

NEWSLETTER of the

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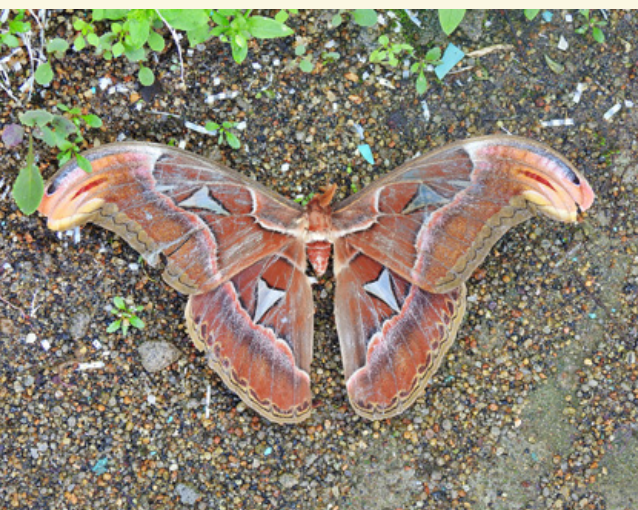
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SRI LANKAN ATLAS MOTH [1883]

(*Attacus taprobanis* Moore)

Photo Credit : N Moinudheen, Wellington

EDITORIAL

This has been a good year.

Everything has started to look up. There is brilliance all around, and the bustle of the Nilgiris returned to normal, if not better than normal. Someone even went on to coin the term revenge tourism - after a hiatus of nearly two years, everyone wanted an outing!

But, along with tourism, comes the scourge of littering; because simply put, we civilised beings just don't care adequately enough.

There has also been some notable development in roads, especially the NH 181 from Metupalayam to Coonoor. The widening of the road now handles more traffic, and consequently, more tourist footfall. Sim's Park at Coonoor and the Botanical Gardens at Ooty are seeing record visitors in bus-loads every day. And these travelers have a unique traveling style - the boot of the mini-bus carries prepared lunch for all on board! So, come lunch time, and the bus stops on the roadside, and everyone troops out for their meal. There's nothing wrong with a timely meal - but it is how we leave our refuse on the roadside, for someone else to clean up after us, that is hurting. And there is just that little bit that the administrative machinery can do to keep the biosphere clean.

Unfortunately, the green-tax is not punitive enough!

But it is heartening to see the Forest Department religiously pulling out every bit of plastic from travelers' vehicles at the Bandipur-Mudumalai border when traveling up from Mysuru. I do wish that we were so diligent on the other side of NH181 as well. The Kallar side is only collecting the tax, and mostly letting travelers through.

There has been the Court order to close the Horticulture Farm at Kallar, because it lies in an elephant corridor. This is a welcome order, and though it means lesser fruit in the market, it may be a good thing in the long-run; not only for the elephants, but for the biosphere as well. This, hopefully, will set the tide rolling for closing some of these man-made efforts, which were a good thing to provide for the forest-dwelling tribes in yester-year in the name of development. Most of these tribes are now hopefully reasonably self-sufficient, and not entirely dependent on the horticulture farm for their livelihood. A gradual weaning off is necessary; only then will the delicate biosphere regain its pristine state.

The almost incessant rains are a clear indication of things to come. Some may call it El Nino, and the cycles may actually be doing their bit, but one tends to compare weather with the past year or two, and this year has been wetter than earlier. However, in discussion with the weatherman, this is close to the normal for the hills, especially for Coonoor, and the past years were drier in comparison. Drier or wetter, we would like to see as much sun as we see clouds. Let there be a 50-50 sharing of the skies!

This edition has devoted some space to Soil as an essential ingredient of our environment, with Dr S Pasupathy and Ms Jennifer Pinto both making references in their articles.

Like revenge tourism, the NNHS also picked up pace with outdoor activities, and there has been an increase in participation from members, as well as from citizens. As we now move into 2023, it is hoped that NNHS will see more citizen participation, with proactive members spreading the good word around.

Ajay Ludra,
Secretary, NNHS

IS THIS FOREST IN DECLINE?

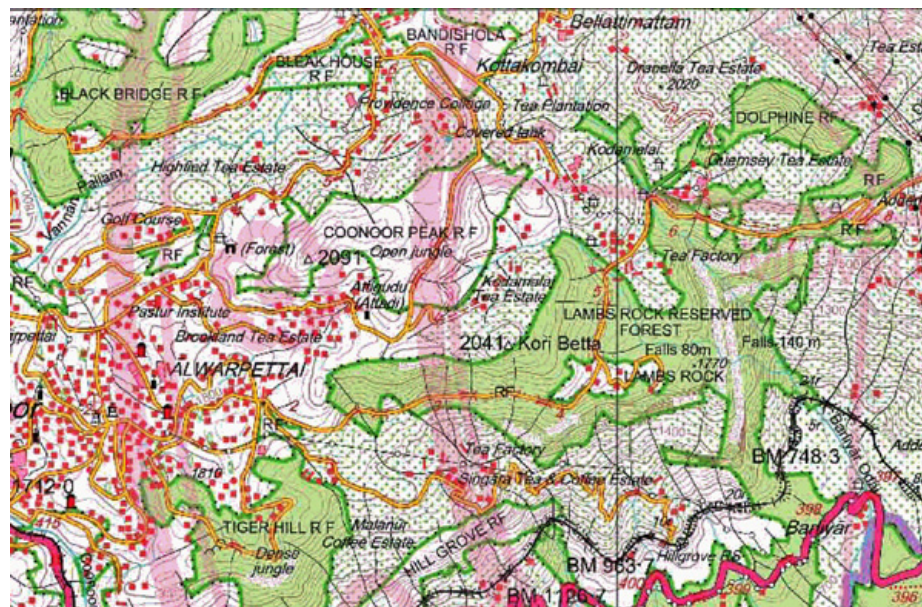
A VISIT TO THE COONOOR PEAK RESERVED FOREST (COONOOR BETTA)

AK Acharya and Ravindra K Azad

The Coonoor Peak Reserved Forest lies to the north-east of Coonoor town, and above the road leading from Coonoor to Kotagiri. The relevant settlements that bound the reserve-forest are Attadi in Coonoor, Vandisolai on its north-west, and Kodamalai Hatty to the east. The Coonoor Peak, also named Tenerife in some British journals of yester-year has a Saravana Murugan temple atop, and forest trails from Vandisholai, Kodamalai Hatty, as well as from Upper Attadi (Attigudu on the survey map). The reserve forest measures about 1.21 sq km (≈121 hectares).

A small group of ardent hikers ventured along the trails. The walk started from Vandisholai, where the vehicles were parked; inconvenient, though, since this became more a hindrance for traffic. There really is no convenient place to leave parked vehicles! A short walk up the road leading to the Coonoor Estate, Adar, and Sri Brahavidya Ashram, we broke off onto the forest trail. Wet after recent rains, we were duly alerted by a passerby to beware of leeches in the mulch or on the grass. This portion is known for leeches, and rarely does the forest floor dry up, even in the dry months.

