A Newsletter on the Natural History, Ecology and Conservation of the Agasthyamalai region, Western Ghats, India

AGASTHYA

Volume 10 Issue 1

SPECIAL FOCUS: NATURAL HISTORY

January to July, 2018

ASHOKA TRUST FOR RESEARCH IN ECOLOGY AND THE ENVIRONMENT

Editorial

As I walked along with my colleagues and ATREE PhD students of 2017 batch into the `Green trail' in the Kakachi forests of KMTR as part of the natural history walk, I wondered about the results of the similar exercise with the previous batch. All their observations had in fact vanished in thin air. So, this time we decided to capture it in Agasthya. Also, I remembered Rauf Ali, our maverick professor, quote his grand-uncle Salim Ali "field notes are not for you but it is for others, so it has to be detailed and lucid". I parroted him but promised that we would publish them in Agasthya. The PhD students took the whole exercise very seriously, as we now have eight of their natural history notes in this issue. Most of them are accounts from Kadana trek and Green trail. It is amazing to see diverse stories that have emerged from the same trails. One thing which caught almost everyone's attention was the lofty wet evergreen forest tree *Cullenia exarillata,* its flowers, fruits, its role as keystone species, and of course the lion tailed macaque. We have diverse accounts – from the first timer to the rainforest, to ones who have lived in forests. Also, one student reflects on what the forest and its occupants meant to an ecologist and a farmer. A couple of them have stepped out of these two trails to write about their experience on their mini project. These night riders give interesting accounts on frogs and bats, which were their subjects of research.

With respect to the newsletter's editorial review, I will be taking over as Editor and Rathnavel Pandian as the Associate Editor. The editorial team will remain the same. We would like to thank Allwin Jesudasan and Rajkamal Goswami who took the Agasthya to a larger audience. Enjoy reading the revamped edition which now, besides nature, will also capture the history and culture of the Agasthyamalai region. We have brought in some changes in the design and will also have an online version which has been made mobile friendly.

We would be happy to receive your feedback.

- Soubadra Devy

Contents

Cover page image: Lion Tailed Macaque
Credit: R Ganesan

Flip of cover page image: Tamiraparani Waterbird count
Credit: Antony

Back cover: Cicada
Credit: Thalavai Pandi

Editorial Team

Editor: Soubadra Devy
Associate Editor: Rathnavel Pandian
Editorial Review: R Ganesan, T Ganesh, Soubadra Devy, Mathivanan

For feedback & suggestions please write to:
rathnavel.pandian@atree.org

Agasthya is available online at
https://atree.org/newsletter

Agasthya is a medium to highlight ACCC-ATREE's research and conservation activities

A Deluge of a Different Kind

Mottled defoliated leaves of Myristica, by the leaf beetle Sastroides besuchet - T Ganesh.

The wet evergreen forests of Kalakad Mundanthurai Tiger Reserve (KMTR) seem to be a forest frozen in time. To a layman, it appears a sea of unchanging green, constant dampness with the musky odour of fungus and rotting vegetation prevailing in the air, but if you look beneath this envelope of constancy, there is change. Walking the forests for years has always revealed something interesting every time I go there.

I share one such observation that happened in the summer of 2016. It was a hot and dry year; Ganesan was working in his permanent plot deep inside the evergreen forests when he noticed that *Myristica* trees were losing leaf. The fallen leaf had a string of brown sickle like mark on then. Closer examination revealed that the green tissue containing chlorophyll has been eaten leaving behind brown patches. Over the months as we looked at more and more trees of *Myristica,* it was clear that most trees were having similar issues. Nowhere in the 25 years of observations, have we seen such heavy loss of leaves. As we continued our watch, we were beginning to get a hang of what was happening. Fallen leaves showed that there were cluster of eggs on it but were mostly dry cases.

We then decided to go up the canopy and look at fresh leaves. The green leaves had fresh eggs and also tiny caterpillar-like larvae, who were grazing on leaf surface turning then brown. They were after the green tissue and not attacking the main veins, which kept the leaf still green and attached to the tree. The loss of the green tissue is a big cost to the trees and the strategy from the tree would be to drop leaf and discourage more attack. Would that be the case? So we bagged the branches to see what happens. The leaves did drop off one by one till the branch became bare and the larvae had become big or pupated. To get a better idea of what is happening we reared the larvae in cages with fresh *Myristica* leaves and found them grow big quickly feeding on the leaves. The larvae are also wicked smart as they would not eat the whole leaf but would move on to a fresh leaf after some part of the leaf was eaten. This kept the leaf from falling with the larva. No wonder we did not see larvae on ground. These simple experiments of rearing them showed that larger ones went below the fallen leaf and pupated. So, we thought that they may require soil and litter to pupate. We provided them with soil in a bucket and left it in the forest enclosed in a net bag. The bigger larvae pupated in the soil and after a period of wait we saw beetle like insects coming out. The insects were identified as leaf beetles *Sastroides besuchet,* and entomologists said that they were common in cultivated nutmeg but did not know its native host. The adult insects were nocturnal and we saw them active around lights at night. They possibly would have laid their eggs at night - a reason we could not see them do so in daytime.

