

## Progress or Peril?

*Amritanshu Prasad*

*(Email: [prasad.amritanshu@gmail.com](mailto:prasad.amritanshu@gmail.com))*

Pollution is the dreaded word today as it poses problems of all kinds to the living species. Since human beings are the only ones who can think and do something to stop or mitigate the anathema of pollution- they should simply go ahead and do it. Or else all the air, water, land and atmosphere will get contaminated beyond redemption and repair.

Human avarice circumvents all rules, laws and goes on plundering forests and gifts of nature in the name of creating progress. The situation, therefore, is grim and warrants immediate attention of planners and policy makers to correct the trend. The Pollution peril in the country and Delhi region in particular is acquiring a hazardous and ominous stance year after year. Pollution, like the hydra headed monster, raises its head despite all stratagems and machinery used by Administration to uproot the devil. But the never- say- die monster refuses to budge and continues to spread its calamitous canopy of smog in all cities.

All attempts- whether scientific, legal, sociological, administrative even religious have been rendered infructuous by the undeterred brute. The dust spewing and water sucking villain continues to grow at a nerve wrecking pace and makes a mockery of all efforts including traffic combinations, air purifying innovations and masks. The obnoxious demon continues to envelop cities after cities regurgitating dust, soot and smoke, making a sorry spectacle of the battling Government and vulnerable human folk, inflicting a big question mark on their very existence.

### The Pollution Juggernaut in India

According to a WHO survey of 1650 world cities, Delhi is one of the worst affected major city in the world. Air Pollution in India is estimated to kill about 2.5 million people every year and it is the fifth largest killer in India. India has the world's highest death rate from chronic respiratory disease and asthma, as per WHO. In Delhi, poor quality air irreversibly damages the lungs of 2.2 million or 50 percent of all children.

Air Quality Index of Delhi is generally Moderate (101-200) level between January to September, and then it drastically deteriorates to Very Poor (301-400), Severe (401-500) or Hazardous (500+) levels. During October to December, however, due to various factors including stubble burning, road dust, vehicle pollution and cold weather the air pollution spikes far beyond acceptable levels. Levels of PM 2.5 and PM 10 particulate matter recently hit 999 micrograms per cubic meter, while the safe limits for those pollutants are 60 and 100 respectively. Delhi's air is twice as bad as Beijing's air. As of October 2017, experts in several monitoring stations have reportedly measured an air quality index (AQI) of 999. According to said experts this is the equivalent of smoking 45 to 50 cigarettes a day.

The Pollution story remains almost same in most of the Indian cities which boast of progress, urbanization and development.

### Causes of Pollution

Air pollution can be attributed mainly to motor vehicle emissions, noxious emissions from chimneys of factories, thermal power plants, wood-burning fires, fires on agricultural

land, exhaust from diesel generators, dust from construction sites, burning garbage and illegal industrial activities. Agricultural stubble burning is a new emerging factor contributing significantly to Delhi region's air pollution.

Water pollution is an equally, if not more, appalling problem being faced by all societies and India in particular. Water is an easy solvent, enabling most pollutants to dissolve in it easily and contaminate it. Several people die each day due to consumption of polluted and infected water.

### **Serious Effects of Pollution**

Needless to mention that the hazards of pollution being created in the name of progress must be checked. Or else we are simply inviting Environment Degradation, damage to human health, global warming, Ozone Layer Depletion, and making lands infertile. Pollution not only affects humans by destroying their respiratory, cardiovascular and neurological systems; it also affects the nature, plants, fruits, vegetables, rivers, ponds, forests and animals on which they are highly dependent for survival.

It is crucial to control pollution as nature, wildlife and human life are precious gifts to mankind. It is imperative for the people and the Government to focus on the Pollution issue or else it will prove to be disastrous for mankind.

Tom Lehrer, the noted American musician, singer-songwriter, satirist wrote way back in the early 80s

***"Pollution, pollution!  
You can use the latest toothpaste,  
And then rinse your mouth  
With industrial waste.  
Just go out for a breath of air  
And you will be ready for Medicare.  
The city streets are quite a thrill-  
If the hoods don't get you, the monoxide will.  
Pollution, pollution!  
Wear a gas mask and a veil.  
Then you can breathe,  
Long as you don't inhale."***

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## Prospects of Gold Mining in Jharkhand



**R. K. Singh, AISM**  
(Ex- Director of Mines, Bihar Undivided)

The recoverable reserves of gold metal have been estimated as 68 tonnes in India. They are located in states of Karnataka, Andhra Pradesh, Chhatisgarh, Kerala, Jharkhand, Bihar and Rajasthan. Only about 0.5% of total consumption of our country is produced in India. Mainly following countries produced gold during 2018:-

	Countries	Production (In Tonnes)
1.	China	440
2.	Australia	300
3.	Russia	255
4.	USA	243
5.	Canada	180
6.	Peru	155
7.	South Africa	143
8.	Brazil	85
9.	Indonesia	80
10.	Ghana	80

India Produced only 1.36 tonnes of gold during 2018 from its two mines in Karnataka and one in Jharkhand. Karnataka is the largest producer in India. Production of gold during the last five years has been reported as follows :-

Year	Production in India
2014-15	1440 Kg
2015-16	1320 Kg
2016-17	1600 Kg
2017-18	1650 Kg
2018-19	1360 Kg

Jharkhand has good prospects of mining gold in future as it has good deposits in Singhbhum (East and West). Apart from these Ranchi, Gumla and Garhwa districts have small deposits of gold ore. The details are as follows :-

### SHINGHBHUM (EAST & WEST) Saraikela Kharsawan

I. Kunder Kucha – 22° 28' : 86° 15'

Gold occurs in white Quartzite and blue Quartz associated with phyllites six gold reefs of 0.7" - 1" thicken have been identified by GSI and MECL. They have with gold content of 13.11 gm per tonne of ore.

