MAITREE

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ROTARY CLUB OF BEHALA

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18
FEBRUARY

2587th REGULAR CLUB MEETING

Rotary | Rotary Opens Opportunities

COVER STORY

Seeing is Believing

See(a) In Depth

February : Peace & Conflict Prevention or Resolution Month

TOP STORIES

Published by Rtn Shuvranshu Mitra, Club Secretary | Edited by Rtn Dr Siddhartha Chakraborty
C/O Rtn Debidas Ganguly, 2/6 Biren Roy Road (East), Kolkata - 700 008

February : Peace & Conflict Prevention or Resolution Month

Rotary

THE FOUR-WAY TEST

OF THE THINGS WE THINK, SAY OR DO

1. IS IT THE TRUTH ?
2. IS IT FAIR TO ALL CONCERNED ?
3. WILL IT BUILD GOOD WILL AND BETTER FRIENDSHIPS?
4. WILL IT BE BENEFICIAL TO ALL CONCERNED ?

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ROTARY CLUB OF BEHALA

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Like

HAPPY BIRTHDAY

20th February
Anuradha wife of PP Rtn Debabrata Joardar

23rd February
Virin son of PP Rtn Prasunjit Mukherjee

25th February
Srimati wife of PP Rtn Debidas Ganguly

25th February
Bani wife of Rtn Sujoy Krishna Bhadra

HAPPY ANNIVERSARY

18th February
Champa & Rtn Susmit Bhattacharya

19th February
Sikha & PP Rtn Amaresh Bhattacharya

25th February
Ruma & Rtn Angshuman Bhattacharya

27th February
Bani & Rtn Sujoy Krishna Bhadra

1st March
Nandini & Rtn Ashish Kumar Das

3rd March
Indrani & PP Rtn Ajoy Krishna Chatterjee

TODAY'S HIGHLIGHT

2857th Regular Club Meeting along with Club Assembly. The President and Scretary will present Activity report for RY 2020-21.

UPCOMING DAYS

18th February 2021
RCM and Club Assembly (Online)

20th February 2021
1. Blood Donation Camp at Nandan Pally, James Long Sarani
2. Board Meeting at Library Room, CRC for AG and ZS visit.

4th March 2021
DG visit with Fellowship at CRC.

12th to 14th March 2021
Club trip to Jhargram with family. May have a Joint Meeting with RC Jhargram Green

20th & 21st March 2021
District Conference

25th March 2021
2589th RCM, there wont be any RCM on 18th Mar.

EDITORIAL REQUEST

Thank you for your constant appreciation & support towards Maitree. All the members & their extended family please keep on contributing to Maitree.

Please share your write ups / drawing / Art & craft by emailing it to **sid.ctvs@gmail.com** or whatsapp to **98300 30020**.

Please call for any clarifications.

EDITORIAL

COVER STORY

PP Rtn Dr Siddhartha Chakraborty
Editor 20-21

Plastic

plastic everywhere

Mr Acharya is a pious man. Every morning he brings fresh flowers for the household deity and performs puja. On way to office, he carries the previous day's stale flowers in the plastic bag supplied by the florist, throwing it in the lake on way with the addition of a prayer with folded hands. The plastic bag joins the hundreds littering the lake.

Acharya belongs to a not-really-exclusive club. Every year around 2-4 trillion plastic bags are used and discarded around the world – about 320 bags per capita being used in 2014. And the bags are reused before discard at a rate of 1.6 times, a common area of disposal being the waterways.

One third of the 78 million tons of plastic packaging produced annually is left to flow into our oceans; the equivalent of pouring one garbage truck of plastic into the ocean every minute. This is expected to increase to two per minute by 2030 and four per minute by 2050. By 2050, this could mean there will be more plastic than fish in the world's oceans.

The plastics float in the water, colonized by barnacles, tubeworms and algae, and drift to the high seas. These plastic bags are not capable of biodegradation but rather they photodegrade, a process of breaking down into smaller toxic parts over hundreds of years.

Once eaten by mistake, they enter the marine animals' digestive tracts, clogging their stomach and the toxic components causing premature death. Researchers do find not only plastic bags in the stomachs of dead whales and turtles, but also lots of 'hard plastic' - toothbrushes, golf balls, plastic water bottle caps, or fishing debris.

And the plastic physically obstruct the animals too.

The land animals are also in danger. Specially vulnerable are the cattle. The cows, used to dry fodder, munch on plastic with glee. In Lucknow, the heart of cowbelt in India, 1000 cows die annually from it – clusters of polythene are taken out in rock solid state from their rumens. And prolonged consumption of polythene and plastic by-products causes endocrine disruption leading to multi-organ failure.

Humans are not immune. Chemicals added to plastics are absorbed by human bodies. Some of these compounds have been found to alter hormones or have other potential human health effects.

Though synthetic varieties are available, plastic basically is a product from fossil fuels. Around 4 percent of world oil production is used as a feedstock to make plastics, and a similar amount is consumed as energy in the process. Discovered in 1856, the production increased with advancement of chemical engineering between two great wars. The nonporous, light, durable, mouldable cheap material caught the imaginations and from toothbrush to computer, transport to home, injection syringe to body bag - the material is omnipresent in our lives. In developed economies, about a third of plastic is used in packaging and roughly the same in buildings in applications such as piping, plumbing or vinyl siding.

But it was the invention of plastic bags by Swedish engineer Sten Gustaf Thulin in 1965 that brought it into households in every nook and corner of the world. Discarded bags float in the waters, gather as huge dumps, and turn into waste no one wants.

