# SCIENCE SHORE exploring the ocean of life

#### VOL 1| ISSUE 3 | OCTOBER 2020

SCIENCE ARTICLES

SHORT STORIES & ARTICLES

POETRY

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#### WHERE SCIENCE MEETS LIFE

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SCIENTIFIC ARTICLES

## THE SCIENCE BEHIND A MAGIC CUP

#### HEMA RANGARAJAN

My son and daughter-in-law gave me a pleasant surprise for our wedding anniversary. They presented us with two "magic cups" which had our most cherished photographs. Being a chemistry teacher, I wanted to know the science behind the magic cup. I googled and learnt a lot about it- Let me share my learning with you.

The magic cup, which is usually black, develops an image due to the phenomenon of THERMOCHROMISM. It is the property of materials to change their color due to the change in temperature. It is a reversible process. This cup is coated with a thermo chromic paint. This is made from a mixture of leuco-dyes and crystals of acidic and basic salts with low or high pH value (pH is defined as the negative logarithm of hydrogen ion concentration).

The thermo chromic paint is sensitive to pH changes in the environment. A chemical reaction takes place when the temperature changes. The solid crystals mix with the dye and the optical properties of the dye change making the cup transparent. As you drink the hot liquid from the cup it brings down the temperature gradually. The cup becomes transparent and the picture inscribed on the outer part of the cup is displayed.

#### The Chemistry of Thermochromism

Triphenylmethane lactone and fluorine derivatives are the most prevalent representatives. Their lactone ring opens by reaction with a developer to form a colored zwitterionic structure. Due to the opening of the lactone ring the conjugation length of the  $\pi$ -electron system of the dye varies.

A corresponding change of the  $\pi$ - $\pi$  transition energy leads to a color shift. Weak acids such as phenol derivatives are mostly used as the developer agent in thermo chromic leuco-dye composites. By chemical modification of the dyes, a large variety of colors is accessible. Reversible thermochromism is achieved by the addition of an appropriate solvent to the dyedeveloper complex to generate a transition between the colored solid and the colorless liquid state.



#### ColorChanging Inks

Thermo chromic paints use liquid crystals or leuco-dye technology. After absorbing a certain amount of light or heat, the crystal or molecular structure of the pigment reversibly changes in such a way that it absorbs and emits light at a different wavelength than at lower temperatures.

#### Applications

Thermo chromic paint is extensively used in a variety of daily life products. Magic baby spoon is a useful indicator for parents to make sure that the parents do not burn their babies' mouths while feeding hot food. Nail polish, magic T-shirts & many other products use this paint. Leuco- paints are easier to work with and less sensitive to temperature changes.

They are also used in advertising labels, textiles, and packaging for microwaveable syrup bottles and beverage cans that indicate temperature changes.

The material of the cup where thermo chromic paint applied is ceramic which is a non-toxic and harmless material. Magic cups should be washed in normal water not in the dishwasher because in dishwasher the temperature of water is hot and the paint in the cup becomes fade and may peel off. It can be used in microwaves with temperature of less than 170 °F.

Thermochromic dyes are made from mixtures of leuco-dyes and other suitable chemicals. The color changes that you see are the leuco-dyes changing form from being colored to colorless (or transparent). Such dyes usually come in the form of micro-capsules that have the mixture sealed inside them. A fascinating example of such capsules was in Hyper color garments (a popular fad of clothes that changed color based on temperature variations).

Thermo chromic Leuco-dyes are used in manufacturing and process control, quality control, safety warnings, advertising, consumer packaging, product labels, security printing, anticounterfeit inks, novelty applications such as temperature-sensitive plastics and inks printed onto ceramic mugs, promotional items, toys, and textiles.

Various industry terms for these thermochromic safety labels and thermochromic printed ink products include-Interactive Packaging, Smart Packaging, Cold Activated Labels, Chill and Reveal, Heat Reactive Labels, Too Hot Labels, Touch and Reveal.

### ALARMING LAZY EYE

#### MAHALAKSHMI SARATHI

A good vision plays a vital role in every individual especially in growing children. It is beyond the clear visual perception with 20/20 acuity, where it deals with stimulus and response to their eyesight. Every child requires visual skills and perception skills such as eye tracking, eye teaming, eye focusing, eye-hand coordination, visual perception, comprehension, retention for their progress in life. The lack of these skills leads to stress in their life; leading to learning difficulty. There is an urgent need to attend to children with poor visual skills. As children are unaware of it, they try with much effort but results in vain with lower efficiency. Many of us unknowingly believed them to be a lazy child. But it is not so. It might be due to lazy eye.

Lazy eye is also termed as Amblyopia. It is a neurologically active process with impaired ocular motor function. It occurs mostly in premature born babies and children and rarely in adults. The poorly developed vision in single eye makes the brain to use the normal eye, thereby avoiding signals from lazy eye. As the vision develops during early childhood, it is more important to diagnose amblyopia at an early stage. In children some of the alarming symptoms that cause amblyopia are difficulty in sequential eye motion, muscle imbalance, eyes focused in different directions (strabismus), blurry vision (refractive errors), cataract and droopy eyelids. Amblyopic eye worsens as the brain pay less attention to the unused eye and depends on normal eye. When untreated, amblyopia might also lead to permanent loss of vision. Research says that even longer mobile usage phones might destroy eye sight by causing amblyopia.

Treatment is quite easier with children below six years old. But early diagnosis and treatment is quite important for early cure of the disease. The visual impairment treated using eye patches or eye drops (occlusion method) become a stress in children. The prevention of eyesight from normal eye by these treatments and subsequent usage of unused eye improves better vision; still some children require glasses for vision correction. The use of contact lenses and glasses can be replaced by laser eye surgery. These predicaments were overcome by researchers at Glick Eye Institute, Indiana University using electronic glasses, a combination of occlusion and vision correction. It is provided with liquid crystal display lenses which can be turned opaque and programmed as patches for different time period.



Pairs of images processed by our eyes (left eye and right eye) are handled by groups of neurons (V1, V2, V3) present in visual cortex of our brain. V2 neurons aids in processing of cyclopean image. Researchers of Utrecht University revealed that better understanding of image processing helps in treatment of amblyopia. And also, successful treatment can be accomplished when V2 neurons shift to cyclopean representation. Thinning of the myelin sheath around neurons leading to water diffusion indicating amblyopic symptoms. They also studied on the pathways involved in vision from eye to brain using brain scanning method such as diffusion-weighted imaging. It aids in gaining knowledge about the outcome of brain training treatments.

Though several researches were carried out, colorful vision of our children could be saved only by the awareness of visual disorders. Beware of these alarming symptoms and prevent amblyopia at an early stage.

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### CAN GARBAGE BE USED TO TIDY UP YOUR HOUSE?

NITHYAKALYANI

The title looks contradictory in itself but wait, what if it's possible. Following the footsteps of our mother nature where nothing is a waste, where we can turn organic wastes in our kitchen into a multipurpose cleaner. Before I delve further into its preparation; let's look at our garbage trash, which is composed of more than 60% organic waste (includes vegetable and fruit scraps from kitchen) along with other dry wastes and plastics. We have heard of a phrase-"Make maximum utilization of the opportunity presented to you" and rightly in our case, we are going to utilize garbage to its full potential. The word "garbage" sucks, but when you employ the right methods at the right time, you end up with valuable materials such as compost, bio enzymes, recyclable materials, etc. What could be done with organic waste? I suggest two options - compost and bio enzymes. A lot of people had already discussed on the preparation and uses of compost, so without wasting anytime further, let's delve directly into bio enzymes. Whoa, what a leap from garbage to bio enzymes.

Bio enzyme is an enzyme solution which could be employed as a multipurpose cleaner. As it employs nature's best action heroes (enzymes) it could work on any biological stains on any surface without harming any living tissue or leaving behind any toxic residues which makes it the best cleaner of all cleaners available in the market. With no more delay on the topic, let's get to know how to prepare the cleaning solution. Water combined with citrus peels and jaggery in the golden ratio of 10:3:1 gives you the bio enzyme after an incubation period of 90 days.

Preparation- You will require a plastic container and three simple ingredients such as water, citrus peels and jaggery combined in their golden ratio- 10:3:1. Mix them in the container such that 3/4th is full and the remaining 1/4th of the container is empty. The bio enzyme preparation consists of 2 parts- mixing of all these ingredients together followed by the incubation of this mixture for 90 days. Incubation period has two phases: aerobic fermentation for 30 days followed by anaerobic acetification for the remaining 60 days. The incubation period of 90 days could be shortened to 45 days when yeast/ bio enzyme from the last preparation batch is used as a starter culture to initiate the incubation period. At the end of the incubation period, separate the pulp from the clear bio enzyme which could be diluted to clean biological soils on any surface while the thicker and denser pulpy portion can be used as a heavy-duty cleaner to clean toilets.



