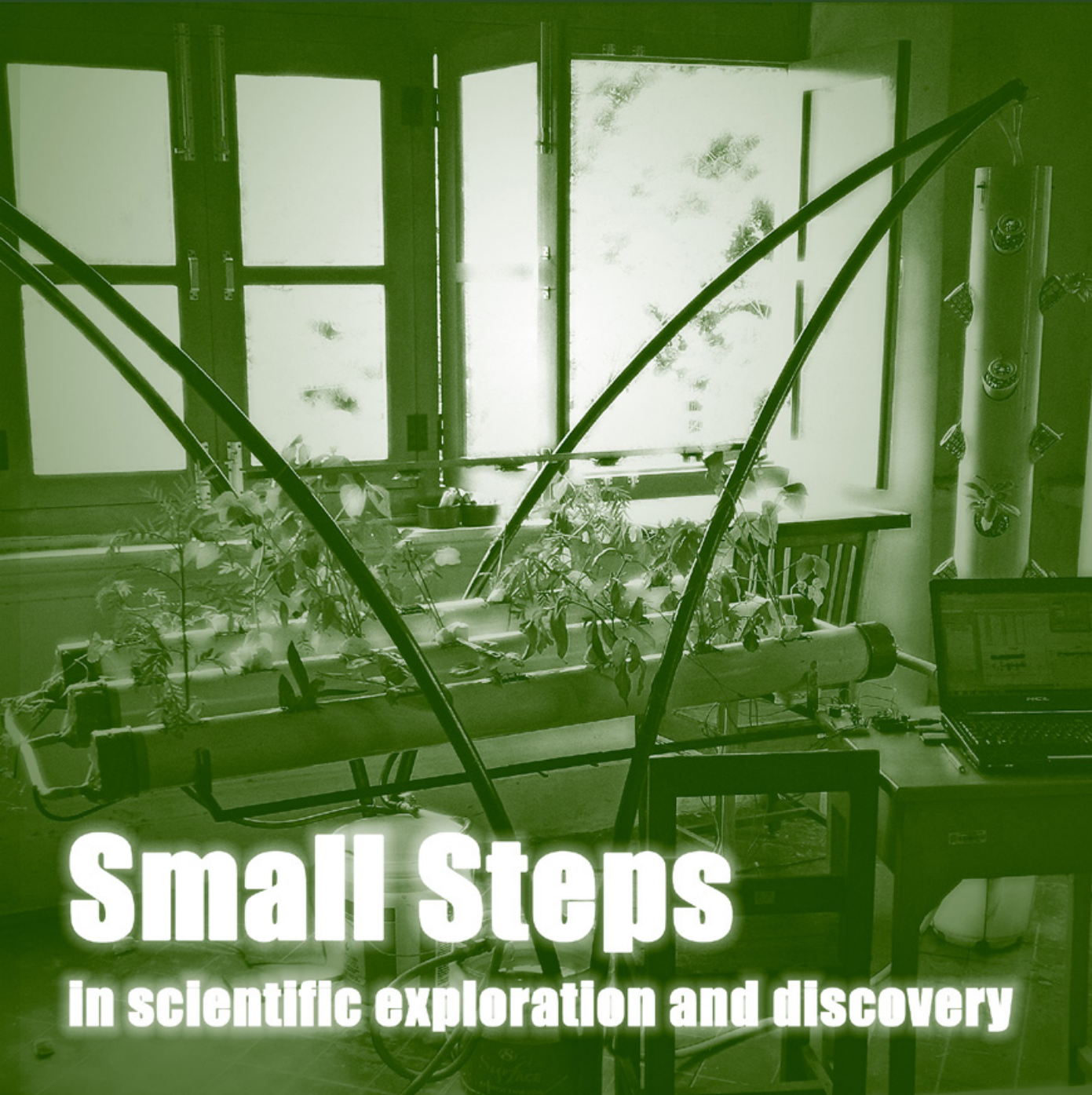


The Golden Chain

Alumni Journal of Sri Aurobindo International Centre of Education



Small Steps

in scientific exploration and discovery

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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The Golden Chain

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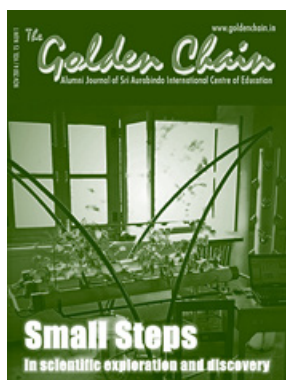
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On the Cover:

The Green Lab - a project from the students' science
exhibition.

Arthur Schopenhauer, the philosopher, once said, "Talent hits a target no one else can hit, genius hits a target no one else can see". Confronted with genius, we are certainly awestruck but maybe there is also just a little bit of genius in all of us. Maybe we can all learn to tune in to the innovative, out-of-the-box ideas that amazingly creative minds seem to bring out all the time. Maybe we need to cultivate a culture of creativity from a really young age.

Creativity is a process that is born from a certain psychological outlook, an outlook that combines a constant mental curiosity, imaginativeness and a willingness to question established suppositions, with a vital enthusiasm and persistence. This is, in many ways, natural to children and the young who look at things afresh and are eager to challenge themselves and the world around them.

Indeed, historically, ideas for scientific and technological change have quite often come to scientists at a pretty young age. As Pranav, a Knowledge student who has just won the Green Brain of the Year award for his project (see article on page 8), wrote while covering last year's exhibition of student-led science projects at SAICE:

"The young mind holds the power to change the future. Alexander Graham Bell, the inventor of the telephone, began working on it at 18. Louis Braille began working on his alphabet at 16. Thomas Edison sparked off his work on the light bulb at 14."

This year too a science exhibition was organised at SAICE. It was called "A Small Step". Having students take up scientific projects of their own choosing and challenging them to find solutions

to all the technical problems that crop up, not only helps in fostering creativity and innovation but is also perfectly in tune with our principle of Free Progress. Children learn to organise themselves, plan, work as a team and to surmount practical difficulties.

For teachers the challenge is to see that the students have the time and the right environment to take up such projects while also ensuring that they are provided a proper grounding in the subject. Ultimately there is no escaping the grind — the systematic and thorough study of a subject, especially in science where discovery is built on previous discoveries. As Isaac Newton wrote, "If I have seen further it is by standing on the shoulders of giants."

Mihaly Csikszentmihalyi, a noted psychologist who has carried out extensive studies in the area of creativity and happiness, says, "It has become a kind of truism in the study of creativity

that you can't be creating anything with less than 10 years of technical-knowledge immersion in a particular field. Whether it's mathematics or music, it takes that long to be able to change something in a way that it's better than what was there before." The important psychological factor is probably not to feel limited and satisfied with the knowledge acquired but to keep alive the urge and enthusiasm to break new ground.

Not many of us are scientists or even science teachers but the spirit of creativity and innovation is something we can all foster in our lives and in our environment. We can remain alive to new ideas, be ready to free our imagination, immerse ourselves in the creative flow and in doing so find personal growth and fulfilment. ❧



LIFE IN THE NAVY

Ayesha '11 tells Datta '85 about her life in the Navy

As a student was it your dream to join the armed forces?

I had nearly always dreamt of joining the Navy. There was a time when I wanted to be an astronaut, a swimmer, even Spider-Man for which I dedicatedly even had a green spider as a pet. But these were all phases. And when they passed, I again wanted to join the Navy. Somehow that stuck on. When I was in Knowledge, I wanted to pursue Astrophysics as a career. But by the time I finished Knowledge, I wanted to join the Navy again. So I joined. And since, I've never really looked back or regretted that I could have done something else.

Why were you not allowed to join the Air Force?

I wasn't allowed to join the Air Force because they did not accept my certificates. However, with the help of Group Captain Sucharu Rai '90, we managed to put up a case at the HQ, and we worked it out and now our certificates will cause no more trouble. By the time the whole situation was sorted out, my letter to join the Navy had come. I decided to go ahead as I was getting both, wings and waves, in naval aviation. I believe it was a wise decision. I truly enjoy where I am and what I am doing.

Can you tell us some anecdotes about the initial

six months of training you had to undergo and how they prepared you mentally, psychologically and physically for a life in the armed forces?



Every day in the initial six months of the training has an anecdote. And when I look back, I just laugh and laugh and laugh and truly believe there couldn't have been a better time.

Our day began at 0500 and officially finished at 2315. The whole day was a mixture of exercise, running, swimming, parade, firing and classes. The training motto is very simple, "One for all, all for one". With 250 of us being part of the "One", there were just too few days when one of us didn't do something out of the box and everyone was not put on hands for push-ups or just plain made to roll on the road. This not being part of the curriculum, these extra sessions nearly always happened at night, after 2315, and could continue... the only restriction being the clock striking 0445 on the morning of the next day. It was not so bad when you had friends beside you and everyone was enjoying and secretly laughing. It was during those sessions, where everyone is at his or her worst and still hav-

ing a totally awesome time that I made the best of friends. Only in the initial phases was training a little hard. Later it would just reveal that I could do that much, be so exhausted and still enjoy it.



