

Quest

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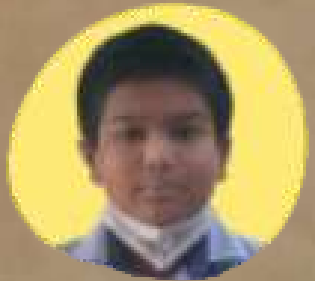
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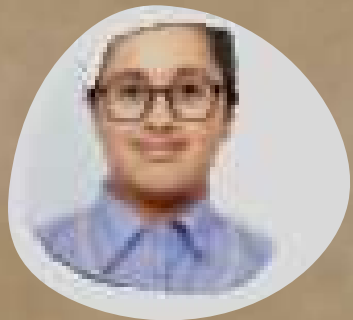
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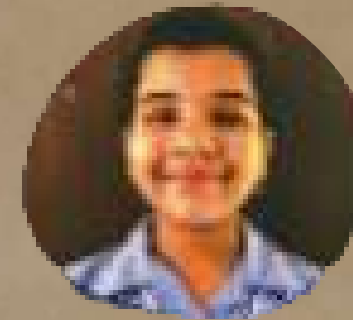
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FROM THE EDITOR'S DESK...

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Quest is an engaging platform for students to express their scientific and mathematical creativity through cartoons, art forms, creative writing, research articles, analysis, paintings, drawings and other forms relative to General Science and Mathematics.

All the students of classes P4- SS2 are encouraged to bring forth their scientific temperament in any representation of writings, videos, photography or art forms.

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National Milk Day

What is National Milk day?

National milk day is a day celebrated on the birth anniversary of Dr. Verghese Kurien in order to honour him for his contribution in the white revolution of India.

The White revolution Of India

White revolution India is referred to as the industrialisation of the Indian milk agencies therefore forming the brand named as AMUL (full form: - Anand Milk United Limited).

How he contributed in white revolution

He had a major role in the white revolution in India. He, Dr. Verghese Kurien, invested a capital of about Rs. 1700 crores in 25 years in an operation called the 'OPERATION FLOOD'. He risked his money in a poor country like India for its milk production which later on had fruitful results. He helped raise India's production to Rs. 55,000 Crores in the International market. It, at that time, remained the output ratio unmatched.

What was the 'OPERATION FLOOD'?

Operation flood was an operation designed by Dr. Verghese Kurien. It transformed India, which was a milk deficient nation at that time to the world's largest exporter of milk. Operation Flood had three main phases: -

Phase I: -

In the phase 1 of it, the main objectives were: -

- a) Making & developing dairies in both the Urban and rural areas in order to increase both production and profit
- b) Make more producers of milk join and increase their share