Knowing how to prepare, let's see why prepare bio-enzyme when you can buy their counterparts off the shelves in the marketplace. As it is a multipurpose cleaner, it could be used as a floor cleaner, kitchen surface cleaner, pesticide, insect repellent, fertilizer, washing liquid, etc. it replaces different types of cleaners which makes it economically very friendly. Also, the production cost of a liter of bio enzyme costs less than Rs.10 while their replacements cost at least around Rs.500. It is good on the environment as it doesn't contain any harmful chemicals such as the nitrates, phosphates and detergents as in other cleaners and also has nature's catalysts, enzymes in action thus cleaning all the way even in the oceans. And the ultimate and best reason from my personal point of view is that it promotes selfsustainable living where you make things for yourself instead of depending on the factories. More than all the reasons cited above, more pressing reason for the need of the bio enzymes in this hour is to protect the rivers and oceans- the backbone for sustaining lives on earth. As the recent news article too has reported the continued frothing of the river Yamuna even after the shutting down of the industries for more than 2 months which quickly points to the everyday wash down of the detergents from each and every household as the sole reason. So, if you think industries are polluting, look more clearly and you will know that every household is a mini factory which is polluting our environment steadily in an increasing manner. So now it's our time to change our perspective on who is polluting our environment and start taking steps- after all it is our responsibly!

## THE THREE MISTAKES OF MY DIET

#### SHWETA SINGH

#### "It is easier to change a man's religion than to change his diet "- Margaret Mead

Every human is different and so is their diet. A diet of a person depends on many things like, their work or activity, their environment, their lifestyle and their genes. The same diet or diet plan will not work for two different people. There are many other things we take into consideration while planning a diet like, ailments, any allergy, likes and dislikes etc. But, 3 things which I definitely include in every diet plan are:

1) No tea/ coffee as the first thing in the morning.

- 2) Timing of food is important.
- 3) Eat according to your activity level.

Not following this, are the 3 common mistakes everybody does, for sure, and then cries for being overweight.

1) No tea/coffee as first thing in the morning: I know many will say that "I'll die if I don't get my first cup of tea in the morning ". So, addicted we are. People negotiate that they will take lemon or green tea instead, or will go without sugar or with sugar substitute. Trust me, neither of it will work. Instead, try to eat something healthy within 30 minutes of waking up, like any one fruit. Reason: We sleep--->Blood sugar drops--->wake up--->with low blood sugar--->drink tea/ coffee( stimulant)--->increase in blood pressure--->increase in heart rate and breathing rate--->body breaks down muscles to keep blood sugar from dropping abnormally low level---> hampers fat burning--->we feel stressed----> low metabolic rate. In the morning we need something healthy. Start with one fruit. After an hour have a healthy breakfast and then you can continue with tea/coffee. Now this food acts as a buffer and your tea/coffee will not do much harm.

2) Timing of food is important: Want to lose Fat, eat every two hours. The second point is effective only if you follow 1st. The first thing we eat in the morning is the foundation to get proper hunger signals from our body at proper time gap. Most of my friends say that "Please, if I'll eat so much, I'll gain more weight. Just thinking of it only I've gained 2kgs". Really? Eating often won't make you fat. Eating inappropriate food often makes you fat. Please, understand the difference. If you eat small meals every 2 hours (obviously small meals coz you won't be able to stuff yourself every 2 hours) then you consume lesser calories at a time, your body gets proper nourishment, you don't have to starve yourself.

The fewer calories that you get at one time, it is not stored as fat rather it is utilized better. Your body feels good and hence it does not store food as fat. Try to have 3 main meals i.e. Breakfast, lunch and dinner, and 3-4 small 'in between meals'. It can include, curd or lassi, nuts, chaas, sprouts, chikki, roasted makhana or chana etc. anything of your choice. Try not to have anything at least 2 hours before you sleep.

3) Eat according to your activity level: In the morning our metabolic rate is higher as compared to the metabolic rate after sunset. Morning time is the most important time when our body needs huge calories and nutrients. If at this time it is deprived of nutrients and calories then it lowers the metabolic process. Time of the day and activity affects the fat burning process.

High activity means when you are physically and mentally active like, working out in gym, attending meetings, doing household chores, doing something creative, planning or organizing events etc. It demands lots of energy and so, all you need is, some energy giving food. Whereas, low activity like simply sitting and watching T.V, talking on phone, surfing net etc. does not demand much calories.

So, try to consume more food when you are in active phase as your body will burn the calories effectively. Proper diet will also improve your metabolic rate and you will feel energetic throughout the day.

Note: Eat for the body you WANT, Not for the body you HAVE.

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### IMMUNITY

#### SRIVIDHYA. S

Immunity refers to the ability of an individual to protect or fight against any pathogens like bacteria, virus and other microorganisms. The immune system of a person plays a crucial role in defending him from harmful effects of the attacking pathogen. This holds true for the prevailing pandemic COVID 19. As we are aware of the current situation wherein the vaccine for this disease is under process, we need to make sure that apart from practicing hygiene measure and wearing masks, and social distancing, we should cultivate some lifestyle practices which would strengthen our immunity.

People of older age and Individuals with co morbid conditions like diabetes, hypertension, cardio vascular disease ,cancer and respiratory issues are at a higher risk of complications. Also, younger individuals, if the immunity is good, they will be able to combat this infection. The following measures help us to improve the immunity.

#### DIET:

Diet plays a key role in determining the overall health and immunity. Cutting down refined sugars, processed foods, having nutrient dense foods should be implemented. Advocating low carbohydrate diet helps us to control the blood sugar and insulin levels. Inclusion of moderate amount of protein in our diet helps in repair and regeneration of new cells. Our meal should have combination of colorful vegetables (rainbow vegetables). Vegetables like capsicum, tomato, spinach, broccoli, cauliflower are rich in antioxidants which help in reducing the oxidative stress.Lemon, Gooseberry, Ginger, Turmeric, and Garlic are called as super foods. They should be the part of regular cooking to build the immunity. Nuts like almonds, walnuts, flax seeds, sunflower seeds are excellent source of protein. Probiotics like yogurt are good for gut bacteria which in turn essential for absorption of nutrients from gut. Supplementation with omega 3 fatty acids may also be done to reduce the inflammation happening in the body.

#### SLEEP:

Good sleep for 6 to 7 hours is the best way to help your body build immunity; lack of sound sleep makes one tired and impairs their brain activity. It is revealed that human immune system and sleep both are associated and influenced by each other. Sleep deprivation makes a living body susceptible to many infectious agents. In the result, immune system of human body is altered by releasing immunomodulators in the response of infections. The current situation requires improved sleep habits to make immune system efficient for a healthy life.

#### **MEDITATION:**

The human immune system consists of many interdependent cell types that together defend the body from infections. In Stress, this balance is hampered through several mechanisms and results in impaired immunity. Meditation improves the functioning of the immune system through its moderating effect on emotional, psychological and neuro endocrinal pathways. It improves immunity against infections. In today's busy systems, Heartfulness meditation is simple, easy to practice and fosters better adherence to derive maximum benefits. Even five minutes a day of guided meditation, or simply sitting quietly and focusing on your breath, can make a difference. Meditation lowers your heart rate and blood pressure and reduces anxiety.

#### **EXERCISE:**

Our bodies function better when we're physically active every day. Moderate exercise for at least 20 minutes a day, ideally 30 minutes, and doing a mixture of cardio and strength training should be practiced as they improve the general wellbeing of an individual.

#### ATTITUDE:

A positive mindset is important for health and well-being. Research shows that positive thoughts reduce stress and inflammation and increases our ability to fight back against infection.

Let's us make sure that we incorporate the above discussed things and build our immune system well. A little progress each day adds up to big result.



## **INTERVIEW WITH A SPACE ARCHITECT**

#### SUJATHA

I bumped into my school friend on Face book messenger. After we greeted each other; we asked each other about our professional lives. He told me that he is a space architect. I have never heard of this before. My next question was do you have a home at space! -he pinged me back saying-may be in the future he may have one!

I thought this is exciting and I wanted to interview him to know more about the role of a space architect. He immediately obliged and gave me an insight into this unique domain. There are a handful of people around the world who work as a space architect. One –half of them are based out in the US and Canada working as a full-time space architect in NASA while the other half work on a part-time basis. The latter belong to secondary organizations (US- Europe partnership program) or work for individual concerns.

Here is an excerpt of our rendezvous;

#### Introduce yourself.

I'm Balachander Baskaran. I'm a space architect, a firm consultant, and a project coordinator.

#### So, what's the role of a space architect?

Space architect's role amounts to 50% of any of any space human mission. Of the many things, there are three distinct roles of a space architect, Other worlds-They study the basic requirements to dwell in space; for example, they assist in human mission to settle on Mars, they should know how to thrive there... In orbits-Space architects may also assist in setting up a hotel in orbit! In space-They can also perform intermediary roles such as designing a spacecraft and planning a future space trip.