Ayesha (front row, right) in full gear during her training

The training breaks you down completely, leaves you with no ego, my companions saw me at my worst, like I saw them at theirs. You are completely shattered physically, mentally, psychologically and giving up is so easy, with absolutely no consequence. But one can't give up, because the first thing that is imprinted on your mind is that YOU have chosen the naval way of life and here, there is no giving up. As time goes by, the effort of pushing yourself a little more with absolutely no motivation makes you very strong mentally and also gives the confidence that you can take on anything. I believe now that limits are mentally made. Nothing can really stop you from achieving so much more; all that is required is a little discipline.

There was this one day when in a hurry I forgot a T-shirt on my bed and an officer came on a surprise check. In the academy everything has a place and everything should be in its place. Every room looks exactly the same, the same cupboard arrangement, the same number of clothes in the cupboard, the exact same bed cover which was folded exactly the same 5 inches at the top, revealing exactly the same ¼ inch of the white bed cover below. It is quite easy to imagine. The horror that a folded

T-shirt left on the bed can cause, was discovered by my whole course that day. My whole course was called on a session of extra physical training at night. We had a place with a lot of pebbles and my whole course was put on hands there except me. I was made to stand in front and count while they did push-ups. With every push-up they were to say "Thank you, Ayesha". It was a good 30 minutes before I was removed from my podium and made to join them. Till date those have been the longest 30 minutes of my life. It hurt me so much that I decided that my room would never again be found with a single thing out of place. Till the end of my training my room was always in a demo state. And at the end my room was chosen for all families to visit.

I am proud to say, the Raksha Mantri also visited my room.

Now that your training is over where are you posted and what is your responsibility?

After my training I did various other courses in Hyderabad, Pune, Kochi, Mumbai and Lonavala. And now I am posted at INS Hansa, Goa. I



Ayesha (front row, third from left) at the Passing Out Parade

am an Air Traffic Controller. My work is to separate aircraft in the air. It sounds way easier than it actually is. Life becomes complicated when you have 8 different types of military aircraft only.



Ayesha (left) undergoing fire-fighting training

That is 8 different rates of climb, rates of descent, speeds and capabilities. The airfield that we have here is also an international airport with civil flights coming in throughout the day. Those too are being controlled by us. We have 40 civil flights coming and going within 4hrs. In 24 hours you can do the calculation. With that we have at least 30-40 military aircraft sorties.

The job of an Air Traffic Controller is considered extremely stressful. How demanding is it?

Work is very hectic. At every point you are playing with lives. There is absolutely no room for error. And when you reach the tower, put on the headset, you have to leave the whole world behind. It requires full attention and presence of mind. Every moment situations are changing, no two being the same and you have to adapt. The adrenaline rush is exhilarating. But when you leave the headset at the end of the day, you carry nothing along except a happy feeling. No

matter how demanding the work may be and how thankless, it truly is satisfying. We have a beautiful quote in our office, "You have Air Traffic Controllers, so that pilots can have heroes too."

How are you learning to cope?

In the initial stages it was difficult. Everything was so new. But you get the hang of it with practice. And then it is not so bad. As the mental image of the air situation starts getting clearer, controlling becomes easier and then enjoyable. I truly enjoy controlling military aircraft as they are so erratic and unpredictable.



In her working uniform

What would you say about the lifestyle in the Services? Does it allow you to pursue activities and hobbies that would not have been possible otherwise? For instance you have always been an excellent swimmer. In the Services could you have pursued swimming at the national level?

When I had just joined the Navy, amongst the first things that we were taught was that the Navy is not just a job, it's a way of life. From waking up in the morning to sleeping at night, you can never

forget you're a naval officer. Discipline, I realise now, is not really difficult.

Oh yes, you get a lot of encouragement to try new things, to widen your horizon. We are made to do so many things. In the academy itself we had a club for firing, diving, horse riding, para-gliding and I do not remember the rest. I had started training as a swimmer in the academy but it was too taxing with everything else and it was my personal choice to discontinue. My seniors have recommended me for a para-jumping course and a diving course. I am truly excited if either or both work out.



Ayesha (left) with course-mates just before getting her stripes

Your dream has always been to fly. Have you ever got a chance to fly in a fighter plane? What was the experience like?

I've flown but not in a fighter plane. I am still pursuant and maybe in the near future I will. But otherwise, I've taken a sortie in most others. I am a frequent flyer on the Chetak and I truly enjoy it the most. The experience is always new and truly lovely.

From the age of 3 when you came to me dragging your big bag with a notebook and a pencil and asked me, "Didi hamein padhnaa sikhaai-ye? Hamein school mein admission milaa hai," it has been a long journey. What do you think these 18 years in our School, in this place, have given you? How does it reflect in your life today?

I truly owe everything to my schooling here. It's not just about the schooling, but everything that I've learned outside the classroom. In the academy I was named "Smiley" because I pretty much laughed and enjoyed everything, even being punished. My fellow members could

never understand that. I enjoyed everything because I always thought it was helping to build me up physically or mentally. Nothing done in the right spirit can be degrading. This is just one of the things I've got from here. Eternal faith in the Mother that everything happening to me was for the better has made it possible to see things from a different angle. I truly enjoy what I am doing and am really thankful for where I am today. ❧

THE NEED FOR DISCIPLINE

One can do nothing without discipline — the whole of life is a discipline.

To discipline one's life is not easy, even for those who are strong, severe with themselves, courageous and enduring.

But before trying to discipline one's whole life, one must at least try to discipline one activity, and persist until one succeeds.

Sweet Mother, Could you write something on discipline for us?

Discipline is indispensable to physical life. The proper functioning of the organs is based on a discipline. It is precisely when an organ or a part of the body does not obey the general discipline of the body that one falls ill.

Discipline is indispensable to progress. It is only when one imposes a rigorous and enlightened discipline on oneself that one can be free from the discipline of others.

The supreme discipline is integral surrender to the Divine and to allow nothing else either in one's feelings or in one's activities. Nothing should ever be omitted from this surrender—that is the supreme and most rigorous discipline.

The Mother (CWM 12: 392, 396, 382)

DISCOVERING SCUBA DIVING

Devdutt Lall '81 shares his experiences of deep sea diving

How did you get interested in deep sea diving? Who inspired you?

I was always curious and was surprised to learn how Nature is so beautiful and complex.

I was always a water-lover and therefore scuba diving was something which always attracted me but due to circumstances I never could try it. Living in Paris didn't help either. It all started when my wife Varsha and I were vacationing in the Lakshadweep Islands in India

in February 2010. We went there for six days and on arriving found out that we were restricted to the island we were on, which was Agatti, the main island, which also has the airport. We couldn't go to any other island. During the first few days we walked around and covered everything there was to see. The resort we were staying at had a dive center. Varsha encouraged me to join as there was nothing else we could do. It was there that I started my diving course. I learnt the basics of scuba diving in the sea rather than in the pool which was great fun. I got my first level of certification 'Discover scuba diving'. The beauty of Lakshadweep was fantastic as it was pristine and there

were very few people too.

I was posted in Kuala Lumpur in 2010 and found a dive instructor, who also happened to be my client, named Tom Chan. He helped me to

discover marine life and introduced me to his group of dive friends. This was the golden period of my diving days as we dived nearly once every month.

Where have you dived? Which places do you like the best?

I have been very fortunate to be able to

dive in a lot of places starting with India (Lakshadweep, Andaman Islands & Pondicherry),



Malaysia, Thailand (Koh Lanta), Indonesia (Bali, Komodo Islands), Brunei, Maldives, Philippines, Palau Island, Vanuatu.

It is difficult to select the best sites as they all have something special, but if I need to choose a few places, it will be Komodo in Indonesia, Sipidan Island in Malaysia and Lakshadweep in India.

What is the real fun of diving?

The real fun is very difficult to pin-point. For me it is the integration of nature and the place where we dive. Having said this, the pleasure I get



is in seeing the beautiful marine life every time, discovering new countries, meeting new divers and learning and sharing the experience with friends, both on land and in the water.

What kind of people do you meet during these dives?

We meet people from all parts of the world and we really are not bothered to know their professional career as all that matters is that we enjoy diving together. We spend a lot of time together during the diving days and this creates a special bond between us which has also helped to open my horizons. The more I dive the more I feel that



Nature is so beautiful, and I realize how little we know about it.

What advice would you give to someone wanting to start diving now?