Phase II: -

In phase II of operation flood, the main objectives were to: -

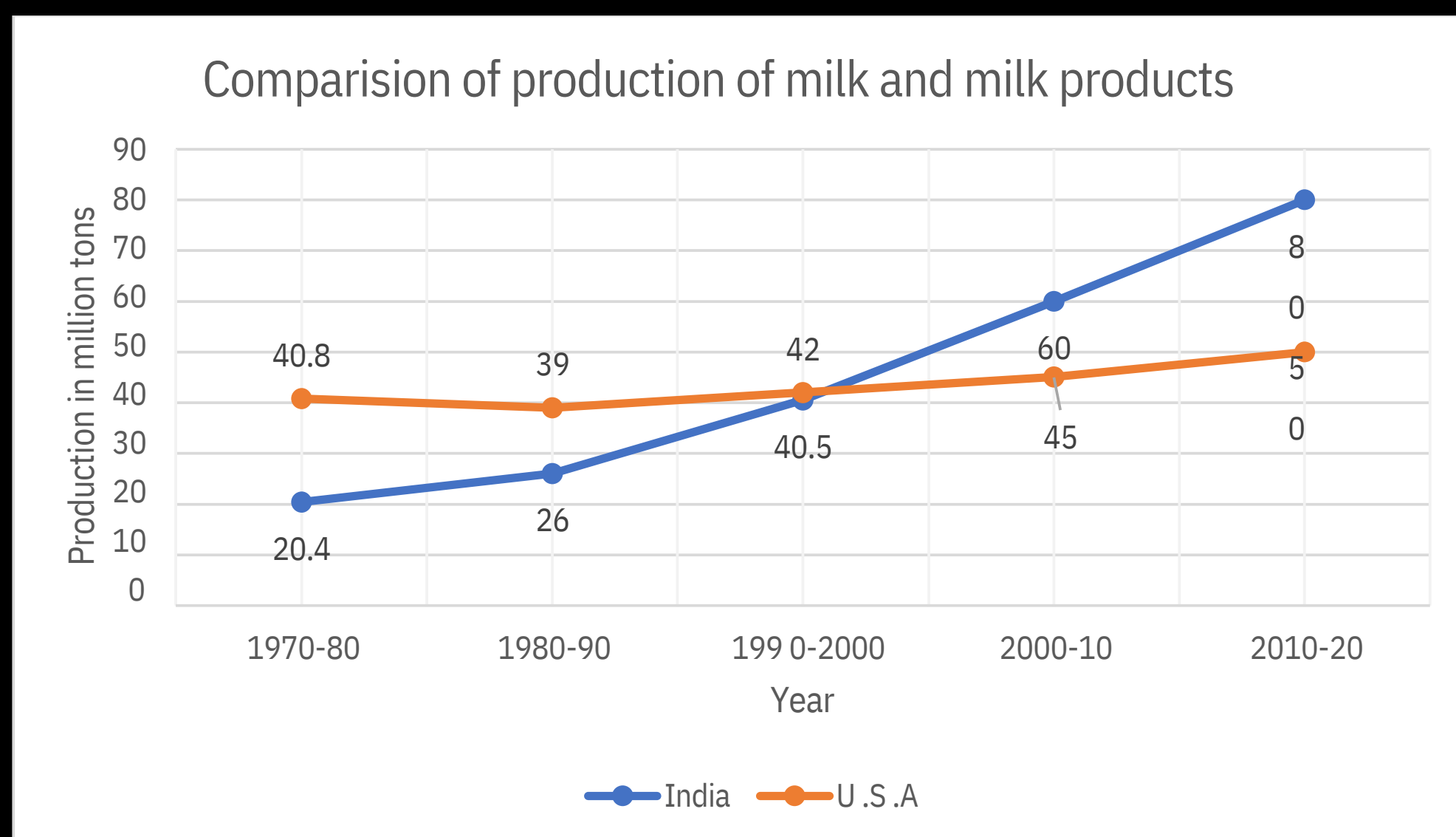
- a) Increase the number of milk sheds and the area covered.
- b) Make the system of milk production sustainable and self – dependant at a low cost with low technology.

Phase III: -

Phase III involved the following objectives: -

- a) Increase the market area covered
- b) Switch from low tech machines to high tech machines
- c) Increase the range of products from just milk & milk powder to other things
- d) Use scientific knowledge to take care of the livestock

The production of milk & milk products in India compared to U.S.A



Made By: -
Aarav Gupta
M3-B

NATIONAL MILK DAY

Dr. Verghese Kurien
~ Father of White Revolution



Who is he?

Dr. Verghese Kurien was the Founder Chairman of National Dairy Development Board from 1965 to 1998. He is the architect of India's White Revolution, which helped India emerge as the largest milk producer in the world.