The forest portion here is narrow - there are the bungalows along the road leading up into Adar on the one side, and the road that goes down to Halakarai on the other; and sounds of human habitation abound on both sides. It is interest-



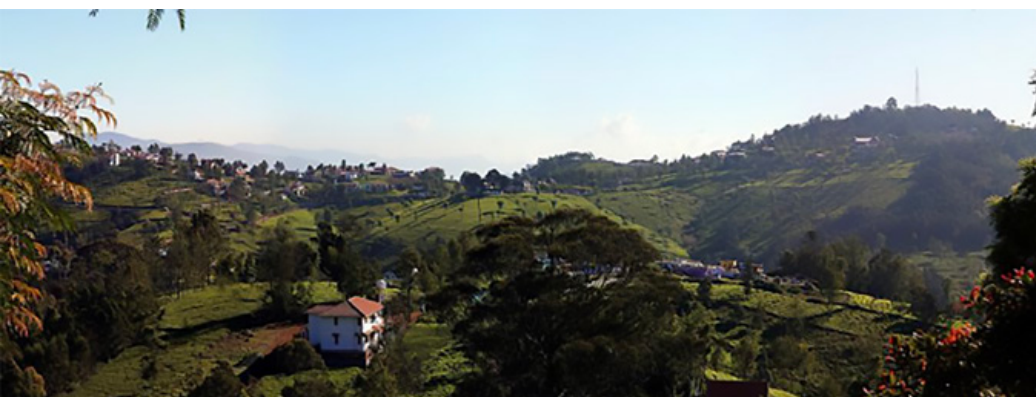
ing for my fellow walkers when I show them some wild capsicum plants, a few of them in fruit, and the seed shells of the *Eucalyptus globulus*, with their very familiar scent of the famous oil. Some of these are conveniently pocketed, for showing off to their friends and colleagues back at home. There are eucalyptus in abundance, acacia in spurts, and very little undergrowth at all. The canopy is high, not dense, and there are no tree-to-tree vines vying for sunlight and energy; eucalyptus won't let even that happen! The entire floor of the forest here is only fallen, dry, eucalyptus leaves. This is a sure sign that the forest will only grow more eucalyptus, probably nothing else.

Less than half a kilometer along, the forest stretch breaks open to tea plantation on the slopes below, and breath-taking views of the open valley that shows

glimpses of Metupalayam in the plains. In the north, the nearby ridge shows up with the dreamy villas of Drumella. On account of the sudden opening of the forest, the floor is dry, also grassy, and without mulch. Towards the edge of the forest part, the shrubbery is now *Solanum mauritianum* (Bugweed), another invasive alien species. Is this planted along the edge of the tea-plantation? Or has this come by as an invasive species, and is not being allowed to invade into the tea? One wonders. There is a little banter amongst ourselves about this being native to India, since a similar-looking plant's flower has mythically been used as an offering during ShivRatri^[1], but then Bugweed was brought by the Englishmen as a fancy plant from Africa, and is now an invasive alien species (IAS).

The short sunny stretch curves around a bend, and the forest comes up again. There's quite a few trees felled across the forest path. This looks intentional; not likely that a set of trees decide to succumb to wind, while other stand tall. There have been tales (and visible evidence) of non-local visitors driving up on their motor-cycles into the forest zone, for a quiet drink with nature;

[1] The plant of reference to ShivRatri is the Giant Milkweed *Calotropis gigantea*, whose lilac-coloured bunches may have been mistaken for the similar bunch of the *Solanum mauritianum*.





Milkweed (*Calotropis gigantea*) plant
Photo: Ajay Ludra



Solanum mauritianum Photo: Ajay Ludra

and they litter their waste there. The forest-department, short of hands to conduct round-the-clock surveillance of their beats, finds it more convenient to block the passage by laying obstacles across the paths. Convenient, yes; effective? probably not.

We vaulted over some of the tree-trunks, crawled below some, and landed up at a clearing with two tracks leading away in the direction of south-west, and a foot-path leading away east-wards. I know the foot-path would lead us to Kodamalai Hatti; I also know that the lower of the two forest-tracks leads away and out of the forest towards Upper Attadi. We took the track that leads upwards, since our target this day was to reach the Saravana Malai Temple. The climb is gradual, and both sides are lined with juniperus, cupressus, and varieties of moss on the floor. This is quite a change from the earlier portion. It is almost like by a switch, a tropical forest changed to a temperate one! There is still eucalyptus, but a few feet away from the trail. The mulch is lesser, the floor is not as wet, and the canopy is not so high; there is also blue sky visible through the trees. But there are no birds - no chirping, no tweeting.

A GPS application on the mobile phone helps. The tracks are not marked, so there is no information from Google-Maps. But the GPS application shows the location of the SaravanaMalai Temple atop Coonoor Peak, and the present location, so it is on what navigators call “general-direction” rather than dead-reckoning, that we continue following the path.

There is almost no sign of any wild-life, even under rocks. Some ants. No spiders, no amphibians. Nada. Zilch. A forest should be thriving with life; but here, there’s thick carpets of moss on the floor, a thin canopy, hide-and-seek sunlight, lichen on the tree-trunks, some luxurious ferns on the side of the pathway, and nothing else. We do see human existence in the form of a biscuit wrapper and a juice tetra-pack chucked away irresponsibly. There is also virtually no undergrowth; one can see into the forest till about fifty odd metres without any obstruction. There is no indication of a tropical forest at all. This is indicative of crossing an elevation of 2000-m.

The only break in the now monotonous flora was one tree-fern some distance away in the thickets.

And we sighted one black agama, a juvenile.

We would have left the forest clearing some 25 minutes behind us. The path now suddenly open onto a tea plantation. We were at the top of the Adar division of the Coonoor Tea Estate; the edge of the tea plantation runs along the ridge-line, with the reserve-forest on the east-slope, and the plantation on the west. We could make out the tri-junction of Vandisholai, where we had left our cars. The location of the Chinna Balaji Thirupathi temple was visible; also visible was the general area of the Providence College for Women, the Elk Hill estate, and the Adar Estate where now bungalows are under construction.

Sounds of vehicles on the Kotagiri road catch our ears. The forest has a lot of proximity to habitation, and to human activity. A ten-minute break for taking in the fine sights, we turn back onto the track, and it turns distinctly south. The track is now almost along the ridge, which is actually a bit flat. The forest here is open wood, eucalyptus entirely; tall trees, spaced planting, and dry leaf mulching on the floor. The mulch is soft to the tread, luxurious even. And we spot a couple of tea plants the size of short trees (*Camelia sinensis*, not tea-tree). One of them was a grand 17 or 18 feet tall. Unmistakeable leaves, but the sure give away is the flower.

