darshan**

From **21 February 1963** to **15 August 1973** the Mother gave Darshan from the east balcony of the second floor of the Meditation House. The disciples gathered on the street below (Rue François Martin) and the Mother came to the balcony between 5.15 and 6.15 p.m. (the exact time depending on the month and the year) on the four major Darshan days. This eventually came to be known as the Terrace Darshan. It should not be confused with the Mother's walk on the terrace of the New Secretariat in the mid forties, which was also called Terrace Darshan. Neither should the balcony used for the Terrace Darshan be mistaken for the north balcony on the first floor of the New Secretariat, from where the Mother gave Balcony Darshan from **early 1938** to **March 1962**. The Terrace Darshan commenced after the Balcony Darshan had been stopped due to Mother's ill-health and she was confined to her second floor apartment. The east balcony was then



The Mother gave Terrace Darshan from this balcony on the east of the Meditation House from 1963 to 1973.

constructed by Udar Pinto so that the Mother could give Darshan from the second floor without having to come down to the first floor. ❧

## “LOVE AND DEATH”, ADAPTED FOR THE STAGE

Sunayana '79

*This stage version of “Love and Death” was performed at the Ashram Theatre in the last week of Jan 2004. The cast was made up of former students as well as students of the adults’ theatre class.*

We took a while to make up our minds about which one of Sri Aurobindo’s works we could take up for our next performance after “The Phantom Hour”. We finally thought that we could give “Love and Death” a try. What made me propose this narrative poem to the others, in spite of its difficult language, was the strong story-line. I had read the series of letters in *On Himself* where Sri Aurobindo discusses this poem at length. I knew also that Amal Kiran, to whom the letters were written, thought very highly of it. From the point of view of theatre, it offered a wide scope to do something creative because the story was rich in fantasy. Humans crossed paths with gods and goddesses and spoke to other beings of the occult, unseen worlds. The aim then was to bring to the stage this work so that everyone could enjoy the poetry. And if it was too difficult for people to follow the structure of the lines, at least they would have heard a beautiful story.

Making the stage adaptation was anything but easy. When Savita '75, Gautam Mitra '76 and I sat down to read the poem through, it went several kilometers above our heads. But as we read and re-read it many times, the story slowly became clear. Everything fell into place once we had divided it

into five acts in order to give it the shape of a normal play. The good part was that there were a lot of turns and twists in the story and this made the poem resemble a play, but the difficult part was that the dialogues were in fact long monologues. Also, the biggest problem was that almost three-fourths of the text was actually the voice of the narrator and each passage ran into several pages. To get round this hurdle we thought of having a chorus, as in Greek plays, which would tell the story, repeat the lines to highlight their beauty and create the links in the narration when nothing was happening on stage. And this chorus was made up of the different characters of the story. In other words, the characters of the story were themselves telling the story.

Let me share with you a few words about the background of this story-poem.

It was written by Sri Aurobindo in 1899 when he was living in Baroda. At that time he was only 27 years old and was then the acting professor of English and a lecturer in French in the Baroda College. Even though six years had passed since he had come back to India from England he was still deeply immersed in the classical literature of the West and was still unfamiliar with the details of Indian mythology. He himself admits this in a





## ALL IS A STEP FORWARD

*Suruchi Verma '03*

Taking part in “Love and Death” was a very good experience for me. It was the first time that I performed in such a big play in the theatre and moreover I was playing the part of the heroine. It was an honour, but somehow I felt all through that I wasn’t doing justice to it: firstly, because I wasn’t putting in enough effort and secondly because I wasn’t very good at acting. All through I had a feeling that things would not work out and there was not too much hope for success because of the various difficulties that cropped up. But I was fortunate because, due to other personal conflicts, I didn’t really care for results.

The hero, Pavak, caught chicken-pox just a month before the play. It was a shock for all of us. Somehow he recovered just in time to practice for ten days before we could put up the play. I must add here that he gave a very fine performance considering the limitations.

Another challenging and interesting aspect was our cast which consisted of participants of a variety of age-groups and standards. It was a wonder how so many different sorts of people could come together and cooperate to put up something so difficult!

You may wish to know what was so difficult. Well, first of all the editing had to be done because the poem was too long. This took up a lot of time and energy. Then the toughest part was the rendering of the poem into a play. Hats off to the directors — Sunayana-di and Savita-di — who managed so much. I must say that Sunayana-di’s spirit is remarkable!

Personally too I had to face some challenges. For instance I received my costume on the dress-rehearsal night! That was an experience. And to add to everything I got a sore throat a day before the dress-rehearsal and was squeaking away! Until the final day my voice was stuck. I got nervous and thought that I would spoil everything. I prayed and tried to offer all to the Mother. Surprisingly the best comments I received were to do with my voice. People found it sweet, soothing, and appropriate for the role! It was a completely new experience because I have done many programmes but never has it happened that I have fallen ill just at the crucial time.