- II. Lava – 23° : 86°15’  
Gold occurs in 1 m quartz vein associated with quartzite and phyllites. Reserve and grade has not been estimated as yet.
- III. MANOHARPUR - 22° 22’ : 85° 12’  
Placer Gold occurs near Manoharpur Rly Station and Ankua hill. Reserve and grade has not been estimated as yet
- IV. SONUA :-  
Gold occurs is JANTE villages in quartz vein. Panning activity goes on in rainy season by local villagers.
- V. ICHAGARH :- 23° 2’ : 85° 51’  
Local villagers do panning in rainy season and recover visible parties of gold.
- VI. MAYSERA - 23° 2’ : 85° 51’  
Gold vein is associated with galena and chalcopyrite, old workings have been found.
- VII. RUDIA :-  
Gold occurs in quartz vein. old working (open and underground) have been found. GSI has done drilling at 45° slope in Rudia Village. Illegal excavation and panning have been reported at large scale in this locality.
- VIII. PAHARDIHA - 22° 30’ : 85° 12’  
No work has been done by any central agency or state Government.
- IX. BHITARDARI - 22° 42’ : 86° 12’  
Minor references have been respected. No agency of state or Central Government has done any work and no estimate has been done.
- X. SAUSAL - 22° 37’ : 85° 17’  
Gold occurs in Phyllites. No work has been done and no estimate of reserve has been done.
- XI. DIGARSAIN - 22° 35’ : 86° 15’  
No work has been done to estimate the reserve of gold ore.
- XII. BHURUDIHA - 23° 02’ : 85° 5’  
No work has been done and therefore no estimate done by any Agency.
- XIII. Besides the above gold occurs in Mosabani and Rakha copper belt with chalcopyrite lode. This gold is recovered from the slimes of copper concentrate by HCL (Hindustan Copper Ltd.), a Govt. of India undertaking, at its copper smelting plant, Ghatsila (Mahubhandar) in East Singhbhum District. Small quality of gold is also produced at this smelting plant from the slimes of Khetri Copper Concentrate of Rajasthan.
- I. **RANCHI:** River Bed of Subarnrekha contains gold particles which are recovered by panning by inhabitants of local villages. But it has not established by any agency as which areas contribute to this river most.
- II. **TAMAR (Habai Kundi) :** Prospecting work has been done by GSI and estimate of reserve has been done. The average gold contents is 4 PPM in Quartz Veins from

100 m = 200m over a length of about four kilometres spreading in East – West direction. Local Villagers dig at a number of places and recover gold by panning.

**III. SIMDEGA: Kurdeg :** Good mineralization has been found on the Bank of SONAJOR NALA in kurdeg Area near ASON BERA and BANDAN TOLI VILLAGES. No estimate has been done by any agency so far.

**IV. GARHWA :** Good mineralisation is expected in the area but no agency of state or centre has done any work in the district. At present geological survey of India (GSI) is doing prospecting work by drilling in Chandil area of Saraikela Kharsawan district for proving and estimating reserves of gold ore. It has already completed its work in TAMAR area of Ranchi district.

### Demand and Consumption

Since antiquity gold has been valued as the most valuable metal by mankind for ornaments and coins. India is by far the largest consumer of gold accounting for about 900 tonnes annually followed by USA. Major share of this gold comes from abroad as import. India is the largest importer of gold in the world, amounting to about 800 tonnes annually. Ornaments & jewellery consume the highest percentage followed by electronics, coins, etc. Nowadays Gold is regarded as an important investment.

### Conclusion

From the above it will appear that Jharkhand state has scattered deposits of gold ore which have not been properly prospected so far. Geological survey of India (G.S.I) has been doing this work on a very small scale with skeleton manpower since long. The Department of MINES and Geology of this state earns huge amount of revenue every year from its minerals like Coal, Iron ore, Copper ore, Limestone, Bauxite, Kyanite, etc. I feel that this Department needs proper organisation by strengthening the Directorate of Geology with qualified geologists who can be entrusted with the works of prospecting and complete the estimation of reserve of gold ore in the state. A reasonable percentage of revenue earned by the state from its minerals needs to be allocated for this work.

The areas which are likely to have deposits of gold should be developed with pucca roads & extension of electricity so that prospecting and mining work can be done on priority basis. Private Entrepreneurs of our country and abroad should be invited to open and operate mines of gold ore as underground mining and beneficiation need heavy investment.



Koel River, Saranda (Photo by Jitesh Pandey)

## Tooth loss and its consequences

*Dr Ankur Kumar Sriwastwa, MDS  
(Endodontics and aesthetic dentistry)*

*Dr Ankita Sriwastwa, MDS  
(Paediatric and preventive dentistry)*

**“IF I HAD A SET OF TEETH I WOULDN’T EVEN BOTHER TALKING, I ‘D SMILE, UNTIL I DIE.”**

Teeth are extremely important when eating. They make us look better, help in articulation, besides manifesting into a healthy beautiful smile. One must manage a healthy dentition irrespective of age with the help of expert dental care and some personal attention.

Tooth loss is a common problem that not only has physical but also social and psychological consequences. The myth that people loose teeth with age, though, still predominates our behaviour.

**Causes:** Tooth loss can happen for several reasons. A good understanding of such causes can help us prevent it to a large extent.

- Poor eating habits
- Poor oral hygiene
- Harmful behaviours - Grinding teeth ([bruxism](#)), drinking excessive amounts of [aerated drinks](#), smoking, chewing ice, and opening things with your teeth
- Accidents
- Certain medical conditions – Diabetes, Thyroid disorders, Vitamin Deficiencies  
These conditions damage the supporting structure like bones and gums causing loss of teeth.

### Consequences of losing teeth:

When one or more teeth are missing and are left as such untreated, the adjacent teeth gradually shift in an attempt to close the gap. These natural movements trigger a chain reaction of consequent unfavourable changes. The shifting teeth create new spaces between other teeth where food gets trapped making it susceptible to penetration by cavity-causing bacteria and gum disease. This, over a long period can lead to bone loss.

What’s more, the tooth in the opposing jaw starts to separate from its socket in an attempt to search for its former point of contact. The gum around this tooth recedes, causing sensitivity due to exposure of part of the root. It also leads to loss of sturdiness in the tooth. This ends in lack of confidence while chewing anything even moderately hard. Chewing with fewer teeth increases the workload of the remaining teeth and can lead to their premature wear and weakening.

Our natural dentition causes uniform stresses on bone leading to constant bone remodelling. The loss of teeth leads to loss of this stimulation thereby causing loss of bone structure. This leads to thinning of the jaw bone making it more vulnerable to fracture.