Anyone who is tempted to discover underwater marine life should just do it. I would like to



specify that one doesn't have to be a good swimmer to be able to scuba dive. Security is a major concern and I would remind everyone, "Please respect Nature and be always aware of your body behaviour. So, friends, just come and dive." ❧

***O worshipper of the formless Infinite,
Reject not form, what dwells in it is He.***

Sri Aurobindo (From the sonnet "Form", CWSA 2: 625)

GREEN BRAIN OF THE YEAR

Pranav Agarwal, who is in the first year of Knowledge, has invented the Solar Scare Mosquito, a gadget that prevents the breeding of mosquitoes in stagnant bodies of water. The Solar Scare Mosquito has been very well received, with international tech magazines reporting about it and Bill Gates commenting on it on his Facebook page. Pranav was also invited to Cyprus for the Green Brain of the Year competition. Did he win? Read on to find out.

How did this idea of the Solar Scare Mosquito come to you? Was this project done in the context of one of the Science Fairs?

No, it wasn't part of the Science Fair; I worked on it in my free time. Being a passionate hater of mosquitoes and knowing that the pest kills thousands of people annually, I always wanted to do something about the mosquito menace. Back in March, I began researching about mosquitoes and the existing practices of mosquito control. After a month of brainstorming and reading research papers, I finally came up with a solution.

Can you tell us something about your invention? What is the concept? What are the elements you have used to put it together?

It's best to curb a problem at source. Thus to tackle mosquito-borne diseases, I've made a device that prevents mosquito breeding itself. I conceived a solar-powered electromechanical device that creates surface turbulence in water bodies and thus inhibits mosquitoes from laying eggs on water as well as drown any larvae that exist in the water.

The device consists of a portable aquarium pump that produces bubbles to make ripples, a timer circuit, a couple of sensors, an alarm to

prevent theft, a solar panel and rechargeable batteries.

What were the main constraints and challenges you had to surmount to get it made?

For the success of this method of mosquito control, I had to keep the device cost-effective



Pranav making his presentation at the Green Brain of the Year competition

and simple in operation. And I must say, ironically, it is very difficult to keep something as simple as possible. Thus while designing the device, I not only confronted technical issues but also had to keep the cost in mind.

Having built it, the next challenge was to scientifically validate its effectiveness. For this, I had to hunt all over town for a mosquito larva-infested pond where I could install the device. Then

it was also tricky to study the larval death rate during the operation of the device.

Your invention was widely noticed pretty quickly with Bill Gates remarking about it and Wired reporting it. How did it gain such traction so soon?

That's an interesting story. I had posted a YouTube video about my device and written an article on how to make the device on another site. To my surprise, a couple of tech sites posted articles about my innovation and then the popular Wired UK magazine picked it up from there. Then came the climax... Bill Gates, being a campaigner against malaria, took note of my project and commented on his Facebook page about it, saying, "Simple, but smart!" The next thing I knew was that my invention was featured in the top tech e-magazines in UK, Germany, South Africa and China. So much so, that at a certain point, every three seconds someone was watching the YouTube video and it became the most trending tech article worldwide for that one day.

You were then invited for the Green Brain of the Year competition. How did the whole thing get arranged for you? How did the organizers contact you?

In May, I submitted a short write-up about my project on a website and forgot about it. Then in August I got an email from this Middle East Technical University, saying that I had been selected as one of the "top 5 global finalists". I thought it a hoax and ignored it.

But out of curiosity I visited their website and I realized that I was indeed a finalist! Then the university sent me the tickets and arranged for my visa.

How was the overall experience — the country, the people, the stay, the competition?

My trip to Cyprus was a once in a lifetime experience. It was amazing in every respect... the place, the people, the food and the academic aspect of course!

To start with, travelling alone for the first time was in itself an experience. Prior to this trip, I had never been out of Pondicherry alone, and here I was flying half-way across the globe!

The international Competition

The Middle East Technical University (METU) in North Cyprus hosts the annual "Green Brain of the Year" challenge. The challenge is to come up with an innovation that promotes one of the components of the "Vital Triad": Sustainable energy, Sustainable environment, and Sustainable water



The Solar Scare Mosquito in action

resources.

This year, a total of 271 projects designed by applicants from 17 different countries were submitted to the Green Brain of the Year 2014 challenge. The top five finalists, of whom I was one, were invited to Cyprus to present their projects in front of an eminent jury on the 25th of September, 2014.

People and the place

I was in Cyprus for three days, an island south of Turkey, with desert terrains and snow-capped mountains. My stay was arranged in a guest house on the campus itself where my room's window opened on a scenic landscape overlooking the desert, the mountains and the Mediterranean Sea.

I had a lot of difficulty in communicating as the people there hardly speak a word of English. But in spite of this language barrier, I found Turkish

THE PROBLEM

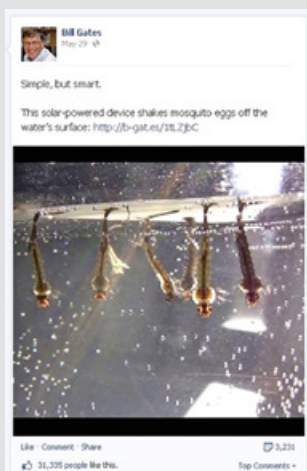
Mosquito-borne diseases like Malaria:



- Every minute a child dies of Malaria
- More than 780,000 deaths in 2012
- Over 200 million malaria cases in 2012
- 97 countries affected

THE LINE OF ATTACK

As stagnant water is critical for mosquitoes to successfully grow through their aquatic stages, creating artificial surface turbulence in water bodies should inhibit mosquitoes from laying eggs on water and drown any larvae that exist in the water.



THE DEVICE

The device is made up of the following parts:

Bubble aeration

I chose bubble aeration to create surface turbulence as it requires less power and maintenance than other methods of aeration, such as the use of an impeller or a fountain. For this

prototype, I used a portable aquarium pump as a bubble generator.

Solar Power

As the aerator needs to run perpetually, it is not practical to make it battery-powered as the battery would have to be replaced often. So I made the device solar powered. Here, I've used a 6v 3w panel.



Night-activation

As most mosquitoes lay eggs between dusk and dawn, the device would be most effective at night. And so with the help of an LDR, which is a light intensity sensor, the device runs only when it's dark. During the day, the solar panel charges Li-ion batteries and these batteries run the aerator at night.

Timer

A 555 timer circuit switches the pump on and off at intervals of 10 minutes to increase the life of the pump.

Automatic Start

In the case of rainwater, roadwork and construction sites, no arrangements are made to treat such temporary water bodies that are potential breeding grounds.

POSSIBLE IMPACT

If this device helps reduce the incidence of malaria worldwide by even 0.1%:

- Global savings of over \$10 million
- Save at least 800 lives annually
- Towards sustainable malaria control

people to be extremely warm and friendly.

After the presentations, the organizers took us to nearby cities and showed us historical sites and beautiful Mediterranean beaches.

How long did you get to speak?

I had to make a twenty minute oral presentation with a slideshow in front of an eminent jury consisting of professors and people from the industry. Other spectators were ministers, members of the UN, journalists and university students. After that, the jury and the students grilled me for ten minutes with questions.

How was your project received?

I was confident about my project and presentation. But just before leaving, when I came to know about the background of the other finalists,

I could barely stand on my feet. The others were doing their masters in engineering, management and other fields, and some were even doing

their PhD! They hailed from the best universities of the world — MIT, Yale, Cambridge, University of Hong Kong... you name it. And here I was, the youngest of them all, in the first year of “Knowledge”, and the only finalist from India.

However the jury was highly impressed with my idea as well as my presentation and I ended up getting

the first prize! I got an edge over the other projects because my idea was innovative, simple and implementable.

After the presentation, the professors and judges were eager to know which university I was from and when I named our institute and described the education system here, they were simply enthused by it.

Did anyone show interest in taking your idea forward on a large scale?

Some professors and some from industry saw a potential in the idea and said it could be taken forward.



The Northern Cyprus Campus of the Middle East Technical University



The audience



The finalists at the competition

Do you think your device can be mass-produced? What modifications to your device can make it more useful and practical? Did you receive any interesting feedback from the participants?

Well I think this concept has a future. However, it first requires thorough testing and experimentation. The device should be made fail-proof, robust and maybe more powerful. Some professors suggested that I should test the device more rigorously.

What were some of the other interesting ideas discussed at the summit?

Though all projects were related to sustainability, each of them was very different in nature. The other projects included a more efficient model of a biogas reactor, a rooftop unit to convert CO₂ to biofuel using algae, a method to convert vegetable oil to biofuel at industrial scale, and an integrated approach to make schools energy efficient.

