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Nilgiri Burrowing Spider
Haploclostus Nilgirinus Pocock, 1899
(Araneae, Theraphosidae)

Rendition by Meta AI, thanks to Karthik Ramesh of Wellington.

EDITORIAL

Tourism. The word conjures up visuals of dreamy destinations, of pristine landscapes, of cool climes,essentially, of a destination to take home memories of, for a lifetime!

If not for anything else, the Nilgiris region is on the map of Tourism, for want of anything else to make it famous....honestly, people even as close as the neighbouring district are unaware of the indigenous peoples that inhabit this region, and do not exist elsewhere....a people that have existed here probably since before history was recorded.

But tourism has become the bane of the entire district. The locals stand divided.....there are those whose lifeline depends entirely on tourism, and the two prime seasons are what make them last through the periods of tourism-famine (to coin an expression)....and there are those who feel that tourists, like everywhere else, are the most uncouth, unruly, insensitive and uncaring lot, towards the upkeep of the place they chose to visit, but will have nothing to do with leaving it behind that way for the next visitor (or even for their own next visit, when they will rue the degradation caused by years of insensitive tourism).

In the recent order of the Madras High Court, to undertake a study of the “carrying capacity” of the district, along with a similar fate of Kodaikanal, the administration chose to introduce (reintroduce) an e-pass system.....this time, not so much as to regulate or control the entry into the district, but to record the numbers that enter the district. There was the negative fallout of this measure.....a large number of us are simply daunted by anything to do with a Government website.....and so, huge numbers elected to cancel their visit, rather than spend two minutes to fill a simple form informing the administration the purpose of their visit. This defeats the very purpose of the pass, since the figures now collected, would not be indicative of the trends that the district has seen in recent years. On the contrary, the figures are so diminutive, that the study might claim that the very demand for undertaking the study was a figment of someone’s imagination. The caring activist/environmentalist/ecologist would lose the case that was intended to ensure that anything that is done by the administration, should take into account the meagre natural resources available at the disposal of the local population. Livelihood vs development vs preventing degradation.....in all such battles, prevention of degradation usually takes the back seat, and by the time civilisation realises the damage, it would have gone past a point of no return.

Does education help? One wonders.

When we visit a tourist destination, how do we, the caring and sensitive ones, behave? Do we also let loose and behave like the Romans in Rome? I don’t know whether such caring-and-sensitive types even stand out in the crowd of those who consider it their birthright to be treated well, leaving the cleaning up to the locals to complete after the tourist season is over.

As a district that barely can clean up for its local residents, the tourist season creates havoc for the sanitation department. The consequence of the season is that the entire district is now just one large garbage heap.....litter left behind by revellers.....the worst in this category being the day-visitors.....drive in, see seven, nine, or eleven sights, and depart. This category does not even contribute to the local economy of a home-stay, cab, eatery, guide, et al.

The Nilgiris needs a drastic rethink on its future, and the people have to decide. If we choose money over nature now, very soon, there won’t be any nature to make money from.

Ajay Ludra,
Secretary, NNHS



THE PLASTIC PREDICAMENT: A THREAT TO THE NILGIRIS BIOSPHERE RESERVE

Dr Vaithianathan Kannan

The Nilgiris Biosphere Reserve, nestled in the Western Ghats of India, is a treasure trove of biodiversity and natural beauty. However, this fragile ecosystem faces a significant threat in the form of plastic pollution. This essay delves into the detrimental effects of plastics on the Nilgiris, highlighting the urgency of adopting sustainable solutions to mitigate this menace.

The Nilgiris Biosphere Reserve, once known for its pristine landscapes, now grapples with the menace of plastic pollution. Despite efforts to curb its usage, plastic continues to pervade every corner of this fragile ecosystem. Single-use plastics, including water bottles, food packaging, and shopping bags, are ubiquitous, exacerbating the pollution problem. The convenience of plastic packaging has led to widespread usage. The lack of effective waste management infrastructure further compounds the issue. Improper disposal practices, such as littering and open dumping, result in plastic waste accumulating on the roadside, in rivers, forests, and urban settlements, defacing the natural beauty of the Nilgiris, and polluting the soil as well as waters.