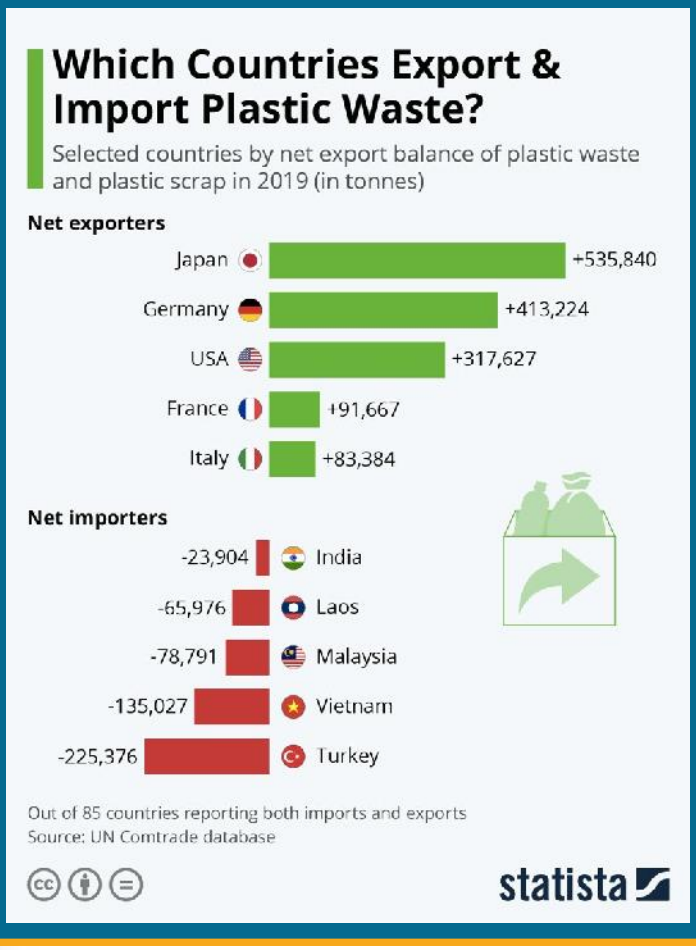
People with concern for environment started to raise alarm, and few countries or regions have started banning plastic bags. The list is as varied as Italy, China, Bangladesh, Rwanda, Congo or South Africa. In USA San Francisco showed the way, Seattle, Los Angeles, Portland and North Carolina joining the fray. Sikkim, which in 1998 became the first Indian state to ban disposable plastic bags, was followed by almost half of total States and Union Territories of the country.

Simultaneous efforts are on to reduce the problem created by the non-degradable material. Plastic recycling started in the 1970s, in part as a response to the growing amount of plastic waste, but less than 10% of plastic has ever been recycled.

Much of it actually ends up in landfills, where it may take up to 1,000 years to decompose, leaching potentially toxic substances into the soil and water. Most of this plastic disintegrates into particles smaller than five millimetres, known as microplastics, and these break down further into nanoparticles (less than 0.1 micrometre in size). These particles are entering the food chain, and can trigger many kinds of adverse effects.

Incineration or burning plastic – as a Waste to Energy model or simply as a method of getting rid of it – releases a lot of toxic gases which are carcinogenic and hormone disruptor, apart from affecting our heart and lungs. Worse still, they accumulate in our body-fat and can even be transmitted from mother to babies.

The developed countries adopted a technique of clearing their household junk on to neighbour's courtyard. They started exporting plastic waste to developing countries to keep themselves clean. The importers got a supply of material for recycling at a cost less than the labour-intensive process of collection of plastic



waste. But a big chunk of these mounds of plastic ultimately find their way into landfills or incinerators. No matter how far this waste is distanced, it still ends up somewhere on Spaceship Earth, humankind's one and only home. The immediate negative effects of this imported waste are most acutely felt locally, resulting in Basel Convention of 1989 designed to prevent the transfer of hazardous waste from developed to developing countries. This 'eco-imperialism' got a jolt in 2018 with China banning any such import, followed by Malaysia and Philippines sending rancid shipping containers back to their ports of origin.

In the meantime, the search was on to devise ways to use the discarded plastic. Nzambi Matee, the founder of Nairobi-based Gjenge Makers, produces 1,500

bricks each day. Made from a mix of different kinds of plastic, They are almost five to seven times stronger than concrete. Another innovation is Ecobrick – a plastic bottle filled tightly with all varieties of discarded plastic. This tight tube of plastic becomes a building block, which can then be used for a range of things from sculptures to construction projects. A variation was used in constructing an entire resort - the 'Outback Havelock' in Andamans. Five lakh – yes, you read it right – five lakh plastic bottles filled with sand and dust has been used as construction material. They are more than 10 times stronger than brick and also are water resistant.

Simultaneously, work is on to find degradable alternatives to plastic – the bioplastics. In the Czech Republic, two students have developed a bag for fruit and veg. Their 'Frusack' is made of a biodegradable material created from starch, and can carry a load of 1.5 kilos and lasts around two years.

Ari Jónsson, an Islanding student came up with the idea of bottles made of agar, manufactured from seaweed. It decomposes rapidly, and agar being edible, can be eaten. A similar edible membrane is used in 'Ooho' bubble developed in London. The mouthful-sized blobs can be flavoured and coloured, and can also be used for other liquids such as soft drinks, spirits. The decomposition of the material decomposes in only 4-6 weeks. And it is edible.

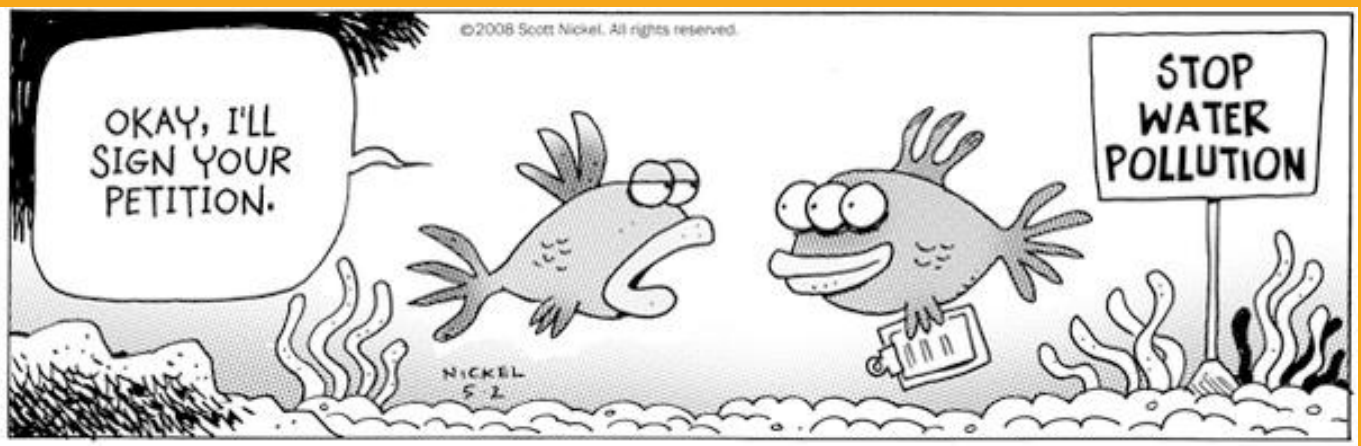
Yes, you can eat your water!

As the plastic waste spread itself from high Himalayas to arid desert, the world is turning more concerned about environment.

And so is Rotary, which has now enlisted Supporting Environment as one of its seven areas of focus.