One of the very innovative projects was a proposed model of harvesting water from the available moisture in the air in deserts using nanotechnology. The idea was inspired from the Namib Desert beetle which inclines itself on a sand ridge; its mouth facing down and wings spread open. Hydrophilic (water-loving) bumps and hydrophobic depressions on its wings cause minute fog droplets to accumulate on these bumps and grow until they trickle down into the beetle's mouth. That's how the beetle quenches its thirst in one of the most arid areas on the planet.

Any other thoughts?

I gained a lot of confidence by speaking in front of a large audience of intellectuals and competing with the best.

Winning in spite of the qualifications of the other participants also goes to show that you don't need to be an engineer or hold a PhD to come up with an invention. All you need is an idea! ☼



Receiving the award from the President of Cyprus

“A SMALL STEP”

Vikas '02, reports on this year's Science Exhibition organized by the students of SAICE

All science exhibitions at SAICE generate a keen interest in applied science across all age-groups and this year's expo at the end of August was no different. While it was named “A Small Step”, it was a



▲ Shubhankar sets the harmonograph in motion
► Harmonograph creations on Display

very important step in maintaining the momentum from last year's trendsetting expo.

In the process of manifesting their creations, students conceived their projects, worked out the feasibility of their ideas with existing models, materials and guidance and finally solved the practical issues that invariably crop up before the project can consistently work successfully.

While the expo was organized by students, almost half the participants were from EAVP 3 (age 14 upwards) who were working on a science project for the first time and needed more guidance. This is where senior students Pranav, Pushan and Vinay spontaneously took on the role of mentors and guides with teachers playing the role of facilitators.

Given below is a summary of each of the projects that was exhibited.

1. HARMONOGRAPH

Akash, Auroakshay and Shubhankar wanted to create a project that was a fusion of science, math and art and chose to make a harmonograph. This impressive device had two pendulums whose planes of oscillation were at right angles to each other. When the two pendulums were made to oscillate, two horizontal cross-arms connected to the pendulums moved a sketch pen whose resultant motion was caught on a glossy photographic paper which itself was moving in circles. The result was a rich geometric design known as a Lissajou's figure.



▲ Swadesh-da tests the smartness of the light and the student!



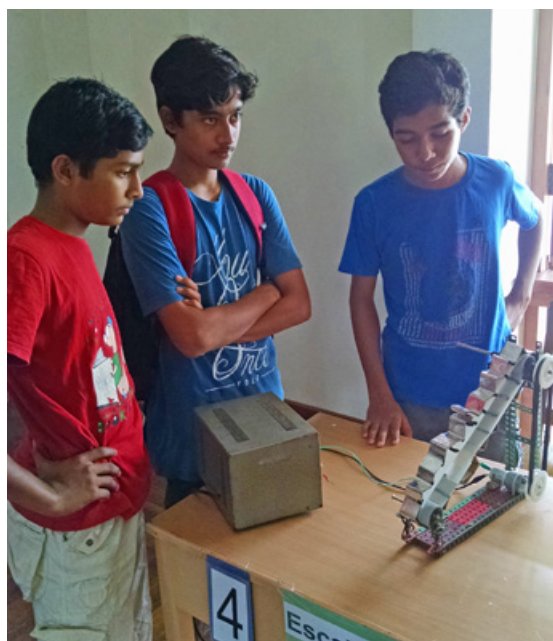
▲ Manoj-da checks out the LED Cube

2. SMART LIGHT

Utsarga's smart light turned on whenever it detected motion in a particular region and the light would turn off automatically after a while. Applications of this circuit range from corridor lights that come on as one walks through and doors that automatically open at shops upon sensing the movement of people.

3. LED CUBE

Rajalaxmi built a 3-D LED cube with 27 LEDs in a 3 x 3 x 3 pattern. These lit up randomly, as they were controlled by two IC's. This was a good project to acquire soldering skills and get acquainted with basic electronic components.



▲ Riddhiman gets his escalator rolling



▲ "The mechanical hand can't give a tight slap," says Rajnish, as Vinay & Suman listen intently!

▼ Batti-da & Parul-di marvel at the mechanical hand



4. ESCALATOR

Riddhiman wanted to build a model of an escalator. Through the project he came to learn that even tasks which seem simple require accurate measurement and the use of appropriate materials in order to make the project a success.

5. MECHANICAL HAND

Suman and Vinay combined their woodworking skills with their penchant for mechanisms. Their mechanical hand was made out of wood, with each finger having separate digits just like in a real hand. These were controlled by small motors pulling on nylon strings to curl the fingers and springs that straightened when the motors released the strings. A pre-determined sequence that was programmable on a computer would give inputs to an Arduino chip which would control the sequence in which the different motors turned. By a simple modification in the code on



▲ Monica with her salt water cell

the laptop, they could control the opening and closing of the wooden hand in different ways much to the delight of all onlookers.

6. ECO-CELL

Monica made a battery of three cells, each using copper and zinc electrodes and salt-water as electrolyte. Her battery produced enough voltage to run an alarm clock. Thus her power source didn't use the usual chemicals found in a regular battery.



▲ Water-level Alarm in Action

7. WATER-LEVEL ALARM

Concerned about water overflowing from overhead tanks, Ritwika and Yogitha created a water-level alarm that would beep whenever water came close to the overflow level.

8. GREEN LAB

This was quite the showpiece project of the expo, because of its sheer size. Under the guidance of "PP-bhai", a team of five — Amarnath, Devika, Gayatri, Meera, and Pranav — worked on this interdisciplinary project that combined



▲ Green Lab - towards Hi-tech farming



▲ Soil-less cultivation: Aquaponics and Aeroponics

physics, chemistry, biology, electronics, renewable energy and computer programming along with a whole lot of plumbing skills! Their aim was to cultivate plants without soil, and with finely controlled nutrients in the oxygenated water that kept flowing past the roots of the many plants. Besides controlling the nutrients, they also experimented with different lighting conditions and monitored the growth of the plants with the help of sensors that would give an input to an Arduino chip which in turn would update the spreadsheet on a laptop so that the growth of the plant could be checked in real time. Fixing the plumbing for this project was complex and in the process, the nutrient content in the water fell dramatically. Eventually the students were using ordinary water from School! Nonetheless,



▲ Aniya and Pranjana with their sample sky lanterns

the results of this project were quite dramatic, as the plants have survived for over three weeks now with minimal maintenance!

9. SKY LANTERN

Aniya and Pranjana created sky lanterns with paper treated with boric acid so as to make them fire-proof and burnt a specially designed fuel cell that would heat the air inside the sky lantern, making it buoyant in air as hot air is lighter than cold air.

10. HAUNTED HOUSE

Aradhya, Auroshree, Ritam and Shambhavi, under the guidance of Pushan, completely transformed a classroom into a dark, spooky and noisy

► The only way to get a picture of the haunted room - light it up!

▼ By the end of the show, the four ghosts went missing :)





▲ Falling water spins the wheel to generate power

maze with some visual effects created by UV light on fluorescent strings. Young and old alike enjoyed the experience of being temporarily scared and entertained by this group.

11. HYDEL POWER

Adit and Arjav made a thermocol wheel with plastic spoons that caught the flowing water and turned the wheel which in turn spun a motor whose leads exhibited a small voltage. Besides learning many practical work skills through working on the project, it became evident to them that to generate current of a sufficiently high voltage requires one to harness hydro-power on a much larger scale.

12. PARABOLIC TROUGH

Praveen and Sukrut wanted to build a solar device that would generate hot water or steam which could be used to bend and shape wood for their carpentry class. They designed a parabolic sheet for the purpose, which had a whole line as focal points and they fixed a glass tube salvaged from a solar water heater, with a metallic tube inside along the focal line.



▲ Praveen and Sukrut set up the parabolic trough

India's entirely indigenous Mars Mission has given our scientists the self-belief that it is possible to "make in India" provided we are ready to learn, innovate, overcome the odds and creatively solve our problems with the limited resources at our disposal. In its own way the Science Expo 'A Small Step' too gave an immersive learning opportunity to our young scientists at SAICE, en route to bigger scientific adventures in the future. ☼

STORYTELLERS

Lopamudra '94, whose collection of short stories, East West Crossroads, is to be published shortly, tells us of the storytellers she encountered in her growing up years

As a child when asked what I would do when I completed my studies I replied I would read books. With all the delectable books the world was full of I would never be idle. I would have loved to do it already but there was always some homework waiting. Finally when I had time at hand I was not happy just reading books, I wanted to write them too. And I started recounting stories. "Tell us some more," my hearers said. So I took an anecdote and laid it out as a story. Then I braided fact and fiction together. Sometimes it was pure fiction, sometimes an observation interestingly expressed. I realized I had the gift.