The loss of bone support also results in sagging of facial skin giving the person an aged appearance. The changes due to missing teeth disturb the equilibrium of our oral cavity causing adverse effects like TMJ (temporo-mandibular joint) pains that can further lead to neck pains and headaches, mimicking spondylitis.

Loss of teeth causes a major impact on person’s speech, reducing the clarity of words, which reflects on self-confidence. There is an overall decrease in the ability to chew due to missing teeth leading to poor digestion, compromised nutrition and poor general health.

Despite the enormous adverse effects of tooth loss, many people choose not to replace their missing teeth, mostly because even with a fewer teeth “it works”, ultimately facing ire of neglect and the problems, discussed above.

Modern dentistry has more efficient solutions to ailing teeth or loss of dentition unlike older times. Prosthetics have become a common intervention affecting both the appearance as well as function. This isn’t the time to compromise on what one can eat and relish or look old just because one has lost one’s teeth. It’s time, instead, to take advantage of the modern advances in dentistry and enjoy life... eating, smiling and staying healthy.

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DR. ANKUR KUMAR SRIWASTWA

BDS , MDS (ENDODONTIST & AESTHETIC DENTIST) -BANGALORE

DR. ANKITA SRIWASTWA

BDS - MANIPAL, MDS (PAEDIATRIC DENTISTRY) – PUNE

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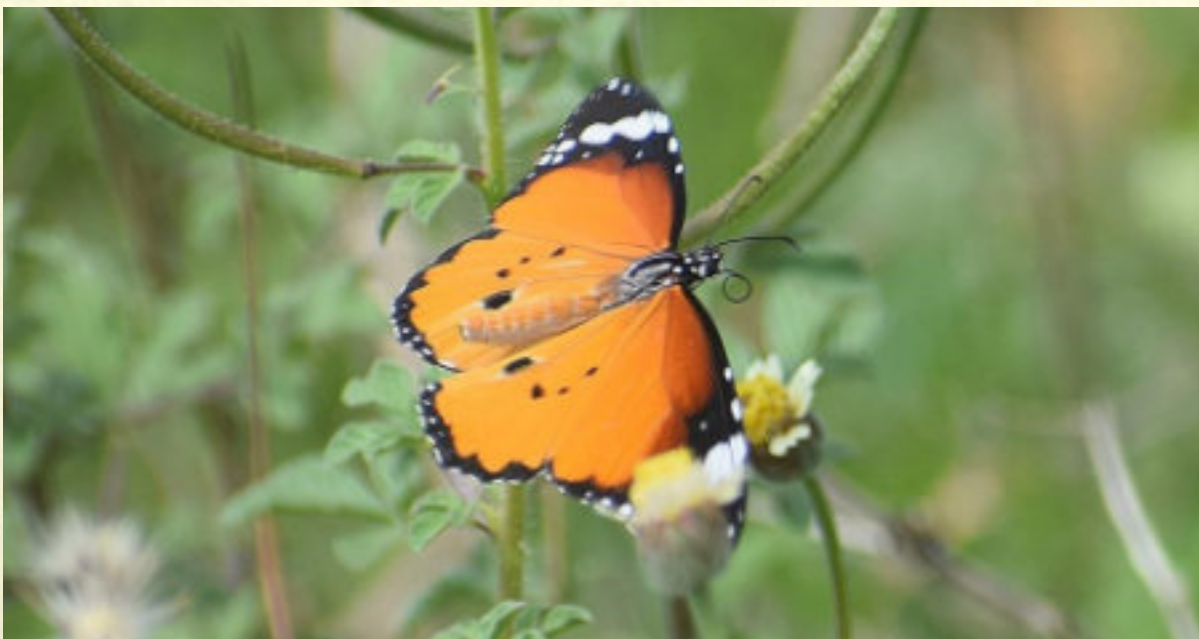
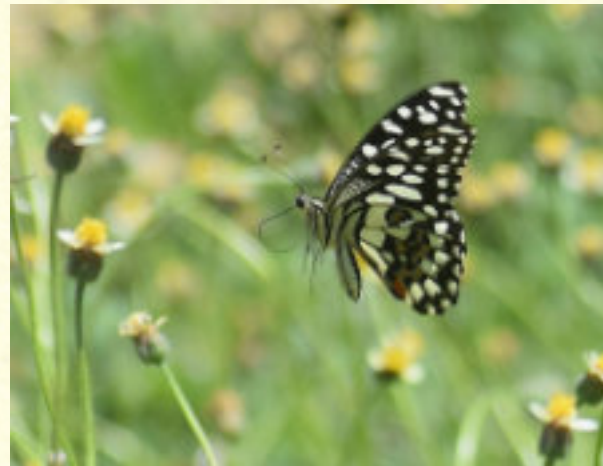
## My Tryst with Butterflies

*Akhilesh Sahay*  
([aksahay1@yahoo.co.in](mailto:aksahay1@yahoo.co.in))

I have been doing wildlife photography, mainly bird photography for more than thirty years. Of late I have done some butterfly photography. I found that action photography is fascinating but very challenging. My observation about the individual behaviour helped. I adopted certain strategies.

Firstly, I selected only five species because their flight behaviour has a definite pattern and focussing becomes easy. Secondly, I kept zoom to less than 200 mm because in higher zoom range my lens struggled for sharpness. Thirdly, I focussed more on females not because my heart lies there but because they move about in a limited area whereas males go from one female to the other and getting close to them is tough.

I am attaching some images.





## Standing with People: Saranda Division during the Corona Pandemic

*Rajnish Kumar I.F.S*  
(D.F.O. Saranda)

The Corona Pandemic has been an unprecedented global crisis that has changed our world and affected lives and livelihoods in every corner of the globe, right from mega-cities to isolated forest communities. Saranda – the land of 700 hills – has not been untouched by this pandemic either. However, amidst the crisis Saranda Forest Division has risen up to the occasion and taken a lead in combating this crisis. Let me recount how it all began.

