

NEWSLETTER of the NILGIRI NATURAL HISTORY SOCIETY

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Newsletter of the Nilgiri Natural History Society is available at

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Malabar Pied Hornbill

(*Anthracoeros corantus*)

A resident of Western Ghats, E. India and Sri Lanka. Commonly found along the Mulli River in Pillur. Listed as Near Threatened by IUCN and in Schedule I of the Wild Life (Protection) Act, 1972. CITES, Appendix II

Cover photo: A. Meena
Niradi Village, Pillur.

EDITORIAL

Dear Readers

Welcome to the 13th edition of the Newsletter of the NNHS. It seems like we only have two seasons for this newsletter – monsoon and winter. Let's start by talking about the weather and indeed we have had more rain on the north eastern slopes than the southern and western slopes of the region of the Nilgiris. We are not complaining, as the summer heat was quite unbearable for those of us who have become naturalised mountain folk.

This edition of the newsletter is focussed on a special region of the Nilgiri Biosphere Reserve, Pillur valley. This area of evergreen forests, elephants, streams, mountains has been special to us since we have worked for a number of years to understand the people and forests, bees and insects, forest and agriculture systems. Recently a team of Botanists at Keystone Foundation have published a field guide to the forest plants of this region.

Pillur is being covered through its water resources, plants, brooms (yes brooms), butterflies, people, elders and history. The newsletter has its regular columns on the wall papers from the village conservation centers and the diary of the NNHS. The many articles in this edition were written by young people who work in this area, have volunteered with us and are a part of this team.

A special word of acknowledgement to Last Forest Enterprises Pvt Ltd. who have made a donation that enables us to cover the cost of printing our June 2016 edition.

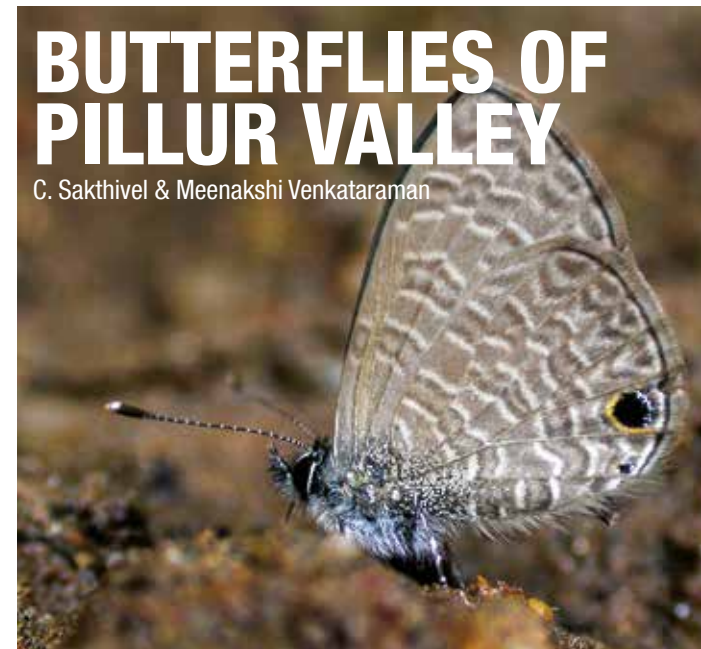
We do hope you enjoy reading this edition and this takes you through a journey of the Pillur Valley. Do write back to us with your feedback and let us know if you would like to be a part of the NNHS in anyway.

Editorial team

Under the Lens... Conservation

BUTTERFLIES OF PILLUR VALLEY

C. Sakthivel & Meenakshi Venkataraman



Common Lineblue

Among the insects, butterflies and moths come under a large group called Lepidoptera (Greek: scaly wings). Moths and butterflies differ from other insects in having two pairs of membranous wings covered with over-lapping scales. Moths outnumber butterflies, there being ten times more species of moths than of butterflies. Most butterflies fly during the day, as they prefer the warmth of the sun for basking and feeding, whereas a majority of moths fly after sunset. Distinguishing between butterflies and moths can also be done by the means of antennae wherein butterfly antennae are always slender with the tip either clubbed or hooked. The antennae of moths are variable, ranging from feathery or hair-like to club-shaped.