Some people throw a can of water on a crisp story. One of my friends has many tales to tell — which often are excuses he has to craft. His pace is so slow I wish he had a fast-forward button on him. I would prefer if he came on TV — I could then switch channels. And while I am

thinking of these practical measures he had been talking. Then I have to ask him to rewind. And he starts from the beginning; feeling, no doubt, very accommodating, but giving me the jitters. Such people remind me of the wonderful storytellers in my life, most of them my teachers at SAICE. Today I want to reminisce about them, and thank them for giving me something so precious. Some of the voices have become silent, some came before my time, and some after, but I know the tradition of storytelling will never die. It must not die because it is much more than sharing a story or a few moments together. It is one of those things that cannot be explained in words.

And so I am going to rewind my life's story and start from the beginning — first year in Big School, Progres 1.

Was one being named after the good or the bad character? One had no clue. It was agony not to know. The seniors called one Professor Shanku; then corrected themselves saying one was Chin Chan Chua. But they knew one's friend was certainly Professor Shanku, and the other classmate was Chin Chan Chua. In short we were classified in two distinct groups — the Shankus and ChinChanChuas — but none of us knew who the bad were and who the good. And our seniors would not tell us. We held our breaths for one year. Then we were in Radhikarya's class and pounced on him right away. He told us the story and we got our answer. Radhikarya was our Sanskrit teacher and a most engaging storyteller. His repertoire stretched from Akbar-Birbal tales to detective thrillers to science fiction. At that time a play of Kalidas's life was being directed by Subhash-da in Sanskrit where Bharat-arya played Kalidas and Radhikarya was king Vikramaditya. We hung around the stage while they practised and closely followed Kalidas's verbal sparring with the court poets. Radhikarya had explained all the puns in the *shlokas* which made the show even more stimulating than a film. And before we realized it, we had learnt Sanskrit. Similarly Namita-di told us stories in French — of the triangular love affair of Quaincaillé and Roberson and the sad story of the boy, Dadou, in *Dadou Gos de Paris*. Here all the girls in the class became tearful, including our teacher. I never found a better way to learn languages.

When I look back on those storytelling sessions I can still feel the thrill of stepping through the looking glass and losing myself in a new world.

Every culture has that magical door, whether it is the cupboard in the *Chronicles of Narnia*, or the hollow in Enid Blyton's *Faraway Tree*, or the magic lamp, the deep pocket, the secret garden. Childhood isn't complete without a storyteller. It is one thing to read a fine story alone, and quite another when read aloud by a good storyteller. The pauses, the sudden rush of words, the personifications, the voice modulations — all make up a rich listening experience.



I was a lucky child. My father made us laugh with stories of his quirky aunts and uncles. And my mother is one of the best storytellers I have ever met. I waited for the afternoon siestas. She used to read a story aloud until her voice trailed off in sleep and the book fell on her face. This is how I heard *The Good Earth* — in Bengali first. There

was a long stretch of Satyajit Ray's stories of the detective Pheluda. Later when we read Sharat Chandra and my mother's voice became heavy with tears, my sister continued. When she started weeping I read and passed on the book to my mother when my voice failed. I remember asking her to tell stories from her childhood. We asked her for the episode where she accosted a goat and tried to milk it, where she cut her finger thrusting it into a table fan, where... I had heard these stories many times... but it was the way she told them... And there were other kathaks I remember fondly.

Arati-di told us stories in the Bengali class. Students spanning several age groups were crowded together on a mat. We gazed up at her as she recounted the most intricate story of all — the *Mahabharat*. We were in Flower Room, still unlettered, and *Amar*



Chitra Kathas were two years away. In the final year of Flower Room we discovered Bokula-ben's storytelling skills. The story was *Ramayana*. She chewed her words slowly; the images crept up on our imaginations leisurely. She sat on a stool and we at her feet. Sometimes I felt so elated I wanted to hug her. *Ramayana* took her half the year. *Ivan and the Golden Bird* occupied the rest. After the class we asked ourselves how we would have captured the bird had we been Ivan. When Ivan outdid us we cheered him; and then planned his next move.

I don't know if our teachers copied Vishnu Sharma of *Panchatantra* trying to teach us morals, but some qualities certainly seeped in. For many days we were all Krishnas or Arjunas. Our enemies became Duryodhanas and Shakunis. Later when I read the *Malory Towers* books, adventures in a girls' boarding school, my friend, Mala, and I named all our friends after its characters. These were useful codenames and we felt no shame warning each other to disappear because "Gwendoline was coming" or "Zeralda was laying her trap". Mala was the scatter-brained Irene, I the prankster Alicia, and in this vein our good friends were rewarded with good alter egos. We even wrote letters to each other during the vacations signing as Irene and Alicia.

Second Year in Big School was a year full of stories. We were about Tom Sawyer's age and Savitri-di reserved a class for *Tom Sawyer and Huckleberry Finn*. In Group Chanda-di told us stories of Poliana, the adopted girl. This happened on gymnastics days. Sometimes Mona-da came and told us stories of athletes. Oh, were we not inspired to run like the Gazelle? We, who had no polio, and had training grounds and dedicated coaches! Wilma Rudolph was her real name, an African American



born before the Civil Rights days. One of her legs was paralyzed due to polio. She was in and out of hospital — an expense her family struggled to bear. Finally at the age of twelve she recovered and very soon was discovered by a coach. In the 1960 Olympics she won three gold medals for sprinting events. Mona-da told us stories of the legendary football player, Gostho Pal, and other Indian athletes who worked hard against odds and made it to the top.

Once or twice we caught Dada passing by in the playground and pinned him down to tell us a story. I have never found his stories in any book. Maybe they were folk tales from his native place in Bengal or maybe he made them up. They came in ten-minute packets of absolute delight. There was an astrologer who calculated a muhurta for a king when he could slice open a pumpkin and find a lump of gold inside it. The astrologer's wife raised a row and desired some gold too. He found she was entitled to a little, as per her karma. She raised the sickle over the pumpkin as he began his countdown. Just then a louse starts tickling her head. As his countdown reached 4, 3, 2... she was unable to control the itch. She grabbed the louse and crushed it between her nails just as she heard "Now". She swung the sickle and sliced the pumpkin. But alas there was no gold. She was all abuse. The astrologer had hitherto never erred in his calculations. He pondered, and then it struck him. He grabbed her fingers and found a grain of gold stuck to her nail — a lump no bigger than the louse.

The stories kept pouring in — even during vacations. When I was in Green Group while waiting for the Main Ground to be free for our drill practice, we used to huddle on the grass around Smriti-di. It was always in a dark corner. She said there were too many insects buzzing around the spotlights. But I suspect she had a more sinister motive. In the dark, with the cold wind moaning, she told us stories of two friends, Amal and Kamal, who met after a long time as per an old pact.... It is a dark and desolate place, not unlike the one we are huddled in.... Smriti-di takes her time filling in the details about their lives.... Amal is evasive, Kamal forthcoming. Amal

throws disturbing hints. We fear he will kill Kamal. We don't know why. A shiver starts from the tips of my fingers and reaches the top of my skull. But none of us dashes off to the light, to the elders standing a stone's throw away. We are rooted to the ground, transfixed, wedded to our doom. Then Kamal opens his arms to hug his friend. And suddenly Amal vanishes. We scream aloud. My index fingers are jamming my ears but my eyes are wide open. Mala's eyes are tightly shut but her ears are wide open. Each has his or her own way of meeting disaster. But running away isn't one of them. Amal was dead but had come to keep his promise. And again and again we followed Smriti-di to the gloomy shades and begged her to tell ghost stories, our faces already distorted in fear. Much later I read Sri Aurobindo's *The*



Door at Abelard and *The Phantom Hour* and felt invaded by the same clammy fingers that made my heart thud and my skin crawl.

The vacation treat wasn't over. After 2nd December practice we ate a hasty dinner in Corner House and jumped on the jeep that took us to Theatre Hall for First December practice. We were fish, reptiles and plants. As far as I remember it was the story of evolution. While the elders rehearsed their parts we played hide and seek and were hard to find when our turns came. So they found an angel to manage us. That was Ange, maybe studying in Knowledge then. Ange gathered us around the cement stage under the sky, out of earshot from the main stage, and told us stories of seafarers harpooning large fish. She provided a lot of material for exciting dreams. And we were so quiet I am sure people thought they had forgotten to get us. While telling stories



sometimes Ange ate bread and vegetables that came from Corner House. Once she screamed, "Ouch, I bit into a chilli!" and ran towards the water fountain. We followed her like a shoal of fish not to miss a single word she may utter on her way back.