The walk is now leisurely; there has been virtually no strenuous climb. The sky is partly clear, but the tree canopy makes for good shade. And then, as if out of nowhere, it started to drizzle. We were carrying umbrellas, but they were not really needed. The drizzle brings out a little frog (*Raorchestes tinniens*), and Habeeba is quick to grab it. It poses for a photo, but I am a little fumbly chang-



Tea flower - Photo: Ajay Ludra



Raorchestes tinniens - Photo: Ajay Ludra



Malabar Giant squirrel Photo: Ajay Ludra



ing lenses. It jumps off, but I get a shot before it vanishes in the undergrowth. There is some life in this forest!

The tall outcrop of rock indicates that we've come to the summit. Slightly slippery after the drizzle, it is clambered up on all fours. The flat-top is craggy, with grass growing in cracks.

There is the forest look-out post in sight, and then the temple. Surprisingly, the temple is in very good keep, while the forest observation post is in a state of sheer disrepair. Funding apart, this also indicates intent. The temple looks like it has been already visited by the priest in the morning. The light atop the temple is off (the light is visible from dusk onwards - the only light on the entire ridge), the area is cleaned, and the deity's door locked. As a temple, if there is something that could have been done better, is the ornate pot placed due east and in front of the deity, where some Marigold is planted, could be in better keep.

As we squatted at the top of the ridge, to take in the views, and some photographs, we see more wildlife. Three different butterflies flit past - an Admiral, and a Peacock, and a cabbage white. We start to hear birds chirping, and then a minivet darts from behind the temple into the bushes.

The sights from atop are lovely. Despite drifting clouds, one can see as far away as the Grant Duff Road near Ooty, where La Montana by TGI has a cascade of holiday homes on the slope. Dodabetta is visibly the tallest of hill-features around. Forestdale, Wellington, Aruvankadu, Mynalai, and parts of Yedapalli are in clear view.

After a fifteen odd minute stay, we trace our steps back. The route back is till the top of Adar estate along the ridge. From here, we descended through the tea all the way down, hitting the Kotagiri road near the residence of late Field Marshal Sam Manekshaw. From here, it is a road-walk back to Vandisholai. Close to the Chinna Balaji Tirupathi temple, there is the ethereal scent of Champa (*Magnolia champaca*) in the air. For the other two with us, this is a first encounter, and so some time is spent clambering and collecting flowers for taking back home. It is now that a giant squirrel decided to show himself; and did he pose. He comfortably sat on the branch, chomping on something very dear. It was a pleasant sight, with him showing as much patience to us, as we did to him.

The walk culminated at the start point; tea at the Iyengar Bakery in Vandisholai is a must after the exertion. There is

milk-tea, black-tea, masala-tea, and lemon-tea to go; with or without sugar.

A short summary of the exposure to the Coonoor Peak Reserve Forest is that there is very little bio-diversity here. There is a felt need to replace the alien invasive plantings with endemic forest in a phased, but deliberate manner. In fauna, there was so little to see, that it gives an impression it has all been driven out. There is knowledge that this is bear-country, but it may be the fringe of their romp. The lower slopes of the forest have thick undergrowth, on the west. The east is populated with a tree-fern forest, and fern as undergrowth. Replacing the eucalyptus on the higher reaches will, probably help undergrowth resume. Undergrowth provides for a lot of small fauna - mammals as well as birds, mollusc, and insects. Rejuvenation will happen with the change in flora, not the other way round.

Ravindra Azad and AK Acharya are undergoing the course of instruction at the Defence Service Staff College. Both of them are ardent nature-trail walkers.

A CLIMATE FOR CHANGE

By Jennifer Pinto

"Save the Planet" said a faded slogan on a wall as I was driving by.

It was what most of us grew up to believe actually, that planting a tree, using less plastic or turning off the lights "saved the planet"! But can we really save the planet or is it the other way around? The planet is, after all, 4 and half billion years old and has survived an amazing number of extreme and catastrophic episodes, from tectonic shifts, raging volcanoes, acid rain and ice ages to meteorite hits. We Humans, however, have only been around for a little over 300,000 years. For these 300,000 years the planet has pretty much nurtured us as we evolved and civilised. Human civilisation, in fact, became possible only when the planet settled into the salubrious Holocene, the current geological epoch of stable, predicable climate. An epoch, just 10,000 years old that roughly coincides with the age of Human civilisation.

So how do we even think we can "save the planet"???

As a civilization, because we have somewhat successfully harnessed Earth's natural resources and invented an economy of resource exploitation, we have settled into a complacent belief that we "control Nature", that we are the centre of the planet. In truth, all we control is a socio-economy that's entirely dependant on the planet's natural systems and bio-diversity. Entirely! We share the planet with over eightand a half million species of animals, birds, fish and insects, countless species of plants, fungi and microbes, who's primary purpose is to sustain the conditions of Life on the planet. The oxygen we breathe, the atmosphere that controls the temperature and weather, the water we drink, the food we eat and the minerals we mine, are all the direct or indirect result or a gift, of the life's work of some creature or natural process somewhere on Earth.

Yes! We live on an amazingly interconnected planet and all Life, including ours, depends on this.

One of the most amazing stories of interconnectedness that I learnt about is how the Sahara desert keeps the Amazon rainforest alive! It's an interconnection, not just of geography but of history and evolution as well.

Every year millions of tons of dust that rises in the air in dust storms in the Saharan deserts in Africa, travels across the Atlantic ocean. This dust, much of it originating in an ancient lakebed in Chad, is rich in Silica and Phosphorus because of ancient fish fossils (most deserts are ancient the sea beds). When it reaches the Amazon forest, the mineral remains of long-dead organisms of the Sahara, provide crucial nutrients like Phosphorus and Iron to the Amazon rainforest's living flora. But the story doesn't end there. When it rains over the Amazon jungles, the water, containing surplus nutrients, runs off into the Amazon

river, that carries these nutrients from the rainforest down to the open ocean. The nutrients including phosphorus, iron and silica, are all needed by algae and phytoplankton to grow. When the phytoplankton die and sink to the ocean floor the minerals that they consumed, sinks with them and will, millions of years later, become part of a desert, whose dust will probably nourish another forest across the world. Intertwined in this story are modern Humans, who are direct beneficiaries of the Amazon forest which is a massive rain machine and a very important carbon sink. Yet, today we're destroying the Amazon rainforest and other forests around the world at an alarming pace. Every day, over 42 million trees are cut down, according to the science journal 'Nature'. Our civilisation has destroyed around a third of the forests we were gifted at the beginning of the Holocene.

You can see the Sahara-Amazon story here: <https://youtu.be/5VImv3U3kQ> or here <https://www.youtube.com/watch?v=s7IVGhTPQAY>

There are also lots of "little" stories that make big differences to our lives.

Phytoplankton are microscopic sea plankton, that floats on the surface of all the planet's oceans. They are the bottom of the marine food chain and get their energy, like any plant does, from the Sun through photosynthesis, releasing oxygen in the process. Nothing remarkable about that except that because of the huge volume of phytoplankton in our ocean systems, they produce 60-80% of the planet's oxygen. Yes, most of the oxygen we breathe comes from the ocean's little green plants. Today, climate scientists are interested in studying phytoplankton because of the key role they also play in carbon sequestration, making oceans very important carbon sinks.