The diverse flora and fauna of the Nilgiris face grave threats from plastic pollution. Aquatic ecosystems suffer from the ingestion and entanglement of marine life in discarded plastics. Fish and birds mistake plastic debris for food, leading to internal injuries, starvation from choking, and even death. Terrestrial animals are not spared from this plight either. Cattle, Gaur, Elephants, bears, pigs, and monkeys, roaming freely in the vicinity of urban settlements in

the Nilgiris, often encounter plastic litter left behind by humans. Ingesting plastic bags and other debris can have fatal consequences. Moreover, plastic pollution disrupts natural habitats and food chains, threatening the delicate balance of the ecosystem. Microplastics, invisible to the naked eye, permeate soil and water, posing long-term risks to plant growth and wildlife health, as well as, in the long term, humans. These microplastics act as vectors for pollutants, including heavy metals and persistent organic compounds, posing risks to both terrestrial and aquatic organisms. Soil-dwelling organisms, crucial for nutrient cycling and soil structure, suffer from the adverse effects of plastic contamination. Furthermore, plastic debris obstructs natural water flow, leading to stagnant pools and increased vulnerability to land slips during monsoon seasons. The aesthetic degradation caused by plastic litter diminishes the appeal of tourist destinations within the Nilgiris, impacting local economies reliant on tourism revenue.

Chemical additives in plastics can leach into the environment, affecting wildlife and human health. Over time, soil contaminated from leachate will drop in fertility, and in turn, drop in crop productivity. Additionally, there are high chances of chemical leachate finding its way into our food.....in the long run, this will harm humans as much as it's direct impact on other mammalian life.

The socioeconomic fabric of communities residing in and around the Nilgiris is intricately linked to the health of the surrounding environment. Plastic pollution not only threatens biodiversity but also undermines livelihood opportunities and community well-being. Coastal communities dependent on fisheries face dwindling fish stocks and reduced income due to plastic-related marine pollution. Inland communities relying on agriculture and tourism suffer from land degradation and negative perceptions associated with plastic litter.

The financial burden of mitigating plastic pollution falls disproportionately on



local governments and environmental organisations, diverting resources from essential services and sustainable development initiatives. Moreover, remote hamlets, lacking access to proper waste management facilities, bear the brunt of plastic pollution's adverse impacts.

Single-use plastics, such as bottles and bags, pose a particular threat due to their non-biodegradable nature. While these have been banned in the entire district since 2018, they still find their way in surreptitiously. In a larger sense, since commercial packing material is plastic, it's entry into the district/biosphere cannot be altogether done away with.

Improper disposal and lack of recycling infrastructure exacerbate the problem, leading to plastic waste almost everywhere. The tourism-dependent economy of the Nilgiris will suffer directly from the negative perception of plastic pollution. Cleanup efforts have significant costs and other resources, and so far, the administration is unable to keep pace.

Plastic pollution exacerbates social inequalities, disproportionately affecting marginalised communities reliant on natural resources for their livelihoods.



and combating plastic pollution. Urgent action is needed to mitigate the impact of plastics on this fragile ecosystem. Efforts must focus on reducing plastic consumption, improving waste management practices, and fostering community engagement. In conclusion, the scourge of plastic pollution poses a multifaceted threat to the Nilgiris Biosphere Reserve, jeopardizing its ecological resilience and socioeconomic sustainability. Urgent and concerted action is imperative to address this pressing issue, ranging from policy interventions and public awareness campaigns to community-based initiatives and technological innovations. Only through collective efforts can we safeguard the natural heritage of the Nilgiris for present and future generations. Only through collective action can we safeguard the Nilgiris for future generations to enjoy and cherish.

We need solutions to the packaging dilemma. Just banning plastics is only the first step. We still are quite some years away from a viable solution to all plastic packaging. This will still not prevent plastics in our garbage, only one of the ingredients. Other forms of plastics in the garbage include damaged household utilitarian goods, stationery (pens and file covers, for instance), toys, and much more. We need a consolidated, coordinated effort to change our very lifestyles, to become increasingly less plastic-dependent. The term plastic independent is a utopian thought. It may be achievable down a couple of centuries. It will do humanity good. It will do much more for earth, it's soil and other inhabitants.

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Some of the actions taken by the local administration have paid dividends:

- Banning of single-use plastic bottles, plastic straws, and carry-bags. This implies that no more are PET bottles of water and aerated drinks and juices available in the local market. Carrying these by tourists/visitors is leviable by a fine, in addition to these being discarded at entry points.
- Banning of laminated/waxed and styrofoam disposables (cups/tumblers, plates and spoons) used at eateries. The usage of bagasse replacements has gone up to nearly 100%. Yes, littering is still at the same level, but the damage to ecology has been brought under control to a reasonable extent.