When Shobha-di found it hard to control us in the singing class she told us stories from her life. Once she was being bewitched by a lady who, no doubt, had some power. Shobha-di had met the Mother by then and was wearing a necklace with the Mother's symbol as a pendant. In front of the lady when she started feeling threatened she suddenly clutched the locket. Immediately something snapped and she was free. She ran down the stairs out of the mansion and never returned. Later she was told the lady had had a fit of vomiting and had almost died that day.

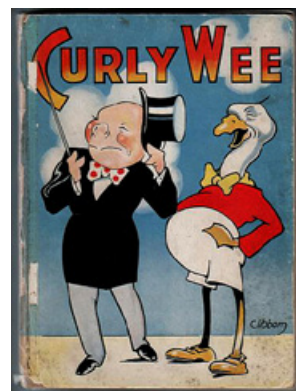
Most afternoons when I was in Flower Room I used to be in Bela-di's embroidery class. I listened with rapt attention to Bela-di's stories. She poured them out one after the other, often repeating herself. There were stories of how Mother wanted them to mend a tear in her dress and they embroidered a flower on the torn place. Then how they embroidered long hours to complete Mother's gown for a Darshan Day. Then again Mother asked them to make a salwar kameez out of a saree she had received as a gift. There were stories of Vasudha-ben, whom they called Akka and Mother called My Little Smile. Bela-di described the fruit bars Mother gave them and made us all long to taste them. To date I have never found anything like those fruit bars. Whatever I find always falls short of Bela-di's memories.

But I suppose that is how it should be. They were from the Mother after all.

We were given a choice to do handwork with Sarala-ben or Reba-di. Reba-di's classes were harder as one did not use paper and glue but needle and thread. One made stuffed toys for Christmas and learnt to use the sewing machine. Five of us girls took up the challenge. But we had another reason too, a more hedonistic one. After two hours of fighting to keep cotton inside a turtle's belly we had our treat. We relaxed and Reba-di began. There were adventure stories, often with children as heroes. I had read many *Famous Five*, *Secret Seven*, *Nancy Drew* novels, but the ones Reba-di told us were always new. I believe she made a punch and added to it her own imagination. There was hardly a moment without action. Airplanes were flown into islands, thieves were caught, spies betrayed, detectives outwitted, police ridiculed. Many years later when watching an Amitabh Bachchan film involving smugglers, I recalled having heard part of it in Reba-di's class. The same déjà vu occurred when watching James Bond.... The four o'clock bell would ring but we would beg her to continue. Finally she would throw us out and we would rush to Corner House just in time for tiffin.

Again in EAVP2 we had a choice and most of us girls chose fabric painting while the boys preferred to draw on paper. While Habul-da told them the stories of *Not a Penny More*, *Not a Penny Less*, and *Kane and Abel*, we too had our own serialized treats. These came from Gauri-di's collection of *Curly Wee* cartoons. Curly Wee was a pig with a curly tail and a bouncy nature. The magazines were shipped from England and Sri Aurobindo himself had enjoyed reading them.

We clustered around Gauri-di because the scrapbook where she had pasted the cartoon strips was too delicate to be passed around.



We met another famous pig in Veena-di's class. As our English teacher she read us select works of literature. And what a choice she had! This story was set in a farm where animals talked like humans; and had attitudes — the sheep especially. But their leader was a spider — Charlotte. On her web she wove the words "Some Pig",

meant for Wilbur, the pig, the darling of the farm animals. People came from far to see the phenomenal web and Wilbur was saved, for how can such an extraordinary pig be slaughtered? Only our classmate, Samrat, could have any resentment towards Charlotte's Web. For many months he would be "Some Rat". Veena-di also

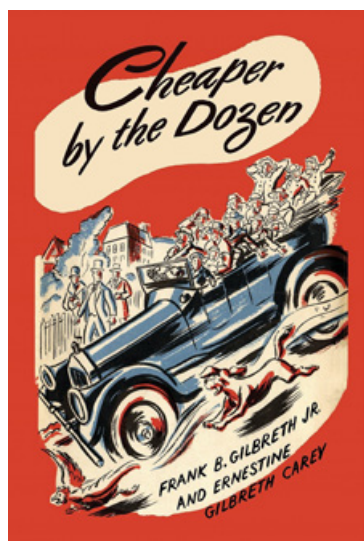
told us two other charming stories — *The Wind in the Willows* and *Cheaper by the Dozen*. Now I have an audio recording of *The Wind in the Willows* which I hear whenever I need some cheering. It never fails to raise my spirits. As for *Cheaper by the Dozen* the father's character really impressed us. His innovative teaching techniques made his kids smarter than their peers.

We followed his lead trying to keep our minds jogging all the time. Of course we didn't go to the extent of dangling the Morse Code in front of the toilet seat but we learnt Morse Code and played geography games during

lunch. Anyone who wants to manage time well must read this book. And it is a true story — the children's tribute to their departed father.

In our last maths class in Knowledge, Manojda (Das Gupta) walked in with a surprise. He would read us a story. It was a memoir written by Rabindranath Tagore. The protagonist was a young man, Sukumar. He and Pupe, Tagore's granddaughter, used to play together when they were children. Tagore reminds Pupe of a day when Sukumar had presented her one of his sketches and Pupe had spurned it, like all little girls. Sukumar used to sit on a broomstick and urge it on to fly among the clouds. He called it his pokkhiraj— winged horse. He grew up dreaming of paintings and aircrafts but his father kept forcing him to join a more mundane but lucrative profession. One day Sukumar disappeared. Rabindranath hands Pupe— now a grownup woman — one of Sukumar's drawings. She holds the paper close to her heart and hides her tears. At this point my eyes were wet too. Tagore had explained to the children that the whole sky is crowded with people's dreams. And that is why it is so full of stars. Not all the dreams will get fulfilled. But that does not mean we should stop dreaming. The perfect world is not here yet, but we continue dreaming about it. And while we wait, to remind us of it, we have our poems, we have our songs.

The next day we graduated from the Ashram School and added our own dreams to that wondrous sky. ☼



GOLDEN MEMORIES

Sachidananda Mohanty '75, who is Professor of English Literature at Hyderabad Central University, reviews the English translation of the book by Pramila Devi, who was in charge of the Jhunjhun Home for many years.

The *Luminous Past* by Pramila Devi, translated into English from the original Bengali by Sunayana Panda, is a notable account in oral history of life in the Sri Aurobindo Ashram, Pondicherry. Originally published in Bengali as *Ujjwal Ateet*, 1997, the work was serialized in *Mother India* from April 2011 to September 2013 and is now available in book form.

In this riveting narrative, Pramila Devi offers memorable vignettes of Ashram life from the 1940s till the end of the 1980s. It is undoubtedly her recollection of the Jhunjhun Home, a residential “boarding” of the Ashram children, inaugurated by the Mother in the afternoon of 9th December 1961, that serves as the unique vantage point for the unfolding of the narrative. It is this location that gives strength and uniqueness to her story. It is true the book contains fascinating glimpses of early life in the Ashram, but these, it must be admitted, constitute perspectives that other inmates and visitors have shared. Pramila Devi, on the other hand, was closely linked to the birth and growth of a unique students’ home, carefully nurtured by the Mother and her close disciples like Pavitra-da and Nolini-da. Indeed, in course of time, the dedication of Pramila-di and others made Jhunjhun Home an educational destination par excellence for visiting dignitaries from India and abroad. Sunayana herself was a lucky inmate of this “boarding” and had the good

fortune to watch Pramila-di and her managerial approach from close quarters. It is her sense of gratitude that has led to this labor of love, being shared now with the larger community of seekers of the inner life. We must thank Nandita-di as well for her many hours of help in the making of this text.

Pramila Devi (Sen) was born in the early 1920s near Chittagong, East Bengal in undivided India. As a teenager, she joined a centre of the Sri Aurobindo Ashram at Chittagong and came to the Ashram at Pondicherry permanently in November



1941. She worked in the laundry and bakery with her cousin Jatindranath, under the guidance of the Mother. Although a relative latecomer, she learnt English and French rapidly. She was asked to take charge of Jhunjhun Home (Boarding) in 1961 which became an exclusive hostel

for girls in 1971. She ran this hostel with a single-minded dedication as part of her sadhana; she continued her French classes despite suffering from asthma, and after life-long devotion and dedicated work passed away in 1995.

The book rests essentially on three pillars for its significance. First, there are the memories of early Ashram life by Pramila Devi; secondly she reveals her close association with a set of notable Ashram figures, and finally, she narrates her life at the Jhunjhun Home that lends uniqueness to her

“achievement” as a sadhika of the Integral Yoga.