In all the 25 years of watching *Myristica* trees we never saw such a deluge of leaf loss. What lead to this eruption of beetles? Was it drought, high temperatures, low moisture or some other biotic pressure that lead to this eruption? We probably will answer some of the questions but not all. There is more to it. *Myristica* fruits are eaten by several arboreal animals. However, one little fellow, the spiny dormouse, specialises on it. Even after 2 years, the trees have not fully recovered and flowering and fruiting is just initiated. What would have happened to the frugivore community dependant on it is even harder to answer. Keep watching for more on *Myristica!*

- **T Ganesh**

tganesh@atree.org

Searching for *Mundanthurai*

Ghats or 'steps' this is where our massive welcoming mountains takes its name as the Western Ghats. Among all these mountains which look as if planted in the sea, stands out a conical, easily distinguishable peak: Agasthyamalai, named after the legendary short ascetic sage Agasthya (*aga*-mountain, *asti*-thrower, overthrower of mountains) who is first mentioned in *Rig-Vedas*, as one of the *Saptarishis*. Apart from these mythological significance, Pothigai Malai (another name for Agasthyamalai) has an important role in letting in the monsoon rain-bearing clouds towards the eastern side of the Western Ghats, which helps in the formation of evergreen forests in the eastern side at lower elevations as well (usually evergreen forests are seen at the higher elevations, but here one can see evergreen forest at 315-400m elevation as well), making this place an exception of its kind in the entire Western Ghats range.

A small stream. Picture credit: Lakshmikantha

If someone is new to the landscape then apart from observing the

surroundings closely, following the meaning of names, places and things will help a lot to explore the history and its current significance. While doing so I came across an interesting story for the origin of name *Mundanthurai* narrated by RG sir, with calm and apathy which made it scarier. *Thurai* means lord, *Munda* means head and *Runda* means body, basically *Mundanthurai* translates to headless body of a British lord who was beheaded by local people in response to some atrocities. The soul of that British lord without head is rumoured to be roaming around in the Mundanthurai Bungalow made all of us shiver for some time and the imagination of the same used to pop-in when we wake up in the middle of starry dark night.

As we started to walk through the jungle, along the path which was once a trade route to Kerala and estates in the Ghats, Soubadra ma'am gave a brief intro to plant-animal interaction and some co-evolutionary stories of butterfly pollination, how foul smelling plants keep away herbivores. Then RG sir took a field class and taught us about transect and quadrat sampling, Soubadra ma'am did mention about the importance of considering the third dimension of vertical height in this grounded study using XY co-ordinate quadrats (it will be useful while sampling birds, lichens etc., which are distributed vertically).

We started to walk back on the same route we came, I did find a scrub plant popularly known as *moggalu soppu* in Kannada. Collecting *moggalu soppu* is a routine activity of many herders in some parts of Karnataka which they use to prepare the bed for cattle. After grabbing a nice cup of tea we all headed towards field station, hoping to site a new species in the dusk colloquially well-known but never had been documented with proof – *Mundanthurai.*

-

- **Lakshmikantha NR**

lakshmikantha.nr@atree.org

A River from the Rains

On our first day at the field station, we were to visit. As the last person got into the bus, the driver touched his chest, kissed his forefinger and gave a tiny glance upwards and we were off. As the bus exited the gates of the field station, we got our first view of the landscape; everything to the east of the southern-most part of the Western Ghats. What was probably once a rain shadowed dryland had now been transformed into a booming agrarian economy thanks to the construction of the Manimutharu dam. People could now grow paddy and bananas, both high income crops in this region. Once we reached the dam check-post, we followed the perennial Manimutharu River that flows down from the hills around and beyond Manjolai, a high altitude tea estate. Every bit of the rain that falls in these evergreen forests is soaked up and slowly released into the dam about 1500m downstream. This water is then stored in the dam and used by villages until it meets the Thamiraparani River at Kallidaikurichi.

As we trudged along the pothole ridden road, we entered the tea estates of Manjolai and headed towards the "one mile corridor" at Kakachi. A corridor famously noted by ecologist Steven Green back in the 1970's, as a strip of dense forest that connects two large tea estate patches. The ride itself was worth remembering. As with any quick climbs into the mountains, the air got cooler and the flora, dense and diverse. Harder to notice were several small streams that would sometimes flow along the road or just under them via small canals. Somehow I knew where they were heading to. As we passed by an ecological vacuum of a golf course in the middle of the forest, Kakachi welcomed us.

The bus stopped at a bend and we stepped momentarily on tarmac only to directly step into some of the most well preserved forests in the Western Ghats. A few metres in and we had left the world behind. As I let my senses adjust to what I was enveloped in, the enormity of the forest became apparent. Wet evergreen forests are truly a world apart.