I learnt a bit about the different aspects of acting, speech delivery and direction. I also developed a bit of patience! And what I enjoyed most was the language and the feeling behind the words which expressed itself almost palpably. There were times when I used to sit in awe and listen to the lines and they would mean so much. What can be said in praise of His writings!

The most important part was that all I did I tried to offer to the Mother. In these 21 years I’ve done lots of programmes but never has it happened that I’ve completely offered them to Her. This was my first actual success because this is far more important than the audience’s remarks.

I learnt much from “Love and Death”. Although I had started off with indifference, I ended having progressed so much. It’s always like that — the best results take shape when you least expect them to! I would like to continue doing such programmes and keep gaining such experience.



short paragraph printed at the end of the poem. The idea of writing a long narrative poem about the power of Love opposing the power of Death

was already there in his mind since those early Baroda days. It first worked itself out as “Love and Death”, then years later possibly the fragments

“Chitrangada” and “Ulopie” were also attempts in the same lines and finally it found its full expression in “Savitri”. Interestingly, all three stories are taken from the Mahabharata. In “Love and Death” he tells the story of Ruru who brings back the soul of Priyuvada, his dead wife, from the kingdom of Yama by sacrificing half his life in exchange. In a letter written to Amal Kiran on the 1st of July 1933, he says: “The poem itself was written in a white heat of inspiration during 14 days of continuous writing — in the mornings, of course, for I had to attend office the rest of the day and saw friends in the evening. I never wrote anything with such ease and rapidity before or after.”

When we started choosing the cast we decided the main thing we had to keep in mind was how eager a person was to participate in this venture. There was no point in having very able actors if they were not going to be involved whole-heartedly. Moreover this whole work was meant to be an offering of our sincere efforts to Sri Aurobindo, therefore what mattered was not so much what we did as how we did it and with what attitude we did it. This is how we ended up with a cast made up of people of different age-groups and various levels of experience. But our enthusiasm carried us through.

While it is true that putting up this play seemed like an obstacle race it is also true that help came from many quarters. Priti-di, who had done a series of paintings years ago based on this poem, willingly gave us the photos of the pictures to use as slide projections. Richard, from time to time, helped us with the diction and recitation. Gita Lall did a marvellous job of choreographing some of the dances and in such a short time. We needed special music to suggest the atmosphere of the strange worlds through which the hero passes. My friend Nadaka, from Auroville, very kindly allowed me to use pieces from his compo-

sition called the “The Lotus Trilogy” series. One piece of music was composed specially for us by Bryce. This piece was the opening and closing music of the play. The entire team of technicians, Mahi, Bokul and their team, did an admirable job of the lighting and sound. Many others gave us their help discreetly at the moment when we needed it.

Right from the beginning Savita and I shared out all the work. She typed out the entire edited script and looked into all the little details of the production and the co-ordination of the rehearsals. She also took care of the costumes and accessories. I was sometimes amazed at how she always

managed to do what she said she would. This left me free to concentrate on the creative aspect. Those who watch a play can never know all the hard work that the production team has to put in. And yet it is this behind-the-scene preparatory work that makes a performance look so harmonious and seamless.

On the day of the performance a friend phoned me in the morning to ask me if we were going to Sri Aurobindo’s room. I told her that we weren’t. After putting the phone down I realized that it had not even crossed my mind to ask for permission to go to Sri Aurobindo’s room. Firstly, some of us were going to come to the theatre after a full working day since we are employed outside the Ashram and there was no question of taking a day off. Secondly, I had got so much by working on this poem for five months that I did not feel the need to go to Sri Aurobindo’s room.

Every evening when we came for rehearsal, as we left our shoes outside the stage, we also left behind us all our other thoughts and worries, whatever they might have been — emotional, financial, pertaining to health or family, or any other, and for that time we entered into a sacred space. There is a tangible world of purity and beauty which is



always there in the Master's works. For those two hours during which we worked, we lived in that world. What joy it is to touch with your mind a thought that had come from Sri Aurobindo's mind, to touch with your heart a feeling that had been born in his heart, to be wholly concentrated on the words that were written by him and to finally become a character that he had himself created. I know that had I gone to his room on the morning of the performance I would have