#### What would you define as your niche in this field?

I have been studying extreme architecture i.e. how to build in extreme conditions such as underwater, hot and cold desserts. But apart from that my understanding in the field of space, my experience helps me do a lot of other things too. I am a project management consultant and I coordinated the management team for the construction of National war memorial; India gate, Delhi which was opened by our Hon. Prime minister in February 2019. I also offer critical solutions to complex projects (This is the most complex project that I have handled so far). I am also a firm design consultant who helps in rejuvenating companies to turn for a successful period of 33 years. I'm a visiting faculty at the School of planning and architecture, New Delhi and Chennai.

#### What was your route to becoming a space architect?

I pursued my B.Arch. from Anna University, Guindy campus. I worked on the dissertation titled Permanent settlement on Mars in the year 2010. I did a master's in space studies program at ISU (International Space University). They create an international, intercultural and interdisciplinary medium. It was great exposure. I have been part of the UNESCO documentation where I learned about traditional arch building material. I also learnt a lot from two renowned companies- Energeia and Star city on Moscow where I learned about space stations, and training of astronauts which takes snout 5-7 years. I widened my knowledge in the Moscow Aviation institute where I learned about rockets. I have also been a part of a few projects related to European space agency. I was also involved in designing the cockpit for space crafts while working in Belgium.

#### What are your proud moments?

Couple of rovers sent by NASA which underscored my research findings on landing locations and future settlement. They have included my name and a lot of other people's name who have contributed significantly on one of the rovers. I'm one of the co- authors in the book titled- "Space and human culture"; edited by Jacques Arnould. I have penned a chapter in that book titled- Human response to extraterrestrial intelligence. The book is available on Amazon. I'm also one of the authors in a book titled- A one-way mission to Mars which is a part of the NASA library. I have also received gold medals from my Alma mater; recognizing my contributions with respect to exploration on the Mars.

#### What kindled you to become a space architect?

I was always amazed at the massive Universe. As a tenth-grade student; I will be the first one to finish the chapters on "Universe". Our textbooks lacked the current updated information, so at times I was forced to write the wrong answer! (He chuckles!) I wanted to take a different career path as I had problems with my eye-sight, but as the saying goes- passion guides you to your destination was true in my case.

#### What are your other hobbies?

I like cleaning! I don't like clutter-I like "organized chaos". I like gardening, counseling mentally challenged people, and also give architecture counseling. I'm also interested in photography, writing, and website designing.

I can't thank him enough for this amazing learning experience! I thank Balachander on behalf of all the readers and editors of the Science Shore magazine!



## THE SCIENCE BEHIND THE BURNING FLAME OF A CANDLE

#### SUJATHA VARADARAJAN

Year after year we look forward to this day of great celebrations. Yes, I am referring to our birthday celebrations. Young children have a special emotion attached to this day whether birthday is theirs or their friend's or for that matter anyone else's. They wait for the whole day and finally, circle around the cake unable to hold back till the candles are blown out. Their joy may double up if they are asked to blow out the candles even if it is not their birthday.

While all this goes on, seldom we think about what is candle made up of, how does it burn and what principles and concepts of science are behind the burning of candle and also about the matchbox which goes hand in gloves with the candle.

Hey, you guessed it right! My article today is about how a flame is generated in a matchbox and what concepts of science are involved in burning flame of the candle.

As always, let me start with a question, which one do you think is a better option to light, an oil lamp or a candle? Think at least 5 reasons while I go ahead with the story.

Candles are in use for a very long period; what has changed is the material used for making them. Earlier people used tallow (animal fat), bee wax, bark of cinnamon plant (in India) etc. and now, it is whole and sole paraffin wax. Paraffin is one of the petroleum products. The other products being kerosene, petrol, gasoline etc., being hydrocarbons, these are good as fuels for combustion. Since paraffin is a term used to refer to automobile fuel in some countries, the term paraffin wax is exclusively used for the material that is used for making candles.

The following phenomenon in a candle facilitates burning while making it the best material for lighting.

Cup formation

**Capillary Action** 



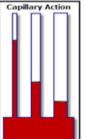
The lighted candle forms a cup in the middle which gets filled with the molten wax. This happens because the flame on the wick melts the wax around it. The molten wax continues to rise up. It leaves behind a depression resulting in the formation of cup. The hot air moves upward due to convection leaving the sides of the candle cooler. This creates depression in the center. Such a cup formation is very important as it hold the molten wax which would otherwise run-down guttering.

Many times, the molten wax gutters down in-spite of a cup in the middle, why? And, what's wrong if it gutters down?



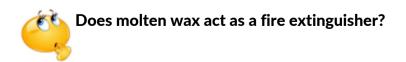
Capillary action

The molten wax rises above the wick by capillary action. Liquids have a tendency to rise up a thin tube due to a phenomenon called surface tension. There are forces of adhesion between the molecules and the sides of the tube. The tube has to be as thin as a capillary for this phenomenon to occur. Wick acts like a thin tube. The molten wax in the cup of the candle rises up and provides a continuous supply of fuel for burning.



#### Why the wick does not burn while the candle continues to burn?

When we light a candle, the flame does not run down to burn the wick. This is so, because the molten wax extinguishes the flame perhaps by cutting off the supply of air. This can be proved by inverting the burning candle. The flame extinguishes on inverting the burning candle if the molten wax flows towards the flame. In an upright position, the candle will continue to burn.



Burning zones in a candle

The burning candle flame has many zones. The outer most is the brightest and its brightness reduces as moving inward. It has some dark part inside due to incomplete combustion.

Can you identify the zones in the above image?

There is air current formed which gives the shape to the flame. This can be seen by the shadow of a candle on a paper formed by any light source. The darkest part of the candle in the shadow is the brightest part of the candle. The ascending current draws out the flame supplies air and cools the sides of the cup.

The flame can be drawn down by the descending current.



If air current is irregular than we get a flame shape that takes variety of forms.

Candle's companion: Match Box

If you would scrape out the head of matches you would have collected antimony trisulphide. What is this antimony trisuphide? Have you seen a ruby colored glass? If yes, then you would be happy to know that the color red is imparted by this chemical, antimony trisulphide. It is also used in firework and ammunitions. The reason for its usage –it acts as a fuel. There are other chemicals such as oxygen supplier (potassium chlorate) and white phosphorus. White phosphorus is little difficult to handle as it reacts violently and catches fire. Therefore, in safety matches

red phosphorus is used instead. Red phosphorus is applied on the sides of the match box along with powdered glass for friction. So next time when you would strike a match, remember the sides of the match box is coated with some red phosphorus and powdered glass. When the match head gets adequate heat on striking, there is a chemical reaction that converts red phosphorus to white. This helps in the burning of antimony trisuphide which is the fuel and causes flame. But, don't you think we have forgotten one important component? Yes, the stick to which the fuel and oxidizing agent are glued as *head* of the matchstick.

## Why the matchstick which is a piece of wood, does not burn as soon as the flame is produced in the head?

Okay, now time to light a candle and ask for a wish! Bye bye, see you with the next write-up on scientific thinking.

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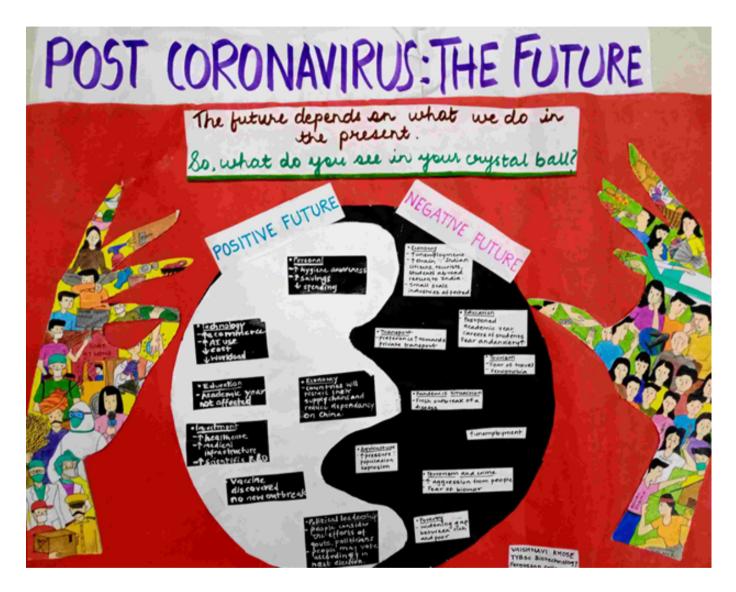
A Description of a Burning Candle

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## **POST CORONAVIRUS: THE FUTURE**

VAISHNAVI KHOSE



The poster depicts a scene of 'fortune-telling'. The centre object is a crystal ball and the hands are psychic's hands. The left hand comprises of the hygienic actions, corona virus warriors and precautionary measures so the crystal ball shows a positive future on its side. The right hand shows all the wrongdoings that are supposed to be avoided with respect to the spread of the corona virus and therefore the crystal ball shows a negative future on its side because the future depends on what you do in the present.