A stream near Sorimuthaiyyanar Kovil, KMTR. Picture credit: Antony

The soil squelches under one's foot as one walks on old leaves that slowly decompose. Underneath all of this, a thick layer of humus waits for roots of trees to pass through in their search for nutrients. Trees, tall and wide with intricate buttresses, rise around and above us, some as tall as 60 metres. Lianas snake through the undergrowth making their way to the canopy. The system speaks to the one who cares to listen. And if one listens closely, one can hear the endless rush under the soil to soak up nutrients alongside a rush to soak up the sun above it.

Wet evergreens in this part of the Western Ghats receive rains from both the south-western as well as the north-eastern monsoons. The forest soaks up all this water and releases it slowly into the plains. The result is spectacular. Many millions of streams form and as they flow down, each become into one; A river from the rains.

- **Nakul Heble**

nakul.heble@atree.org

The Roar of the Wind

From where we were stood on the Kadana dam, we could see a part of the pass, where rain bearing clouds can cross over to the leeward side of the Western Ghats, resulting in the Dry evergreen forests of KMTR. The main source of water is not the south west monsoon, which is experienced only as light drizzles, but by the north east monsoon providing 60-80 cm rain over 2 months.

We approached a cobbled road, which used to be a trade route from here to Thenmala in Kerala. As we started walking on the cobbled road and into the forest, a tree resembling Teak was seen on the left. It was *Careya arborea*, known to be pollinated mostly by bats and also by bees. Elephants are quite fond of its fruit and it is known to be intoxicating for them. Close to *Careya*, a butterfly flew over a common local plant called 'kanakambra' (*Crossandra sp.*), with a distinct orange coloured flower. The plant itself was quite small, about 20 cm tall, the wild species of the cultivar species. Over this trek our professors shared their observations of pollinators of various plants species. We encountered chokkalai' (*Aglaia elaeagnoidea*) along the trekking route. It had very small whitish flowers and may possibly be pollinated by thrips in the day and by tiny moths at night I assimilated the information from our faculty who had worked in the area for many years.

A little ahead, an elaborate white flower caught our attention on the right side. It was the *Cadaba fruticosa*. It is pollinated by papilionidae or swallowtail butterflies in the day and by sphingid moths at night. The common feature between the butterflies and the moths are they fluttering nature of wing movement, which the plant has adapted for its pollen transfer. The plant belongs to the Capparaceae family. It is not profusely distributed.

As we continued, we left the cobbled road and started walking on narrow trodden routes with trees arching over and their buttresses forming irregular steps along the way. The wind would be picking up speed every few minutes, resulting in the rustling of the leaves and branches. The next tree to have caught my attention was *Ehretia*, used as fodder for cattle and goat and has latex. The leaves are scabrous due to the presence of silica. Local belief is that if the umbilical cord of the cattle or goat after the birth of the calf or kid is tied to the tree, it will ensure high production of milk. The leaves are also used for scrubbing vessels and for cleaning jewellery.

Cullenia trees at KMTR. Picture credit: R Ganesan

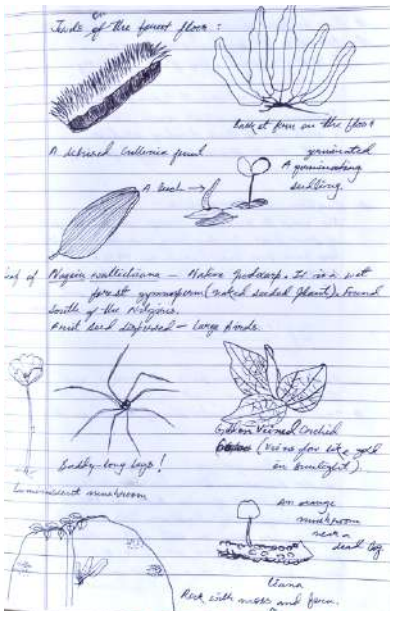
After lunch we continued trekking upwards. The forest changed to a dry deciduous forest, which had grass as its understory. Along the way, on the right, a few *Erythroxylum* were present with fruit on them. The fruits were bright red in colour, reminding one that they might be poisonous. After some time, the forest changed to that of evergreen, with the route being shaded by the trees almost completely, and the wind blowing through the top branches periodically. Our trek ended at a temple, which lay in the forest, with one side overseeing the dam and valley from where we started. The area was surrounded and almost completed shaded by trees. The roar of the wind was quite clear to hear.

- Sumita Bhattacharyya
sumita.bhattacharyya@atree.org

Jewels on the Forest Floor

We visited the "Green Trail" (approximate elevation of 1200 m asl) which lies on the border between Kalakad Mundanthurai Tiger Reserve and the Manjolai tea estate. It is easily accessible and is just off the motorable road that leads up to Kodayar. To my surprise, the name of the trail is not because we are inside the wet evergreen forest (which I thought was obvious), but it was named after the renowned primatologist Steven Green. He had studied Lion Tail Macaques (hereafter LTM) and brought to light the importance of these forests as precious habitats for LTM populations which led to a ban on the felling of trees on the lower forests for coffee plantations.