What do phytoplankton feed on? Whale extracta, which is a very precious source of nutrients in the marine ecosystem. An ecosystem we Humans depend on for oxygen, food and weather. But today our oceans are reeling under a staggering amount of Human generated plastic and chemical pollution. UN Statistics put it at 8 million pieces of plastic that end up in the ocean every day!! Ocean acidification, climate change and melting glaciers compound the problem, even as overfishing depletes fish stocks at an alarming rate. So, the next time you read a slogan that says "save the whales" or "save the ocean", remember, that by being mindful of plastic pollution or lobbying for more stringent whaling laws, we're simply saving ourselves!

Another “little” story is that of the earthworm. There are over 6000 species of them and many of us may have begun to appreciate the role earthworms play in our compost pits, but that little action of turning organic waste into soil is something that worms have been doing for, maybe 250 million years. In fact these little wriggly soil ecosystem engineers, helped create soil, a substrate that has been the foundation of forest ecosystems, climate, freshwater and agriculture. In other words, a foundation for Life as we know it. According to Charles Darwin, in the last book he wrote in 1881: “The Formation of Vegetable Mould, through the action of Worms”, he credits the earthworm with the planet’s soil formation. In his book he concluded, “It may be doubted if there are any other animals which have played such an important part in the history of the world as these lowly organized creatures.”

The story doesn't end there though. Soils are huge carbon sinks and the microbes in the soil that breakdown the nutrients that plants absorb finally make their way into our gut through the food we eat. These microbes then help us absorb nutrients to sustain our bodies. Mounting evidence shows that many of today's whole foods aren't as packed with vitamins and nutrients as they were, say, 70 years ago, mainly because of chemical agriculture that kills soil microbes. We are direct beneficiaries of the three important roles of healthy soil systems: the micro-life, ground water and carbon sequestration, yet today, we are eroding lands and killing soil ecosystems with industrial and chemical agriculture at an alarming rate. Globally an estimated 1 billion plus people are undernourished (FAO 2009) and the 2017 FAO Global Soil Partnership report showed that each year, an estimated 75 billion metric tons of fertile soil is eroded from arable lands globally.

You don't have to look far for millions of such little and big stories of interconnectedness. Right here in the Nilgiris, the region has many species of flora and fauna that have helped make the

Nilgiris and all of the Western Ghats one of the planet’s most bio-diverse ecosystems, that impacts the climate and many important conditions for life. In recent years, the Western Ghats have been severely impacted by changes in land use and other infrastructure and development projects in the surrounding plains, resulting in species loss, changing weather patterns and land erosion that has already begun to have a negative impact on our lives.

Today, all of Nature’s systems, the oceans, forests, deserts, glaciers and soil are under threat from Human caused pollution, land degradation, species loss and climate change, that is a result of a prolonged systemic lack of understanding of our deep connectedness to the planet's natural systems. This has had a cascading impact on each and every ecosystem and on the conditions that sustain Life.

Why is it so important to recall our deep connectedness to Nature?

Today we are so disconnected from Nature that we do not seem inclined to make the necessary changes to address the alarming issues the planet faces. Our civilisation needs to stop in its tracks and take a relook at how we conduct our lives. We need to understand Homo Sapiens true relationship with the planet. We may even need to unlearn and recalibrate if we have to reduce the economy’s dependence on fossil fuels and reduce our carbon footprint. We also need to use our collective knowledge to understand Life’s truths and go beyond our Exploitation and Waste Mindset and adopt a Regeneration Mindset. Regeneration is the basis of all Life on Planet Earth and has helped the planet survive for four and a half billion years.

We cannot save the planet but the planet can save us if we let her wisdom guide us.

The Climate is ripe for Change.

Jennifer Pinto has done many things in her life, from making films to making handmade paper and designing lights. She travels, cooks, and writes as for children. She has a consistent love for the environment, and the Nilgiris.

FROM CONFLICT TO COEXISTENCE IN KOTAGIRI

By Habeeba Fathima

It is a fact that sharing spaces with wildlife ranging from small mosquitos to large elephants is a life for many in India and unfortunate situations occur especially when there is also pressure on the natural resources. As human populations and demand for space grow, the competition for shared resources between humans and wildlife also grows. This often results in negative interactions and sometimes even conflict between species.

All over the world people are putting in efforts to mitigate the loss of livelihoods and life. Human-wildlife conflict cannot be attributed to a single, focused reason. Many points of focus such as livelihoods, forest health, access, and governance contribute to the conflict. A holistic approach is a solution.

In the town of Kotagiri, a small town in the Nilgiris district of Nilgiris Biosphere Reserve, people share spaces with animals like the Indian Bison, Sloth bear, Leopard, and Dhole. I still remember the first time I saw an adult sloth bear with two cubs

when I was walking home. I had not given much thought about the warnings I had received to not venture out after sundown. I'd just moved in from Chennai and when I heard that I will be sharing spaces with animals like leopards, sloth bears, and gaur, I believed it to be stories emerging from fables to make children sleep at night. But I was foolish, and only after a near-death encounter did I understand the graveness of the situation.

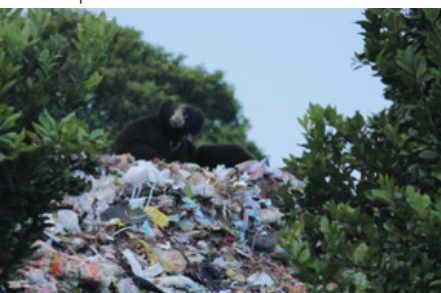
But people in this small-town live with these animals daily. They know the bears for raiding their temples for food, the bison for damaging infrastructure, and leopards for taking away their dogs.

While these perceptions develop through negative interactions and many negative interactions build to become a conflict over time, there is a lot of retaliation and hate for wildlife among communities.

Through Keystone Foundation's work, we are currently mapping large mammals' movement in Kotagiri town through secondary sign surveys. Secondary signs



Shared spaces - Photo: Chandrasekhar Das



Sloth bear and cubs in a dump yard foraging for food - Photo: Habeeba Fathima



Street play conducted in collaboration with Nilgiris Forest Division to create awareness among public in Kotagiri - Photo: Keystone Foundation



Leopard fallen into an open well rescued by the Tamil Nadu Forest Division.