But then goods that are packaged in plastic by manufacturers, groceries, electronics and electrical goods, and almost everything in the household and office, needs to be reconsidered for alternative packaging. We have a long way to go in this aspect. One cannot just ban the entry of rice, wheat-flour, condiments and other groceries that have been packaged in plastic. **There are only three alternatives:**

- **Outright ban on these items**
- **Force the manufacturers to comply to "Nilgiri norms", and**
- **wait for the rest of the country to follow suit, and ban the usage of plastics for packaging.**

Are alternatives in sight? To start with one finds absolutely no solution to packaging milk for wide-spread distribution in the manner that it has achieved. What the distribution of milk has achieved with usage of plastic, could not have been possible with the erstwhile medium of glass bottles.

Is a tetra-pack carton a solution? Probably not, it is also laminated with a PET lining inside.

Is a plastic jar a solution - probably not, it might make the costs prohibitive for wide-spread distribution.

The Nilgiris Biosphere Reserve stands at a crossroads, facing the dual challenges of preserving its ecological integrity

EDHKWEHLYNAWD BOTANICAL REFUGE

Ramneek Singh Pannu

The Edhkwehlynawd Botanical Refuge (EBR), was started by Dr Tarun Chhabra and Ramneek Singh Pannu. It was registered as a non profit trust in 2003, with a vision that would encompass ecological research, eco-restoration and ethno-botanical studies. The name Edhkwehlynawd in Toda means a place with a magnificent view. EBR is a small

oasis in the upper Nilgiris of Tamilnadu, where a silent movement to re-wild an ancient landscape is taking shape with the effort of ordinary citizens.

EBR has acquired about 25 acres of a tea estate in the extremely bio-diverse Kundah area of the Nilgiris that borders the core area of the Nilgiri Biosphere Reserve. This, along with adjacent lands that are proposed to be acquired in due course, is being restored to its original shola-grassland and wetland ecosystem. EBR has established a plant and grass nursery where saplings/seedlings and grasses are being grown for re-wilding the acquired land. Re-wilding has been underway for a decade, by uprooting the tea bushes and other non-natives, and native flora has been planted. We have also erected a solar powered fence around the areas being restored (so that herbivores like Sambhar deer, Barking deer, mouse deer and wild pig don't damage the plants) followed by planting the native shola tree saplings, shrubs and grasses.

EBR was established with the hope of achieving a synthesis of objectives. Among the important ones of these are:

1. To restore the original ecology in a degraded zone surrounded by areas of high biodiversity.
2. To propagate plant species crucial to the Toda culture in the region.
3. To re-introduce and propagate the endangered flora and fauna of the Nilgiris.
4. To prevent further degradation and encroachment onto the adjacent hinterland.
5. The protection and preservation of all mammals, birds and amphibians of the area, including the Toda buffalo, which is restricted to the Nilgiris only.
6. To establish a botanical documentation and ecological research centre. This would have a live seed herbarium, photographic and illustration records of rare, endemic and endangered flora of the Nilgiris.

EBR has been involved in conducting ecological research and botanical studies for a number of years. Several scientific papers on our experiences with re-wilding ecology, floristic composition of shola forests surrounding the refuge, and studies on nearby wetlands were published by Dr D Mohandass. The re-discovery of endangered species like *Eriochysis Rangacharii* and *Arisema Translucens* in EBR hinterland were published in international journals and have brought the focus towards conserving and propagating such rare and endemic floral taxa.

EBR also documented and described (Nordic Journal of Botany 34:708 - 717, Dec 2016) three new species of endemic wild balsams from the western upper Nilgiris and gave them Toda related names based on their site location: *Impatiens Kwattyana*, *Impatiens Taihmushkulni* and *Impatiens Nilgirica* var. *Nawthyana*. These were discovered as a result of a comprehensive survey of genus *Impatiens* in the Nilgiris for over 14 years. EBR also discovered one more species of *Impatiens* which was later named by a plant taxonomist, many years later. Other species like endemic and endangered *Berberis Nilghirinensis* are present in the EBR hinterland and we plan to propagate this along with *Arisaima Translucens* and many other rare plants in our nursery before they are re-introduced in the re-wilded areas.