In the early days of March, our division had organized a training workshop for the Forest Committees working in Saranda at the Forest Guard Training School, Chaibasa. The workshop was focused on ethnobotany and medicinal plants and their effective sustainable utilization. One of the most important trainers in this workshop was a veteran Ayurvedacharya Shri Madhusudan Mishra of Muri. It was during the course of this workshop that the nationwide lockdown was suddenly imposed and official communications ordered us to cancel all training classes in accordance with the newly released lockdown guidelines. This got us thinking on the nature of the virus and the official announcements detailing how the immune system had a key role to play in determining how susceptible a person would be to this virus and how severely would it effect those infected by it. The discussions that followed on this aspect of CoVid-19 gave us an idea on working towards creating an immunity boosting herbal Ayurvedic tonic utilizing the vast variety of medicinal plants that the lush forests of Saranda are home to. Based on discussions with Madhusudan ji, we prepared a list of medicinal plants that were either easily available in our division's forests or in the town and village markets of our area. A total of 11 ingredients which included a mix of commonly available spices and herbs such as turmeric, ginger, cloves, black pepper as well as forest products such as Arjun tree bark, Guava leaves, giloy leaves, etc. were finalized and an immunity boosting tonic was prepared. We christened it 'Saranda Kaadha'.

Soon the news spread that the Forest Department has prepared such a health drink and the demand for it rose, especially in Chaibasa. Keeping with the demand, we decided that this was the right opportunity to associate various forest communities of our forest division in this endeavor through the respective village forest committees. The most important forest committee in this regard was that of the Karampada village located deep in the forests of Saranda. The village had a Medicinal Plant Collection Center that had been inaugurated in 2018 and this was the right time to harness its potential. The Forest Committee of Karampada and other villages were mobilized to collect the forest products required for the tonic to meet the demand and they were compensated as per the rules prescribed in the Biological Diversity Act, 2002. This entire endeavor helped the forest department forge new strong bonds with the local communities in an area that has witnessed peak of naxalism.

Meanwhile as the demand for the tonic steadily rose throughout April, we decided that in the true spirit of public welfare, we must make the ingredients and the recipe for the tonic public knowledge. Once this was achieved, we are simultaneously assisting the Karampada

Forest Committee in signing memorandum of understanding with various private firms for collection of herbs and preparation of drink, so that the monetary benefits of the Saranda Kaadha must truly go to the people of Saranda's forests. This further strengthened our bonds with the forest communities. At the same time, it is a blueprint for any future commercial utilization of forest produce, both in Saranda and elsewhere, where the first beneficiaries, both in terms of income and livelihood generation, of any such exercise are the local communities.

The CoVid-19 pandemic also presented other humanitarian challenges for all of us. Due to the strict lockdown (which was being followed with utmost sincerity by the villages) as well as the loss of livelihood due to the shutdown, we were worried about the villages undergoing acute food shortage. Consequently, our forest division decided to step up to the task and immediately a relief kit was prepared (consisting of soap, long lasting vegetables, cereals, rice, spices) for 10 of the remotest villages of our division that are located deep in the heart of the forest that would last them a week. While ensuring the prompt delivery of this kit, our field staff coordinated with the Munda-Manki and JFMCs of various forest villages to identify vulnerable families in each village (both forest and revenue) in our jurisdiction and the department coordinated in arranging relief for such families as well. We also coordinated with the district administration and the security forces posted in the region in this regard. The civil society and social activists also joined forces with the department in this endeavor. At the same time, we were presented with another challenge in the form of some families being unable to cook for themselves. To solve this issue, we started an open kitchen in these affected villages and started distributing hot khichdi to the needy which was serving 300-400 people every day across these remote villages. Shri RP Singh, IFS(Retired) did a yeoman service for the villagers in Tholkobad by arranging for a community kitchen in the village. We also had given strict instructions to all our field staff to be on the alert with respect to any food shortage in any village or rural family, and an emergency relief vehicle was kept on standby at all times. During all these times our staff was constantly creating awareness in the villages regarding Corona and the importance of social distancing and hygiene in keeping oneself safe from the illness and keeping themselves indoor as much as possible. We are also working on getting electricity to reach Tholkobad by repairing the lines and transformers while ensuring that the wires are strictly insulated to prevent any accidents with elephants and other wildlife.

Amidst all this, the months of March, April and May are peak forest-fire seasons. To combat forest fires four Quick Response Teams (QRT) with a dedicated vehicle for each team were put in place. This team would not only immediately act on any forest fire reports (received either through FSI app or even from local people) but would also go across the villages of our division to create awareness regarding forest fires, and eliciting public support in combating it. At the same time this QRT served a twin purpose of checking with the people in each village it visited regarding their food security and carried emergency ration kits to provide immediate relief whenever the need arose. The QRT teams, Forest Committees and Van Mitr teams and the simultaneous community relationship building measures through relief work paid rich dividends and we had very few incidences of forest fires this year compared to previous years. All this has regenerated forest floor vegetation and thus the forest undergrowth has remained healthy. This regeneration and public support also resulted in a perceptible increase in wildlife sightings in the area. We were especially surprised by the large number of peacocks that were being seen across Saranda.

To sum it up, the forest department and all our hardworking field staff have played a key role in ensuring the welfare of both our forests and communities dependent on them, and done our little bit in this global fight against the pandemic. We have forged new strong relationships with the communities in our jurisdiction and we are hopeful that this will go a long way in ensuring local cooperation in forest and wildlife conservation in Saranda. We hope to keep up this positive work and build upon it with the eventual aim to returning Saranda to its former glory days.



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## First record of Marbled balloon frog (*Uperodon systoma*) (Schneider, 1799) from Palamau Tiger Reserve

**Manish Kumar Bakshi**  
(GIS Expert, Palamau Tiger Reserve)

**Observation Date & Time-** 03 July, 2020, 09:02 PM,

**Location Details-** Lat 23°47' 52.8"N, Long 84°13' 7.9"E;

**Habitat-** Saidup Compartment- 02 (Core Area of PTR); Chhipadohar East Range of Palamau Tiger Project, North Division, Medininagar.

**Species Name-** Marbled balloon frog or lesser balloon frog (*Uperodon systoma*).

**Age-** Young frog (not fully matured, tail can be seen in the photograph)

**Observer-** Manish Kumar Bakshi, GIS Expert, Palamau Tiger Reserve.



©Manish Kumar Bakshi

**Methodology-** During returning to Daltonganj from Baresanr after field visit, I saw this frog from vehicle, after chasing it to the forest, this is identified as Marbled balloon frog.

**Last detection of species-** First record, not observed in past in Palamau Tiger Reserve.

**Descriptions-** Marbled balloon frog or lesser balloon frog (*Uperodon systoma*) is a species of narrow-mouthed frog found in Indian subcontinent.