Pillur Valley lies in an isolated corner of Coimbatore District, densely forested and sparsely populated, this forest forms the southeastern part of the Nilgiri Biosphere Reserve. The forests are bounded by the Sathyamangalam and Nilgiris division on the north and northwest, and by the Palghat division of Kerala in the south and southwest. Pillur is located at an average elevation of 400 meters and receives a rain fall of upto 1400 mm in certain patches. As a zone, it extends in to the Attapadi area of Kerala and as a result has a lot of social, cultural and economic relations with that state. The valley is dominated by the Pillur dam and reservoir, part of many along the River Bhavani.

Butterflies are classified into two super families. Hesperioidea has all the Skippers, while Papilionoidea includes the rest, the 'true' butterflies. Hesperioidea consists of a single family of Hesperidae (Skippers), whereas Papilionoidea consists of Papilionidae (Swallowtails), Pieridae (White and Yellows), Nymphalidae (Brush-footed butterflies), and Lycaenidae (Blues). There are about 18,000 species of butterflies in the world. India has 1,501 species, of which 321 species are skippers, 107 species of swallowtails, 109 species of white and yellows, 521 species of brush footed butterflies, and 443 species of blues.

In my survey of Pillur Valley, I observed 51 species. There were 9 species of blues, 18 species of brush footed butterflies, 10 species of swallowtails, 9 species of whites and yellows and 5 skipper species. My field work covered a 3 km walk on the road around the villages. It involved taking photographs of butterflies and identifying the butterflies.

Lycaenidae			
1	African Babul Blue	<i>Azanus jesus</i>	Common
2	Banded Blue Pierrot	<i>Discolampa ethion</i>	Forest Areas
3	Common Lineblue	<i>Prosotas nora</i>	Common
4	Common Pierrot	<i>Castalius rosimon</i>	Common
5	Dark Grass Blue	<i>Zizeeria karsandra</i>	Common
6	Dingy Line Blue	<i>Petrelaea dana</i>	Forest Areas
7	Malayan	<i>Megisba malaya</i>	Common
8	Tiny Grass Blue	<i>Zizula hylax</i>	Common
9	Zebra Blue	<i>Syntarucus plinius</i>	Common
Nymphalidae			
1	Angled Castor	<i>Ariadne ariadne</i>	Common
2	Anomalous Nawab	<i>Polyura agrarius</i>	Common
3	Blue Tiger	<i>Tirumala limniace</i>	Common
4	Chocolate Pansy	<i>Precis iphita iphita</i>	Forest Areas
5	Common Crow	<i>Euploea core</i>	Common
6	Common Four-ring	<i>Ypthima huebneri Kirby</i>	Forest Areas
7	Common Lascar	<i>Pantoporia hordonia</i>	Common
8	Common Leopard	<i>Phalanta phalantha</i>	Common
9	Common Beak	<i>Libythea lepita</i>	Schedule II
10	Common Sailer	<i>Neptis hylas varmona</i>	Common
11	Danaid Eggfly	<i>Hypolimnas misippus</i>	Schedule -II Wrongly Added
12	Gladeye Bushbrown	<i>Mycalasis patnia Moore</i>	Common
13	Great Eggfly	<i>Hypolimnas bolina jacintha</i>	Common
14	Lemon Pansy	<i>Junonia lemonias</i>	Common
15	Plain Tiger	<i>Danaus chrysippus</i>	Common
16	Redspot Duke	<i>Dophla evelina</i>	Forest Areas
17	Tamil Yeoman	<i>Cirrochroa thais thais</i>	Forest Areas
18	White Four-ring	<i>Ypthima ceylonica</i>	Forest Areas
Papilionidae			
1	Blue Mormon	<i>Papilio polymnestor</i>	Forest Areas
2	Common Banded Pea-cock	<i>Papilio crino F.</i>	Common
3	Common Jay	<i>Graphium doson</i>	Forest Areas
4	Common Mormon	<i>Papilio polytes polytes</i>	Common
5	Common Rose	<i>Pachliopta aristolochiae</i>	Common
6	Crimson Rose	<i>Pachliopta hector</i>	Common
7	Lime Butterfly	<i>Papilio demoleus</i>	Common
8	Malabar Banded Peacock	<i>Papilio buddha</i>	Schedule II
9	Red Helen	<i>Papilio helenus</i>	Forest Areas
10	Spot Swordtail	<i>Graphium nomius</i>	Forest Areas
11	Tailed Jay	<i>Graphium agamemnon</i>	Forest Areas

Greetings!