As responsible Rotarians, let us pledge to reduce usage of single use plastic - like switching over to cloth or jute bag and traditional water bottles, to segregate the plastic waste at home for helping recycle.

And not to litter the places we visit.



Rotary District 3291

SAMAGAM

Conference for all

DISTRICT CONFERENCE, RID 3291

Date : 20th & 21st March 2021 (Sat & Sun)

Venue : Swabhumi. Entire complex has been booked. Main programme will be in new 'Rajkutir'. Other 3 halls – including dining area - will have online video streaming.

Time : Morning of Saturday to evening of Sunday.

Club Exhibits : Physical. Display Dimensions to be informed later.

Refreshments : Lunch on both days, dinner on Saturday, evening high-tea on Sunday.
Complimentary breakfast session on Sunday for new Rotarians.

Expected Programme :

Saturday :
> Inaugural session may include Hon'ble Governor of West Bengal Sri Jagdeep Dhankhar (Ex-Rotarian), RID Rtn Kamal Sanghvi, RIP Elect Rtn Shekhar Mehta (online) etc.
> Session on Membership with RID Rtn Kamal Sanghvi as keynote speaker.
> Session on Community Service with launch of two mega projects of the District, Recognition on-stage of the Major Donors of the District.

Sunday :
> Session for new members with complimentary breakfast
> Session on Public Image with some leading personality of the field
> Session on Literacy
> Session on Vocational Service – Sri Arindam Seal and 5 leading figures from industry in panel discussion on 100 years of Bengali cinema'
> Session on Leadership with Retd Air Chief Marshall Arup Raha and Prof Anup Sinha, formerly of IIM Joka
> Valedictory Programme – termination at 6 pm

Cultural Programme :

Saturday evening : Homage to Rahul Dev Burman with an orchestra from Mumbai (including musicians who performed with the maestro) and two singers.

Sunday evening : In-house programme from 6 pm

House of Fellowship :

Saturday : For 2 hrs after lunch, in the evening before dinner

Sunday : After Valedictory Programme

Registration :

@ Rs 3000 + 18% tax = Rs 3540/- (Physical/ Online)
Registration starts at Kerala Food Festival on 31-01-21

Sponsorship :

Host Club (2) : Rs 10 lakh each
Co-host Club : Rs 2 lakh, 1 lakh, 50,000/- and 25,000/-
(Any sponsorship arranged by a club from any well-wisher will also be credited to the club concerned)

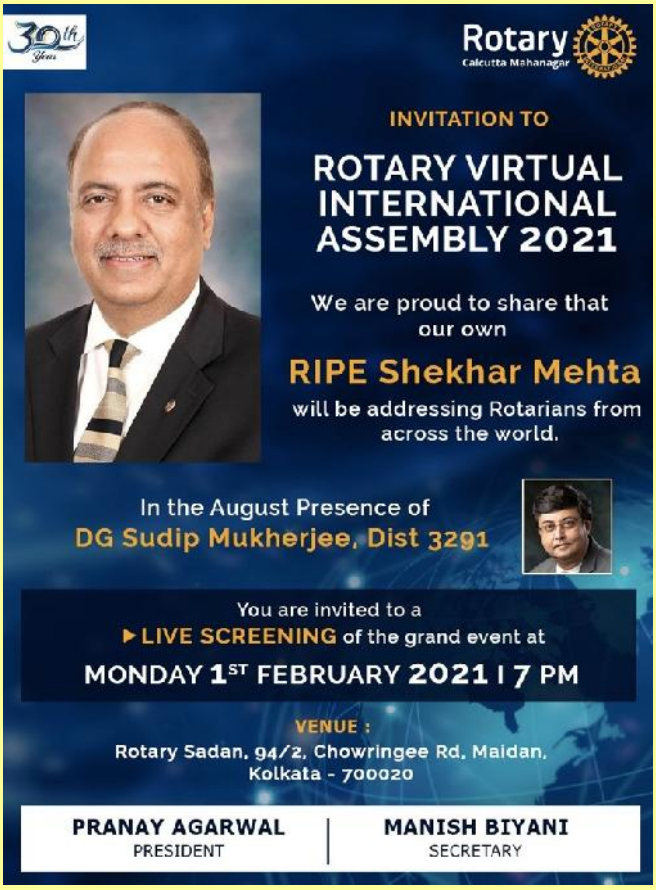
Members are requested to submit their names to the President/Secretary as early as possible.

THE FORTNIGHT THAT WAS...

RI DISTRICT 3291

Know Your Numbers Camp

On 31st January, at macro level District's 18th (overall) & 14th Service Project pertaining to AOF:' Disease Prevention and Treatment' and 12th exclusive 'Project Positive Health-Know Your Numbers' project was held at Hamiragachi,Malia. There were around 250 beneficiaries. Kudos tohost club Salt Lake Metropolitan Kolkata and co host club Hooghly.



Rotary Virtual International Assembly 2021 - 6th February, 2021

It was Rotary Day at Royal Calcutta Golf Club(RCTC). 4Races were organised namely
1)The Rotary Club of Calcutta Millenium Cup.
2)The Rotary Club of Calcutta Victoria Cup
3)The Poker Guru Cup (in name of AG B.K. Agarwal & his son Rtn. Rajat Agarwal's company)
4)The Rotary District 3291 Cup.
DGE, DGN, DT and Core Committee members & spouses attended.

Kudos to President & members of Calcutta Millenium and Calcutta Victoria. Big Thank You to AG B.K.Agarwal who organised the whole programme. It was viewed live all over India. It is ironical that the District 3291 Cup was won by AG BK Agarwal's horse.
A great exercise of Public Image of Rotary.