# SHORT STORIES & ARTICLES

## SOCIAL STUDIES AT PRIMARY LEVEL

#### J.P.BHARATHI

'Social studies' is a very interesting subject in school. It is very important to see that students understand social studies in the right perspective. Social studies include environmental studies at the primary level, geography, history and civics in the secondary level and economics and business environmental studies at the graduation level. So, in short, knowing "what is environment" can be called 'Social studies. If this subject is viewed in line with other subjects like sciences and mathematics, greater good will happen to the world. In fact, Social sciences can be placed before or given equal status along with the other popular subjects.

In this article let us discuss the social sciences and how to make a child understand the same at the primary level to preserve the environment, it is important to create social awareness and arrest pollution. A paradigm shift in thinking should happen at the primary level, so that every child will start protecting nature.

At primary level, a child learns about the human body - parts of his body, sense organs and living beings and also about various species and plants on this earth. This way he gets to understand that the life on earth is dependent and interdependent on one another.

A child is amused by the beauty of nature; he loves to listen to the chirping of the birds, their ability to fly and their beautiful nests. He understands that animals live in forests. Let the child admire the animals and make them feel they are important for the wellbeing of human beings. Let us teach him, it is very important to protect the birds and animals on this earth. Now he will understand that there are no forests without animals. So, he will start realizing trees are very important for preserving the life of living beings. A teacher should now try to drive home the reality that we should protect the birds, animals and trees in order to protect ourselves.

At this tender age, it is very important to teach a child that we should protect the environment not for others, but for our own self. A child starts understanding that we cannot live without water, sunlight, air and food. He should be made to realize he needs his family, friends, society, plants and animals for his own existence. When a child is taught not to fight or throw tantrums, he will apply reason for his behavior and will become more responsible. Students should be told how much water is needed for each one on earth and how the resources are depleting in the world. Small experiments to teach these truths are enough for him to live close to nature. He should be told dramatically all these things in a classroom and outside.

Experiments which can be conducted in class room:

Earth quake- Show a child using small building blocks. A teacher can explain, as there are more buildings, it can become heavy for the earth to carry the load.

Floods, drought- As we cut the trees, the soil becomes loose, show him how we can hold something tight pressing our hands tightly on the floor. This can be related to roots holding soil tightly protecting the earth from floods and drought.

Desert- Teach him how it feels when there is no water to drink. How desert plants, camel store water. Example: Dry land vs. greenery

Fresh air and Pollution- Teach him how it feels when there is no air to breathe. How plastic is harmful. Teach him how plastic cannot be absorbed in the soil. School can maintain a Nursery or attach itself to a small one in the area.

All buildings vs. All plants - There can be few indoor plants maintained in a classroom and teach them how to protect the same. As they cannot harm the plants, they calm down and maintain discipline.

Hunger- Teach him how it feels when there is no food to eat. Community lunch or common lunch activity can help them to realize how food can be served without wastage. Example: Excess food vs.No food.

Pain and destruction- Teach him how it feels when we harm or injure others. A wounded child vs. friendly supportive children.

Appreciation for behavior also should have grade points along with grades for academic studies.

Empathy- Teach him how it feels when we hurt animals & birds. Example: An animal in pain vs. happy animals.

Tolerance and Values- Why we should follow rules. Experiments showing where to compete and where not to compete.

Finally, A happy world vs. A sad world

PPTs can be included while teaching. To make it student friendly, every topic should be taught with the help of:

Wall magazine- Here students will bring relevant news clippings to understand a specific topic. They should be made to explain the news item.

Personal space- Any kind of imagination, fear or a family affair which is disturbing. Teacher can check these areas with confidentiality.

Story board activity- Each student uses his creative ideas and pins a story on the board, relevant to the topic in the subject. Let the student express his happy feelings, sad feelings. In fact, it is very natural if we allow the child to cry when he explains a sad event.

Collage activity- In this the students will only use pictures to help and develop a particular topic.

Group discussion- Though it is a popular method of teaching, it should be discussed with proper guidance, so that all the relevant areas are covered.

Outdoor activity- Field trips which cover an educational theme gives a perfect understanding to the student. Here the field trips should be to slum areas, crowded areas, theme parks, nurseries and so on, according to its relevance.

Small experiments will help him know how life on earth is interrelated with all living beings. He should be allowed to conduct experiments and learn the subject, environmental sciences.

This gives him the responsibility and makes him feel he needs to preserve this world. The result will be,

A child starts planting new saplings and feels confident that the air he breathes is fresh.

He will water plants every day and ensures his food on earth is preserved.

Gets discouraged to use electronic games and gadgets as they are harmful for animals, this way he will learn to respect others freedom of life on this earth.Protests when trees are cut and becomes a father of the man to protect the nature. Learns to be healthy because he needs to take care of the parts of his body.

Discourages and starts being away from violent movies and illusions.

Discourages and starts liking nutritive food, so that he can do his work efficiently.

Does not waste food as he knows there are poor to be fed on this earth.

Stops wasting paper as paper is made out of plants.

Learns to keep his environs clean as pollution is harmful for his life.

Starts washing his hands before eating as germs are not good for his well being.

If social sciences at primary level help the child to understand and apply reason for his behavior, he will stop making mistakes which disturb the environmental harmony.



## STRUGGLES BRING OUT THE BEST IN US -LESSON FROM A BUTTERFLY

#### HEMA RAVI

The mention of 'Butterfly' brings out nostalgic memories of childhood -running around in the garden, trying to catch the flitting creatures that went from flower to flower even as our mothers would yell out not to harm them.

Butterflies are nectar-feeding insects with two pairs of large, typically brightly coloured wings that are covered with microscopic scales. Butterflies are distinguished from moths by having clubbed or dilated antennae, holding their wings erect when at rest, and being active by day.

It is believed that there are over 1500 species of butterflies in the Indian subcontinent. The major threat to their breeding and continued existence is brought about by destruction of their natural habitats, using pesticides in agricultural and urban lands.

The lyrics of a melodious film song sung by the legendary S.P. Balasubramaniam (who lost his life to the pandemic) and Asha Bhosle, set to tune by maestro Illayaraja come to mind. "O Butterfly, Butterfly, why did you open your wings? O Butterfly? Will you come closer? I have opened my mind's door for you..."

I am also reminded of a story shared by a motivational speaker. It is about a boy who loved insects. One day, the boy found a caterpillar, took it home and gave it food and water. After a few days, he noticed it started building a cocoon around itself. He was excited and was eager to see the butterfly. He had read about metamorphosis in his Science reader.

One morning, a small hole appeared in the cocoon, the butterfly's head emerged, it was struggling to come out. Feeling sorry for it struggling so much, the boy used a pair of scissors and cut the cocoon to make the hole bigger.

To his dismay, the butterfly spent the rest of its life with a swollen body and small shrivelled wings, it could never fly.

Only later, the boy understood that by pushing through the tiny opening, the cocoon pushes the fluid out of its body and into its wings.

The lesson learnt out of this is - STRUGGLES ARE IMPORTANT FOR LIFE AS THEY BRING OUT THE BEST IN EVERY ONE OF US.

(Picture Courtesy: N. Ravi. All the butterfly pictures are from the environs of Adyar, Chennai.)









## LOSING SLEEP OVER LOSING HAIR

#### T. S. MANOHAR

It is but natural that everyone becomes increasingly self conscious over appearance and outfit as they transit from adolescence to adulthood. I was no exception. After all, one has to be at least appealing if not attractive. Precisely why, losing strands of hair was a major cause of concern for me. Despite the meticulous care and grooming, my mane was losing its density. My anxiety and worries only worsened the problem.

What if I become totally bald by mid- twenties like my maths teacher?

How am I going to react when I become the object of ridicule over it?

"Your grandfather used to have a full crop of curly black hair, you know. He maintained it neatly groomed. In fact I fell for it more than his height and complexion" prided my grandmother adding to my agony.

My friendly barber found nothing amiss. "You have smooth, straight hair with a silky texture. Look, it is easy on my comb and scissors. Keep the scalp clean and oiled and they will hold it firm and rooted for long" he said.

Not convinced, I decided to seek the opinion of the dermatologist one morning. (It was in the early eighties of the last century when trichology, hair weaving, transplant etc were not in vogue). He was more of a family friend than a doctor. Far from enquiring the purpose of my visit, he was excited to see me and started off.

"You see, this time around, India is sure to win the world cup. We have a bunch of allrounders led by Kapil dev. English conditions will suit them to the tee".

My half grin brought him to focus on me. "Ok, what worries you young man?" he enquired.

"The itchy scalp and consequent hair fall; I thought it is better to seek your expertise on that", I mumbled.

"You see, It is called alopecia areata - male pattern baldness. It is a genetic disorder. Your dad went bald in his forties and you are following suit earlier. All the proclaimed magic potions and wonder cures won't work. Have you heard of Murphy's Law? Anything that can go wrong will go wrong. Bhagavad Gita echoes it similarly. Whatever is destined to happen is bound to happen". Self applauding his communication skills, he let out a guffaw. Observing that I was least amused, he positioned himself upright in his chair. Professional etiquette took the better of him. Speaking in a serious tone this time, he said "Nutrition and yoga can work wonders my dear. It increases the blood circulation and nourishes the hair follicles and thereby prevents hair fall to an extent. I will give you a list of do's and don'ts. Follow them religiously and you will be rid of this nagging worry".