The trail was cool and there was an occasional breeze, which was in stark contradiction to the heat experienced as soon as one walked out to the open roads. It was clearly marked by tall and large trees of *Cullenia exarillata* and *Palaquium ellipticum* which formed the top canopy as they are the dominant trees in these forests. The leaves on the trees were sclerophyllous with thick cuticles, tough texture and dark green colour; one of the many adaptations by plants to facilitate easy and quick drip off rain water in a habitat which receives rain throughout the year. A clear view of the soil was only very occasional and a rare sight as the floor was covered with thick layers of fallen bark, fruit cases, leaves, twigs and branches covered in fruticose lichens which were all experiencing different stages of decomposition. The soil was loose and moist due to a rich humus layer. Among the array of fallen leaves, some were bright in colour and stood out, such as that of *Elaeocarpus munronii.* Like in all plants, most of the essential nutrients and chlorophyll pigments from leaves had been reabsorbed before eventually shedding them, hence the colourful leaves (a deep red in this case). Then there were elliptical leaves of *Nageia wallichiana* which is a native podocarp, and the only gymnosperm found in these forests. But it is commonly distributed in wet evergreen forest south of the Nilgiri and Palani hills and in Andaman and Nicobar Islands. To add to this list, there was a scat dropping right at the start of the trail, which



While it was not possible to bring back souvenirs from the field, I brought back. Notes credit: Neyi Jamoh.

we saw only while exiting the trail, probably because by now we knew that the forest floor had as much to offer as it canopies.

Sunlight was fleeting on the forest floor and kept coming and going due to sudden and swift breeze which would momentarily open up the otherwise dense canopy. This also resulted in high variation in the readings of light (between 100- 800 Lux) taken at varying locations on Lux Meter mobile app. I kept looking up in the hope of spotting any arboreal vertebrate, but the tree branches and trunks soon drew my attention due to the sheer number of epiphytes and mosses that were "hanging out" on them, much like in the wet tropical evergreen forests of Arunachal where I had grown up. Adding to this was the overwhelming songs of Cicadas playing in the background which easily transported me back home for a moment.

Walking through the forest was like playing a real-life game of 'temple run'. Lianas and roots of trees had formed an elaborate net and were sprawling all over and one could easily trip on them if they got distracted. And as we manoeuvred our way through the slim trail without being scratched by an understorey of canes containing needle like thorns on leaves and stems or avoid being predated upon by an army of tiny leeches swaying on the floor, we spot jewels on the floor! I spotted my very first jewel, a fallen immature Cullenia fruit. It was one hard ball of spikes. Next in my find was an undecomposed portion of a mature and dehisced Cullenia fruit, it was also hard and got me thinking about the sharp canines of the LTM which opens the fruits of this keystone species, feeding itself and in the process sowing seeds for the future. Steadily I spotted other marvels that were on display and many which had blended into the surroundings such as a seed (still encased in its aril) of *Myristica beddomei*. The seeds of this tree growing in the Western Ghats is dispersed by giant squirrels and LTM, unlike its counterparts elsewhere which are dispersed by Hornbills.

Ferns were in plenty and formed the ground storey; I spotted four different kinds of which I knew the common names of only two - maiden hair and basket fern. Some basket ferns were growing on the crevices of huge boulders which was also covered in moss and saxicolous lichens and bound by lianas. And on the same boulder, weaver ants were busy at work. I picked one, it bit me in protest. Resisting the urge to gently place its abdomen on my tongue for the sour ascorbic acidic it releases, I placed it back from where I had picked it.

Meanwhile a blue bottle butterfly was fluttering away, probably looking for a Cinnamon tree. The leaves of this medium sized tree are food for its larvae. Golden veined orchids and bright green seedlings lined the trail and were found on areas which were comparatively more lit. Mushrooms of varied shapes and colours such as white, orange and fluorescent popped out on the brown background. Many of them growing on fallen-decaying branches, drawing life out of the dead!

Black ants scouting for food, gangs of daddy long legs huddled up on tree trunks and spiders on the prowl. On closer examination, the forest floor is a battlefield. Diverse and large number of species are continuously competing for limited space, sunlight and nutrients (which easily leach out). The only difference from a real battlefield is the fact that there are as many winners as can be who have all flourished for years gone by (And I hope that they do so for many years to come by).

- **Neyi Jamoh**

neyi.jamoh@atree.org

Ancient Temples: A suitable Abode for Bats

In India, around 118 species of bats have been reported from various habitats ranging from arid desert to wet evergreen rain forests. Generally, these bats roost in natural caves and tree cavities but in absence of such natural roost sites, they also colonize dark and humid places of human-modified structures and old building.

Nearly 1000-year-old ancient temples of southern India are among the places providing safe roosts for many bat species in urban and peri-urban landscapes. The ceiling of dark rooms, cracks, pillars and tall temple towers are the main roosting sites in these temples supporting large numbers of bats. It was an amazing experience of exploring such ancient human architecture while working on these less-understood creatures. We organised a survey for 22 of these temples across Tamiraparani river basin of Tamil Nadu. We observed a total of 7 species of bats at 36 different roosting sites. The roosting site varies in height and surface type while the temperature was in the range of 29ºC to 33ºC.