Human - wildlife interactions theatre competition conducted by Keystone Foundation.
Photo: Habeeba Fathima

include pug marks, hooves marks, scat, and scratch marks. These signs indicate animals' movement without having to encounter the animals directly. This will also help us identify patterns of animal movement about multiple variables like seasonality, fences, refuge, presence of forest cover, etc. We also engage the community members to identify ground-level knowledge, and perceptions, and identify hotspots for negative interactions. With the help of the communities, we identified that some of the common causes of negative interactions are the lack of proper infrastructure, like bad lighting on the streets, improper garbage disposal, overgrowth of invasive plants along the bends of the roads, and lack of access to toilets. With the support of Foundation Segre through IUCN Save Our Species, HCL, and Rohini Nilekani Philanthropies, we have managed to set up some solar-powered street lights, closed open wells, and supported some villages with toilets. This has created a sense of security among the people in the villages. To build a pro-conservation attitude and bring collaboration between people and nature, we regularly conduct nature education programs for children and young adults. Through fun programs like street plays and radio programs, we also engage the adults of the community.

A holistic approach to solving conflict would not be completed without the involvement of multiple stakeholders like the local communities, government representatives, and forest managers. Often forest managers are left to tackle any situation without proper safety gear and updated training. This results in the communities losing trust in the Forest department and taking matters into their own hands. Through our project, we also train and equip the frontline staff of the forest department to handle and prevent situations of conflict where needed.

The results and positive outcome of this project will serve to become a model for the management of human-wildlife conflicts in and across the state of Tamil Nadu. There will be a special emphasis on peri-urban areas and hill towns as these are the hotspots for conflict and mitigation/adaptation mechanisms seem to be lacking.

Habeeba Fathima is NNHS coordinator and conservation educator at Keystone Foundation interested in studying human - animal interactions in the Nilgiris Biosphere Reserve

SAGA OF OOTY LAKE

N Moinudheen, Samson Arockianathan, M.S. Sarath Kumar

The lake at Udthagamandalam is a man-made one, and over recent decades, has become one of the major tourist attractions in the Queen of the Hills, with a boat-club situated in one corner.

The lake is fed by the Kodappamund channel, which runs down from the erstwhile Toda hamlet of the same name on Kotagiri Road, under the culvert at Charing Cross, and behind the shops on Commercial street. Apart from being a rain-water drain, it is also an effluent channel for all users along its banks till it spills into the lake.

The lake was created by placing sluice gates towards the west end, near Kandal, and allowing the bowl to fill up. A boulevard was later placed across the lake. In later years, the upstream part of the lake was filled over to create the race-course; the down-stream part continues to be the lake. The boulevard is now the road on which the Ooty Bus Stand is located.

On account of the effluents it carries, the channel brings in a lot of sedimentary sillage, and over a few years, the lake bottom rises a fair bit. It is a routine activity for the Public Works Department to undertake “de-silting” of the lake bed, and the channel that feeds the lake.

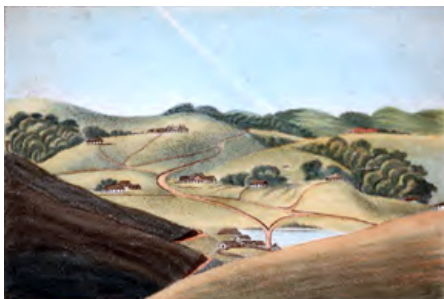


Also, over the years, the Ooty Lake happens to have become winter home for a fair variety of migratory species that fly south for the winter. This list of guests includes some from foreign lands. The count of visitors this year included the Green Sandpiper, the Wood Sandpiper, Northern Pintail, Garganey, and the Northern Shoveler, mostly European dwellers; This year, there has been the sighting of the Lesser Whistling Duck as well. Other migratory birds from within India that have been sighted regularly over years

by ornithologists is an honourable list containing forty-three varieties/species.

This year (2022-23) happens to be the one when the PWD needs to undertake the desilting of the lake. Desilting of the lake bed and the feeder channel are a good thing in multiple ways. Firstly, the depth of the lake is taken down, thereby increasing the volume of water it holds. Secondly, the desilting helps clear the outlet drain, else the water will flow over the sluices, rather than through the drain gates on the west, where the channel takes the feed past Ooty Golf Course into Sandy Nullah. Choking of the sluices is not a good thing, for when the lake needs to be emptied/drained, or excess water needs to be released, the sluices will not allow the drainage. This possibly was the reason why Ooty faced flooding during one of the nights of excessively high downpour in mid-2022. Linking the two events, one wonders whether the act of desilting is routine, or is it based on the status of the lake and feeder channel analysed in hind-sight after the downpour and flooding.

Being the channel of convenience along the Kotagiri road and Commercial street, the feeder channel is also full of waste, including plastic and all other sorts of commercial and domestic





Garganey at Ooty Lake. PC N Moinudheen



Cormorant with a plastic piece in its beak. PC N Moinudheen

refuse. During heavy rains, this finds its way into the lake. There have been instances of floating islands of waste, with water-birds resting, or roosting on these. For the uninitiated, this looks, and sounds, like an extraordinary phenomenon (floating islands!), but the poor avians need to find ways of accommodating themselves within the space that the human leaves them with.

Activists have also been demanding the clean up of the lake, especially of the filth and garbage, as also of the weeds which seem to have choked about a fifth of the water surface. Consequently, the decision to de-silt the lake came as good news to many. Unfortunately, the timing is not so good. Nov-Jan is the peak period of migratory roosts. Commencing desilting in end-Nov to early-Dec would have affected the roosts. This is may not just be a short-term measure for the current season. Migratory birds have a sense of memory that is yet not very much understood in science. If disturbed this year, they may not revisit this site the next year.

A group of citizen activists came together to meet with the District Collector on 28 Nov 22, and it was promised that all stake-holders would work towards the better aim - that the desilting is necessary, but can be deferred was the most workable option. It seems to have been decided to take on the desilting after the visitors leave for home turf, but well before the next rains hit us.

There is hope that the work will be done well, and done in time. The team of activists that came together calls itself the Nilgiris Environmental Team, and there is one member keeping track of the timelines, and field-studies on the migratory visitors. One hopes to see the avian visitors again next year at the same time, to cleaner waters, and hopefully bring in some more for us all to see.

On an aside track, one wonders why only Ooty lake, of all the water bodies in the biosphere, has so many migratory visitors. Other water bodies have lesser human population, and consequently, lesser pollutant. Would the ambient temperature be a deciding factor (Ooty is warmer than Mukurthi, Pykara, Upper Bhavani, Avalanchi, Emerald, et al, by probably 2°C). One wonders. This is a ripe topic for our next research.

Ooty lake was created by British settlers as a *pièce de résistance*, and stayed an element of beauty for decades since. It is up to us, the people of the Nilgiris, to keep it in its natural pristine state, lest it become a pond of foul effluents and garbage, causing the decline of not only the migratory visitors, but our local avian population as well.

The writers:-

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A research paper on this issue was submitted to the web-portal ResearchGate and is locatable on the url https://www.researchgate.net/publication/355819732_OCCURANCE_OF_MIGRATING_WATER_BIRDS_AND_RISKS_OF_OOTY_LAKE_IN_NILGIRI_WESTERNGHATS_INDIA.