Pramila Devi begins her story as many of her contemporaries did, with the evocative aspects of the Mother’s Darshan. She recalls the Mother as “radiant as the sun, her eyes full of compassion”. She remembers that even birds, and crows like “Blacky” were loyal to the Mother. We see her fascination with the everyday life at the Ashram: ordinary sights and sounds were alchemized by a spiritual ardor. Her association with devotees like Nishtha, American President Woodrow Wilson’s daughter, is fondly recalled and so also other aspects like Playground activities, the display by visiting Russian gymnasts, holding theirs as well as the Mother’s flags, symbolizing the “union of the East and the West”, football matches in town, the opening of the Sri Aurobindo International University Centre by Dr. Shyama Prasad Mukherjee, the food habits of the Mother and Sri Aurobindo and Her many acts of compassion. In one such instance, She takes back the unstable and wayward son of Sabitri Devi who had run away from the Ashram and wanted to come back.

We also see Pramila-di’s interesting experiences as a teacher in the Ashram School (SAICE) and her openness of approach in handling mischievous students. While others wished to play safe, she sought out the difficult ones and took them under her wing and they reciprocated her love in a boundless manner.

In the second segment of the book, we see Pramila-di’s close association with a set of outstanding personalities of the Ashram, namely Bharati-di, Janina, Jatin-da, Nolini-da, Pavitra-da, Andre-da, Amrita-da and Pranab-da.

These figures come to us through the admiring eyes of Pramila-di. The editor does well

by giving us a brief life sketch of them. For instance, Bharati-di was a French lady whose real name was Suzanne; she grew up in Paris with a pronounced interest in Indian philosophy and religion. She worked in Cambodia, classified and conserved Buddhist texts. Arriving in Pondicherry through the Ecole Francaise d’Extreme Orient, she became a teacher in the Ashram School and after a dedicated life, passed away in 1969.

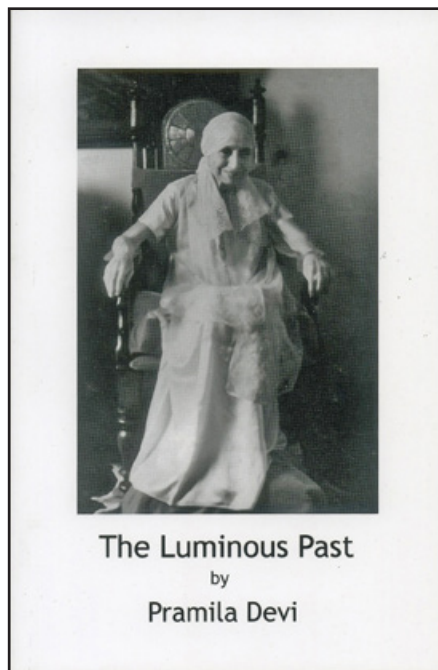
As Pramila-di came in close contact with these eminent personalities, she grew in spiritual discipline and ardor. There were many acts of sharing and generosity, occasions for learning from the

towering personalities who were blessed by the Mother. While she lacked their stature and abilities, she made up by her deep humility and keenness to learn from the smallest acts and deeds. The experience came most handy; looking back it appears as if this association was a necessary preparation for Pramila-di’s position at Jhunjhun Home. It is this unique aspect we witness in the third and final section of the narrative.

Pramila-di’s dedication to Jhunjhun Home was guided by the message of Nolini-da: “This school, this education, they are not ordinary. The ideals of the Mother and Sri Aurobindo

are there within them. The Mother is working tirelessly so that our children grow up with those ideals. They must live in joy. One cannot force them to study and learn. They have to be brought up with true love and affection.”

Once Pramila-di internalized this message, she became a consecrated soul and a perfect instrument: guide, mentor, parent and friend — all rolled into one. She brought up generations of children at her boarding. We see details of the food arrangements made under the close





The Mother at the Jhunjhun Home on the day of the inauguration. Also seen in the photo are: (back row, left to right) Nolini-da, Abhay Singh-da, Pavitra-da, Kireet-bhai, and (front row) Dayavati Jauhar, a Tibetan girl.

supervision of Pavitra-da; the smartly dressed Tibetan children who became the symbols of Pramila-di's good care, the wonderful combination of studies, play and recreation, the many anecdotes, touching moments, hours of joy and moments of epiphany.

In the epilogue, Sunayana recalls her memories of Pramila-di. We see the wonderful manner in which an older woman brings up, with love and care, a somewhat sensitive but rebellious daughter / granddaughter. In one instance, in 1977, Sunayana expresses her desire for a "Prosperity" sari because she wanted "to belong to the family of devotees". Pramila-di's remark is extraordinarily simple and yet deeply moving: "I believe," she said, "that my saris come from the Mother even though she is not in her physical body anymore."

We see Pramila-di as an unusual soul, simple, childlike in her adoration of the Mother and the divine life. We hear her ghost stories — *bhuter galpo* — as her many children did. On one of her birthdays, Sunayana had the privilege to hear the father of all '*bhuter*

galpo', namely Shakespeare's *Hamlet*, narrated in the inimitable East Bengal dialect.

Sunayana and her countless hostel mates were not the only fortunate beings. Pramila-di touched the lives of many others. In fact, anyone who came close to her felt her overpowering affection and care. I remember that I used to be invited on the occasion of the birth anniversary of my sister Pranati who lived at Jhunjhun Home. The way Pramila-di served food, and took care of her guests as her very own children, was something to be seen to be believed. As Ashram children who came from

diverse social-cultural backgrounds and found a welcome leveling field, thanks to the Grace of the Divine Mother, we can do no better than to thank our guardians like Pramila-di. Indeed, they



Another photo of the same occasion. Along with the Mother are: (left to right) Amrita-da, Pavitra-da, Nolini-da, Navajata, Pradyot-da, Abhay Singh-da, Udar-da.

nurtured us selflessly, far more effectively and efficiently than what our own mothers would have done; they have made us what we are today in the best parts of our being. ❧

PRESENTING SAVITRI — *THE PLAY*

Earlier this year, the Ashram Theatre saw an enactment of Savitri presented by members of the Delhi Ashram. Jayanthy Ramachandran tells us about it.

Savitri — *The Play* was offered on 28th March 2014 at the Ashram Theatre Hall as part of the commemoration of the 100th year of the Mother's final arrival in

Pondicherry and her meeting with Sri Aurobindo in 1914. This play was a collective effort by senior and trainee teachers of Mirambika, the Ashramites and aspirants of Sri Aurobindo Ashram — Delhi Branch, together with the

children of Mirambika School. All in all there were about 50 members in the cast.

The play was a dramatised, meditative rendition of selected passages from Sri

Aurobindo's epic poem *Savitri*. It traced the life of its main character Savitri, daughter of Light, from her birth to her ultimate triumph over the Lord of Death. By doing this she secures the return to life of Satyavan, her husband, who in truth was the representative of the bound mortal, so that she could do her divine work of transformation with him, with the Light of Truth, in order that humanity could express the Divine on Earth.

The play was first presented in February 2011 on the Mother's 133rd birth Anniversary in the Hall of Grace at the Sri Aurobindo Ashram — Delhi Branch. Subsequently, in the same year Savitri was



offered on the same stage in September, on the occasion of the release of the commemorative postage stamp honoring Shri Surendranath Jauhar by the Indian Government. This year, 2014, saw *Savitri — The Play*, in Pondicherry.

Bringing *Savitri* to Pondicherry was a significant experience for all of us and for the Delhi Ashram. It was a grace, an invitation from the Mother and Sri Aurobindo themselves, to do a work





for them and, in truth, for ourselves, within ourselves. Especially for this offering, we worked on perfecting movements, be those dance movements or movements showing the scenes in the inner worlds; the subtle Soul-merging scene following the defeat of the Lord of Death. We also paid greater attention to pronunciation and enunciation, with a good number of the cast speaking English on a public platform for the first time.

Transporting a troupe of about fifty people and 150 odd kilograms of prop material from Delhi to Pondicherry was no mean task. This involved a good amount of organization and co-ordination from various angles, across two locations, spanning from the north to the south of India. And all the logistics had to be worked out throughout — from the preparation stage to the return of the troupe to Delhi.



Once the basics were more or less in place, other challenges were before us. There had to be smooth changeovers from scene to scene in order to retain the continuity that was vital to a meditative programme. Lighting was a major factor that was needed to enhance what was enacted on stage

and had to play along with the meditative purpose of the play. Sunil-da's compositions on *Savitri* were meticulously put together, each track matching the passage for which it was composed.