A *Pipistrellus* bat held using special animal handling gloves. Picture credit: Chetan Misher

Rousettus leschenaultii was the most abundant bat species found during our survey, a mega-chiropteran that mainly feeds on fruits. The species is reported to be the only megabat using ultrasonic sound like micro-chiropteran. The largest colony of the species observed in the survey was of 1200 individuals with several infants on their belly in the month of June 2018. *Hipposideros speoris* also was known as Schneider's leaf-nosed bat was the most abundant micro-chiropteran found in these temples from having 1 to 3 of individuals at single roost up to 200 individuals. These bats were mainly found roosting on the ceiling of halls and dark rooms of temples. Roost of black bearded tomb bat *Taphozous melanopogon* was found to have a single individual at a roost to 15 individuals resting in the wide gaps between pillars and walls. The bats got their name from a clump of black hair present near the lower jaw.

We also observed several colonies of greater false vampire bats *Megaderma lyra*. Unlike the vampire bats, these bats are mainly carnivorous and feed on insects, rodents, small birds and some time on other smaller bats also. It is reported that these bats mainly eat only the head part of their prey while leaving whole rest of body waste. Head-less insect remains observed under the roost of the species support these previous reports. Free-tailed bat *Tadarida aegyptiaca,* lesser mouse-

tailed bat *Rhinopoma hardwickii* and *Pipistrellus sp.* were the less abundant micro-bats in surveyed temples.

Along with the diversity of bat species in these temples, we also observed some natural predators of bats such as common palm civet and barn owl. Bats have been pushed out from several roosts by temple authority by smoking or netting for renovation purpose. To understand the impact of these renovations on abundance and diversity of these temple bats detailed long-term studies are required.

- **Chetan Misher**
chetan.misher@atree.org

Frogs of the Night

Microhyla ornata Picture credit: R Ganesan

As part of our PhD coursework, my classmates and I had the opportunity to do a mini project. It taught us to plan and work in groups, and at the same time have freedom to choose the topic with the help of our course instructors. Lakshmikantha, Madhushri and Thalavai and I worked as a team. Initially our team came up with many ideas to work on. However, the big problem we had was the number of days at hand. After taking valuable feedback from our course instructors, we decided our topic on "Assessing the amphibian diversity and deformities in different agricultural fields in the southern side of Western Ghats" and planned our logistics. On the first day, we visited the fields and interacted with farmers in the morning to get permission to work in the night. We have conducted our field work in three different farms (i) Banana plantations, (ii) Paddy field, and (iii) flower plantations. Our field work took place from 6 pm to 7:30 pm. All of us collectively spent 12 man hours on field examining almost 625 frog individuals . Our data sheet contained information on Species name, Gender, Age, Deformities, Snout-Vent Length [SVL] (mm), Weight (g). We documented 5 different species of frogs in different sites. We presented our work to the course instructors and got valuable feedback. Overall this course work was a wonderful experience

- **Nobin Raja**

nobin.raja@atree.org

The Green Trail

When I think about rainforests- tall, lush, green trees flash in my mind. In school, we are taught that rainforests are unique, they sequester carbon and support rich biodiversity. I think rainforests are the most artsy landscapes on this planet. If you want inspiration for sketching, selecting color schemes or painting, forget Rome or Paris, simply walk down a moist evergreen forest and you'll have it all. The unique structure of the trees and the colors makes the evergreen forest an artist's paradise. With golden veins on bottle green leaves, *Anoectochilus elatus* is a ground dwelling orchid that caught my eye on the trail. Commonly called the South Indian Jewel Orchid, it bears white flowers in the months of November and December. I was lucky to have even seen three leaves shooting up from the forest floor.

The pristine wet evergreen forest at Kakachi of Kalakad–Mundanthurai Tiger Reserve (KMTR) is not forgiving. Like any other wild patch, it may be appealing to the eye but danger lurks behind every tree. The forest is ruled by vipers, elephants and tigers. Lines from John M. Campbell's 'The Hungry Summer' entered my mind as I walked down into the depths of the emerald forest - "It is nearly impossible for modern man to imagine what it is like to live by hunting. The life of a hunter is one of hard, seemingly continuous overland travel… A life of frequent concerns that the next interception may not work, that the trap of the drive will fail, or that the herds will not appear this season. Above all, the life of a hunter carries with it the threat of deprivation and death by starvation."

Each tree, had something magical going on. The long buttresses for example. They were nothing like I have ever seen before. If they were to suddenly come to life, they'd swallow me whole. They were huge. A number of lichens grew on the trees and the buttresses. *Palaquium ellipticum*is a dominant tree in the forest. Its wood is unique and is extensively used to make shingles and other building material. *Cullenia exarillata,* is another dominant evergreen tree. The tree has characteristic scaling on the bark. The dark-brown, spiky fruit is eaten by squirrels and arboreal mammals like civets and bats. The tree is recognized as a keystone species and is majorly pollinated by macaques and bats. The occurrence of bats in the forests of Kakachi is rare, therefore the tree is pollinated majorly by macaques. The fruit is hard to break. The Lion-tailed Macaques use their sharp canines to break it open. The reward is 8 to 9 seeds. The macaques also feed on the flowers of this tree. The

Anoectochilus elatus - the ground dwelling orchid

Picture credit: Madhushri Mudke

flowers are not typical flowers with free-flowing nectar - something that birds would find interesting. Instead, the flowers have a musty odor and a large basal part. The nectar is contained in small pockets called nectaries. This is why birds cannot get to the nectar but macaques and other mammals can.