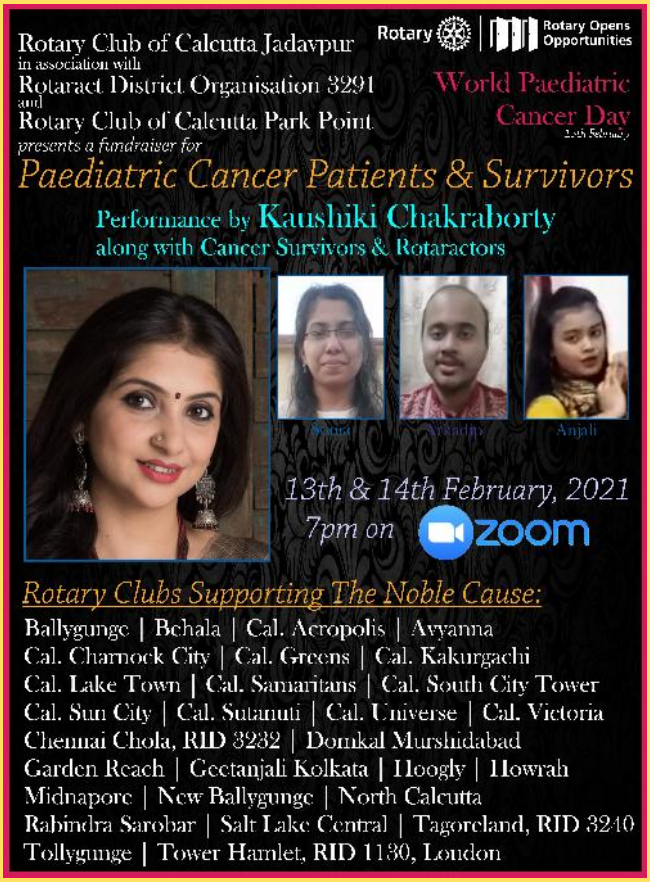
THE FORTNIGHT THAT WAS...

CLUB

Supporting Adult Literacy

"Free to be Kids Charitable Trust" is engaged in running an Adult Education Centre at Krishnarampur, near Amtala. Rotary Behala is supporting the centre with financial and logistical support as per requirement.

Co-Hosted Paediatric Cancer Fundraiser



13th & 14th February - our club co-hosted the Online Fund Raiser Cultural programme towards establishment of a Trust for helping Paediatric Cancer patients and survivors.

On 13th there were performance by rotaractors and cancer survivors, and on 14th there was performance by renowned vocalist Kaushiki Chakraborty. Event organised by RCC Jadavpur in association with Rotaract District Organisation 3291 & RCC Park Point.

FROM THE WORLD OF ROTARY

Rtn Kamal Sanghavi, RI Director zone 5 & 6, appointed as World Chair to Grow Rotary (Membership) 2021-22

SERVE TO CHANGE LIVES

VIRTUAL INTERNATIONAL ASSEMBLY 2021

DGE Rtn Prabir Chatterjee at Virtual International Assembly 2021.

With RIPE Rtn Shekhar Mehta At Rotary International Assembly 2021, New Delhi

ekushey february

PP Rtn Kaushik Bhattacharyya

Prologue

This day is commemorated for the martyrs of the language movement on 21st February 1952. After the movement, Bangla got the honor of being the state language of the former East Pakistan, the current Bangladesh. The movement was made on the strength to preserve the privileges to speak and write in some one's mother tongue. The day of International Mother Language has been celebrated under the banner of United Nations since 2000 to create awareness of multilingualism and peace worldwide.

It was on 21st of the February in 1952 that the students of the Dhaka University, Jagannath Hall along with Dhaka Medical College came out with a demonstration to restore 'Bangla' as the National Language of the former East Pakistan. But, the Junta of Pakistan ordered shoot out over the procession brutally. Large numbers of students and common people were killed near the High Court of Dhaka. We commonly know the name of Rafiq, Barkat, Salam etc. But, there were a lot more killed.

Amor Ekushey of 21 February has a large value and significance for all Bengalis and in particular, the Bengali nation Bangladesh. On this day they got the right to speak and write in their mother language after donating a huge amount of blood under the shooting of the Pakistani Police. It acted as the catalyst of the identity of the Bengali nationality in the East Bengal. It also became the ancestor to the movements of the Bengali nationalists, including the Movement of the 6-point demands and finally the Liberation War of Bangladesh in 1971. 21 February is the National Day of the country and a public holiday.

Each year, UNESCO selects the theme of the IMLD – International Mother Language Day. It sponsors a number of events relating to the IMLD in its Headquarters in Paris. In Bangladesh the first and ancient event is the 'Probhat Feri" from the first minutes of the 21st February. The other celebration and events of the day include discussion about the importance of the day, and international, national, and provincial award presentation. Bangladesh is the home of the Bengali Language and the day is observed all over the country. The day is also celebrated across the world.

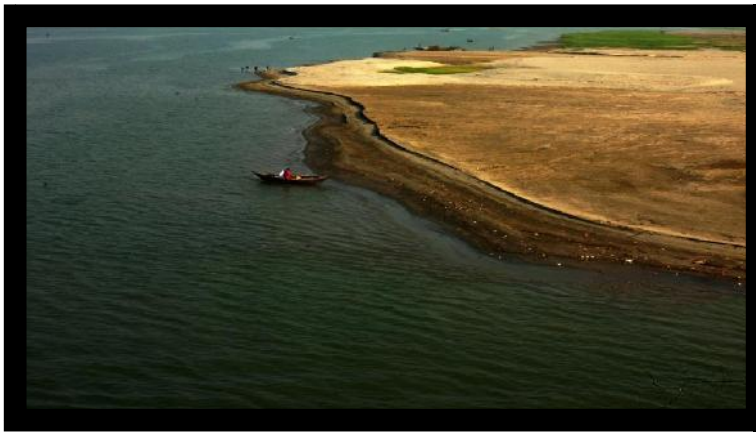
My Ekushey Experience.

Crossing the border in a bus was an experience that I wouldn't want to have again. The Indian side of the border was terribly bad. Our suitcases were almost ransacked especially those of the ladies. I was travelling with two ladies, my cousin and my friend. The experience on the other side of the border was quite pleasant though we were actually expecting more hostile behaviour, being foreigners on that side. But the following journey on the river Padma erased every bad memory of crossing the border.

While crossing the Indian side of the Border

The warm mixture of humans, huge vehicles, cars, two wheelers, manual carts on the ferry and the surprisingly yummy food in the restaurant onboard, everything was so pleasant. The expanse of the river Padma was calming and it seemed to convey a tale of the Gangetic plain of Bengal. It appeared to give a forecast for our stay in Bangladesh.

The Ferry



The Padma Experience

Gulshan Club

Our primary objective of this visit was to experience the love for a language.
When we reached in the evening, we parked ourselves at Gulshan Club where we were booked through my office ABP. The weather was pleasant and a light pullover was comfortable. We were told by my friend in Dhaka who stopped over to meet me at the club that we must start our day very early and visit the Dhaka University where we will get to see the main programme of 'Ekushey February'.