Other on-going projects relate to providing support for preservation of the rich and ancient heritage and culture of the indigenous Toda people, besides also providing medical assistance. EBR has been in the forefront to support young Todas to pursue their dreams. We are also educating the younger generation of Todas, over a dozen students are on full scholarships in various well known boarding schools of the Nilgiris. At the university level we are supporting students who are destined to become the first lawyers, nurses, teachers and engineers from their community. EBR has also been supporting other

communities in The Nilgiris for education and medical needs.

As the first societies of the world, the Todas are recognised architects par excellence. A project to revive the barrel-vaulted Toda houses was done in the mid 1990's; about 40 houses were constructed with government funding. Now, realising the need for modern Todas with growing families for more space and durability, we have designed a large barrel-vaulted structure with multiple rooms, that has the best of traditional and modern. The new modern houses were built with funds from two sponsors. We hope that this will lead to restoration of the traditional look of modern Toda hamlets in the near future as more such homes are sponsored.

The Todas represent one of the few herds of the asiatic water buffalo, *Bubalis bubalis*, which, like the Todas, is restricted to the Nilgiris. Therefore it is very important to conserve the pure bred Toda buffalo not only for its importance to the Todas but also for preservation of their genetic purity. Now, with funding from a Swiss donor, EBR has begun a project to breed and conserve purebred Toda buffaloes. Today the herd sizes of both the sacred and domestic buffaloes have shrunk drastically and if immediate steps are not taken to propagate the pure bred animals and increase their numbers, it is feared that the Toda culture dating back to ancient times could collapse, as without their sacred herds, they'll be unable to operate their dairy temples. Therefore this project is of utmost importance if the Toda culture is to survive and thrive, and save the buffalo breed from extinction.

EBR is a pioneer in the attempt to restore the landscape. It has been a difficult task to restore lands from under tea cultivation, but there has been support from donors and the Government of Tamil Nadu. The support from the Toda peoples has been paramount. In due course, others have also taken on the onerous tasks, and most have been equally successful, if not more. It is hoped that the cumulative efforts put in by so many, will eventually help take the biosphere back to its pristine days that existed before unmitigated interference.



THE NILGIRI LARGE BURROWING SPIDER

HAPLOCLASTUS NILGIRINUS POCKOCK, 1899

(ARANEAE, THERAPHOSIDAE) Anbazhagan Abinash and N. Moinudheen

Haploclastus nilgirinus Pocock, 1899, belongs to the family Theraphosidae (Order, Araneae), which is endemic to India. The genus Haploclastus consists of seven valid species. Previously, there were eight species within Haploclastus, but recently, Haploclastus himalayensis Tikader, 1977, was transferred to the genus Chilobrachys Karsch 1892, based on generic characteristics (Siliwal and Raven, 2010). *H. nilgirinus* is found predominantly in the Nilgiris, inside holes in tree trunks. Compared to the burrows of other mygalomorph groups, theraphosids are comparatively easy to find since they have open entrances. The ecology and habitat of this species have not been extensively studied.

Spiders serve as biological markers of natural ecosystems and provide information on how communities respond to environmental disturbances or changes. South and Central American theraphosid spiders, also known as bird-eating spiders, are very common in the pet trade. This study is a brief framework on *H. nilgirinus* ecology that is aided for tarantula conservation. Tarantulas are vulnerable groups which may face extinction due to habitat destruction, climate change, and illegal trade.

We studied the habitat ecology of *H. nilgirinus* from Coonoor, The Nilgiris, as well as the tree burrow characteristics of the species in order to understand the microhabitat characteristics and preference. This study



examined the diversity of the spiders and the insects at the sampling sites, as well as the prey choice of the spiders, also provided some notes on the diet, sympatric species, coexistence, and egg sacs of this species. Thereby, the study was developed to understand the ecology of the lesser known *H. nilgirinus* focusing on its future conservation.

We found a total of 25 spiders inhabiting tree holes within an orchard. There were a total of 18 trees, but the spiders were seen only in the pear trees which included 7 trees in total. The pear trees in the orchard naturally had holes in the tree crevices. We have classified the spiders as large, medium, small, based on their sizes. In the orchard, there were a total of 25 spiders in 21 nests in 7 trees.