Leaves have fascinated artists and poets for centuries. My eyes chanced upon the colors on the forest floor. There was a carpet of red, yellow and brown leaves on the floor. Some were decaying. When I tried to pick up a brown, wet leaf it broke down into smaller particles. The thick layer of leaves under my feet felt more like a soft mattress. The floor was cushioned. Ever wondered why there are so many shades of browns (in other words leaves) on the forest floor? Evergreen trees do not simply shed their leaves. There has to be a reason for all this shedding of leaves. As I contemplated these deep mysteries of the moist evergreen forest, I turned around to find a primitive, *Nageia wallichiana,* naked-seeded tree or a gymnosperm standing behind me. It was flanked by a bright orange mushroom that I failed to identify.

I have known that leaves in the rainforest have pointed tips – otherwise called the dripping tip. Dripping tipped leaves allow rainwater to drip down to the ground much faster. But, there are exceptions to this. The *Calophyllum austroindicum* is exactly that – a tall tree with tiny, sclerophyllous leaves – the leaves are thick, not pointed and instead have an elongated heart-shape. Why it doesn't follow the dripping pattern is something that I have not yet understood.

Appreciating these subtle nuances of the forest left a deep impression on me - before I knew it I'd spent more than 3 hours deep inside the jungle. By now it was noon, time to start walking back on the very trail noted biologist Stephen Green walked and studied the critically endangered Lion-tailed Macaques. These old world monkeys bear the tail of a lion and a very strong mane. Imagine an Asian Lion mating with a Nilgiri Langur- the offspring would strongly resemble the Lion-tailed Macaque. In the continuous cacophony of cicadas and birds, my team and I moved on. Thirty minutes of brisk walking and we touched the tar road where our vehicle was parked. As I craned my neck to look above, I saw the dense canopy part slightly to give me a glimpse of the clouds - we were at the edge of the forest. We might be leaving it, but in the enchanting forest the magic continues

- **Madhushri Mudke**

madhushri.m@atree.org

My First Stint With The Woods

It would be worthwhile to begin by saying that I am not a field person. I have always enjoyed writing codes and analysing data sitting in front of my laptop. It is therefore not surprising to reveal that unlike my classmates, I did not feel on cloud nine when I learnt of our field visit to KMTR as part of our Natural Science Methods course. It rather sent a shiver down my spine, thinking of having to spend the summer in an awfully hot place and then paying visits to the forests with leeches and spiders and snakes galore! Bangalore sure spoils you at least with respect to weather.

I must admit here, however when I reached ACCC, it was quite a welcoming place with its serene surroundings, where you can spot hills at a distance and smell the fresh air. Our first visit was to the forest at KMTR. As we started our journey, we first encountered the dry evergreen forests. The most striking feature of this forest in KMTR was the large number of teak trees. This was unusual because teak was, and still is, not suitable for this particular climate. We were informed that these trees were planted by the British. Since they are not meant to be here, the wood is not as great as it is supposed to be. However, the trees have thrived well. We also waited to spot Nilgiri Tahrs, which are quite common at this elevation, but unfortunately we could spot none.

We also had heard wonderful stories about the famed Lion-Tailed Macaques (LTMs) and this was the only thing that kept my spirits high. From the dry evergreen forests we proceeded to the wet evergreen forest. The LTMs have a very important role in this forest as a seed disperser. They feed on the *Cullenia* fruits which can only be ripped open by the macaques, given their thorny outer covering. We also noticed quite a population of lichens on the trees, which also became the topic of my project. The prevailing condition of moisture in these forests supports the growth of lichens. Though the forest is dominated largely

Broken open cullenia fruits. Picture credit: R Ganesan.

by *Palaquium* and *Cullenia*, other species such as *Myristica, Syzygium* and gymnosperms are also widespread. I could not decide what to be awed of - that I am seeing and hearing of animals and plants that I did not know even existed (I had opted out of Biology right after Class 10), the serene surroundings, the mushroom that were at my feet or the leeches that I was pulling off my shoes.

The day ended with what can be called the best part of our trip – the canopy climbing exercise using the single rope technique. For me this was my "aha" moment because I know I might never be able to experience this again.

By the time it was time for us to leave, I had fallen in love with the place. Who knew this would happen!! Such is love, it comes to you when you least expect it. I am proud and elated to say that I too am a field person who loves the unknown sounds of the woods and is not afraid of trailing on a path less explored. KMTR, you are missed!