My friend Khushru provided us with a car. We just had to refuel it and keep it during our entire stay at Dhaka. It was a huge Toyota car and I was worried about the fuel consumption. The next morning, when we took out the car and went to the gas station, it was another pleasant surprise. The car ran on gas and not liquid fossil fuel. A full tank of the huge car cost us a pittance! But the real surprise was yet to hit us. As we got into the main road, we were awestruck. The city seemed to be walking with mostly Black and White attire!!! People were singing, people were laughing, people were celebrating MOTHER TONGUE. We had to walk. It is a norm that people walk their way with Black and White dress, to the university campus (the nerve center of bhasha andolon) to pay their homage to the martyrs.
Even the evening before we didn't see the colorful 'alpona' on every main road of Dhaka. But look at the streets in the morning…


The human procession (probhat pheri) to pay homage to the martyrs of 'bhasha andalon' started from as early as 4 am in the morning and the streets are decorated with 'alpona' since midnight.



As we approached the university campus, the crowd thickened and the merry making was slowly converging to paying homage to the people who gave Bengalis their own piece of land…Bangladesh. We got to see people distributing mementoes, doing body

painting, exchanging sweets and singing in small groups - mostly Tagore, some Nazrul and some songs dedicated to the 'bhasha andolon'.

The crowd slowly moved towards the center stage of the campus which had a replica of the 'bhasha sahid' monument. And we moved with the momentum. The movement transformed to crawling pace and we decided not to go up to the central stage. Rather, we decided to visit the other small stages distributed around the campus. While I went one way, my cousin and my friend went another way. Oh! There was no turning back and meeting because all walkways were one-ways. Ocean of people walking in only one direction, no turning back. So, to meet up with my team mates, I had to walk all around the campus (half circle) and they too had to take a half circle (4 kms each side) and meet at the exit gate. But trust me, the walk was one of the most memorable walks of my life. I made friends with a group of professors from Mauritius, I made friends with a couple from Sri Lanka (Daniel and Kavitha) who had come to do the informal wedding vows at the university campus on this particular day. Kavitha's mother was a Bengali. I also made friends with a kid who was singing 'banglar mati banglar jol…' while riding on his father's shoulder.

Language has no barrier. One language doesn't hate another…they just complement each other. Language helps us express, create and stand up for human rights.

That was citizens' celebration.

There was also a state celebration at Sahid Minar which is at near the Dhaka Medical College campus adjacent to the University.

The Sahid Minar is actually a re-built Sahid Minar. The first one which was built in 1952 to commemorate the martyrs of Bengali language was destroyed in 1954, by the Pakistani police when Bangladesh was part of East Pakistan. The second one was planned in 1963 but due to resistance of Pakistan army, it couldn't be completed. Only after the independence of Bangladesh, in 1972, this was completed and inaugurated.

The euphoria at this spot was less compared to the university crowd.

After all , general citizens and students always have more 'life' in them than the mid-aged people in the government.

Rotary

ROTARY MONITORS THE GLOBAL CORONAVIRUS CRISIS

Read how Rotary is responding to the impact of the global COVID-19 crisis. We are closely monitoring updates and recommendations from the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC) to ensure the safest and most appropriate actions are taken by and for our members and the communities they serve.

CLICK TO READ

THE ROAD THAT WASTE BUILT

[Source : https://www.bangkokpost.com/life/social-and-lifestyle/1816959/the-road-that-waste-built]

KARNJANA KARNJANATAWE

Asst Prof Wechsawan Lakas recycles single-use plastic bags into paving blocks

Piles of plastic garbage bags are kept inside an open-air hall behind a woven wire gate. At a glance, the place looks like a garbage warehouse. When Asst Prof Wechsawan Lakas opens the gate, it reveals machinery, equipment and stocks of hexagonal bricks.

"The pavers are made of single-use plastic bags. The facility is a workshop for my students to learn how to produce the recycled blocks," said Wechsawan, a lecturer of the Industrial Technology Department of the Science and Technology Faculty of Chiang Mai Rajabhat University, located in the city of Chiang Mai.

He collects the plastic waste from on and around his campus while many people living in many parts of Thailand also mail him their single-use plastic bags in postal boxes. (Some boxes are even sent from the Deep South, like the one from Koh Lipe in Satun.) He accepts them gracefully because he aims to reduce plastic waste.

The idea came to him seven years ago, when he brought his family to Phuket for vacation. It was the first time his young son had experienced the sea. They took a boat to an island, the name of which he's asked us to omit, about 12km south of Phuket.

"My son had a good time swimming in the sea. I saw not only his happy smile but also plastic waste floating not far from him. I was upset and felt sad that nature was not as beautiful as it used to be. At that moment, I knew that I must do something so that my child can experience the beauty of nature like the time when I was young," he said.

Having a background in civil engineering, he thought about recycling single-use plastic bags as material to make a road. In 2012, his research team collected the plastic waste around the university and also from the neighbourhood. They built a 1km-long "plastic road", by mixing shredded bags with asphalt, on the university's Mae Rim Campus, about 30km north of the city of Chiang Mai.

"The road has been used for seven years. It is still in good condition. It's durable and easy to maintain," he said.

He also shared his expertise with other communities, including Ban Thung in Krabi. The village got rid of 200kg worth of plastic bags to fix a road surface in the community.

With strong determination to reduce plastic waste, he continued his research. In 2013, he introduced recycled paving blocks. The first version was created with the same material as the plastic road, a mixture of asphalt with plastic bags. Later, he eliminated the need for asphalt and focused on materials that can be easily found, like sand. He used trial and error for another six months with different types and amounts of one-time-use plastic bags before he successfully came up with the present version.

The current recycled pavers comprise two components: 1kg of single-use plastic bags and 3kg of sand. The ratio for producing each block is easy to remember.
"I believe that good technology should not be complicated. It must also be easy to implement," he said.

His technique is to heat sand at a temperature of 200C and mix it with shredded plastic bags -- the smaller the pieces, the better. The plastic bags, which can be melted at a temperature of 140C, will penetrate the surface of the heated sand grains.

The melted plastic will act like a binder to stick the sand together, like the use of cement. The mixture is then compressed into hexagonal moulds for setting and will later become recycled pavers.

One paver uses around 1kg of plastic bags, the equivalent of 100 bags, he said. One square metre of pavement needs 40 pavers. It means that within a small area, 4,000 plastic bags are recycled.

The benefit of the pavement blocks is that the pavers are tougher than normal paving stones. Wechsawan took a brick with his right hand and dropped it from the height of his chest to the floor. Thud! The stone remained unchanged. Nothing was broken, not even

The recycled blocks are more durable and lighter-weight than normal pavers

a tiny fragment.

"The recycled paver is durable and can last as long as it takes for plastic bags to decompose, which can be 100 to 400 years," he said.