The dorsum of the specimen was marbled extensively with yellow and dark brown, the ventral surface was pale yellowish in appearance. Skin smooth to weakly tuberculated dorsally while the venter was smooth all through.

*Uperodon systoma* is a fossorial species that buries itself in soil. These frogs have been observed in a number of habitats, such as dry forests, plains, gardens, and agricultural areas. They are bad swimmer, but faster in buries himself. Adults are only seen during the summer monsoons; otherwise they retreat into the soil. Feeding may be concentrated to rainy nights during the monsoon when termites emerge to swarm.

Breeding takes place during the monsoon rains when the males call from the banks of streams and paddy fields. Eggs are laid in water where they float.



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## Beauty in Nature

**Shubhra Mishra**

*(C/O A T Mishra, I.F.S., House No 5, Forest Colony, Doranda, Ranchi)*

In the beginning of the civilisation we had started with nothing but what our natural surroundings had to offer. Now when we look back, we have definitely made a huge progress, but what this proves is that the origin of everything we have today is in nature. The number of benefits and services we get from nature are infinite. In 1997 Robert Costanza, Distinguished University Professor, first estimated that ecosystem services worldwide are worth an average \$33 trillion annually (\$44 trillion in today's dollars), nearly twice the global GNP of around \$18 trillion. Although the idea might seem remote, it is true, as Rilke once said, 'If we surrender to earth's intelligence, we will rise up, rooted, like trees.'



Nature provides numerous ways to tackle problems of today. For example, trees act as barriers during tsunamis and cyclones. Rows of tall trees are planted in coastal areas to minimize the damage caused by such natural disasters. The roots of trees hold the soil and prevent it from eroding and the thick canopies lessen the force with which the raindrops hit the earth thus protecting the soil from being washed away. They also help in reducing floods. Needless to mention is the importance of trees in replenishing the stock of oxygen in the air. A mature leafy tree produces as much oxygen in a season as ten people inhale in a year! Trees also help in increasing rain. Transpiration increases the amount of moisture in the air which indirectly increases the frequency of rainfall. A typical tree breathes out 250 to 400 or more gallons of water per day. The services that our ecosystem provides us for free are innumerable. The study of medicine, and cures of tens of thousands of diseases that have been discovered, which some still believe is a miracle, has originated from nature. Herbs, flowers, fruits, roots and many other bits of nature, have been, and are still being used as medicines and drugs. Of course,



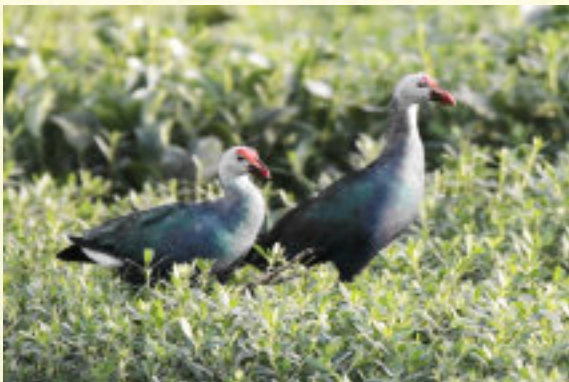
nature is miraculous. For example, garlic works wonders for lowering cholesterol and blood sugar levels. Turmeric is an antiseptic, Tulsi is the most common remedy for common colds and cough and the list is endless. Nature based solutions are the best ways to tackle problems of pollution, global warming, calamities etc. because the side effects are almost nil. Today we must emphasise on building the future of this world in harmony with nature.



Apart from all this one of the important problems we humans face today is that we are too busy. All of us have put ourselves in the centre of this universe and work tirelessly pushing our capacities, going way too far beyond our limits to improve our lives. The saddest part of this story is that, no matter how much we strain ourselves, we never seem to be satisfied with what we finally arrive at, and therefore we put in more effort, sacrifice the very important rest that our body needs



and try to achieve whatever we think will satisfy our thirst. And thus the cycle repeats because we are only humans and the only way in which we can achieve equilibrium is death. This living body can never be in equilibrium. But this does not mean that there is no way to find peace in this cut throat competition. All we need to do is step out of the spheres we've locked ourselves in, and try to make order out of the chaos inside our heads. The lockdown has proved to be a great boon for our minds. It has given us an opportunity to clear our meddled minds, the process is simple, all you need to do is shut your gadgets for a while, go out into your backyard or your front garden for a stroll, barefoot. Simple acts work wonders, for instance it has been proven, walking barefoot on grass reduces body aches, increases the flow of oxygenated blood inside our veins, and energises and activates the whole body. Research work also claims that it improves eyesight and boosts immunity. Apart from that it also helps in curing insomnia, a condition which almost half of the population suffers from. Direct physical contact with the earth's surface, and the ethereal fragrance of grass and mud, reduce the amount of stress hormones produced and induces sleep. The natural environment helps us in finding peace



in our busy schedule. It can cure depression as it helps in reducing everyday stress and curing mental fatigue. And since all the problems we face today are intensified because of the condition of our physical and mental health, we can have calmer lives only if we have a calm mind.

Therefore, we must know, that all our solutions lie around us. All one needs to do is observe around closely, and the Nature will give the answers. To quote Antoinette Brown, 'Nature is just enough, but men and women must comprehend and accept her suggestions.'

***"Because can there ever be a question a mother cannot answer."***

(Photos by A. T. Mishra, I.F.S)

## An Urban Tree

*Srijan Rudra*

*(Son of S. K. Gupta, I.F.S. Retd)*

Uh! The drudgery of winter is over. It's spring time now. It's meant to be the most enjoyable time for most of us. I am supposed to blossom, put out new flowers. Enjoy the warmth of the fresh sun; the scent of sweetness in the air. Host some of my favourite birds and listen to their songs. Yes, some of my peers far away will cherish all these, but not me. Why? Because I am a Delhite. And Delhites do not have the luxury of enjoying spring. Here the sunrays are blocked from rising smoke for most part of the day. Air is fresh but only inside human rooms. Many birds have escaped, though some still remain loyal to me.