- Rumia Basu

rumia.basu@atree.org

Privilege Of Being An Ecologist

Five of us were working on lichens along the 'Steven Green Trail' in Kalakad-Mundanthurai Tiger Reserve (KMTR). We all were feeling like ecologists already. More so because stalwarts like Steven Green, John Oats, Karen Minkowski walked this same path to study the lion-tailed macaque - "the endangered, enigmatic and endemic canopy-dwelling primate of the Western Ghats" as Pankaj Sekhsaria puts it.

PhD students - 2017 batch at ACCC. Picture credit: Antony

It was a feeling of owning the jungle, if only for a few days. This was my dream for last more than ten years! It all started with a typical touristy trip with one of the typical wildlife tourism company of Pune. I was a freshly graduated architect, and had nothing to do with forests as such. But the experience was so powerful, I still remember how I envied the trip coordinators dressed to 'camouflage'. And today, here I was! I literally felt like 'arrived'.

This 'one-mile corridor' was our first introduction to this gorgeous landscape. It has been the site of the first long-term rainforest canopy research and monitoring project in India undertaken by ATREE. Ten of us along with four fellow professors had arrived at KMTR about five days ago and were stationed at ATREE's Agasthyamalai Community Conservation Centre in the KMTR buffer. We had a packed schedule for 15 days. For the first three days we would be introduced to the landscape. Then we were supposed to design a small project for which we would collect data for the next three days. We would then analyse and present the findings and after about a month we would have to write a manuscript. To be honest - I did not believe that I could do any of this. I had little background of ecology. But the hand holding by our professors was so fantastic that we could at the end write a manuscript. It was a journey of knowing the landscape in more intimate way. And of joy!

Now if I look back, and think why was it such a joy, the reason was more than just the forest. It was those camouflaging clothes, fancy nature hiking shoes, all the equipment we used for the project, feeling of being empowered by more nuanced understanding of scientific research. It was that overall feeling of 'being ecologist'!

But underlying all this, the most important reason for me was that I had a choice. I had a choice of leaving the forest and returning to my comfortable urban world. It was because I went there with a bearing of a 'researcher' that the landscape interacted with me in a particular way. Propped by my identity of a PhD student I felt like I could control this interaction the way I wanted to. I could shield myself from the rain, leeches, hundreds of small insects etc. I could decide my working hours, I could rest whenever I wanted to. I would get a decent pay. And alas I could go back to my comfort zone in Bangalore.

Instead, if I was a small local farmer, or tribal who had little or no choice to leave the jungle and who was subjected to all the vulnerabilities of being on the margins - will the interaction with forest still be such a joy? Would they be romanticising the shades of green? Would they be smelling the earth? Or the hardships of staying there and lack of material comfort has made them indifferent or bitter even? Would the landscape be rendering them helpless? I wish all of it was just my fanciful imagination. But more often than not I have seen it personified back in Maharashtra where I belong. For example just a few days back I visited a small tiger reserve in Eastern part of Maharashtra. I got down from the vehicle to talk to a farmer passing by the boundary of the reserve. Our clothes showed that we were worlds apart. Mine showed that I had a choice to leave the place, his showed that he did not. I asked about the tiger movement in their village. He said just two days back his cattle was killed by the tiger. On his face was rage. That was when I suddenly realized the privilege of being an ecologist.

- Amruta Pradhan

amruta.pradhan@atree.org

Dr Muthunarayanan. Bird Watcher. Photographer. Anaesthesiologist.

Dr Muthunarayanan (in green) at Korampallam tank during 2018 Tamiraparani Waterbird count with fellow volunteers.

How did you first get into activities such as bird watching and photography?

I came across Salim Ali's Book of Indian birds during my college days and was hooked to birding since then. I picked up photography during my final year in college, when I was helping my professor prepare his medical slides. We used lith film and individually painted in colours with markers.

In and around Tirunelveli, do you think the current generation are getting interested in nature and bird watching?

The current generation are an interesting lot. Though they have so many distractions, they are very eager to learn more and are passionate when they get to know about birding and how nature works in depth. They are a lot more quicker at grasping ideas. Birding with them is a challenge because we need to show them a new species every five minutes to keep them engaged.

What do you think are some major threats to birds in and around Tirunelveli, and in general?

We are blessed to have varied biomes - forests, scrublands, dry grasslands, riverine and coastal, all within our reach, but unfortunately this ease of access seems to be its bane. The real estate business seems to have wreaked havoc in the grasslands. Almost every grassland has been divided into plots. Besides that, the burgeoning industrial belt adds to the pollution as well. The new found interest in wind power has seen every inch of land been grabbed for erecting windmills almost across the entire district. The effect of windmills on the migrating large water birds need to be studied as the effect on flamingos has been in Gujarat.

How do you balance your profession with bird watching?

Birdwatching has been my passion for more than two decades now and juggling it with my untimely anaesthesiology profession had not been easy. Weekend birding and photography definitely had been instrumental in charging my batteries. Probably It was the pleasure of meeting so many new people out in the field that kept me going . I am sure I have made more friends by watching birds than anything else!