The weight of the recycled blocks is also 30% lighter than typical paving stones, adding a benefit to transportation, he said. Besides, the recycled pavement blocks pass the engineering standard that 1cm^2 of the paver be able to handle 210kg of weight. "Recycling plastic bags as paving stones is an effective means of carbon capture. However, the process needs a lot of fuel and can create toxic fumes that can harm our health and pollute the air if it is done without a proper treatment process," he said.

When plastic is melted, it creates dioxins, heavy metals and acid gases. The fumes must be incinerated at high temperatures, at least 500C, to properly break down the toxic compounds. Then the fumes will pass through a water-treatment system to ensure that there are no heavy metals and that no toxic compounds seep into soil or water.

The total solution requires specific machines. It can cost from a few hundred thousand to a couple million baht of investment, depending on production capacity. A small solution can produce 50 blocks a day, while a large solution can produce up to 500 blocks a day.

The leftover rubber sheets are recycled into 'Green Road' flip-flops

If you break the investment down, it means 60% of every 100 baht will be spent on the treatment process, while the remaining 40% is the production cost. For the investment in fuel gas, only 20% is used for producing the pavement blocks, while 80% is used for eliminating toxic fumes.

"Producing recycled blocks is not cheap so we should make the most use of plastic bags before trashing them," he said.

If people do not reduce plastic bag usage and keep throwing them out with other garbage, without separating them for recycling, the plastics will become rubbish and clog the rivers or end up in the sea and harm marine life.

"If more people realise the problem and separate their waste properly, plastics can be recycled to new products, thus creating a circular economy," he said.

Wechsawan has also created roof tiles made of single-use plastic bags. He mixes 1kg of shredded bags with 1kg of sand. The result is a lightweight and durable tile. But the tiles are not yet as popular as the pavers.

In recent years, he has brought his research team and students to help many communities as well as national parks manage single-use plastic bags. They have produced recycled pavers for Doi Pha Hom Pok National Park in Chiang Mai, Aow Nang Municipality in Krabi, Samut Songkhram Municipality, Koh Mak in Trat, Koh Lan in Chon Buri, Chiang Rai and Khon Kaen.

In Koh Mak, he also helped reduce waste of glass bottles by grinding them into small grains and using them instead of sand. The recycled blocks are even more durable.

"In my opinion, we should manage garbage where it is created," he said. "For example, local municipalities or the Bangkok Metropolis Administration, which manages waste -- they should consider investing in the facility to recycle plastic bags into pavers. The blocks can also be used to improve footpaths, walkways in temples, public parks or schools."

In the future, Wechsawan plans to have a mobile unit to help more local communities manage plastic waste. He's also created a new khaya laek bunproject, a way to turn waste into merit, to eliminate rubber waste from a shoe factory.

He advises them to produce recycled flip-flops by using leftover rubber sheets after making soles. The parts are shredded and remade to be "Green Road" flip-flops for kids and adults. He offers them on his Facebook page.

The process is used for buying recycled sandals for kids in remote areas.

Recycled flip-flops are made from leftover rubber sheets

"I try to find solutions to eliminate waste. I will do it until there is no garbage left in the world," he said.

Roof tiles made from recycled plastic bags

Packaging for milk is preferred to other types of plastic bags because it can make the paver tougher

We've lived in a synthetic world for more than 70 years. How much longer can it last?

[Source : https://www.rotary.org/en/welcome-to-plasticville]

Susan Freinkel

In 1950, a Philadelphia toy company came out with a new accessory for electric-train enthusiasts: snap-together kits of plastic buildings for a place it called Plasticville U.S.A. Sets of plastic people to populate the town were optional. Today we all live in Plasticville. But when, exactly, did we take our first steps into this synthetic world? Some say it was in 1870, when the inventor John Wesley Hyatt patented a malleable compound that was originally conceived as a substitute for an increasingly scarce commodity: ivory. It was created from a natural polymer — the cellulose in cotton — combined with other ingredients; Hyatt's brother Isaiah dubbed the new material celluloid, meaning “like cellulose.”

Others fix the date to 1907, when a Belgian émigré named Leo Baekeland cooked up Bakelite; the first fully synthetic polymer, it was made entirely of molecules that couldn't be found in nature. With the product's invention, the Bakelite Corporation boasted, humans had transcended the classic taxonomies of the natural world: the animal, mineral, and vegetable kingdoms. Now we had “a fourth kingdom, whose boundaries are unlimited.”

Bakelite was invented to replace another scarce natural substance: shellac, a product of the sticky excretions of the female lac beetle. Demand for shellac began shooting up in the early 20th century because it was an excellent electrical insulator. Yet it took 15,000 beetles six months to make enough of the amber-colored resin needed to produce a pound of shellac. To keep up with the rapid expansion of the electrical industry, something new was needed.

As it turned out, the plastic Leo Baekeland invented by combining formaldehyde with phenol (a waste product of coal) and subjecting the mixture to heat and pressure was infinitely more versatile than shellac. A dark-colored, rugged material with a sleek, machinelike beauty, it could be precisely molded and machined into nearly anything. Contemporaries hailed its “protean adaptability” and marveled at how Baekeland had transformed something as foul-smelling and nasty as coal tar — long a discard in the coking process — into this wondrous new substance.

The 1920s and '30s saw an outpouring of new materials from labs around the world. One was cellulose acetate, a semisynthetic product (plant cellulose was one of its base ingredients) that had the easy adaptability of celluloid but wasn't flammable. Another was polystyrene, a hard, shiny plastic that could take on bright colors, remain

crystalline clear, or be puffed up with air to become the foamy polymer DuPont later trademarked as Styrofoam.

DuPont also introduced nylon, its answer to the centuries-long search for an artificial silk. When the first nylon stockings were introduced, after a campaign that promoted the material as being as “lustrous as silk” and as “strong as steel,” women went wild. Stores sold out of their stock in hours, and in some cities, the scarce supplies led to nylon riots. Across the ocean, British chemists discovered polyethylene, the strong, moisture-proof polymer that would become the sine qua non of packaging. Eventually, we'd get plastics with features nature had never dreamed of: surfaces to which nothing would stick (Teflon), fabrics that could stop a bullet (Kevlar).

Though fully synthetic like Bakelite, many of these new materials differed in one significant way. Bakelite is a thermoset plastic, meaning that its polymer chains are hooked together through the heat and pressure applied when it is molded. The molecules set the way batter sets in a waffle iron. And once those molecules are linked into a daisy chain, they can't be unlinked. You can break a piece of Bakelite, but you can't melt it down to make it into something else.