An excerpt of the research paper is as follows:-

This study article is based on the types of migratory birds in Ooty Lake and how they spend six months in this lake and the ecosystem and structure of the area around the lake. The description of the vegetation cover of the reservoir is given. A list of the inhabitants of the lake is given. The ecological state of the lake as a habitat for many species of waterfowl is of concern, since there is a lot of plastic and debris in the lake and along its shores. Tourists also help to reduce the diversity of waterbirds by scaring them away. A big threat to the inhabitants of the lake is nylon nets, which are exhibited not only by the local Fish Farming Department, but also by some local residents. The situation improved slightly in 2020, when the reservoir was closed to tourists due to the 2020 Covid period.

Photo credits. Pictures of birds in Ooty Lake taken by and copyrighted to N Moinudheen. Picture of Ooty Lake is representative, sourced from Tamil Nadu Tourism Corporation web-portal. Vintage pictures of Ooty Lake sourced from a collection of Dr Vasantham Pancharathnam of Coonoor.

"EFFECT OF SOIL: WHERE FOOD STARTS"

By Pasupathy. S and Ajay Ludra



A healthy soil is essential for the survival of a world that depends, to a very large extent, on agricultural produce. Soils support healthy plant growth to enhance both nutrition, and water percolation to maintain groundwater levels. Soils help to regulate the 'plant-climate' by storing carbon, and are the second largest carbon sink after the oceans. They help maintain a landscape that is more resilient to the impacts of droughts and floods. As soil is the basis of food systems, it is no surprise that soil health is critical for healthy food production (Konda Reddy Chavva, 2022).

Soil is formed by the process of weathering of rocks and plant waste, primarily done by wind, water, and climate. In some studies conducted towards the turn of the century, it has been established that it takes a century to add a layer of 5 centimetres of soil in areas where natural mulching occurs - in generative forest-areas. Lands where mulching does not take place - naturally, or human-aided, have virtually no natural-additive nutrients to the soil. This then leads to soil nutrient imbalance,

which is identified as one of the main global soil threats, caused by the underuse, misuse, and overuse of nutrients. The excessive use, or the misuse of fertilizers also has negative effects on ecosystems and contributes to climate change, including through biodiversity loss, and greenhouse gas emissions.

Soils: A crucial ally to food security and nutrition: Food availability relies on soils: Nutritious and good quality food and animal fodder can only be produced if our soils are healthy-living soils. Over the last 50-odd years, advances in agricultural technology

and increased demand due to a growing population have put our soils under increasing pressure. In many countries, intensive crop production has depleted the soil, jeopardizing the soil's productive capacity and the ability to meet the needs of future generations.

Maintaining a healthy soil implies managing the land sustainability.

With a global population that is projected to exceed 9 billion by 2050, compounded by competition for land and water resources and the impact of climate change, our current and future food security hinges on our ability to increase yields and food quality using the soils that are already under production today. Holistic production management systems that promote and enhance agro-ecosystem health that are socially, ecologically, and economically sustainable, are necessary in order to protect our soils while maintaining high productivity capacities.



Importance of Soil Conservation. To help fight climate change, scientists and researchers, and farmers committed to sustainable agriculture champion soil conservation, which promotes healthy, fertile, productive, and resilient soils. Soil conservation is essential for

Reducing the destructive impact of climate change worldwide

Maintaining a balanced climate cycle

Providing healthy ecosystems where plants, trees, and animals can thrive

Ensuring healthy agricultural yields through sustainable farming practices.



Farmers play a central role in this aspect. Numerous and diverse farming approaches to promote the sustainable management of soils with the goal of improving productivity is the need of the hour. For instance, agro-ecology, conservation agriculture, organic farming, zero tillage farming and agroforestry. Ultimately, a better understanding of the linkages between soil life and ecosystem function, and the impact of human interventions will enable the reduction of negative impacts and allow to capture the benefits of soil biological activity more effectively for more sustainable and productive agriculture. (Food and Agriculture Organisation of the United States, 2015) .

In the Nilgiri Biosphere, we have three categories of land not under human domestication - the forest zones, tea cultivation, and other forms of farming, including horticulture. Forest zones not under Eucalyptus occupation have a good soil generation/conservation pattern. Where Eucalyptus plantations exist, the mulching takes inordinately long, and Eucalyptus mulch tends to deny other plants from thriving. In a manner of speaking, Eucalyptus tends to poison the soil, though it works well to hold water. Tea plantations have a forced mulching pattern every year. Pruned tea is left to rot and weather under the plant itself. For this reason, the soil under tea, over the last 25-30 years, tends to be a good water retainer, despite clayey red soil underneath. Where other forms of cultivation are being undertaken, there is fertilizer-use, and single-crop farming all year round - carrots, potato, strawberry, other perishable vegetables, and floriculture. Mixed farming has not been introduced to the farmers (growing fruit-trees where ground is used for vegetables). As a result, the soil in the third zone is poor, and needs chemical intervention to sustain food growth.

Good Soil Conservation Practices would include one or more of the following techniques:-

Crop rotation: Instead of planting the same crop year after year on the same piece of land, crop rotation involves planning out growing seasons for different crops. This method of sustainable agriculture requires long-term planning with crops being changed every season. In addition to improving soil health and organic matter, crop rotation reduces the need for fertilizer and pesticides, lowering costs, and increasing the table-quality of produce. It also helps prevent excess chemicals from entering water supplies, improving water quality.

No-till farming: In no-till farming, seeds are planted in narrow furrows eliminating the need to plough. It protects the soil from moisture loss due to high temperatures because cover crop residue remains on the surface of the soil. The residue layer also helps infiltrate the soil and increases organic matter and microorganisms, further enriching the soil.

Earthworms: Earthworms are among the most productive organisms in soil. They digest plant matter, releasing essential nutrients into the soil and their tunnel network creates channels that help water move through the soil.

Wind Breaks: Wind breaks are rows of trees and bushes planted between fields of crops, reducing the erosive power of the wind on the soil. Wind breaks also provide homes for



Conservation tillage consists of a variety of practices used in agriculture to reduce wind and water erosion of the soil. The main principles are: a) to keep bare soil protected at the time of the year with living vegetation, or with residue from the previous crop; and b) to minimize the number of times the field is tilled bare soil is highly susceptible to erosion. Excess tillage destroys soil structure and organic matter.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



Cover crops.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



No-till farming involves planting seeds into the residue of the previous crop, with no tillage between harvest. No till leaves 60 to 70 percent of a field covered with crop residue..

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))

living things. From an economic standpoint, using trees that produce fruits and nuts in windbreaks can diversify farm income.

Wetlands restoration: Wetlands restoration and protection is defined as “removing a threat or preventing the decline of wetland conditions”. Wetlands provide a habitat for living creatures of all types. They also act as buffers, protecting farmland from floods.

Buffer strips: Like wind breaks, buffer strips are designated areas of land, planted with trees and bushes. Instead of protecting soil from the wind, their purpose is to prevent water runoff and reduce soil erosion.