More spiders and nests were located in the seventh tree. The seventh tree housed 13 spiders under 10 nests, which comprised 4 adults, 5 juveniles, 2 sub adults, and 2 sub juveniles. Three nests, each with an adult, a sub adult, and a sub juvenile were located in the sixth

tree at a much lower level in comparison with the other six trees. Various other insects were found around the nesting trees during the nocturnal hours while surveying for *H. nilgirinus*. Cockroaches, Grasshoppers, Crickets, Treehoppers, June Beetles, Flower Chafers, Moths, and Bugs were the most common insects found in the area around the spider nests in the 7th tree.

The orders of insects that were prey to *H. nilgirinus* included cockroaches, moths, crickets and grasshoppers. All theraphosid spiders have scopulae and claw tufts, which are sticky and used for prey capture and mobility, primarily when climbing.

The tree hole occupancy of individuals was observed to be greater the size of the hole, more the the number of individuals. The average hole size was an outer circumference of 14 cm, inner circumference of 7.1 cm, and depth of 6.8 cm.

The commensalism of spiders is a

significant phenomenon since spiders and amphibians have mostly displayed this trait in various ecosystems. Commensalism is an interaction where one species benefits while the other species neither benefits nor receives harm. In this study, we have been examining commensalism between *H. nilgirinus* and triangular spotted frog *Uperodon triangularis* for 4 months. They coexisted in the same nest without interfering with one another. This observation thus accounts for sympatric and syntopic relationships. They were found to co-occur next to each other without any disturbance. Both species were found active during the night times sitting on the edge of the tree-hole, while during diurnal hours they spent their time inside the holes.

The male spider vibrated his body in proximity to the female spider when they were together, but the female spider did not behave similarly. There was a possibility for seismic signals to be the primary communication route as used by burrowing tarantulas, especially during courting, given the benefits of seismic signals and the frequent occurrences of vibration activity in theraphosids.

We encountered *Cnemaspis* sp. and *Dravidogecko* sp. geckos in the same

trees, along with the spiders, during nocturnal hours of the field work. While looking for tiny insects in the fifth tree, an adult *H. nilgirinus* approached the edge of the hole, and caught the *Cnemaspis* sp., and then entered back into the hole. Their primary sources of food were insects, spiders, and worms, but they also consumed a variety of other taxa including fish, mammals, birds, reptiles, and even extremely poisonous poison dart frogs. The majority of the time, these spiders would hunt at night. Usually, a few spiders emerged from the hole and waited for food 10 cm away. In every circumstance, these spiders relied on the hole. It would drag itself inside the nest as soon as it caught its prey.

In our study, we had the opportunity to observe the egg sac of *H. nilgirinus*. Remarkably, the size of the egg sac measured an impressive 4.2 cm. This spider's egg sac fell while cutting down a tree. In the study *H. nilgirinus* was observed to lay eggs during the winter season. During the breeding period, we made an intriguing observation regarding the behaviour of *H. nilgirinus*. We found that these fascinating creatures exhibited a unique mating ritual, where they would close their nests tightly with mud. This behaviour serves as an exceptional adaptation, providing a protective enclosure for their eggs and ensuring the safety of their offspring.

DISCUSSION

H. nilgirinus is a nocturnal tarantula that has a complex ecology due to its ambush and secretive lifestyle. The study found that they were arboreal and semi-arboreal by nature.

In conclusion the study identifies some key areas to concentrate that would enhance the conservation of *H. nilgirinus*, including: Protection of habitat, the spider's habitat is threatened by deforestation and habitat fragmentation. Protecting and restoring the forests where the spider lives is essential for its survival. Avoidance of pesticides: Pesticides can harm the spider and its prey, and should be avoided in areas where the spider is known to live. Education and awareness: Raising awareness among local communities, forest officials, and policymakers about the importance of the spider and its role in the ecosystem can help garner support for conservation efforts.

A Abinesh and N Moinudheen are independent research scholars. The complete research has found acceptance for publication in the Iraq Natural History Society. The authors propose to use this research paper to get an IUCN status for the species.





TWISTED TREES

~Ajay Ludra

Water-colour rendition of twisted trees, by Anandha Karthick of Wellington.

A tree that gave way to weight, wind, age, weakened by the twists? - Photo: Ajay Ludra



Ajay, why are these trees twisted? This was an innocuous question by a friend during a walk through the Black Bridge RF between Yedapalli and Forest Dale.

This didn't look like a one-off phenomenon, quite a few trees were twisted. Initially, it looked like the "twist" was in the same direction for all the trees, clockwise, twisting in a left-hand motion from bottom to the top. But there were a few of them that did have a reverse twist. What was unique was that despite the mixed vegetation in this forest, the twist was only evident on one variety....pinus.