LAST FOREST is a profit-hybrid institution providing marketing solutions to primary producer groups and communities that are working on forest and agriculture produce which are natural, wild and local.

Our product portfolio consists of our flagship wild honey, various beeswax products such as balms, lip balms, and soaps, Toda items and much more.

We strive to sustain local skills and traditional techniques of indigenous communities and hence constantly link the value chain back to the forest and its dwellers.

WE ARE PROUD TO ANNOUNCE THAT WE HAVE BEEN CERTIFIED BY THE **WORLD FAIR TRADE ORGANIZATION** AND ALL OUR PRODUCTS NOW BEAR THE WFTO LOGO ALONG WITH LAST FOREST'S TAG.

Walk in to our stores in OOTY, COONOOR and KOTAGIRI or grab them off our website or send your queries to response@lastforest.in

Pieridae

1	Common Grass Yellow	<i>Eurema hecabe</i>	Common
2	Common Gull	<i>Cepora nerissa nerissa</i>	Common
3	Common Wanderer	<i>Pareronia valeria hippia</i>	Common
4	Crimson Tip	<i>Colotis danae danae</i>	Common
5	Great Orange Tip	<i>Hebomoia glaucippe</i>	Forest Areas
6	Large Cabbage White	<i>Pieris brassicae</i>	Common
7	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Common
8	One spot Grass Yellow	<i>Eurema andersoni</i>	Rare
9	Psyche	<i>Leptosia nina</i>	Common

Hesperiidae

1	Golden Angle	<i>Caprona ransonnetti</i>	Forest Areas
2	Indian Skipper	<i>Spialia galba</i>	Common
3	Malabar Spotted Flat	<i>Celaenorrhinus ambareesa</i>	Forest Areas
4	Plain Banded Awl	<i>Hasora vitta</i>	Schedule IV
5	Small Banded Swift	<i>Pelopidas mathias mathias</i>	Common



Angled Castor



Banded Blue Pierrot
Discolampa ethion LYCAENIDAE

Wing Span : 26-36 mm
Habitat : Heavily Forested areas near streams and clearings
Host Plant : *Zizyphus mauritiana* & *Z. xylopyrus*



Dinky Line Blue
Petraleae dana LYCAENIDAE

Wing Span : 24-38 mm
Habitat : Forests and stream beds
Host Plant : Data Deficient



Chocolate Pansy
Junonia iphita NYMPHALIDAE

Wing Span : 55-80 mm
Habitat : Forests and stream beds
Host Plant : *Strobilanthes callosus*, *Hygrophila costata*, *Justicia micrantha*, *Lepidagathis prostata*



Common Fourring
Ypthima huebneri NYMPHALIDAE

Wing Span : 36-46 mm
Habitat : Forests and open hilly grasslands
Host Plant : *Gossypium herbaceum*, *Celtis*, *Grewia*



Common Beak
Libythea lepita NYMPHALIDAE

Wing Span : 45-50 mm
Habitat : Forests and streams
Host Plant : *Gossypium herbaceum*, *Celtis*, *Grewia*



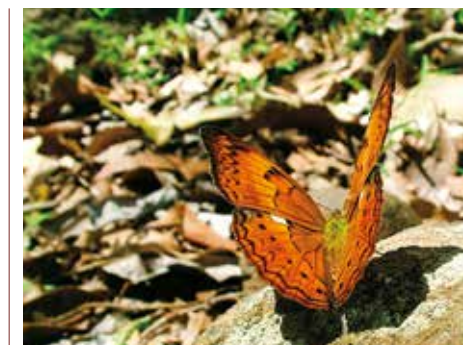
Danaid Eggfly
Hypolimnas missipus NYMPHALIDAE

Wing Span : 70-85 mm
Habitat : Forests and open
Host Plant : *Barleria cristata*, *Asystasia lawiana*, *Portulaca*, *Hibiscus*, *Abutilon* sp



Dinky Line Blue
Petraleae dana LYCAENIDAE

Wing Span : 24-38 mm
Habitat : Forests and stream beds
Host Plant : Data Deficient



Chocolate Pansy
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Chocolate Pansy
Junonia iphita NYMPHALIDAE