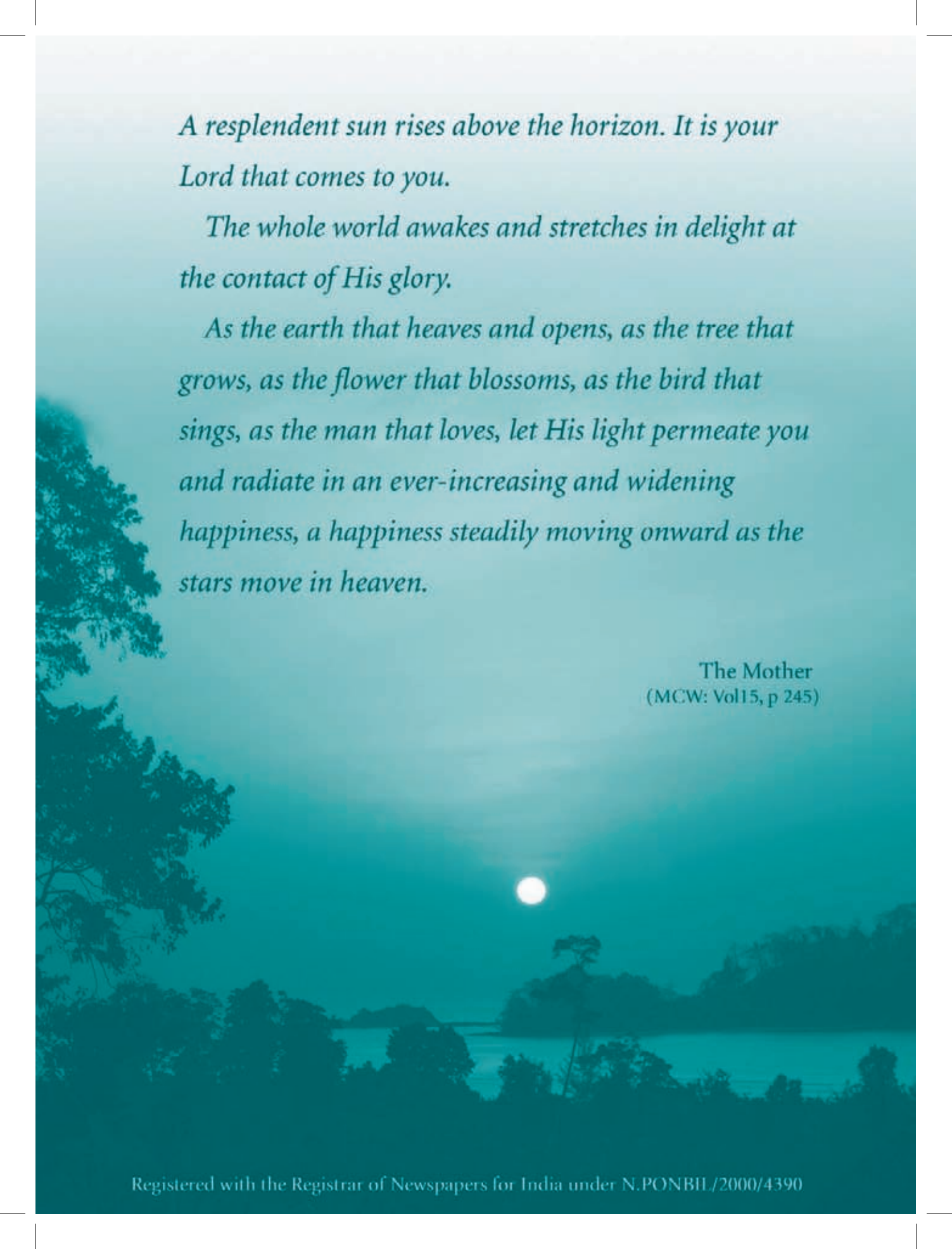
been unable to concentrate my thoughts. I know I would have sat there but would have started making little mental notes, telling myself not to forget to iron Pavak's dhoti, to remember to buy flowers for Anuradha's bow, to remind Apurva to get her mike fitted earlier... And yet, every evening, in an effort to do justice to Sri Aurobindo's work I had stood fully concentrated on the stage, in that special atmosphere. And that world created by him, is to me, as real as the room in which he lived. ❧

## QUIZ TIME!

*With this issue we are starting this quiz section. The answers will be printed in the next issue.*

1. Where was the Ashram bakery when it was first started?
2. When did Mother officially inaugurate the Dining Room in Aroume House?
3. For how many years did Sri Aurobindo live in the same rooms (on the first floor of the Ashram Main Building) without ever going out?
4. Who first showed the Mother how to put on a sari?
5. He was a graduate of the Ecole Polytechnique of Paris. He had spent a few years in Mongolia and Japan before joining the Ashram. Who was he?
6. Which boarding, other than Dortoir, did Mother visit?
7. What work was given to Nirod-da before he became the Ashram doctor?
8. She was a niece of Chittaranjan Das and was a well-known singer before coming to the Ashram. Who was she?
9. What connection is there between Rajmata Gayatri Devi of Jaipur and Sri Aurobindo?
10. In which poem written by Sri Aurobindo will you find these lines?  
"I am that Madan who inform the stars  
With luster and on life's wide canvas fill  
Pictures of light and shade, of joy and tears,  
Make ordinary moments wonderful  
And common speech a charm." ❧

*Send in your answers either by e-mail or by post or hand-deliver it to our office...*



*A resplendent sun rises above the horizon. It is your  
Lord that comes to you.*

*The whole world awakes and stretches in delight at  
the contact of His glory.*

*As the earth that heaves and opens, as the tree that  
grows, as the flower that blossoms, as the bird that  
sings, as the man that loves, let His light permeate you  
and radiate in an ever-increasing and widening  
happiness, a happiness steadily moving onward as the  
stars move in heaven.*

The Mother  
(MCW: Vol15, p 245)