Safdarjung road. Yes, that's the name of the street where I live. Safdarjung. A rather inappropriate name, isn't it? Built over the slain corpses of hundreds of my brethren, it seems rather odd that it would be named after a Nawab who became a Nawab only because he was able to marry the daughter of a Nawab. If anyone's sacrifice had to be remembered, it should have been that of my fellow trees. "Magnifera Indica street," or "The Great Old Banyan road" would have been more appropriate.

Life is busy here. No not for me. For the humans around here. They zoom past me in their vehicles but sometimes crawl when there is a traffic jam. A lot of ambulances rush past as well, their sirens wailing. It seems humans made a very good system to take care of their ailments. But what about me? Nobody cares about me. Just the other day, Mr. Mehta chopped off one of my branches just because I was disturbing the aesthetics of his bungalow. Now what kind of behaviour is that? Shall I call an ambulance now?

Oh, I forgot to tell you. I am turning four next month. Four years ago planted on this very spot at the pious hands of the Chief Minister of Delhi. I spent my childhood in a cage, a green wired mesh supposed to protect me from being grazed by cattle. But there is no cage now. I am taller and stronger. The winds, the rains and the cow, I can handle them all on my own. But I have to go further. I am planning to grow at least by a meter this year. That would be impressive. But there are hurdles. My roots are kind of stuck. I am hitting concrete wherever I try to expand. On the right I am blocked by Safdarjung's tarmac while on the left I am obstructed by Mr. Mehta's boundary wall. But I will try and find a way. Hopefully, there's enough soil left.

Wait. Some environmental activists are here. They are undertaking a survey. It looks like they are planning a plantation drive on the other side of the street. New saplings are being readied to be put in a handful of soil in the middle of a cemented footpath. Oh! Those poor saplings, I pity them. If only someone asked them how they wanted their homes to be. I am sure, they will give an answer already known – "we want our homes to be nice and comfortable, where we can live and grow with ease".

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## The Wonder that is Nature

*Swapna Sanchita*

*(Director, T.I.M.E., Ranchi)*

In every blade of grass that springs forth  
 From the embrace of the earth  
 In the sound of cascading waterfalls  
 In the silence before a predator's leap

In the myriad manifestations of life and death  
 Creating a macrocosm  
 Of the most primeval needs.  
 It seeks absolutely nothing

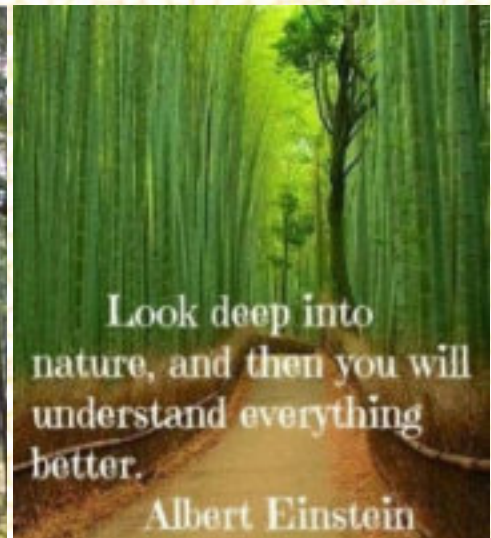
And yet, it is the essence of the all.  
 In the variance of its very existence  
 It comes together.

Its power lying not in the majesty of its terrain

But in the smell of the first rain  
 In the warmth of the winter sun  
 In frondescence- the unfolding of leaves  
 In the love of a praying mantis

In the flight of a bumblebee that still does not know, it cannot fly  
 In all the colours of the rainbow  
 In all the blues, greens and all the shades in between  
 Nature reveals itself

Over and over again  
 And still we walk, with foolish pride  
 Unable to hear, see, sense or fathom, we deride.



गेल (इंडिया) लिमिटेड



# लाएं ताज़गी भरा बदलाव

- हरित ईंधन प्राकृतिक गैस अपनाएं
- सार्वजनिक वाहन का इस्तेमाल करें
- प्रदूषण-मुक्त वातावरण बनाएं



#HawaBadlo



[www.changetheair.org](http://www.changetheair.org)

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## संस्मरण

चन्द्रदेव पाण्डेय, भा०व०से० (से०नि०) 1955-58 बैच

भूतपूर्व महानिरीक्षक, वन, भारत सरकार

### कट-कट-धड़ाम-धड़ाम ॥

**1955-58 बैच का फोरेस्ट्री ट्रेनिंग का पहला चक्राता टूर का मुंडाली कैम्प - समय- 12 बजे दिन**

सही ढंग से पेड़ काटने की ट्रेनिंग दी जा रही थी। पूरे क्लास को दो भाग में बांटा गया था - एक था कुल्हाड़ी पार्टी और दूसरा आरा सह कुल्हाड़ी पार्टी। टाइमिंग रेकार्ड के लिये दो टाइम कीपर रखे गये थे। पहली पार्टी का संयोगवस मैं टाइम कीपर था। थोड़ी देर पेड़ काटने के बाद मेरी पार्टी की ओर से आवाज आई- धड़ाम और फिर बापू बापू - मैया मैया की चित्कार ।

मैं भागा-भागा घटना स्थल की ओर दौड़ा तो देखा कि वह रोना-धोना मेरे एक परम-प्रिय मित्र की थी जो पेड़ गिरने से भयभीत होकर भाग चले थे। जमीन पहाड़ी थी, इसलिए बहुत दूर नहीं निकल सके थे और ढलान पर लुढ़कते हुए एक टूट का सहारा मिलने पर अटक गये। मुझे देखकर उनकी रूलाई और बढ़ गयी। मेरे देखते-देखते उनके नाक- मुंह से खून निकलने लगा।

मैंने इंस्ट्रक्टर जी को पुकारा जो दौड़कर वहां पहुंच गये। घायल को धर-पकड़ कर कैम्प के बरामदे पर लिटाया गया। निकटतम अस्पताल करीब-करीब दस मील दूर था। डॉक्टर महोदय को आने में देर हो गयी। डॉक्टर महोदय ने सलाह दी कि घायल को शीघ्रातिशीघ्र निकटतम बड़ा अस्पताल देहरादून ले जाया जाय। मैं और मेरे दो सहपाठी स्थानीय आठ कुलियों की सहायता से एक टेम्पोरेरी स्ट्रेचर पर लेकर चक्राता के लिए पैदल प्रस्थान किये। एक सुरक्षित गाड़ी की व्यवस्था से रात के खाने बाद चक्राता से देहरादून के लिए रवाना हुए। पहाड़ी रास्ता होने के कारण मेरे दोनों साथी तो उल्टी करते हुए और हमलोग देहरादून पहुंचे। प्रायः दो सप्ताह के सघन उपचार के बाद मेरे मित्र स्वस्थ हो गये और हमलोग वापस मुंडाली कैम्प पहुंचे। वहां से कैम्प उखड़कर देवबन्द चला गया था जहां हमलोग भी आगे की ट्रेनिंग के लिए पहुंच गये।