The play was presented before a small audience on 15th March 2014 in New Delhi, before we set off for Pondicherry. This was a significant moment in many ways as it showed the level of perfection we had attained till then. We all knew in our hearts that more was possible and took note of all areas to improve on. This offering was also important to us in



that it marked the end of the preparatory stage and the beginning of a significant journey, that of taking it to Pondicherry, the abode of our spiritual gurus. We faced the task of dismantling, in our minds, all the markers we had been accustomed to till then, both physical and psychological. We were to take up the challenge of building anew our steps on stages we were not at all accustomed to, within a very short period of time (three days to be exact). We prepared ourselves to have new sections rewritten in our *Savitri* script as soon as we reached Pondicherry. Alongside this psychological dismantling of rehearsed actions we also had to dismantle the props and pack them. They looked a far cry from their original beauty, and some of us cringed at the sight of our props appearing as disjointed parts. But there was also the living certainty that everything would be reassembled, and perhaps with even a greater



degree of perfection, in Pondicherry.

The day finally arrived for our much-awaited journey. A small group left for Pondy by plane while the rest of the group of 48 set off by train on the Tamil Nadu Express... along with the props. It was one of the most beautiful train journeys for all of us. We existed together, closely occupying one carriage with 7 cabins, living and breathing Pondicherry and *Savitri* as one team. Morning and evening hours were spent on chanting mantras and shlokas and singing sweet songs of devotion. The cast spent some time working on last minute improvements to expressions and pronunciations. There was a group keenly involved in learning by heart the lines of the

Soul-merging sequence. The mantric chant of *Savitri* reverberated in the cabins in one voice, "...Onward she passed, seeking the soul's mystic cave...", as we sped across the heart of Bharatam, under the full blaze of the sun most of the time. From time to time, the soulful tunes of a flute erupted from one or two of us and these floated out across the heart of our sacred Motherland.

From the beginning, the spirit of consecration took hold of us, of all the aspiring artistes and the support team. Whether we were fully ready or not the spirit was with us throughout the journey, as if something ordained from above.

The day of the performance was anticipated by one and all with joy and some amount of anxiety that all should be well and hopeful that a degree of perfection be attained in every aspect of the play. A greater feeling of faith and trust was also there that Mother herself will see to everything and that all one needed to ask for was an opening from within, receptivity to Her guidance and a consecration of all our efforts and time towards





this. The support from Pondicherry in terms of stage support, sound and lighting was overwhelming. Sadhaks and sadhikas of the Ashram offered their unconditional help and support with unwavering goodwill, leaving a deep mark within us.

Each of us grew with the play. As the play was evolving, each of us evolved with it, within our own internal spaces. All through the preparatory period of one year, love and goodwill permeated our efforts, be it in the making of the back-drops or the props, in the acquisition of costumes, in putting togeth-

of passages through voice and body-movements. And this was true despite the testing and trying times when we were stretched to our limits and dire forces challenged us. This was truly a beautiful journey for all of us and an unforgettable one that brought about subtle changes within, needed changes that will probably contribute towards collective living, and a harmonized collective living at that. Indeed, it is no mean feat that a multiple number of people from all walks of life come together for this momentous offering. This too was a sign of the presiding Grace.



er the sound-tracks for the background music, in training and drilling to enhance the depiction

The offering itself was a beautiful one. Gratitude was there and devotion too. Silence was there to an extent. And all of us, those on stage as well as those in the auditorium, bathed in the glorious passages of Savitri for two golden hours.

Indeed, what culminated on 28th March on the stage of the Theatre Hall and on the 30th in the auditorium of Bharat Nivas in Auroville were only two high points of a beautiful journey. Throughout the journey, there was a rain of Mother's Grace. All was made possible because of this alone. ❧

THE GOLDEN CHAIN FRATERNITY FUNDS AND CONTRIBUTIONS

The Golden Chain Fraternity (GCF) Trust Board has received a few enquiries asking us to elaborate what we are doing and how we are spending the funds of the Trust. This is a very valid question and the Board has been hesitating to mention such matters only because in the past when we have spoken about our activities, we have received feedback that we should not seek publicity and that providing such details amounts to self-aggrandisement by GCF.

We have therefore preferred to do what we can in our own small way and left it to word of mouth communication to disseminate information about our activities / contributions.

However, since we have now received queries, we believe that we need to clarify the position.

Brief details:

After a review of the focus of the GCF, a decision was taken by the Board that its efforts should primarily be towards assisting the SAICE/Ashram. This resulted in a Board decision to dispose off the GCF land "Swarnabhoomi" as it was becoming financially unviable on a continuing basis. It was sold to the highest bidder via a sealed bidding process, after formally notifying the

sale on our website, via mailers to all alumni on our mailing list and other communications. A total of 4 bids were received. The sale resulted in our receiving Rs. 1.45 crores (August 2013), far in excess of the government value of the land.

The entire sale proceeds have been placed in 3 year fixed deposits at State Bank of India as per advice received from our external auditors.

The interest income on these deposits is being used to fund various activities of interest to the alumni, e.g. donations and contributions in kind to SAICE and the Ashram where we receive agreement from the authorities, costs of the GCF magazine and other routine administrative expenses.

Among the projects and donations/contributions made:

- Energy Sustainability / Solar project, SAICE - Phases I / II – Rs. 5.5 lakhs (Nov '11-May '12)
- Lake Estate – towards purchase of PICO solar home systems for staff / workers to enable improved lighting and communication across the estate – Rs. 67,431/- (Oct 2013)
- Equipment for Electronics Classes at SAICE – Rs.18,132/- (Feb-Jun 2014)
- Donation of Rs. 12 lakhs to the Mother (March 2014)



- Sound equipment to the School to improve sound clarity during programs in the courtyard and Hall of Harmony – Rs. 6.16 lakhs (July 2014)
- Work-in-progress – Band Saw for carpentry section at SAICE – estimate Rs. 2.5 lakhs

Currently (post sale of land), our major routine annual running expenses are approximately as follows:

- Salaries/ex-gratia for admin and accounts work – Rs. 1.4 lakhs
- GC magazine production and postage costs – Rs. 1 lakh
- Routine office expenses (electricity, phone, repairs, etc.) – Rs. 20,000/-
- In addition there are audit fees, occasional non-magazine printing costs, consumables for PCs, etc. which are variable but not significant

The current Capital of the Trust as at March 31, 2014 is Rs. 1.89 crores.

The following alumni are currently on the Board of Trustees of the GCF:

Mr. Ram Sehgal (Managing Trustee)

Mrs. Alo Sud

Mr. Devashish Patnaik

Mr. Dilip Patel

Mr. Gopal Naik

The accounts are audited by M/s Modi, Modi & Associates and all returns have been filed on time as per the legal requirements.

We find we are still not able to help as much we wish to and there is much that we, the alumni, can contribute with gratitude to the Mother.

It would be nice if those alumni who are able and willing to help can donate either to The Golden Chain Fraternity or directly to the Ashram as the next big project is the sustainable energy initiatives (energy conservation and efficiency and solar power generation) at Nursing Home to cut down electricity costs which are very high and rising constantly. Depending on GCF's own funding position at the year end after any other projects undertaken, we hope to be able to contribute to this but would earnestly encourage alumni to lend a helping hand. ❧








QUIZ TIME!



Know the answers to the following questions? They will be printed in our next issue.

1. Who was the Indian Consul representing India when Pondicherry was still under French rule? After he joined the Ashram he became a teacher in the Higher Course. 
2. Where were the Higher Course classes held before Knowledge was built? 
3. Why is the building where the classes of the Primary section of the school located called 'Delafon'?
4. In which year was the kindergarten started? 
5. What is the significance of the yellow-orange flower which grows on the bush which is at the south-eastern corner of the lawn in the School Courtyard?

ADVERTISEMENT RATES FOR *THE GOLDEN CHAIN*

In an effort to make *The Golden Chain* magazine more economically sustainable we have, for the past two years, been taking advertisements. We invite and request all those who are in a position to put their companies' ads in *The Golden Chain* to come forward and help us in this manner.

The format of the ads is the same as those in the Bulletin — a quote from the Mother or Sri Aurobindo at the top and the company's logo and other information below.

Our advertisement rates are as follows:

FULL PAGE FOR ONE YEAR (FOUR INSERTIONS): RS 6000

HALF PAGE FOR ONE YEAR (FOUR INSERTIONS): RS 3000

*Give all you have, this is the beginning.
Give all you do, this is the way.
Give all you are, this is the fulfillment.*

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Class of 2014



Back Row (Left to Right): Pranjali Lall, Divij Kapur, Aneesh Raghavan, Biswajit Acharya, M Praveenkumar, Arvind Sajjan, Satadal Dutta, Saptarshi Kotal, Prasad Das
Second Row (L to R): Samarpan Mondal, Kittu Reddy, Dilip Mahtani, Swadesh Chatterji, Manoj Das Gupta, Arati Das Gupta, Jhumur Bhattacharya, Aurosh Chakraborty
Front Row (L to R): Dharanipragada Nilima Katayani, R Indu, Enya Khanna, Nayana Murali, Saumya Mohanty