Wing Span : 36-46 mm
Habitat : Forests and open hilly grasslands
Host Plant : Grasses



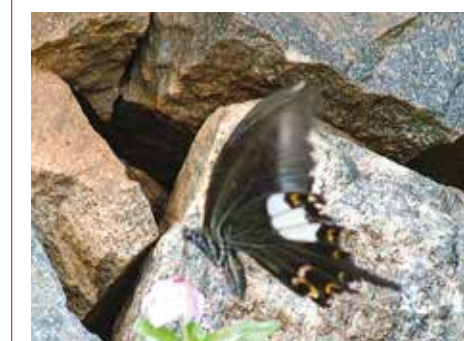
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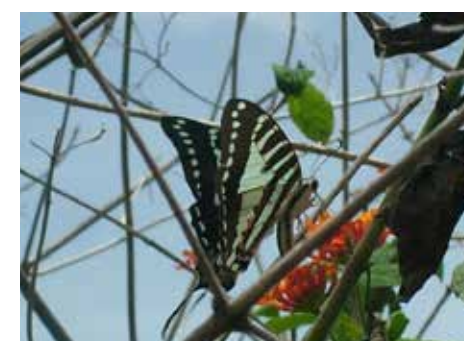
Chocolate Pansy
Junonia iphita NYMPHALIDAE

Wing Span : 70-85 mm
Habitat : Forests and open
Host Plant : *Barleria cristata*, *Asystasia lawiana*, *Portulaca*, *Hibiscus*, *Abutilon* sp



Redspot Duke
Dophla evelina NYMPHALIDAE

Wing Span : 81-113 mm
Habitat : Thick forests
Host Plant : *Anacardi-um occidentale*, *Diospyros candolleana*



Tamil Yeoman
Cirrochroa tyche NYMPHALIDAE

Wing Span : 60-75 mm
Habitat : Forests Evergreen and moist deciduous
Host Plant : *Hydnocarpus wightiana*



White Fourring
Ypthima ceylonica NYMPHALIDAE

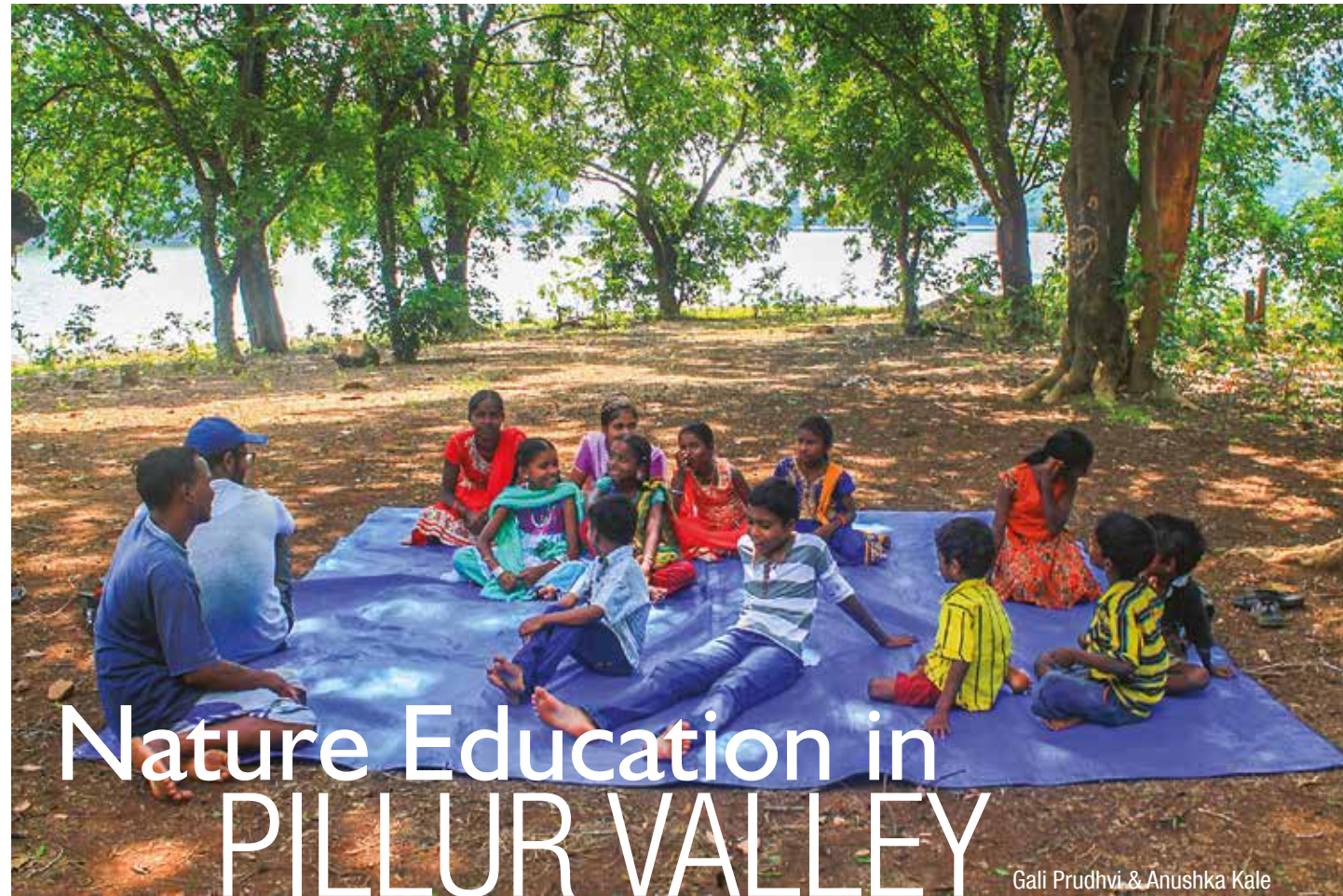
Wing Span : 30-35 mm
Habitat : Thick Forests
Host Plant : Grasses