As I prepared to get up, he patted my back and continued, "Did you look at the members of the Indian team, young man, all energetic and handsome? They have a step cut and curly lustrous hair too". However only the bald pate of the ace stumper Syed Kirmani came to my mind instantaneously!

Looking back and pondering I feel that my anxieties were after all flimsy, frivolous and funny. Turning sixty, I still can boast of enough crop of hair necessitating the use of a comb to keep it in place. I still visit my faithful barber with purpose. Only that I no longer lose sleep over losing hair!



## ENVIRONMENT

#### PARVATHI

World Environment day is celebrated on 5th June every year. This day is celebrated to bring about an awareness about our environment. But are we really eligible to celebrate World Environment Day is a million dollar question?

Before we go ahead further let me ask you what is Environment? Technically speaking, Environment is a natural sphere for all living beings such as humans, plants and animals to live happily. But nowadays there has been a drastic change in the abbreviation for the "World Environment Day".

The environment is no more a common space for plants and animals. Their spaces have been snatched away by humans for their own various selfish reasons.

Here in this article, we shall discuss the problems created to the environment by human beings, steps to be taken to protect the environment and contribution from our end to the environment.

Let us discuss the problems created to Environment.

#### Cleanliness

Cleanliness is not only about keeping our house and ourselves clean. It is also about keeping your environment clean from trash, dirt, dust etc. The absence of basic cleanliness is the first major damage caused to the environment by humans.

#### Deforestation

Deforestation is the selfish act of destroying our trees for our own selfishness.

#### **Human Animal Conflict**

As discussed earlier Earth is not only for human beings but also for animals. Human beings have barged, invaded animal habitat and have started to encroach their homes thus leaving animals stranded.

#### Pollution

Pollution is something that is not only about air it is also about water pollution. Vehicles not only let out hazardous smoke in the air but also let out other wastes in the river thus harming the vibrant, beautiful, marine life.

Based on the above it is very prominent that we are not eligible to celebrate world Environment day. Let us discuss the ways to be eligible to celebrate "World Environment Day "

#### Save and Nurture

Trees are valuable, necessary and a very integral part of our existence. The greenery and freshness from trees brings much needed cheer, vibration, relaxation, positivity in our lives. There are people who attach great sentimental values to trees. Trees help us a lot in saving ourselves and our beloved families from scorching heat. Trees are also an important part of our tradition and culture. Let us avoid the cutting of trees, to the maximum.

#### **Cleanliness is Godliness**

As discussed earlier it is not our home that deserves to be clean it is also our environment that has to be both clean and tidy. Let us discuss and follow below mentioned steps to keep our environment clean and green.

1. Dispose used sanitary napkins, diapers properly by wrapping them tight in a piece of paper.

2. Instead of dumping garbage on the road or an already overloaded dustbin let us take the much needed extra step in finding the nearest dustbin and dump the garbage properly.

#### **Reuse and Recycle**

Reuse and recycle products that are a great threat to the environment.

Plastic bottles are a great threat to the environment. Plastic cool drink bottles are thrown off in the dustbin. In order to save the environment let us reuse and recycle plastic water bottles in the below mentioned ways.

Flower pots (To Plant Saplings)\ Kitchen / Bathroom Organizers Garden sprinklers

#### Idea: You Tube

#### Pollution

As discussed earlier pollution in any form is a major threat to the environment. Government should instruct factories to have alternate methods of waste disposal and should bring strict laws on the same and heavy punishment for companies which fail to abide by the laws.

#### **Reducing Animal and Human conflict**

Animals are an important part of our flora and fauna. Animals roaming in human habitats cause great tension, panic to human beings. Humans fail to understand that deforestation is the main reason for animals to roam into human territory and also for the declining count of animals. Immediate steps should be taken to stop deforestation and to save ourselves and animals.

#### Contribution from our end to Environment

#### Productive usage of Time

Holidays are not only meant to spend the whole day lazing in the couch. Holidays are also meant to spend time productively and contribute to our environment. We can contribute to the environment by joining and working closely with various NGOs and social service organizations towards the betterment of our environment.

#### Social Media Campaigns

Social media is a very powerful medium of education. But unfortunately social media is mostly used for all wrong reasons. One of the productive ways to put social media to good use is to start a social media campaign / awareness about the importance of a clean, green beautiful environment.

#### Gift a tree

Gifts are something that is special to us. Gifts are something that should be memorable and useful. And one of the most memorable gifts would be a fertile, healthy plant sapling. Plant saplings are one of the most wonderful gifts to both give and receive. Upon gifting the above people feel extremely delighted to see their saplings grow beautifully .This growth encourages them to plant more trees and are also sure to unleash their new found love in gardening and that new found love is sure to bring happiness and peace of mind. This in turn shall drive them to nurture more plants with love and care. My dear friends and fellow contributors Mother Nature has provided us with air, food and water with great love and care. We as responsible, matured and educated Indians should take utmost steps to save our earth and ensure that our mother earth is always safe, happy and healthy.

We fail to understand that Environment is common to all and we should immediately stop all barbaric acts that pose a threat to our environment and ensure that all living beings live together happily in this environment.



### **EDUCATION IS LIFE**

#### SETALURI PADMAVATHI

I've noticed a fascinating phenomenon in the field of education: schools and schooling are increasingly irrelevant to the great enterprises of the planet. No one believes anymore that scientists are trained in science classes or politicians in civics classes or poets in English classes.

"Education means the process by which character is formed, strength of mind is increased and intellect is sharpened, as a result of which one can stand on one's own feet." It can be either formal or non-formal education. In formal education, the students are trained to learn and understand their textual lessons at a particular period of time in a systematic manner. Most of the students do it from their exam point of view, instead of learning it as a whole within the given limited time. Nonformal education is meant for mainly adults who can have self study in order to learn job oriented skills or literacy.

I strongly believe that schools don't really teach anything except how to obey orders. This is a great mystery to me because thousands of humane, caring people work in schools as teachers and administrators, but the abstract logic of the institution overwhelms their individual contributions. Although teachers do care and do work very, very hard, the institution is psychopathic -- it has no conscience. It rings a bell and the young man in the middle of writing a poem must close his notebook and move to a different cell where he must memorize that humans and monkeys derive from a common ancestor.

Today, many educational institutions try to provide comforts, good infrastructure which enable the students to have various curricular and extracurricular activities and qualified teachers who can enhance their abilities, besides developing their skills.

"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel." Children are always ready to learn though they do not always like being taught. "Teachers are people who start things they never see finished, and for which they never get thanks until it too late."A teacher should have an aim to impart subject knowledge, bring out student's innate talents and train them in a methodical manner which will help them to develop morally, educationally, spiritually and emotionally.

"Education is the transmission of civilization." Educational values should transform students as civilized personalities who can become the decent future citizens to their nation. Education is the ability to listen to anything without losing temper or selfconfidence. Furthermore, an educated person is respected everywhere. Young and energetic students are an asset to any nation who should develop courage, righteousness and conscience during their wonderful childhood. Unity in diversity - Every nation has differences in food habits, dressing, climatic conditions, religions and languages that they speak. Patriotism and love and affection towards their family, community and nation have to be developed in school. "Education is not the answer to the question; Education is the means to the answer to all the questions."



### **HEALTH IS WEALTH**

#### THANKAM NAIR

In order to protect from diseases, and keep ourselves healthy, we have to follow some simple measures in life. Always remember that health is the most precious wealth that we save in our lifetime.

First we must follow certain discipline in life. Punctuality, lifestyle and food habits add discipline to lead a happy and contented life. Our mental health and physical health go hand in hand. Proper diet and exercises play a good role. Common and essential things that we use at home can be applied for health care.

Turmeric treats arthritis, diabetes, nerve damage. Protects kidneys, combats obesity, reduces cholesterol and turmeric is a skin tonic. Coconut oil with turmeric paste nourishes skin or curd -turmeric combination, ripe banana paste with turmeric is an age old beauty aid for skin. Mustard is rich with B complex, a great source of minerals, calcium, copper and so on. Vitamins especially Vitamins A and E are good for skin and hair. Jeera helps in digestion, treats acidity, helps us to be slim and jeera boiled water used daily has medicinal value. Ginger is good to digest, relieves pain and nausea. It has anti cancer properties also and enhances our memory power. Eating garlic raw, crushing with teeth, to get taste, through the tongue, is the best way to take. Garlic kills viruses and germs. Fenugreek is another medicine that prevents many diseases, protein rich more than milk, cools our body skin and an effective hair tonic.