Terrace farming: Terrace farming is an agricultural practice that uses terraces or steps built into the slopes of hilly or mountainous areas to create a water catchment system for crops and is commonly used in growing rice. Rainwater carries nutrients and vegetation from one terrace to the next, so the soil remains healthy. Terrace farming also reduces soil erosion and improves soil productivity in otherwise idle plots of land.

Contour farming: Like terrace farming, contour farming involves growing crops on hills, but instead of changing the structure of a hill, the farmer uses its natural slope. In contour farming a farmer ploughs the soil parallel to the hills contours, creating rows of small dams that minimize runoff essential nutrients, organisms and plants, while increasing water infiltration in the soil. The U.S. Department of Agriculture (USDA) reports that contour farming can reduce soil erosion by as much as 50%.

Forest cover reestablishment: In areas where soil has degraded the reestablishment of forest cover can improve soil and restore ecosystem health. This method provides shade for crops and is particularly useful for forest farming, which cultivates high value crops such as those used for medicinal purposes.

Reducing climate change's impact: Restoring degraded soil and using soil conservation practices in agriculture can effectively sequester carbon, helping build resilience to the effects of climate change.

Role of Soils in Water conservation

When thinking about water conservation, many people imagine only water sources - streams, rivers and lakes. The land surrounding these waterways is equally critical to the process too. Soil works to protect local water sources - its erosion is a problem that puts our water at greater risk of contamination. Soil is a natural protector of our water sources. It works to filter contaminants out of water runoff before it joins up with waterways. As water flows and the wind blows, soil will erode. Gradually, soil loses its natural ability to filter. The result is that more contamination is allowed to reach water with increasing pollutant levels.

When water is not able to permeate the ground due to poor soil management, it will run off into sewers, storm drains, and waterways, carrying with it contamination picked up along its path. Consequently, soil erosion, either by water or wind,



Buffer strips.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



A grassed waterway is a permanently vegetated saucer – shaped channel designed to carry surface runoff across land without causing erosion. It is commonly used where gully or rill erosion is taking place due to the concentrated flow of water over land.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



Terrace.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



Contour farming.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



A drop inlet consists of a vertical intake pipe and a horizontal underground pipe. The water enters the vertical pipe at ground surface, and falls below where it is guided safely through a large concrete metal or plastic pipe into a stream or ditch.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))



Natural fertilizers include live stock manure, mulch, municipal sludge, and legume plants such as alfalfa or clover. Manure and sludge are applied by spreading it over the land and then working it into the soil. Strict guidelines must be followed in timing applications, since both sludge and manure can cause major water contamination if handled improperly. Legumes such as clover or alfalfa are grown and then tilled into the soil as "green fertilizer" in North Carolina, U.S.A.

Image credit : Soil and Water Conservation, Johnston County, North Carolina, (HOME) ([HTTPS://WWW.JOHNSTON NC.COM/SWC/INDEX.CFM](https://www.johnston.nc.com/swc/index.cfm))

causes sedimentation in water supplies that can drastically affect water quality.

In a study conducted in 2021, WL Silver and others, in their review on the role of soil in the contribution of food and feed recommend to better use, and protect, soil resource in the global food system. Policies and actions should encourage shifts to more nutrient efficient diets, strategic intensification and technological improvement, restoration and maintenance of soil fertility, and stability and enhanced resilience in the face of global change.

There is a need to strengthen communication channels between academia, policymakers, and society for the identification, management and restoration of degraded soils as well as in the adoption of anticipatory measures. These will facilitate the dissemination of timely and evidence based information to all relevant stakeholders. Greater cooperation and partnerships are central to ensure the availability of knowledge sharing of successful practices and universal access to clean and sustainable technologies leaving no one behind. As consumers and citizens, we can contribute by planting trees to protect topsoil, developing and maintaining home kitchen gardens and consuming foods that are mainly locally sourced and stand seasonal (Konda Reddy Chavva, 2022).

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NATURE WATCH: NATURE DIARY OF THE NILGIRIS

Collated by N Moinudheen
Compiled and edited by Ajay Ludra

The healthier the ecosystem, the healthier will be the planet and it's people.
Let's come together for the cause.

- 2021-2030 UN Decade on Ecosystem Restoration

July

The Centre has passed the Bio-Diversity Bill [Biological Diversity (Amendment) Bill 2022]. Experts and activists alike are not too happy with the bill. There is a general feeling that the bill has a large number of 'holes' which provide for misuse of the enactment for personal gain. One of the key issues is that there seems to be nothing to help the hapless elephant from poaching, capture and domestication, or breeding and custody in unacceptable conditions. The Bill

drew a lot of flak from various corners of the country for its seemingly biased content.

A study of the O'Valley part of the district was done by a reporter for The Hindu. The Gudalur-Pandalur section of the district has undergone extensive 'humanisation', with extensive tracts of land being cleared and converted to tea-use over the last century. While all the upper-reaches of the sector have been declared as 'Forest Lands' under the Janmam Estates Act, a large portion is classified as 'leased'. This ravishing of the environment has had a direct impact on flora and fauna, with the latter losing even a 'toe-hold' for survival.

August

The Irulas are traditional snake-catchers; consequently, they are licenced by the State Govt to catch snakes to help extract venom. Over the last few years, there has been a dip in their produce, with reduced orders from the State Govt. The Irula Snake Catchers' Industrial Co-operative Society Limited, a 44-year-old institution and India's largest producer of snake venom, has been fighting for its survival. This year, they have got a respite with payment of dues, and an increase in orders for catching snakes.

September.

A report in The Hindu brought out statistics of a reducing population of the Sloth Bear in the Nilgiris. The main reason cited is urbanisation, and reduction in habitat (if not entire habitat loss). This has also resulted in an increase in human-animal conflict, especially with the Sloth bear now find-



Nilgiri Thar (representational image)



Kashmir Flycatcher. PC Anthony Grossy, Wellington

ing it convenient to forage inside unoccupied homes. There have been quite a few cases of forced entry into villas in Elk Hill in Coonoor, and in Aravenu/Halakarai. In a few cases, bears have been seen foraging through garbage inside the localities of Mount Pleasant, Ottupattarai, Halakarai, Bakiyapuram, and a host of others.

October.

India took front-stage during the International Meet on Climate Change. The time is ripe for a rethink on the state of our own 'delicate bio-sphere'. Urbanisation of the hill-district is still below 10%, but seems to have spiralled upwards immediately after the pandemic. It is not far when the available resources will become inadequate to support our existence. Agricultural produce is meagre, arboriculture is virtually non-existent (except for where the Horticulture Department manages to produce); tea is becoming unprofitable, and lands are being sold. We need a study-group, preferably citizen and administration combined, to evaluate and spell out the correctives for the administration to implement, less this biosphere need its own "Meeting on Climate Change" very soon.

November.

A fair number of migrant birds have set up their winter home at the Ooty lake. The sightings this year include the Green Sandpiper, the Wood Sandpiper, Northern Pintail, Garganey, and the Northern Shoveler; the Lesser Whistling Duck has been sighted this year in addition to the others.