OPERATION FLOOD

He is the architect of India's White Revolution, which helped India emerge as the largest milk producer in the world. In the late 60s Dr. Kurien drew up a project called Operation Flood. Through an investment of Rs. 1700 crores spread across 25 years, Operation Flood helped to raise India's milk production in value terms to Rs. 55000 crores per annum an output ratio unmatched by any other development programme in the world. Operation Flood has emerged as India's largest rural employment programme and unleashed the larger dimension of dairy development institutional, techno-economic, industrial and social



AMUL

During his time in Anand, Gujarat, Dr. Kurien was asked by Tribhuvandas Patel to assist with the inexperienced operations of the Kaira District Cooperative Milk Producers' Union Limited. This marked a turning point for Kurien, as he helped transform the industry and the lives of India's farmers. Patel's purchase of new machinery increased the cooperative's production capacity from 200 litres in 1948 to 20,000 litres in 1952, leading to the growth of the Anand model of cooperation. Thus, AMUL or Anand Milk Union Limited was formed.

ACHIEVEMENTS

Dr. Verghese Kurien won many accolades and awards including the Ramon Magsasay Award for Community Leadership, Padma Shri, Padma Bhushan, Krishi Ratna Award, Wateler Peace Prize Award of Carnegie Foundation, World Food Prize Laureate, International Person of the Year by the World Dairy Expo, Madison, Wisconsin, USA and the Padma Vibushan.



SAD DEMISE

After a lifetime of struggle and conviction towards serving the nation Dr. Verghese Kurien breathe his last on 9 September 2012 due to brief illness at Anand. Dr. Verghese Kurien will always be remembered as the person who redefined the meaning of milk as a powerful tool for economic development. He will always be fondly called the "Milkman of India"



-AADYA SRIVASTAVA, S1-D

Introduction to Combustion

Combustion is a chemical reaction between a fuel and an oxidant that produces heat and light. It is a fundamental process in many industrial and natural systems, from engines and power plants to wildfires and the human body.

Key Concepts

- Combustion involves the transfer of energy from chemical bonds to thermal energy and light.
- The chemical reaction of combustion requires three key components: fuel, oxidizer, and heat.
- The products of combustion can include carbon dioxide, water vapor, nitrogen oxides, and particulate matter, which can have significant environmental impacts.

Applications of Combustion

Combustion is a fundamental process that has a wide range of applications in various industries. Some of the key applications of combustion are:

- **Transportation:** Combustion engines are used in cars, trucks, and airplanes for propulsion. The efficiency and emissions of these engines have been a focus of research and development in recent years.
 - **Power Generation:** Combustion is used to generate electricity in power plants. Fossil fuels such as coal, natural gas, and oil are commonly used as fuel sources, but renewable sources such as biomass and waste can also be used.
 - **Industrial Processes:** Combustion is used in various industrial processes such as metal smelting, glass manufacturing, and cement production. The high temperatures generated by combustion are necessary for these processes to occur.
- Heating and Cooking:** Combustion is used for heating and cooking in residential and commercial buildings. Natural gas, propane, and oil are common fuel sources for furnaces, water heaters, and stoves.

Chemistry of Combustion



Chemical Reaction

Combustion is a chemical reaction that occurs between a fuel and an oxidizer, resulting in the release of energy in the form of heat and light. The most common fuel is hydrocarbons, which are molecules made up of hydrogen and carbon atoms. The oxidizer is usually oxygen from the air.



Stoichiometry

The stoichiometry of the combustion reaction depends on the fuel and oxidizer used. For example, the stoichiometry of the combustion of methane (CH₄) with oxygen (O₂) is:



This means that for every molecule of methane, two molecules of oxygen are required to produce one molecule of carbon dioxide and two molecules of water.

Flame Structure and Stability

The structure of a flame is determined by the chemical reactions that occur during combustion. Flames can be classified based on their shape, color, and temperature.

Flame Structure

A flame consists of three main regions: the preheat zone, the reaction zone, and the post-flame zone. The preheat zone is where the fuel and oxidizer mix and begin to heat up. The reaction zone is where the actual combustion occurs, and the post-flame zone is where the products of combustion cool down and mix with the surrounding air.

Flame Stability

Flame stability is important for efficient combustion and preventing flame extinction. Flames can become unstable due to factors such as fuel/air ratio, turbulence, and flame stretch. Flame stabilization methods include using a pilot flame, swirl, and bluff-body stabilization.