Rheumatism, Cholesterol and thyroid can also be prevented by taking fenugreek. Soaking overnight in drinking water and drinking that water alone or with lemon juice on an empty stomach early in the morning is a very healthy drink. Good to use fenugreek paste as face or hair mask for glowing skin and thick growth of hair respectively. Basil or Thulasi is a wonder plant we have in almost all our homes. Thulasi sharpens our memory, combats cold and flu, and climatic infections, removes phlegm, mucus, insect bites and is a good anti-stress agent and helps asthma patients too. Many more home remedies are easily available. They are effective and low cost. Always remember that our attitude towards life makes a great impact on our health. And mental health and physical health contribute to each other immensely for a wonderful life. Health is our wealth. Our nation's wealth.



# THE EMOTIONAL AND INTELLECTUAL INTELLIGENCE

#### VARANASI RAMABRAHMAM

A human being is the combination of intellectual and emotional sides and aspects.

Human-beings are unique among life systems. Only humans can talk and have language abilities. This unique and useful ability helped humans to develop alphabet, digits and languages. And through languages ideas, intuitions, understanding, insight, experiences, skills, thoughts, feelings, etc., are learnt and communicated and vice versa.

Our mind distills what all we read, know, acquire, understand, get insight of, experience and forms its own essence. It will communicate that essence when it expresses various aspects, types, perspectives, and understanding of knowledge acquired from various fields of knowledge, science, philosophy, arts, spirituality and experience.

That is why each one of us will have different perspectives and observations. Our perspective appears as Truth to us; others need not agree with it.

Thus through our education phase and profession-phase we learn and communicate and enhance our knowledge and widen the horizon of our learning. Thus knowledge is acquired by us.

In addition, human beings are both emotional and intellectual beings. Very few are intellectual and most are emotional and are guided by emotions during the course of life. 90 percent of human beings won't further their knowledge because of abilities, restraints and constraints of mind and preferred interests.

Only 10 percent further their knowledge. But of these, many don't know that their already acquired knowledge on various spheres acts as obstacles to acquire fresh knowledge.And most of these are confined to the subject of their field.

Interdisciplinary nature of human knowledge, learning and skills are scarcely accepted and welcomed by any.

What they already "know", their strong likes, dislikes, preferences, views already formed, will restrain the individual to view fresh knowledge with an open and objective mind. Most have either intellectual or emotional capabilities. Very few have both.

People with emotional abilities will contribute to fine-arts, love, human relationships, devotion, religion and culture. Human beings need both emotional and intellectual contributions to be a complete being. But certain individuals with their limited knowledge of human endeavours will feel great about their vocation and strongly "feel" and find that other disciplines are not interesting or not their cup of tea.

They want "improvement" in their field only; because of their strong footing in their chosen field and disinterested-ness in rest of human endeavours. Their already acquired knowledge won't allow them to appreciate other kinds of knowledge and achievements. Some of them feel that they own their field and rear it dearly. They don't want to or can't come out of their limited horizon and subjective preferences and love to be and live to remain in that box, like particles in a box of quantum mechanics. Also they don't want their endeavor polluted by other human endeavours. It will be very difficult for many people to objectively welcome other endeavours. They use logic which always need not lead us to reality and truth.

Nowadays logic has given its place to intuition and emotional intelligence. Many personality development gurus are stressing on emotional intelligence for harmonious living and enjoyment. Even intellectuals can't live without emotion and emotional fulfilment. Various people will have emotional fulfilment in various ways. Human beings can live without being an intellectual but can't live without emotional fulfilment. Many intellectuals "transcend" societal norms in their behaviour just to be emotionally fulfilled. Some men find emotional fulfilment in women; some in religion; some in spirituality; some only in the pursuit of science; some in literature; some in music like that.

Though a person is a science student in the real sense of the word, he can have interest in fine arts and other fields of human endeavour. Very few people confine themselves to their field of study - science and technology, arts, fine-arts, philosophy, spirituality - and have varied interests. An intellectual need not confine himself to intellectual studies as0 most have emotional needs and abilities. Intellectual intelligence is based on logic, reasoning, discretion, discrimination and understanding. Emotional intelligence is based on experience, intuition, feeling and faith.





# POETRY

### LIMERICKS

#### ANAND KUMAR

A Limerick is a short and humorous five-line poem where the first, second and last lines are long with 7 to 10 syllables, the third and fourth lines are short with 5-7 syllables. The rhyme scheme is AABBA where the first, second and the fifth lines rhyme alike and the third and fourth lines share a different rhyme.

Once there lived an old woman by name Brown. She fell in love with a clown. He told "I am bald." She told "I am old." Both fell in love and got married in a town.

Old age is a chronological number, That comes and goes in our slumber. A bonus with a gift. Giving a joy of lift. Waking us up in the night with a full bladder

Writing Limericks, I love very much, Which is like eating ice cream after lunch. Lot of ideas in head, Come and go without end. Oft, sans ideas, hair comes in a bunch.

There was a lady called Victoria, Who wanted to visit Australia. She arrived at the airport, Along with a passport. Missed her flight eating at the cafeteria.

Once there lived a young girl called Alice, In her head she had a lot of lice. Could not marry a boy of her choice, Because he spoke a lot of lies. So, she handed him over to the police.

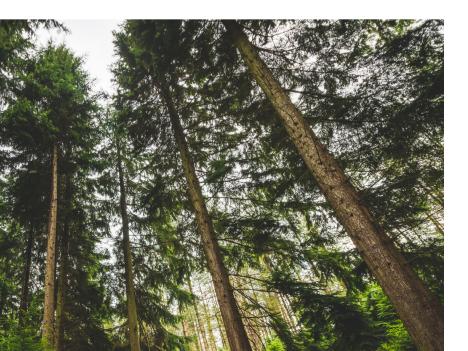
I am very fond of eating curd rice, With mango pickle it tastes very nice. My wife is an expert, who makes it very perfect. We eat sitting in the open terrace.



# THE WHISPERING WOODS

M. ARIVUKKARASI @ AAZHI (PEN NAME)

Tall and Majestic it stood. Birds chirping and Leaves rustling is all What you heard. But, still in the air You could hear some whispers. Like it was from the pines Was it the pines? Or Was it my mind? I stood there yearning to Hear those whispers Not just in my mind, But from the pines. I stood there yearning to be called Staring at the sky and the hills afar.. For deep down to my knowledge I knew that "Woods never Whisper" And "Trees never Call"



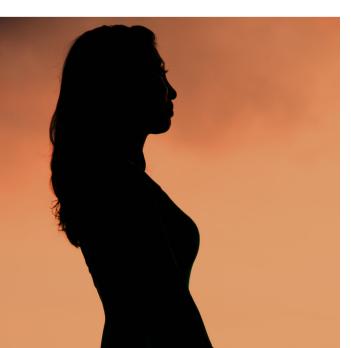


### WOMAN

M. ARIVUKKARASI @ AAZHI (PEN NAME)

She can be an ocean She can be a puddle She can be as fierce as a fire She can be as cold as ice She can be a prickly thorn She can be e fragile flower She can rule the world She can save Millions She can go beyond boundaries She can stay within four walls She can be as hard as a rock She can be as soft as a fur She can melt like a candle She can rebound like a Phoenix She can be anything and everything She can be anyone and everyone She is a "Woman"

Respect and celebrate the She in your life not just on Women's Day but rather everyday -Aazhi





# **BEAUTY OF FRIENDSHIP**

#### BHAGYASHREE MISHRA

To those who stood by me as firm walls While worst storms showed up to topple my dreams To those who didn't care to take a look back Once my job in their lives was done The former showed me what loyalty looks like The latter taught me - "Nothing lasts forever"



To those who did their best to me even if I lagged in reciprocating And to those who wished to see me at my worst Despite pulling them out of their darkest dens The former introduced me to the sanctity of selflessness The latter opened my eyes to earthly truths

To those who cared to be my torchbearers While I was lost, looking around for life's light And to those who pretended that my whimpers Didn't reach them, while I was being strangled The former enlightened my mind with the beauty of benevolence The latter switched on the bulb of my brain And whispered into my ears - "Be your own saviour"

To all those who caressed this bond of camaraderie With sheer sensibility, pouring in pure prayers and love To those who mollycoddled me as they do to their own kids To those who rectified my errors in seclusion And patted on my shoulders while among companions To all of you who make me feel better than yesterday I owe you all a heartfelt gratitude on this precious day.

# OH! MY CREATION... (WOWS OF GOD)

J.P. BHARATHI

You are the reason for my creation, I looked at you as a toddler, But you always remained a traveller... My creation was to create your life But your mission was to cremate my every creation... You call it invention; you call it innovation, And always forget my greater mission I found hundred ways to unite you, But, you found one more means to divide me. I shine as a sun in your daily life, But you are always proud of your only son. I come as a moon in into all your lives, But you slip into your sleep and forget all my dreams... I taught you all good, as you woke up on earth, But, you fought with all Gods and filled it with all the froth... You call me for help, so many times, But when I am there to clear your hell, You are always busy in your cell... You are the reason for my creation, I looked at you as a toddler, But, you always remained a traveller...