Golden Angle
Caprona ransonnetti HESPERIIDAE

Wing Span : 38-45mm
Habitat : Lowland Forests
Host Plant : *Helicteres isora*

C. Sakthivel - formerly with Keystone Foundation as Research Assistant, Editorial Assistance from Meenakshi Venkataraman-Secretary, NNHS



Nature Education in PILLUR VALLEY

Gali Prudhvi & Anushka Kale

Nature Education in Pillur Valley

The Irula people of Pillur have always been an integral part of the forests of the Nilgiri Biosphere Reserve, and today changes in lifestyle are affecting the way they interact with the forest. Several hamlets, dot the roads within the reserve forest. People rear cattle, goats and poultry, while some have plantations of banana or silk cotton. They also depend on fishing in the Bhavani river as a source of their livelihood. Most of the Irula children do not have an opportunity to follow their elders to learn the ways of the forest, since they leave their homes and spend the academic year in travelling near and far in search of modern education. It is during the summer vacation months or weekends that they return home.

The majestic Bhavani River along with the forests and mountains form the perfect backdrop to interact with these children and their immediate environment. Already endowed with traditional knowledge of plants and remedies, of birds and their behaviour; of fishing practices - the Nature Education program conducted by NNHS and Keystone Foundation focused on ecological concepts through games and educational activities. Bringing together children to interact with Naturalists

whether it was the elders from their villages or the team from NNHS was indeed inspiring.

Visualising change through art

Every child was given two sheets of paper and some crayons, and were asked to draw their homes and surrounding environment as they saw it now. Some drew animals, birds and butterflies that they frequently saw in the forests, while some sketched the village with a few houses, cattle and their neighbours. The next part was to visualise



what their village would look like after 20 years and through this they were able to identify the changes happening all around them. They felt that the water level was reducing, that the forests were being cut to expand plantations, and that more houses were being built to sustain the growing population.

A game of Prey & Predator

In this game, the children played the roles of different animals to understand feeding stress, and the food chain within

the ecosystem. The children were divided into two groups, 'Frogs' & 'Snakes'. Some stones were kept in the middle of the ground which were 'food' for the frogs. The Frogs had to hop to the feeding ground and 'eat' or pick up 3 stones, and make it back to safety, while avoiding the snakes. The Snakes were allowed to run, to capture the feeding frogs. This game put into practice the food chain and food webs that they learnt at school.

Navigating Distance & Direction

Four children acted as the four corners of the field and the aim was to touch each of these corners to complete the game. Only one participant was allowed and they would be blindfolded and had to rely on their friends to guide them through the ground with verbal cues and directions. While some participants were able to traverse the field with ease, others found it quite challenging. In the forest, it is a life saving skill to be able to navigate distances with the help of sound and a sense of direction.