Flame Speed and Temperature



Flame Speed

The speed of a flame is determined by the rate at which the reactants are consumed and the products are formed. This is influenced by factors such as the fuel type, the concentration of the fuel and oxidizer, and the temperature and pressure of the system.



Flame Temperature

The temperature of a flame is determined by the chemical reaction that is occurring. In general, hotter flames are produced by reactions that release more energy per unit mass of fuel. The temperature of a flame can be measured using techniques such as thermocouples or optical pyrometry.

Pollution and Emissions

Combustion processes are responsible for a significant portion of the world's air pollution and greenhouse gas emissions. The pollutants generated during combustion include carbon dioxide, carbon monoxide, nitrogen oxides, sulfur dioxide, and particulate matter.

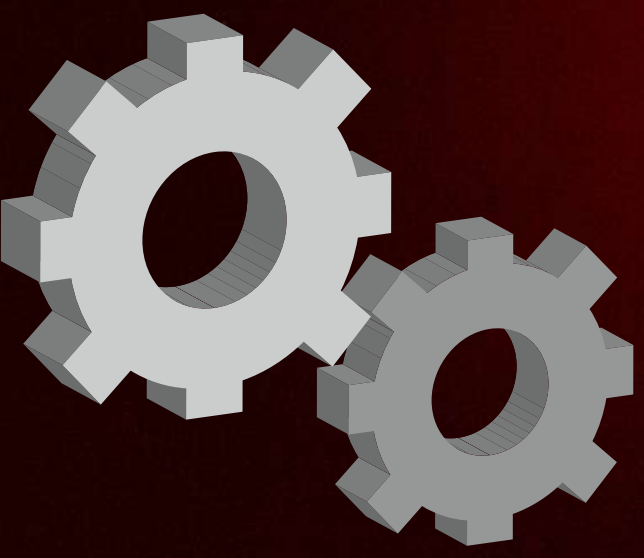
Carbon Dioxide Emissions

Carbon dioxide is a major contributor to global warming and climate change. Combustion of fossil fuels such as coal, oil, and gas releases large amounts of carbon dioxide into the atmosphere, which traps heat and causes the earth's temperature to rise.

Particulate Matter Emissions

Particulate matter is made up of tiny particles that can be inhaled and cause respiratory problems. Combustion processes such as burning of fossil fuels, biomass, and waste generate particulate matter, which can also contribute to haze and reduce visibility.

by Abhishek Rawat



THE GEARS OF A TRANQUIL DESTINY



We have come so far in evolution,
With years of science at our beck and call.
But if it's a means of execution,
Will it not bring about mankind's downfall?
Atomic energy is just a bane,
As well as genetic engineering.
If people burn and pass away in vain,
And if heinous bio-weapons it brings.
Technology and science can be tools,
To a brighter and tranquil destiny.
For this we have to abide by some rules,
Without ethics, science must not roam free.
When all mysteries of science are known,
And all the discoveries have been made.
Peace will still sing to us in a sweet tone,
And remnants of barbaric science will fade.

- Shreyas Mishra

M3 - B

The background features a warm, bokeh-style light effect with soft, out-of-focus circles in shades of yellow and orange. At the top, a string of small white lights is visible. Several decorative lanterns and lit candles are scattered across the scene. The lanterns are orange with vertical lines and have colorful tassels. The candles are in small, ornate holders with a flame. The overall mood is cozy and hopeful.

The Glow Of Hope

Living in these dark and nightmarish times,
We can get stranded in an endless night.
But friend! Out of darkness hope and light chimes.
And a brighter future comes in our sight.