### **CONFESSIONS OF THE FADED INK**

**GITI TYAGI** 

Whence I wrote the tale agonized, The girl in the news, every hour, With her soul, her faith torn apart, My heart with guilt filled words that flow, Help nor support, no solace I render, To the girl in the news, every hour!

Whence I heard the tale agonized, The baby on the street abandoned to fate, A girl she was born, no taker for her smiles, My heart with guilt filled thoughts that flow, Held nor hugged, no tender care, To the baby on the street, abandoned to fate!

Whence I watched the tale agonized, The drowning men, the sinking homes, The wrath of the floods, the nature angered, My heart with guilt filled tears that flow, No hand I stretched to pull them through, To the drowning men, the sinking homes!

Whence I saw the tale agonized, The fallen trees, the dying earth, Cursed and yelled, my role I failed, My heart with guilt filled fears that flow, No steps I took to restore the charming life, To the fallen trees, the dying earth!





# BLACKY

HARINIY. G

"Blacky" is what they call her To whatever she did, From walking to running Those voices in her mind She never knew what was wrong And what was lost within She stood before the mirror And cried for what She proclaimed a "sin" All those days of pamper on her tiny soul Has now become a tantrum to whatever she owned And she asked what she was worthy of? Pretty clothes and shiny jewellery Whatever she had; it did not suffice; It did not make her fair... Came to her mind what she was And what she always will be She wiped her tears And consoled herself And admired herself with bliss.

#### ABOUT THE POEM:

This poem is about racism and how it affects the minds of young children. The poet says all the pampering and love she got from her parents, she expected from the world. And it turns out to be a problem that steals all the love and happiness she kept in her heart.

# A NEW AUGUST DAWN

HIMANSHU BHUSHAN JENA

Let August travel from the valley of death to spring of life with a chain of beacons showing the path of consolidation and reconciliation

How long will the deadly waves of virus make us die each moment? How long will the invisible threat terrorize our fate and fortune?

When August unlocks the doors of our imprisonment with its august presence, Life will be a bubble with many a thrill and hope for welcoming a new dawn.

Let the lost rainbow of life be regained with its original form free of particles of panic Let our lives be blessed with wings of fire panoramic!



# **VOICE OF LIFE**

HIMANSHU BHUSHAN JENA

Life,

An enigma of many a contradiction, often contains the fiesta of fragrance and failure, for time has its own rippling waves of pigments and figments, sometimes misunderstood even by the mighty minds!

Life,

An aroma of struggle for existence and exuberance amid gales and tsunamis even though we've no control over the hazards.

Life,

An odour of optimism in spirit and action, destined to go deeper and deeper of one's divine destination!



### CRADLE

#### JELLIE N.WYCKELSMA

After the cradle ceased rocking The new-born baby girl sleeps Unaware of all around her Picture of innocence

May she be spared human misery Depredations of wars May her true life's cradle Never throw her off balance Humiliate, hurt, or destroy her.

May she grow up to be strong Live a good and honest life Love and take care of those around her Who rocked her cradle When she was young ...





### RESEARCHER

#### JELLIE N.WYCKELSMA

In his laboratory it is where He thinks, sweats, toils, hopes and prays, Labouring on endlessly Twenty-four/seven ...

Where in the playing field of Beakers, flasks and tubes, He continues to Search, experiment, mix, and extract.

Where he bears a heavy responsibility, Needing to climb over a thousand granite rocks To reach the apex of science

Where with his fellow scientists he Communicates, debates, argues, and shares

While time runs on at a phenomenal speed, The world awaits for a magic formula; Guaranteeing a Covid-19 cure ...



# **CYBORG EARTH**

KAMAR SULTANA SHEIK

The Earth, surely, has an expiry date, Because the Sun that powers it, has one! Every star forms, to die, and from dead stars, rise up, planets, new. The law of the Universe: A cosmic cycle of birth, death and rebirth. Cries and screams are little help: Blaming, futile; All that can be done or is left to do, is: Plan As the ancients planned, Through continental drifts and Ice-Ages, When plastic was absent to take the blame or industrial emissions: Yet, there were catastrophes that the planet faced; Pity the dinosaur that became extinct, Yet, learn from the cockroach who survives the latest anti-roach sprays! So, if tomorrows look bleak, we still have our todays ... They say the last morsel tastes the most delicious... Let's ration the 'whatever-left' of Earth's goodness... And believe in the Great wheel of Evolution until the New Earth is reborn. I see, in the mind's eye, a maiden, painfully young, tender, Rising up from the carcass of the white-haired withered Earth dame.. If the Universe wants to preserve its planet, it will surely find a way. Earth has healed itself through eras ...trust it to heal, yet again.. Only, just, let's not fast-forward ourselves into extinction!



# HER SUPER HERO

#### KEERTHANA RAVIKUMAR

Huffing and puffing, Nervous and curious, Awaiting the arrival, Awaiting the celebration. He hears, It's a little baby girl ! The exclamation enthralls him And he tip toes next to the cradle dim He wonders if his hands are soft enough to bear her. He wonders if he is tidy enough to lift her. He feels divine next to his tiny little angel. He feels blessed by The God's. As the new untold chapter of his life unfolds.

Protective and responsible, Caring and affectionate, He is all equipped to be – Dauntless, Admirable And dutiful With eager ears, Awaiting to hear those three letters (DAD) He admires those supple little lips And listens to all, for parenting tips. As a toddler she grew, And he hid behind the pillow playing boo, A kid he transforms to, With her, always near his toe.



He gave her freedom He instilled confidence Neither did he pamper much, Nor did he tamper much, But a balance between the two And a woman she grew into, Always wanting his suggestions. He threw options, Letting his little baby girl decide, Leaving the world aside. Never did he demand Never did he over do. Thereby God blessed him with two.

Dedicated to all dads.



# THE FLOWERS IN THE PARKING SPACE

#### M. LAKSHMI SUPRIYA @ THESPEARHEADPOET (PEN NAME)

The flowers in the parking space bloom a little different today painting themselves in shades of love and harmony, sprouting from clouds of olive green bathing in the flood of golden yellow.

Some flowers emanate the sweet fragrance of reveries bathed in borrowed familiarities perfectly hidden in every bud infectious, upon opening to the first sunshine, drowning me in memories from past, well-disguised by the mysteries of the present while some, grace the sore sight with their unparalleled beauty of blooming, blossoming and withering in indescribable silence, profound.

The image, of these flowers specks of paint upon the canvas of my greying mind, a gyroscope a visual, a motion picture against the retinae of my eyes take me back along the vortex of time fifteen years back, to a place where my childhood bloomed with these flowers, all the same foraging freshly opened blooms to the deity, in prayers, whilst my grandma would reminisce incidents, instances of her yonder past about her childhood that bloomed with these flowers, all the same. I now take a break, from this momentary journey unspool my thoughts, from the tangles of time the grip on my past now slackened let it go, flutter somewhere safe to the vault of my memories only to be opened, reminisced find me in a time capsule, again the next time, with every bud that blooms in the same parking space, again.



# ADIEU

#### LATHA PREM SAKHYA

I was your blackbeauty When I was born, your family rejoiced I was brought up as a daughter Everyone petted me and pampered me I was the cynosure of everyone's eye When I grew up I gave you a calf.

There was great joy in the house Milk flowed from my udder Neighbours flocked for milk, pure. I was the star in your stable I too loved your family Especially you and your young son Who tended me so caringly.

But after gifting a second she-calf Somehow I remained weak and sick Every other day the vet visited me I was given medicine after medicine I knew deep inside, I wouldn't last long I hated the medicines you gave me And would sulk until the taste left my mouth You would pat and stroke me And talk to me, consoling me.



Today too fully dressed for your office You came to check on me and give my medicine. But I didn't sulk today, I started licking you-With my rough tongue I licked your hands Trying to convey my love for you To thank you for all the love and care You and your family showered on me Deep inside I knew when you return today. I won't be there in the stable awaiting you To stroke me and others and bid us goodnight.

I tottered toward my little one As my countdown began, I stroked her with my muzzle Even as my limbs slackened and I crumpled down. Little did she guess that I was bidding her farewell too, Adieu my dear ones, adieu, adieu, adieu.



### AN OATH FOR ENVIRONMENTAL CADENCE

#### LEENA RAJAN

Wonderful, we see some trees full of fruits, We pelt them, may not now but in childhood, Why so many stones to one with great merit? When there is no fruit, a tree is not at all hurt.

Pelting to get its fruits as food of goodness, Peart trees reward them amply remorseless, Putting up with awful hatred and harshness. Provision, despite pain, make trees virtuous.

Alas we brutally cut them for uses different, Acclimatization of globe though forewarned, Altogether an ambience so bad and intolerant, Accursed we are with our birth unaccounted.

Can't we take oaths for trees to be planted? Can we reinstate the cadence and sublimate? Candour pristine of Earth's grandeur exalted, Cutely gaining environmental upliftment.