Polymers such as polystyrene and nylon and polyethylene are thermoplastics; their polymer chains are formed in chemical reactions that take place before the plastic ever gets near a mold. The bonds holding these daisy chains together are looser than those in Bakelite, and as a result these plastics readily respond to heat and cold. Unlike Bakelite, they can be molded and melted and remolded over and over again. Their shape-shifting versatility is one reason thermoplastics quickly eclipsed the thermosets.

Much of the plastic we've produced is with us still. Humans could disappear from the earth tomorrow, but many of the plastics we've made will last for centuries.

It's understandable why many at the time saw plastics as the harbinger of a new era of abundance. Plastics, so cheaply and easily produced, offered salvation from the haphazard and uneven distribution of natural resources that had made some nations wealthy, left others impoverished, and triggered countless devastating wars. Plastics promised a material utopia, available to all.

6%

Share of global oil consumption used to make plastic

42%

Share that car tires contribute to microplastics dumped into the sea by European rivers

At least, that was the hopeful vision of a pair of British chemists in 1941. “Let us try to imagine a dweller in the 'Plastic Age,'” Victor Yarsley and Edward Couzens wrote. “This 'Plastic Man' will come into a world of colour and bright shining surfaces ... a world in which man, like a magician, makes what he wants for almost every need.”That world was delayed in coming.

Most of the new plastics discovered in the 1930s were monopolized by the military over the course of World War II. Production of plastics leaped during the war, nearly quadrupling from 213 million pounds in 1939 to 818 million pounds in 1945. Come V-J Day, all that production potential had to go somewhere, and plastics exploded into consumer markets. Just months after the war's end, thousands of people lined up to get into the first National Plastics Exposition in New York, a showcase of the new products made possible by the plastics that had proven themselves in the war. For a public weary of two decades of scarcity, the show offered an exciting and glittering preview of the promise of polymers. Here was the era of plenty that the hopeful British chemists had envisioned. "Nothing can stop plastics," the chairman of the exposition crowed.

Plastics production expanded explosively, with a growth curve that was steeper even than the fast-rising GNP's. Thanks to plastics, newly flush Americans had a never-ending smorgasbord of affordable goods to choose from. The flow of new products and applications was so constant it was soon the norm. Tupperware had surely always existed, alongside Formica counters, Naugahyde chairs, red acrylic taillights, Saran wrap, vinyl siding, squeeze bottles, push buttons, Barbie dolls, Lycra bras, Wiffle balls, sneakers, sippy cups, and countless more things. The nascent industry partnered with the press to sell consumers on the virtue of plastics. "Plastics are here to free you from drudgery," House Beautiful promised housewives in a special 50-page issue in October 1947 titled "Plastics ... A Way to a Better, More Carefree Life."

That proliferation of goods helped engender the rapid social mobility that took place after the war. We were a nation of consumers now, a society increasingly democratized by our shared ability to enjoy the conveniences and comforts of modern life. Through the plastics industry, we had an ever-growing ability to synthesize what we wanted or needed, which made reality seem infinitely more open to possibility, profoundly more malleable. Now full-fledged residents of Plasticville, we began to believe that we too were plastic. As House Beautiful assured readers in 1953: "You will have a greater chance to be yourself than any people in the history of civilization."

8.8 million tons

Amount of plastic that ends up in the ocean every year

It's hard to say when the polymer rapture began to fade, but it was gone by 1967 when the movie The Graduate came out. Somewhere along the line, plastic's penchant for inexpensive imitation came to be seen as cheap ersatz. So audiences knew exactly why Benjamin Braddock (as played by Dustin Hoffman) was so repelled when a family friend took him aside for some helpful career advice: "I just want to say one word to you ... Plastics!" The word no longer conjured an enticing horizon of possibility but rather a bland, airless future, as phony as Mrs. Robinson's smile.

Today, few other materials we rely on carry such a negative set of associations or stir such visceral disgust. Norman Mailer called it "a malign force loose in the universe ... the social equivalent of cancer." We may have created plastic, but in some fundamental way it remains essentially alien, ever seen as somehow unnatural — though it's really no less natural than concrete, paper, steel, or any other manufactured material. One reason may have to do with its preternatural endurance.

Unlike traditional materials, plastic won't dissolve or rust or break down, at least, not in any useful time frame. Those long polymer chains are built to last, which means that much of the plastic we've produced is with us still — as litter, layers of landfill, and detritus in the ocean. Humans could disappear from the earth tomorrow, but many of the plastics we've made will last for centuries. Each of them offers an object lesson on what it means to live in Plasticville, enmeshed in a web of materials that are rightly considered both the miracle and the menace of modern life.

The story of plastics is riddled with those kinds of paradoxes. We enjoy an unprecedented level of material abundance and yet it often feels impoverishing, like digging through a box packed with Styrofoam peanuts and finding nothing else there. We take natural substances created over millions of years, fashion them into products designed for a few minutes' use, and then return them to the planet as litter that we've engineered to never go away. We enjoy plastics-based technologies that can save lives as never before but that also pose insidious threats to human health. We bury in landfills the same kinds of energy-rich molecules that we've scoured the far reaches of the earth to find and excavate.

We send plastic waste overseas to become the raw materials for finished products that are sold back to us. These paradoxes contribute to our growing anguish over plastics. Yet the plastics-related issues that dominate headlines today surfaced in earlier decades. Studies that show traces of plastics in human tissue go back to the 1950s. The first report of plastic trash in the ocean was made in the 1960s. Suffolk County, New York, enacted the first ban on plastic packaging in 1988. But the stakes are much higher now. As Plasticville sprawls farther across the landscape, we become more thoroughly entrenched in the way of life it imposes. It is increasingly difficult to believe that this pace of plasticization is sustainable, that the natural world can long endure our ceaseless "improving on nature." But can we start engaging in the problems plastics pose?

Is it possible to enter into a relationship with these materials that is safer for us and more sustainable for our offspring? Is there a future for Plasticville?

Excerpt from Plastic: A Toxic Love Story by Susan Freinkel.

THINGS YOU CAN DO

Pack your own toiletries when you travel instead of using the small plastic bottles in hotel rooms — or look for hotels that provide soap dispensers instead.
Carry a refillable water bottle and decline the free ones offered at meetings.
Bring takeout containers to restaurants so you can avoid using plastic foam to carry home your leftovers.
Wear microplastic-free sunscreen and cosmetics.
Go to beatthemicrobead.org to find out which ones are. Buy soaps, shampoos, and lotions in bar form instead of in bottles. An average load of laundry containing synthetic fabrics sends more than 6 million plastic fibers down the drain. Wear natural fibers instead — or buy secondhand clothes. (Clothes release the most fibers the first few times they are washed.)