### निष्कर्ष-सुखान्त-पुनश्च

अब आगे की कहानी सुनिये। दूसरी आरी-कुल्हाड़ी पार्टी भी उसी पहाड़ी ढलान पर पेड़ काट रही थी। थोड़ी देर में धड़ाम की आवाज के साथ बप्पा-मैया की मिश्रित आवाज कराह के साथ सुनाई दी। पता चला कि पेड़ काटने वाले व्यक्ति ने समझा कि कटने के बाद पेड़ उन्हीं की ओर गिर रहा है और उहापोह में स्वयं ढलान पर लुढ़क गये। पर शीघ्र ही उन्हे कोई अवरोध मिल गया और आगे लुढ़कने से बच गये। नजदीक जाने पर पता चला कि ईश्वर की दया से मामूली खरोच से ही उबर गये। हल्की मरहम-पट्टी के उपचार से ही स्वस्थ हो गये।

हमलोगों के ट्रेनिंग की पेड़ कटाई की पहली चर्चा यहीं समाप्त होती है।

इन दोनों घटनाओं के विवरण पढ़ने और 1955-58 बैच के साथ शेयर करने के लिए पाठकों के धैर्य की सराहना करते हुए सुखान्त कहानी का अन्त किया जाता है।

भगवान पाठकों को स्वस्थ एवं सुखी रखें।

## आधुनिकीकरण के नये वन : मियावाकी

रामप्रताप सिंह, भा०व०से० (से०नि०)

मिलिये एक होनहार इंडस्ट्रियल इंजिनियर शुभेन्द्र शर्मा से, जो दिल्ली के टोयोटा मोटर्स में एक मोटी पगार पर काम करते हैं। आज से लगभग 10 वर्ष पहले विश्व प्रसिद्ध इकोलॉजिस्ट अकीरा मियावाकी हिंदुस्तान आये। वे टोयोटा ऑटो मोबाइल कंपनी के अनुरोध पर कारखाना के बेकार पड़े हुए भूमि पर वन लगाने आये थे। कंपनी में उन्हें सहयोग करने हेतु अपने नौजवान अभियंता को उन्हें मदद करने के लिये लगाया। शर्मा ने बड़ी मेहनत एवं बारीकी से प्रो० मियावाकी के कार्यों को देखा एवं समझा। प्रो० मियावाकी जो कि विश्व प्रसिद्ध इकोलाजिस्ट थे वे अपना कार्य कर लौट गये, परन्तु उनके प्राकृतिक वन लगाने के नया तरीके ने इंजिनियर शुभेन्द्र शर्मा को इस प्रकार मोह लिया कि उन्होंने कंपनी से रिजाइन कर इसे अपने नया कैरियर बनाने का निश्चय किया।



टोयोटा कंपनी से त्यागपत्र देने के पश्चात् एक वर्ष तक उन्होंने प्राकृतिक जंगलों के पुनरूधार एवं मियावाकी विधि पर रिसर्च किया एवं अपनी एक नई कंपनी एफारेस्ट बनाई जो कि प्राकृतिक वन लगाने के लिये सम्पूर्ण सेवा प्रदान करती हैं। शर्मा द्वारा बनाये गये वन मूलतः प्राकृतिक, वाइल्ड एवं रख रखाव रहित एवं स्थानीय होते हैं जो वहाँ के मिट्टी एवं मौसम के अनुकूल होते हैं। प्रो० अकीरा मियावाकी एक जापानी वनस्पति इकोलाजिस्ट रहे हैं जो कि हमारा राष्ट्रीय विश्वविद्यालय के ऐमिरिट्स के प्राधानाध्यापक रहे हैं। उन्होंने पाया कि विश्व के प्राकृतिक वन बड़ी तेजी से विलुप्त होते जा रहे हैं जिसके फलस्वरूप जलवायु परिवर्तन में तेजी आ रही है। उनका मानना है प्राकृतिक वन ही हमारे बायो डायवर्सिटी को संरक्षित रख सकते हैं। इसे ध्यान में रखते हुए उन्होंने अधिक घनत्व वाले स्थानीय प्रजाति के पौधों से वन विकसित करने की नयी प्रणाली खोज निकाली। यहाँ हम कम दूरी पर मिश्रित प्रजाति के स्थानीय पौधे लगते हैं तथा जमीन में नमी बरकरार रखने के लिये छोटे-छोटे ट्रेंच खोदकर पूरे जमीन में घास-फूस से मल्विंग करते हैं। इस प्रकार एक छोटे क्षेत्र में अति घनत्व वाला जंगल शीघ्र ही तैयार हो जाता है जहाँ पौधे एक वर्ष में 10-12 फीट के हो जाते हैं। अधिक घनत्व के फलस्वरूप ये वन अधिक बायोमास एवं ऑक्सीजन पैदा करते हैं और कार्बन का अवशोषण करते हैं। इस प्रकार कम समय में हम मल्टी लेयर प्राकृतिक वन बनाने में सफल हो जाते हैं।

मियावाकी विधि द्वारा आज हम न्यूनतम 100 वर्ग मीटर से अधिक रिक्त स्थानों पर प्राकृतिक वन बना सकते हैं। आज शहर में आवासीय कोलोनिया, फैक्ट्री, औद्योगिक इकाईयों में इस प्रकार के लाखों ऐसे रिक्त जमीन है जहाँ

हम मियावाकी वन के माध्यम से प्राकृतिक वन उगाकर मौसम परिवर्तन को नियंत्रित करने में सफल हो सकते हैं। प्रो० अकीरा मियावाकी ने एक करोड़ प्रजाति के बीजों का बैंक भी तैयार किया है। पर्यावरण के क्षेत्र में उत्कृष्ट कार्य हेतु उन्हें 1990 में अशाही पुरस्कार एवं 2006 में ब्लू प्लेनेट पुरस्कार से नवाजा गया है।