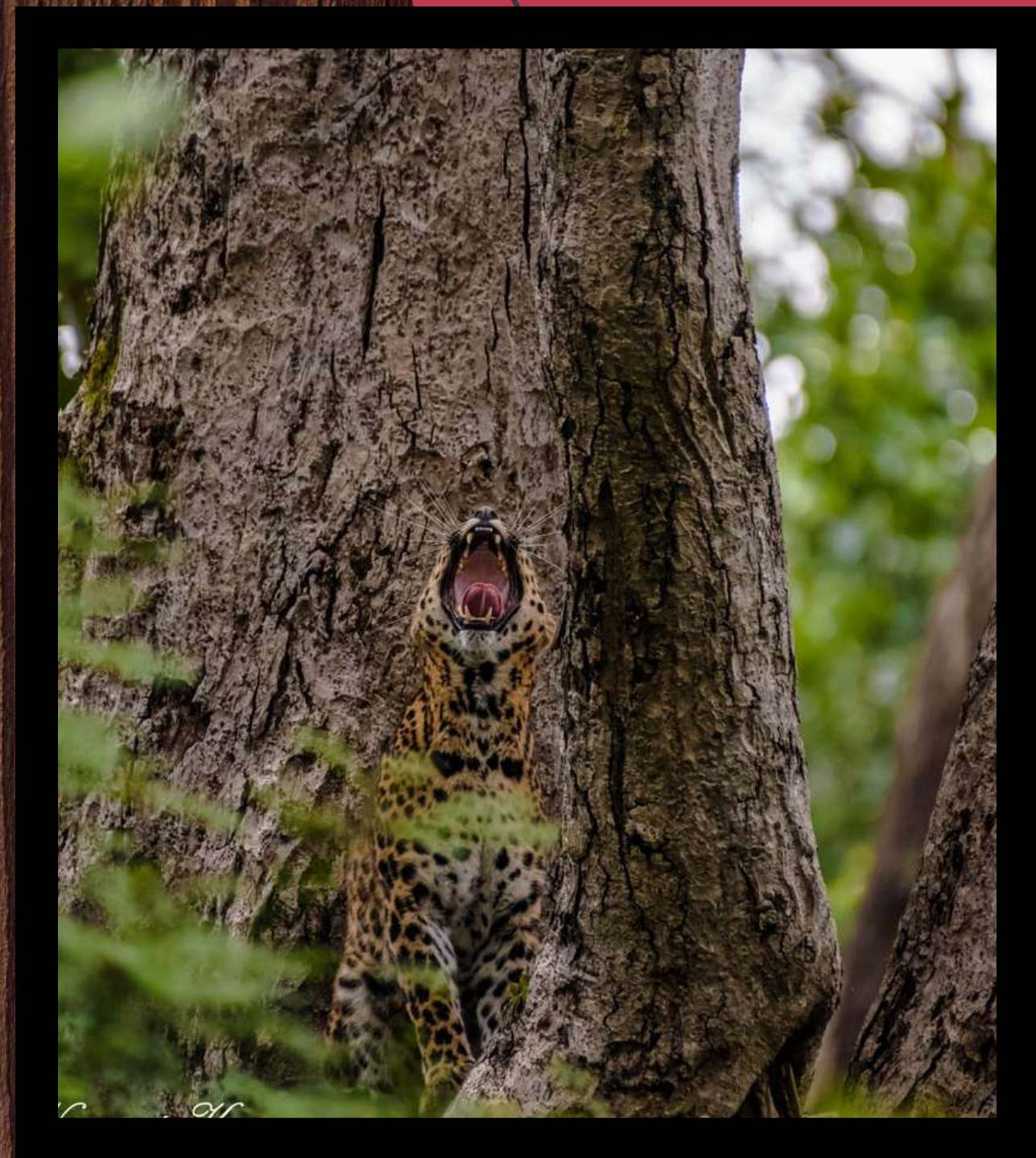
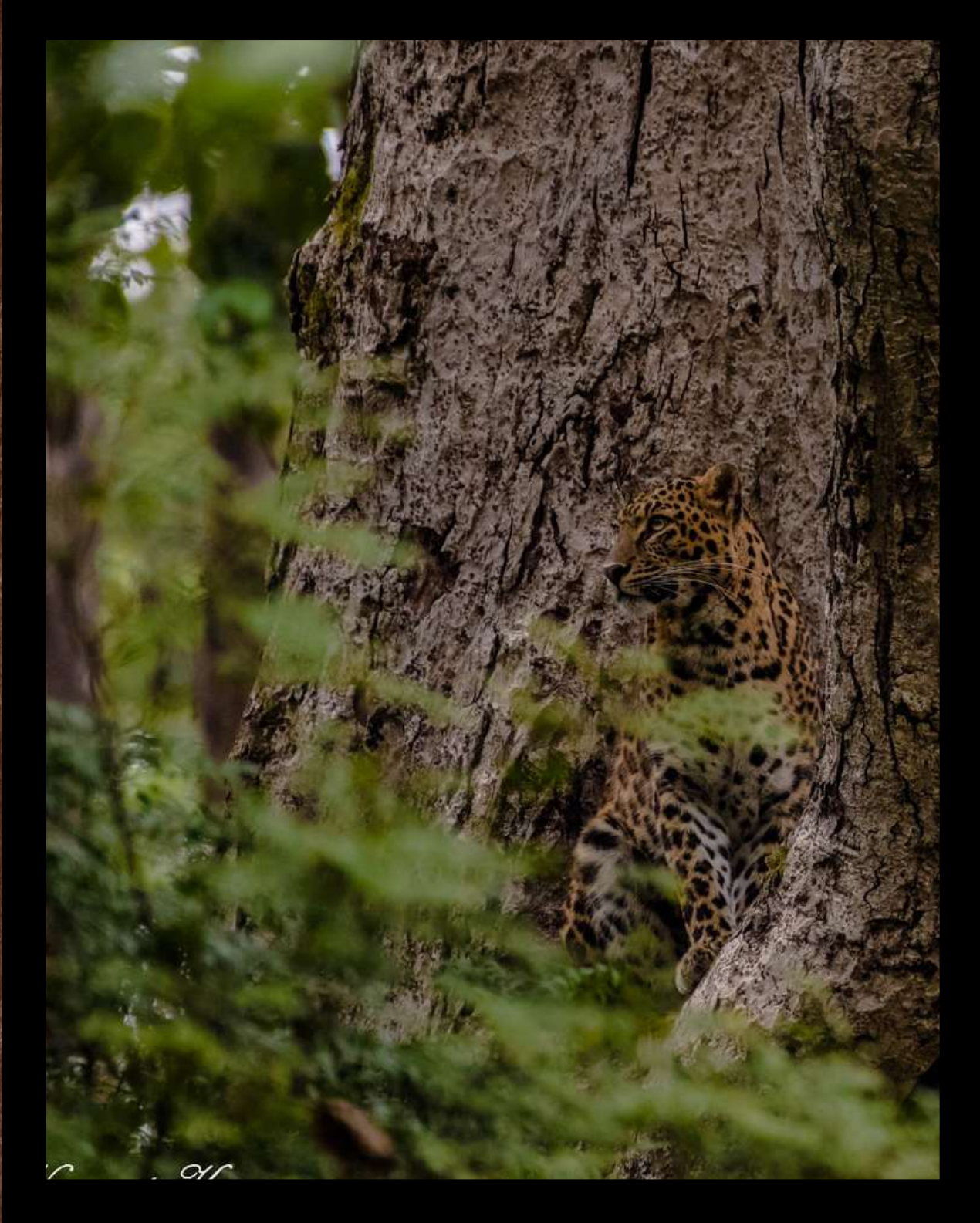
Let light pierce through the web of pessimism,
It will fill us with eternal belief.
We all only aspire for optimism,
To give us power to survive this grief.

And now sitting by the nourishing flame,
Miles and miles of candles - a splendid view.
Other gloomy ages we overcame,
And through this one we will still continue.

- Shreyas Mishra

Anishka Mishra (Graphic designing)

PHOTOGRAPHY



Your paragraph text



by Navneet Kumar S1C



by Navneet Kumar SIC



By Arunav Prashant M2B

Art gallery



Thank you