Recycle plastic packaging such as newspaper bags, shipping envelopes, bubble wrap, air pillows, and zip-top bags. Find a local drop-off site in the United States at plasticfilmrecycling.org/drop-off. Consumers in North America can look for the "How2Recycle" label on many products for guidance. Buy products with less or no packaging. Buy your fruits and vegetables loose or bring your own reusable bag. Find more ideas at plastichealthcoalition.org/plastic-diet.

PARADISE LOST

"Kamilo" means "twisting of currents" in Hawaiian, so it's an apt name for the beach near the southernmost tip of the island of Hawaii. Early Hawaiians combed the white sands of Kamilo Beach for driftwood; they used the enormous evergreen logs that had traveled there on ocean currents from the American Pacific Northwest to make dugout canoes. Today, the same ocean currents bring a different kind of debris to the beach, along with a new moniker — "Plastic Beach" — and the distinction of being one of the dirtiest beaches on earth.

A clockwise pattern of ocean currents called the North Pacific Subtropical Gyre flows south along the west coast of North America, across the Pacific, north along the coast of Japan, and back across the Pacific to complete the circle. In the middle of this is a calm spot known as the Great Pacific Garbage Patch, less a trash island twice the size of Texas than a soup of microplastics — plastic from North America and Asia that has broken down into tiny pieces, like spices floating in broth. The Hawaiian Islands act as a sieve, catching the debris carried by the vortex of water. An estimated 15 to 20 tons of trash washes up annually on the 9-mile stretch of coastline that includes Kamilo Beach, 90 percent of it plastic from the Great Pacific Garbage Patch. At just one cleanup in August, volunteers from the Rotary Club of South Hilo and other partners collected 790 pounds of marine litter: 37 bags of trash, 100 pounds of loose plastics, and 300 pounds of nets and fishing lines.

Last fall, Hawaii County ended its plastics recycling program, and the club is working with the Hawai'i Wildlife Fund and other partners to find new ways to divert plastic from landfills. "As an isolated island community, we are more directly and severely impacted by our environment than many other communities," says South Hilo Rotarian Keith Greer, who led the project.

"Our footprint is constrained, and if we don't take care of what we have, there is no place else for us to go."

Illustration by Studio Warburton
This story originally appeared in the April 2020 issue of The Rotarian magazine.

Plastic Origin

Since the dawn of history, humankind has endeavoured to develop materials offering benefits not found in natural materials. The development of plastics started with the use of natural materials that had intrinsic plastic properties, such as shellac and chewing gum.

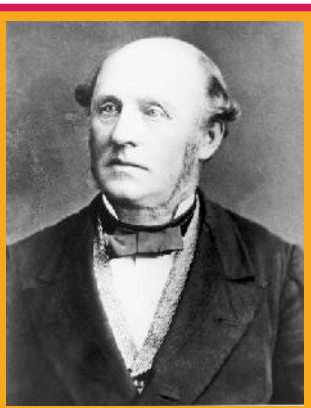
One of the earliest examples was invented by Alexander Parkes in 1855, who named his invention Parkesine. We know it today as celluloid.

Polyvinyl chloride (PVC) was first polymerised between 1838-1872.

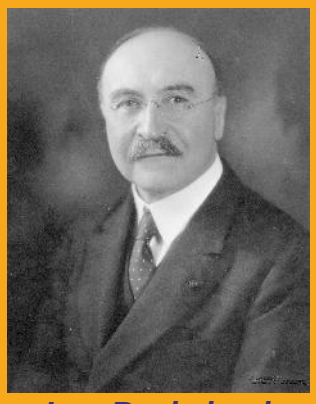
A key breakthrough came in 1907, when Belgian-American chemist Leo Baekeland created Bakelite, the first real synthetic, mass-produced plastic.

Since Baekeland's creation, many new plastics have been realised and developed, offering a huge range of desirable properties, and you will find them in every home, office, factory and vehicle. We can't predict what lies in store over the next hundred years, but we are confident in predicting that, for plastics, the sky's the limit!

[Source: https://www.plasticseurope.org/en/about-plastics/what-are-plastics/history#]



Alexander Parkes



Leo Baekeland

MINUTES OF THE 2586th RCM OF ROTARY CLUB OF BEHALA HELD AT ZOOM DIGITAL PLATFORM ON 4th FEBRUARY, 2021.

Club President Rtn Sugata Mazumdar called the meeting to order.

National anthem was played online.

Club President Rtn Sugata informed that the official visit of District Governor to our club on 4th March 2021 will be held at Calcutta Rowing Club from 7 pm. Members were requested to be there by 6.30pm.

Some projects related to RCC Chandanpiri were discussed:

> E-learning Centre : IPP Rtn Kaushik Bhattacharyya, who organised similar centre at Baidyapara High School, will be contacted for the guidelines.

> Water for Toilet Project : Phase II has been completed, and the accounts are being audited. The closure report will soon be tendered to EIRWT, and on their approval application for grants for Phase III will be submitted. List of 25 beneficiaries along with required documentation are ready.

> There is a request for a community toilet near the local playground. RCC is being requested for a sketch-plan and estimate, after which the Board will discuss the issue.

> A Health Check-up for ladies in association with Free To Be Kids is being planned for the month of March 2021.

President Rtn Sugata requested all members to contribute to TRF. Club Foundation Committee Chair PP Rtn Krishnendu Bhattacharjee informed that he is contacting members personally with the same request. We plan to hand over the cheques to DG during his official visit.

President Elect Rtn Soummojit Mukherjee briefly outlined his plans for next Rotary Year, starting off with a COTS in June.

President Rtn Sugata informed about the club excursion to Jhargram with family is being planned under the leadership of Vice President Rtn Bikash Dutta. Details will be posted in our WA group shortly.

One of our respected senior members PP Rtn Pijush Ranjan Sen Gupta, speaker of the day enthralled all with a lucid talk on history of our club & rotary, augmented by some supplements from PP Rtn Debabrata Joardar.

MINUTES OF THE 2586th RCM OF ROTARY CLUB OF BEHALA HELD AT ZOOM DIGITAL PLATFORM ON 4th FEBUARY, 2021.

Club President Rtn Sugata informed that on 18th there will be a Club Assembly online, and an offline Board Meeting preceded by official visit by Assistant Governor will be conducted on 20th February at CRC. Board members and special invites were requested t attend the meeting.

Club Secretary Rtn Shuvranshu Mitra conducted the usual club business.

The minutes of 2585th RCM of the club as published in Maitree of the day was confirmed.

Club President Rtn Sugata terminated the meeting after thanks from and to the chair.

Total Members : 32. Members Present: 18.