इंजिनियर शुभेन्द्र शर्मा प्रो० मियावाकी के सच्चे विद्यार्थी के रूप में उनके कार्यों को अपनी संस्था [afforest.com](http://afforest.com) के माध्यम से बढ़ा कर हिंदुस्तान के पर्यावरण को संबृद्ध कर रहे हैं। आज इस विधि की अत्यंत आवश्यकता है क्योंकि विकास के साथ प्राकृतिक संसाधनों का तेजी से हास हो रहा है। हमारे देश में भी कई गैरसरकारी संस्थाओं द्वारा इस विधि को अपनाकर पर्यावरण संरक्षण के क्षेत्र में सकारात्मक योगदान दिया जा रहा है। इसलिये इसे हम नये जेनेरेशन का वन कह सकते हैं।

है यह पतझड़ की शाम, सखे!  
नीलम—से पल्लव टूट गए,  
मरकत—से साथी छूट गए,  
अटके फिर भी दो पीत पात  
जीवन—डाली को थाम, सखे!  
है यह पतझड़ की शाम, सखे!

सुमित्रानंदन पंत

## वन आधारित ग्रामीण विकास

धीरेन्द्र कुमार, भा०व०से० (से०नि०)

**झारखण्ड** राज्य में लगभग 30% भूभाग वन क्षेत्र हैं। वनों में 30 तरह की जनजातियाँ निवास करती हैं। हमारे वनों में अर्जुन, आसन एवं सीधा के पेड़ बहुतायत में उपलब्ध हैं। पारम्परिक रूप से झारखण्ड के जनजातियों द्वारा तसर कोकुन का कीटपालन अर्जुन एवं आसन के वृक्षों पर होता रहा है। राज्य की लगभग 40% आबादी वनों एवं वनों के आस-पास रहती है। इस आबादी का बड़ा हिस्सा गरीबी रेखा के नीचे जीवन यापन कर रहा है। इस आबादी में अनपढ़ अथवा कम पढ़े लिखे व्यक्तियों की संख्या अधिक है। यह आबादी कुपोषण का शिकार भी है।

हमारे समय की सबसे बड़ी समस्या अत्यधिक गरीबी है। इतिहास हमारा आंकलन इस आधार पर करेगा कि गरीबी मिटाने के लिए हम सभी ने सामूहिक रूप से क्या प्रयास किया? यह मानना उचित नहीं होगा कि गरीबी हमेशा के लिए है। आज उपलब्ध मानव संसाधन, तकनीक एवं प्राकृतिक संसाधन का उपयोग कर गरीबी को बीते समय की बात बनाया जा सकता है।

### देश में ग्रामीण विकास के तीन प्रमुख मॉडल हैं -

1. **लोनी मॉडल** - महाराष्ट्र राज्य में शिक्षा के विकास के साथ लोनी एवं आस-पास के गाँवों का विकास हुआ है।
2. **खजुराहो मॉडल** - धार्मिक पर्यटन के आधार पर मध्य प्रदेश के खजुराहों क्षेत्र का विकास हुआ है।
3. **पेरियार** - केरल राज्य में इको टूरिज्म के आधार पर पेरियार का विकास हुआ है।

इसी प्रकार हमारे राज्य में तसर सिल्क मॉडल के साथ ग्रामीण क्षेत्रों का विकास किया जा सकता है। पारम्परिक रूप से यहाँ वनों में किसानों के द्वारा तसर कोकुन का उत्पादन होता है। तसर सिल्क आधारित पूरा Value Chain विकसित किया जा सकता है। तसर कोकुन का उत्पादन मुख्य रूप से अर्जुन एवं आसन के वृक्षों पर होता है। इन वृक्षों का वनरोपण अवकृष्ट वनों, रैयती भूमि एवं राजस्व भूमि पर किया जा सकता है। कोकुन का रीलींग एवं स्पीनींग कर तसर धागों का उत्पादन किया जा सकता है। वर्तमान में ताना (Warp) के लिए धागों का आयात कोरिया एवं चाइना से होता है। राज्य के अंदर ही इन धागों का उत्पादन किया जा सकता है। ऐसी तकनीक उपलब्ध है। तसर धागों से कपड़ों की बुनाई की जा सकती है। इन कपड़ों का उपयोग परिधान (Apparel) पर्दे, दोहर, चादर, शाल आदि के लिए किया जा सकता है।

1. तसर कपड़ों की सिलाई, रंगाई, छपाई, कढ़ाई इत्यादि के लिए समूह गठित किये जा सकते हैं।
2. तसर कपड़ों एवं धागों की माँग देश एवं विदेश में है।
3. एक अनुमान के अनुसार तसर आधारित कुटीर उद्योग के विकास से लगभग 15 लाख परिवार को गरीबी रेखा (BPL) से बाहर निकाला जा सकता है।

### तसर उत्पादन से गरीब लोगों को जोड़ने से निम्न लाभ होंगे-

1. प्रत्येक परिवार अपने गाँव में, अपने घर में रहकर कृषि के अतिरिक्त 1,00,000-1,50,000 रु० प्रति वर्ष कमा सकेगा।
2. राज्य से पलायन में कमी होगी।
3. सूखा पड़ने पर भी किसान विचलित नहीं होंगे।
4. स्थानीय व्यक्तियों की वन आधारित आजीविका के बढ़ने से वनों की सुरक्षा भी बढ़ेगी।
5. वनों में निवास कर रहे जन जातीय समूहों का प्राकृतिक जीवन फिर से वापस आयेगा।
6. परिवार की आर्थिक समृद्धि से शिक्षा एवं स्वास्थ्य में सुधार होगा। कुपोषण में कमी होगी। तसर के अलावा राज्य में बाँस एवं लाह आधारित ग्रामीण विकास के मॉडल की पूरी संभावना है।



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Contact Details :

Dhirendra Kumar, IFS (Retd.)

Director

Abhinav Silk Pvt. Ltd.

"Ashreya" Behind Shirdi Sai Hospital, Bariatu, Ranchi, Jharkhad - 834009 (India)

M. No. : 9771434645, 9304537441 Email : dk1983@rediffmail.com