Elephant deaths continue unabated. The Forest Department of Tamil Nadu stated over a 100 deaths in ten years (all over India, the figure is 348 deaths in five years). In one case, the jumbo died on the road after a hit by a truck on the Mudumalai-Bandipur stretch. The Forest Departments of both states have closed the road to traffic by night in response to the aftermath. In other cases, electrocution is the largest killer (79 deaths), and elephant incursions into agricultural patches seems to have no other solution than using electricity. It may be worthwhile to study the movement patterns of the elephants over a year or two, and work out ways to reduce, if not eradicate, their intrusion into farmlands. Statistically speaking, poaching seems to have reduced.

A tiger was spotted with a kill on the outer reaches of Udhagamandalam. A false report of this being on the Golf-Links sent Ooty residents into a flurry.

December.

December started with the good news of the arrival of the Kashmiri Flycatcher. Birding enthusiasts had been eagerly waiting for the pretty, delicate, little dumpy bird. In the initial days, the call was distinctly discernible, but sightings were elusive. Eventually, it was caught on camera by quite a few.

The month also saw the decision of the PWD to commence cleaning up of the Kodappamund channel and the Ooty Lake of silt and garbage. While the decision is a welcome one, it tends to affect the roosting migrants (and resident birds and other aquatic animals); a group of citizen activists approached the District Collector to involve all possible stakeholders to undertake the lake cleanup without disturbing the wildlife on the lake. Promises were made, and PWD has not initiated the work; a common sentiment is to delay work till the migrant birds fly away in March.

A new species of moth was identified in Udhagamandalam. It has been named "*Tagora thomasi* Naumann & Nassig". A first-ever Butterfly survey was conducted in the Mudumalai reserve. 175 species have been recorded (The Hindu, 27 December).

In a stray incident, a contractor was noticed felling trees in the IISWC campus. The campus is leased from the forest department for research, and authority for felling of trees was not accorded, nor sought. Arrests have been made (The Hindu, 24 December). In another case where a dog-breeder abandoned his dogs near the forest, he has been apprehended.

The Govt of Tamil Nadu has set aside Rs 25.14 Cr towards conservation of the Nilgiri Tahr from extinction (Business Line, 29 December). The Nilgiri Tahr is Tamil Nadu's State Animal, and an initial allocation of Rs 10 Cr has been made out of the allocation on 28 December by the Finance Minister. The project includes surveys, treatment of the animals, rehabilitation of affected populations, and Shola grassland restoration in Upper Bhawani.

DAYS OF NATURE

The birds are singing,

The sun is out,

The rivers are flowing,

The squirrels are wandering about.

All is calm,

The geysers are spewing,

The palm trees are sleeping,

The fish are resting.

The people are at ease,

The peacocks are dancing,

The whales are moaning in the seas,

And the world is in a healthy peace.

-Dhruv Menon



As we finish 2022, the diary consolidates the activities conducted by the NNHS for the later half of the year. In June, we invited Jeganathan P from Nature Conservation Foundation (NCF). He spoke about his project on searching for graves and interesting remnants of the

past in the Nilgiris. His exploration of historically and ornithologically significant, unexplored sites in the Nilgiris made for an interesting session.

September was a busy month for NNHS. The members went on a trek into the magnificent Sholur landscape. Grass-





lands interspersed with shola patches and the views of Masinagudi and the Moyar gorge were the highlights of the day along with an impromptu picnic with sandwiches and cookies.

We had multiple workshops for schools on nature education and wildlife conservation. Thirty students and staff from Kodaikanal International School visited us for a three day training on wildlife conservation. Followed by a visit from the Holy Innocents School in Coonoor. Our beekeeping experts also visited Hebron's International school for a beekeeping training for the students and staff there. We had recently also set up bee boxes in the school campus.

In October, to celebrate the wildlife week we screened movies in Sathyamangalam and Kotagiri for the children we regularly engage with for nature education. Movies on Human-elephant interactions, climate change, and frogs were screened. To continue the spirit some NNHS members, volunteers, and community members of Ambedkar

Nagar did a cleanup drive along the boundaries of the Longwood Shola RF.

In November, we collaborated with ALTEFF (All Living Things Environmental Film Festival) and Keystone Foundation to conduct a movie festival at the Assembly Rooms in Ooty. Two days of exciting and impactful movies and discussions with the filmmakers was a part of the event. We also had a visit from the Indian Public School in November. After a brief discussion on the activities of Keystone Foundation and NNHS we went on a tour of the Keystone, Lastforest, and Aadhimalai campus.

With the end of one year and the beginning of another, the Nilgiri Natural History Society looks forward to conducting many more activities and continuing working towards ecologically sensitive communities where people and biodiversity coexist.

Habeeba Fathima
NNHS Coordinator.



The newsletter of the Nilgiri Natural History Society (NNHS) aims to cover the many dimensions of natural history - conservation issues, lay observation, cultural representations and traditional knowledge. The newsletter will carry communications about research in Keystone Foundation in the areas of conservation, environmental governance, culture, livelihoods and enterprise. In keeping with the pan Nilgiri Biosphere Reserve (NBR) nature of the Society, space will be allocated for reporting of events/views from elsewhere within the country and from outside the country. Additionally a section will be devoted to research summaries by students who work in the region of the NBR. Guest editors will be invited for special editions. News items gleaned from printed sources about the NBR will be featured. Separate sections will carry information on NNHS and Bee Museum activities. The species focus will feature species of special conservation status, endemic to the Western Ghats and present in the NBR.

SUBMISSION OF ARTICLE

The NNHS newsletter articles are reviewed by the Chief Editors and a member of the editorial board. Articles are invited for the following section: i. Natural History News from India (400 words); ii. Natural History News from the World (400 words); iii. Research Initiatives in the NBR - student contributions (400 words); iv. Species focus (250 words). Articles should be submitted by email to: contact@nnhs.in

Authors should provide complete information including an email address and phone numbers. Articles need to be submitted in standard word processor formats only. Rich text content and other forms are not accepted. Figures and texts need to be sent in separately with adequate labelling and numbering in context to the articles sent. Pictures in the manuscript also need to be sent in separately in TIFF, JPEG or PNG formats with resolution not less than 250 dpi

Reference style:

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Photo credit: N Moinudheen

(Leopa Schintlmeisteri)

Familia : Saturniidae

Subfamilia: Saturniinae

Tribus : Saturniini

Genus : *Loepa*

Species : *Loepa schintlmeisteri*

Loepa schintlmeisteri, the Bright golden emperor moth, is a moth of the family Saturniidae. This species is relatively new to science, having been described by a German entomologist, Dr. Ron Brechlin in 2000. It is native to the Western Ghats, up to elevations of 1000-1200 m. The moth was described with the help of specimens from Tamil Nadu, but is also found in Karnataka, Kerala, and Maharashtra amongst the southern States.