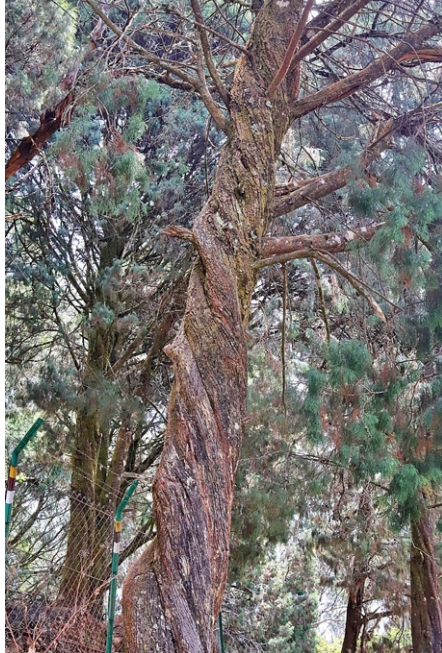
There was also another thing evident, the twisted trees were weaker than those with straight trunks....the trees that had given in to wind force, were invariably the twisted ones. None, with no exception, had any of the straight trunk trees given way and broken down the middle naturally. These straight trunk trees were also the 'healthier' ones.....standing tall, and over-shadowing the others.

Reasons for the unique twist may be many:

Genetic mutation. Such a phenomenon is noticed on some cultivars of the birch that have undergone genetic mutation, and is known for its contorted trunk and branches in eerie, sculptural forms. This unique tree is often used as an ornamental plant in gardens and parks, its twisted shape adding a touch of whimsy and beauty to the landscape. But this didn't seem to fit the distortions visible here.....some twisted, some straight.

Environment: Lack of sunlight. A plausible explanation, one which affects weaker plants in dense forests like the Amazon. These plants, in their quest for sunlight, climb using the brace of stronger trees, entwining themselves around them. That is a symbiotic relationship of sorts... but here, there is no entwining around another.....just them, cork-screwing upwards.

Coriolis Force. There's a little bit of school-physics here. Coriolis force has an effect on fluids, in that fluids in the Northern hemisphere rotate in the clockwise direction, and those in the Southern hemisphere, in the counter-clockwise direction. This is what explains the formation of cyclones, and whirlpools, even in your bathroom sink. This is another very plausible explanation, provided by Karen Yadav, a naturalist who spends some time in Coonoor. In this case, winds, finding forestation as a barrier, would tend to circulate in a clockwise direction around the tree; repeated and long-time exposure to such winds are likely to force the trees to grow in a particular manner. While this is a very likely explanation, the existence of erect trees, and a sprinkling of trees with reverse twists makes one wonder if this is the only explanation.



Twisted trees in the Black Bridge RF, Coonoor. - Photo: Ajay Ludra



A large vine in Longwood shola, twisted and spiraling upwards to seek sunlight. Surprisingly, it didn't need support? - Photo: Ajay Ludra

Human intervention. The least likely explanation, and not the reason why trees even in other locations have twists visible.

Twisted trees are a remarkable phenomenon in the natural world, characterized by their unusual, distorted shapes. These trees have adapted to various environmental factors, such as harsh weather conditions, genetic mutations, or human intervention, leading to their unique forms.

While we wonder about the reason for the twists, these have been a subject of fascination in various cultures and belief systems. In some Indigenous cultures, these trees are considered sacred, holding spiritual significance and representing the connection between the natural and supernatural worlds. The twisted shapes are often seen as a manifestation of the tree's spiritual power, its distorted form a testament to its ability to transcend the ordinary.

These trees have also inspired artistic expression, from photography to sculpture and literature. The unique shapes and forms of these trees have captured the imagination of artists, who see in them a reflection of the beauty and complexity of the world around us. The twisted trees have been the subject of numerous photographs, their eerie shapes and distorted forms evoking a sense of wonder and awe.

On another walk in the Saravanamalai forest near Kodamalai, we noticed a Eucalyptus tree, similarly twisted, though the twist was only visible on



An eerie twisted tree, imagined by Meta AI.

the surface; unlike the pinus varieties, where the whole trunk was twisted. This was a tall tree, with no others in the vicinity to cause any obstructions to wind force. Also, the twist was in the reverse direction!!!