### **EXPLORING SCIENCE IN SCHOOL DAYS**

#### ORBINDU GANGA

Mulling over many things Gave thoughts to wander, Growing days were filled with glee Dined with challenges. Experimenting with the things around Asking the pertinent for not knowing The thought to know made us grow... Thoughts made many Assumptions, to ponder, Conundrums were friends To lit the fire within us. Many times the answers Were so vague, not so good enough, The physics laboratory was Simple to see, only to be decoded, The pendulum has a sea, Mysteries surrounded in The chemistry laboratory, to find salt, Our sweats rained to be salted, Biology laboratory never had a thought To think, whispering the answers, Delving into genetics gave The clone was not merely an illusion, The substance of the thought Gave enough foundation To be locked To be unlocked. The science revered me The thought to think The thought to feel The thought to observe The thought to analyse The thought to understand The thought to conclude... The beauty of science Lives in me from my school days, I treasure them to rekindle The memories of my thoughts, I live with them To smile again.



# PEACE

#### S. PADMAPRIYA

True peace is not meditation, It does not lie in intimidation, True peace is finding a solution, Inspite of chaos!

The opposite of war is not always peace, War for sagacious righteousness, To uphold truth and justice, Is not vicious!

Peace is not abstinence from war, But right indulgence in it when needed, Peace is not keeping mute, But breaking wrong silence!

True peace is not always being popular, But doing and speaking what's right, Peace is not just in smiling, But in wiping others' tears, True peace is not in outer beauty, But giving shape to the inner duty, In contemplation and sacrifice!



# UNDYING

S. PADMAPRIYA

An undying spirit,

Which strives to attain merit,

The sense of duty and purpose,

The sensibility of a mission,

Intermingling with the depths of the soul,

A clear conscience,

Directing light on our path,

The Path,

The undying path of truth,

An undying voice,

An undying virtue,

An undying day,

A day of peace,

The undying spirit of righteousness.



# **BEAUTIFUL ART**

PADMAPRIYA KARTHIK

Can we paint the canvas of our heart? By splashing love on its every part?

Can we form well knit graceful circles And crayon cheerful smiles?

Can we trace the curve of mellow chirps with gentle strokes And fill with colours of love for their folks?



Can we sketch the outline of triumphant roars and rhythmic squeaks And paint with soft bristles of compassion?

Can we sway our fingertip and capture the vibrant green? Can we add the calm flow of turquoise blue inbetween?

Can we sprinkle love glitters on every design That exists in rhythm with universe And breathe life to the creator's creation?

For Love is a beautiful art When crafted, decorates humanity.

# THE BEAUTY OF LIFE

#### ROOPA SUBRAMANI

The beauty of life lies not in the slightest recognition of things that are naturally perfect and beautiful,

but in the grandest realization of things that are imperfectly fruitful,

The beauty of life lies not in the happiness of those that are easily discontented, but in the smiles of those that have gone through the worst and yet have gracefully surrendered,

The beauty of life lies not in the possibility of a comfortable living that this existence may provide, but in the harsh reality of the life circumstances in which each of us are hard pressed to abide,

The beauty of life lies not in the fleeting pleasures of this ever changing chameleon like mind, but in the everlasting peace inherent in every heart that one is urged from within to eventually find,

For ultimately,

The beauty of life lies not in the mere appreciation of the myriad things that we have been afforded so gracefully,

but in going beyond and seeking the very source of that beauty from where everything has it's unceasing flow quite so effortlessly,

And that, is the true beauty of life that begs to be seen and experienced in all her glorious divine majesty!!



### THE BEST

#### B. S. SAROJA

Night made heavy By non-stop rain Now skies are clearing Petals are opening Into the most secret corners Carrying no weight, very light Butterflies flew A day renewed! Past ceased to exist Tomorrow brings twist The present betwixt Is the very best!!





### LOVE

#### B. S. SAROJA

Love attracts love Love begets love Love becomes love

Only an innocent child Can show steady recognition Of uniqueness in others

Capacity to love has strong roots In the minds Of young children

Bliss can be felt When love is mutual And reflective

Where there is love There is no fear Selfless love has a Divine power within

The glow on the face Is the state of happiness In the mind As a result of such love.



# THE LIGHTS OF THE WORLD

#### SETALURI PADMAVATHI

Are you able to see the light? The light beneath your eyelids The dazzling sun rays amidst trees The motherland holding with care and spreading equally everywhere!

Are you able to see the light? The light through the window pane The dim light through thatched huts The homeless kids holding with love and teaching the value of darkness!

Are you able to see the light? The light from the darkened sky The light from the twinkling stars The mothers holding it with a wish and filling their babies' glittering eyes!

Are you able to see the light? The light from the gentle tidal waves The light from the moonlit bright sky The fishermen holding it for a cause and showing the sailors a right path!

Are you able to see the light? The light from an educated person The light from the core of his heart Rich not, poor not, the only human, he who spreads the light of wisdom anywhere!



### TO SLEEP; PERCHANCE TO....ZZZ

#### SHREYA SEVELAR

Into Hypnos' realm, I fell. Powerfully cast is his spell. Like a blanket from your first days "Forget all your woes..." he says.

You lay your head on a soft pillow And pull up the sheets kept below The peddler of dreams soon comes a-knocking. Before you know it, in your sleep you're talking!

You enter a world, beautiful and magical Where anything can happen, sane or fantastical. But sometimes, you simply rest-Those deep slumbers are just the best.

Then, your alarm goes off (One every five minutes, of course) Your nimble fingers are one of a kind, Pressing snooze, while still blind!

Finally, you decide To let your clock's sins slide. And so, you wake-Until noon break.





### GO AWAY...PLEASE...

#### K. SHRIJA

Corona, corona go away, To send you far is there any way? Am compelled to stay at home, Against my wish to roam.

No cycling, no swimming, No to grandma's home too... No vacation, no to park, No to Schools too....

How long can I watch TV? How long can I watch mobile? How long should I wait to chat with my friends? We're always muted during online classes.

Corona, can you hear me? Can you please go away As fast as you can And never ever return.





### NATURE... INTO ME...

#### SUDHA RAJENDRAN

When I've touched a tree, It talks 'forest' to me. When I've drenched in rain, It talks 'ocean' to me. When the rain has showered on me, It talks 'mountain' to me. When a bee has buzzed around me, It talks 'flower' to me. When I've crossed a pond, It talks 'cloud' to me. When a frog has croaked nearby, It talks 'nature' to me.

When I've seen the full moon in a pitch black night, a part of the bewildered forest, a part of the wild ocean, a part of the never ending mountains, a part of the lightning clouds, slowly started pouring through me And it rises up, up, up and up And reaches the moon And now the moon shines brightly ever before.



# **MUSICAL BRAIDING**

#### VIDYA SHANKAR

Sitting comfortably in my chair, so I may begin My *kutcheri*, I open out my plaited sheet music— Lustrous long tresses of *swaras* fall out, Ecstatic for the freedom And delighted about the welcome breath of fresh air Seeping in to cool the tightly bound roots.

I bask in similar relief too, though not for long; The strands are naughty, and knotty they get All too soon.

The freedom of luxuriation to last a while longer, I embark on an *aalapna*,

Carefully exploring the nuances

As I gently run my fingers through the cascading chords—

Specific movements of arohanam and avarohanam,

In tune with the shruti,

Progressing gradually to the kalpanaswaram,

Synchronising rhythmically with the *margam* of the comb.

An Aadi talam one day, a Misra Chapu another day, The expressions setting off a madhyama, a parting, All the way across from the forehead, Missing not a note.

Then, I gather the lilting swaras to compose the *krithi*— *Pallavi, anupallavi,* and *charanam*— Overlapping one over the other, over and over, The three in symmetry, Till all of my long, thick hair is neatly braided. And though I am breathless with the effort, I still am not done till I secure the end with a coloured band— A *mangalam*, And an invocation of gratitude For thick long tresses, which, though a struggle to keep, The lustrous melody in harmony is a *mudra*, An appreciation of my being.

#### Footnotes:

kutcheri: a Carnatic music concert

*swaras*: the seven notes or successive musical pitches in Carnatic music *aalapna*: is the melodic improvisation of a raga, or traditional pattern of notes, in Carnatic music

arohanam and avarohanam: They denote the sequence of notes in a raga. Arohanam is the ascending scale of notes and Avarohanam is the descending scale of notes.

*shruti*: is the smallest interval of pitch that a singer or musical instrument can produce *kalpanaswaram*: the rhythmic pattern of developing the swarams done extempore . *margam*: path

Aadi talam, Misra Chapu: names of talams. A talam is a measure of musical time, like meter is to poetry

*madhyama*: the fourth musical note, also indicating the middle

krithi: a musical composition

Pallavi, Anupallavi, and Charanam: sections of a krithi. Pallavi is the thematic line of a krithi, anupallavi is the second section, and charanam is the third or concluding part of a krithi. mangalam: a song of salutation that is usually sung at the end of a Carnatic music concert mudra: (in Carnatic music) the signature used by a composer





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