In the future, do you think we will see more people come out for bird watching? In what ways, we can popularize it for the next generations?

Bird watching is still an unusual hobby in our parts, but surprisingly we see a large number of students during the Tamiraparani wetlands bird count. But once the exercise is over we tend to lose them. They need to be encouraged to meet often and should be mentored. The general idea that it is an expensive hobby needs to be dispelled. Outreach to individual schools and the environment or green clubs should be done by local groups like Pearl City Nature society and Nellai nature club. Regular field trips and mentorship by expert birders is a must.

What is your most memorable bird watching experience?

Birdwatching as a hobby has taken me to all corners of India with each birding trip etching a memorable event in my mind. Sighting a rare White - necked Grebe in Ladakh, spotting the Spotted Flycatcher in Kundankulam (a first sighting for the state), photographing the rare Caspian plover in Kundankulam, threatened at knifepoint for photographing birds in a remote location are some that I can never forget. However the most memorable birdwatching experience was when literally thousands of Blue tailed bee-eaters descended down on us as they were settling for the day. An awesome sight, that to this day makes my hair stand on its end.

How can an average person best help in conservation of birds?

I feel people are inherently goodhearted when it comes to nature and they are always willing to help in their own small way. I have always admired late Mr.Vijayavel of PCNS, Mama as he is fondly called, for his habit of placing sparrow boxes all around his house and having water troughs for birds. This is one little thing which all of us could and should emulate to help nurture nature .

- Interview conducted by Rathnavel Pandian

Events

- **WilD camp 2017:** The two nights and 2 days WilD camp 2017 from October 6-8,2017 at Thalayanai Base Camp in the Kalakad-Mundanthurai Tiger Reserve was an exhilarating experience for the thirteen active student members of Evans Nature Club, Nagercoil under the leadership of Mr. Joseph from three schools (Evans School of Excellence, Evans Matriculation Higher secondary school, Nagercoil and RMS International School, Panagudi). The camp was organized and led by the fully resourced ATREE team headed by Dr. R. Ganesan and Dr.M. Soubadra Devy offered a practical experience of life in the laps of nature and an exposure to its magic.
- **Workshop on - "Are Grasslands Wastelands**: Scientific Inputs for Environmental Advocacy" in Mundanthurai Range, Kalakad-Mundanthurai Tiger Reserve (KMTR) was held on 30th April, 2018. The workshop was organized by Ashoka Trust for Research in Ecology and the Environment (ATREE) and the Kalakad-Mundanthurai Tiger Conservation Foundation (KMTCF).
- 10 Indian Forest Service Probationers (2016 – 2018 batch) were hosted from October 31st 2017 to November 2nd, 2017. These probationary forest officers, as part of an "**NGO Attachment" module**, aimed to understand how NGOs interface with the forest department and the local communities in forested areas.

Snippets

- Faculties from the Department of Environmental and Life Sciences, Sherubtse College, Royal University of Bhutan visited ACCC as a part of the exposure course that was organized by ATREE. (21-23 January 2018)
- The 8th edition of Tamiraparani Waterbird Count (TWC) was held from January 25-31, 2018. Over 70 volunteers participated in the annual event which was conducted across 50 tanks in Tirunelveli, Thoothukudi, Kanyakumari and Ramanathapuram districts.
- ACCC marked World Wildlife Day by screening Sahayadri documentary movie and discussion on wildlife in Western Ghats in District Science Centre, Tirunelveli on 3rd March 2018, around 150 students from different schools participated in this event.
- ACCC conducted joint press meet along with Pearl City Nature Society(PCNS) and Nellai Nature Club on 6th March 2018 to share results and recommendations of Tamiraparani Waterbird Count 2018 at Nellai Press Club, Tirunelveli.
- ACCC conducted Campaign towards Green Festival at Poyyamozhi Ayyanar temple, Kurumalai Reserve Forests, Kovilpatti from 12-15 April 2018.
- ACCC facilitated for Methods in Field Ecology course for ATREE's Ph.D. students at KMTR from 17 – 29 May 2018.

Ashoka Trust for Research in Ecology and the Environment (ATREE)

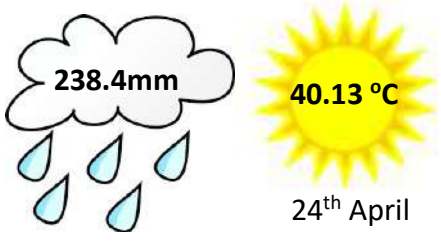
Main Office

Royal Enclave, Sriramapura, Jakkur Post, Bangalore – 560064
Karnataka. Tel.no: +91 8023635555
Email: info@atree.org

Field Academy of ATREE at Agasthyamalai region

Agasthyamalai Community Conservation Centre (ACCC)
3/199D, Mukkavar, Manimuthar Main Road, Manimuthar (post),
Ambasamudram Taluk,
Tirunelveli District, Tamil Nadu – 627421
Contact Person: Mathivanan M
Tel.no: +91 94880 63750

Email: accc@atree.org



January to July, 2018
Maximum rainfall : 50.4mm
14th March