The causative factors could be a combination of many.....wind force (Coriolis effect), lack of sunlight, and obstructive effect. That plants undergo phenomenal pressure and hardship to survive, is evident.....not to mention the stress that humans put on their existence.

Whatever the reason, twisted trees are a remarkable phenomenon in the natural world, a testament to the resilience and adaptability of nature. Whether seen as natural wonders, cultural symbols, or artistic inspirations, these trees continue to captivate and inspire us. As we move forward in our increasingly complex and interconnected world, it is important that we recognize the value of these trees, and work to protect and preserve them for future generations.



Eucalyptus trees with twisted trunks. This 90-ft tree, was in Wellington (now removed). - Photo: Ajay Ludra



THE ELUSIVE NILGIRI MARTEN

Madhu Ahluwalia

https://commons.wikimedia.org/wiki/File:Nilgiri_Marten_Naseef_Gafoor.jpg

I was out for a morning walk, upwards from Chinna Vandicholai towards Arul Nagar. There is little habitation towards the right, and one of the best manicured tea-gardens on the left. I was stopped short with the sight of a dark solitary animal emerging from inside the tea garden. I have never seen this before. It was the size of a medium dog. It was almost black, with a thick tail, and had a bright chest-patch. It vanished to the right of the road almost as quickly as it had emerged from the left. It resembled an over sized Malabar giant squirrel, which I have seen numerous times, but it was different.....there was the bright patch on the chest, the legs were longer, giving the animal a more erect posture, rather than a crouching one, and the tail was not as bushy. The ubiquitous giant squirrel, this certainly was not.

Any amount of discussions with my husband led me to no means of identifying this creature. I had to ask around for some suggestions amongst the more aware within the neighbourhood and circle of friends. The closest we could

get to was the Nilgiri Marten.....and I had no clue this animal existed, and so close to where I have stayed since 1998.

And so, for the generally unaware, I compiled some information

The Nilgiri Marten (*Martes gwatkinsii*) is a majestic and elusive creature native to the Nilgiri Hills. It belongs to the weasel family (Mustelidae) and is also known as the Nilgiri Sable or the Indian Marten. With only around 1000 individuals left, it is listed as Vulnerable on the IUCN Red List, making conservation efforts essential to protect this unique species.

It has a sleek and slender body, approximately 55-65 cm in length, with a bushy tail of around 40-45 cm. It weighs a little over 2 kg normally. Its fur is deep brown to black with a bright yellowish-orange patch extending from the throat to the breast, and a creamy-white belly. It has a characteristic pointed head, long neck, and slender body, making it easy to mistake for a Malabar Giant Squirrel when up in the trees.



The Nilgiri Marten is endemic to the Western Ghats of India, specifically the states of Tamil Nadu, Kerala, and Karnataka. It inhabits the high-altitude forests of the Western Ghats, typically between 700-1500 meters above sea level, but can also be found at higher ranges. It is found in various forest types, ranging from moist deciduous forests to montane grasslands called Shola grasslands above 2000 meters. There have been reported sightings of the Nilgiri Marten even in tea and coffee plantations in the Anamalais.

The Nilgiri Marten is a diurnal and primarily arboreal animal, manoeuvring with ease amidst the thick canopy. It is a solitary animal, mostly found alone or in pairs, but sometimes forms hunting parties of up to four. It is an omnivore and preys on birds, small mammals, insects, fruits, flowers, and buds. It is also known to raid beehives.

The Nilgiri Marten is listed as Vulnerable on the IUCN Red List due to habitat loss, fragmentation, and degradation. Its population is estimated to be less than 1000 individuals, making conservation efforts essential to protect it. The main threat to its survival is the severe fragmentation of its habitat, which remains a significant challenge for conservationists.

Several organisations and initiatives are working to protect the Nilgiri Marten and its habitat.

The Nilgiri Marten is protected under Schedule II of the Wild Life Protection

Act (1972), and efforts are being made to increase connectivity in the canopies of forests to ensure its persistence.

Here are some interesting facts:

- The Nilgiri Marten is also known for its ability to adapt to different habitats and altitudes.

- It has a unique communication system that includes vocalisations, scent markings, and visual displays.

- The Nilgiri Marten is an important part of the ecosystem, controlling pest populations and maintaining the balance of the forest.

- It is a significant part of the cultural heritage of the local communities, featuring in their folklore and stories.

Efforts to conserve and protect this species are essential to maintain the biodiversity of the region. It is crucial to address the challenges of habitat fragmentation and degradation to ensure the survival of this majestic creature. By working together, we can make a difference and protect the Nilgiri Marten for future generations.

A friend mentioned that the animal has also been sighted, infrequently, off the area of Lamb's Rock.

Madhu Ahluwalia is a septuagenarian homemaker. Settled outside Coonoor for nearly three decades, she is regular on her morning walks, and observes nature as it adapts to the changing surroundings with passage of time. She is also a pet-person.



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.

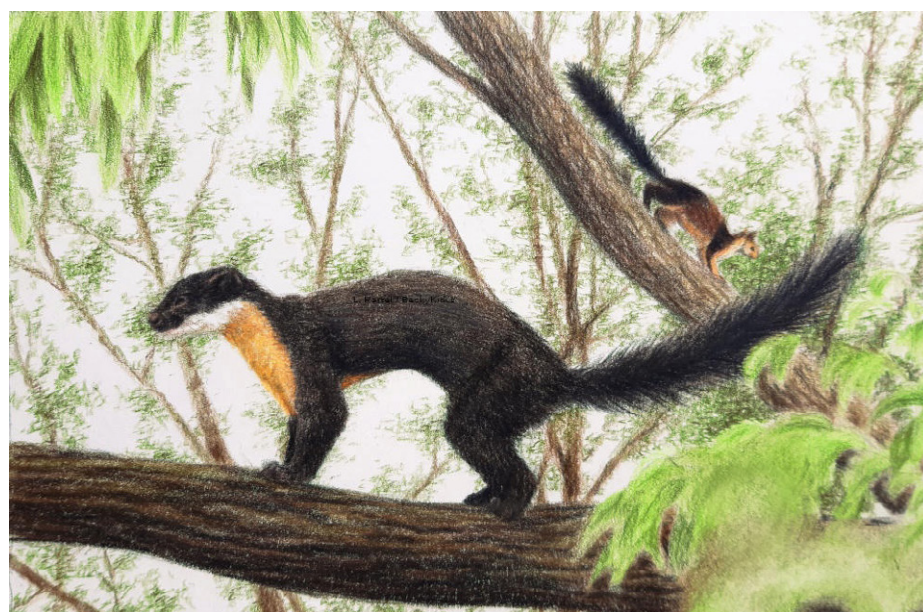
SUBMISSION OF ARTICLE

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:

Papers in Journals and other periodicals
 Hanley, T.A. and Hanley, K.A. 1982. Food resources partitioning by sympatric ungulates on Great Basin rangeland. *Journal of Range Management* 35: 152-158. Papers in Edited Books, Symposia Proceedings, etc
 Cole, D.W. and Rapp, M. 1981. Elemental cycling in forest ecosystems. pp. 341-409. In: D.E. Reichle (ed.) *Dynamic Properties of Forest Ecosystems*. Cambridge University Press, Cambridge.
Books
 Lieth, H. and Whittaker, R.H. (eds.). 1976. *Primary Productivity of the Biosphere*. Springer-Verlag, Berlin.
 Reports, Dissertations, etc
 Sollins, P., Reichle, D.E. and Olson, J.S. 1973. *Organic Matter Budget and Model for a Southern Appalachian Liriodendron Forest*. Oak Ridge National Laboratory, Oak Ridge, U.S.A.





SPECIES!
FOCUS

Nilgiri marten (*Martes gwatkinsii*)

Charcoal sketch by
Ms Anandha Karthick, Wellington, Nilgiris.

The Nilgiri marten is the only marten species native to southern India, primarily inhabiting the hills of the Nilgiris and parts of the Western Ghats. With an estimated population of around a thousand individuals, it is listed as Vulnerable on the IUCN Red List.

The Nilgiri marten has a distinctive appearance with a deep brown coat from head to rump, transitioning to almost reddish on the forequarters, and a bright throat that varies in color from yellow to orange. It features a prominent

frontal concavity and is larger than the yellow-throated marten. The body length from head to vent is about 22–26 in, with a tail length of 16–18 in. It weighs approximately 2.1 kg.

The Nilgiri marten mainly resides in the shola grasslands and high altitude evergreen forests, sometimes venturing into mid-altitude moist deciduous forests and commercial plantations. Its range spans the Western Ghats in the South Indian states of Karnataka, Kerala, and Tamil Nadu.