Diets through Dog & Bone

This classic game was slightly modified to teach the kids about different animals and their food habits. The two teams had to assign themselves with different animals

'Tiger, Gaur, Bear, Monkey and Leopard'. When their respective animal was called out the animal from both the teams had to seize the 'prey/food' which was a piece of wood in the middle of the field. Then they had to discuss the different diets that each of these animals have.

Storytelling & Interaction

Chandran R and Rajendran R, local people from the area discussed with the children the different medicinal applications of certain plants and tree. For example, some of the children shared that they regularly use boiled guava leaves to heal tooth aches. Then they discussed concepts such as how energy is derived from water, and about the distribution of 100MW of electricity generated from the Pillur dam. Giving an account of the history of the dam, the children were told that the water levels used to be much higher before. It seems the British officers in the past used to hunt crocodiles for their skin and now no crocodiles are found after the construction of the dam. A fish called *Sisi*, in the local vernacular, used to be caught in huge numbers some 60 years ago; and each fish alone weighed 50 kg! Today, they are not easily found in the river waters. The children listened raptly and expressed how



valuable their forest and river was. They seemed to understand that the natural resources they enjoy are more valuable than any other luxury that they can buy. To conclude the talks, Chandran R narrated a hilarious local story about the adventure of four not so wise people and this was a great way to end the sessions. Not before a delicious meal of fish curry rice and a swim in the Bhavani!

Text and Photos - Anushka Kale (student volunteer at Keystone Foundation-May 2016) & Gali Prudhvi (Nature Educator, NNHS)



Indigenous brooms of Pillur

L.Rasingam



Indigenous forest dwelling communities have accumulated a rich knowledge on the uses of various wild forest resources and forest products over the centuries. Their dependence on nature has developed knowledge, which ultimately reflects in their traditional culture religion, belief and folklore. Cleaning of houses and courtyards is a daily activity, ritualistically followed in many communities. Brooms are an important tool in keeping the living area clean. They are traditionally made of plant species is a general practice of many folklore traditions. For a long period, brooms were domestically produced and hand-made of tree branches and plant brushes, etc. According to their use, different names are available (yard broom, home broom, threshing-floor broom, etc.). Large quantities of brooms are used in India annually and most are made of grasses, palms and bamboos. Broom making is an important forestry enterprise in several parts of the country and an

important source of income and provide rural employment to the local tribes and village communities.

Making a broom is more than a plain activity, it is an art. The collected leaves or panicles without seeds are dried in open, sunny places (commonly in yards). After drying, panicles are grouped and bound together in small sheaves, with hemp cord or plant fibre for easy handling. The plants used by the Irula communities in the Pillur valley was studied by Keystone Foundation. About 10 plant species were used for broom making in the valley. All the plant species are used as a broom to sweep the surroundings of house and building structures, streets and roads. *Maclura spinosa* (Moraceae), *Bambusa arundinacea* (Poaceae) and *Lantana indica* (Verbenaceae) are used for the collection of grains during threshing. Most of the plant are distributed naturally in the dry deciduous and the semi-evergreen forests



at low elevations, three species are weeds distributed along the roadsides and in fallow lands and the remaining 3 species viz. *Brassica juncea* and *Cocos nucifera* and *Areca catechu* are cultivated along the roadsides, farm fields and village surroundings. Fifty percent of the brooms were made from young or matured branches of plants, because it can be handled better on the hard and rough surfaces. Whole plants, midrib of leaflets and leaves contributed in making brooms.

The most common wild plants that are used for broom making includes: *Phoenix loureirii*, *Sida acuta*, *Sida cordifolia*, *Sida rhombifolia*, *Parthenium hysterophorus*, *Cocos nucifera*, *Bambusa arundinacea*, *Acalypha fruticosa*, *Lantana camara* and *Dodonaea angustifolia*.

It was observed that the use of homemade brooms and broom making craft are slowly disappearing and the knowledge remains with only few peoples from remote villages. The indigenous brooms have lost their necessity due to the availability of modern appliances made of metal and plastics making inroads into daily lives of most people. However, in some places, where technology is unavailable or deficient and the bio resources are easily available, the traditional methods are still widely used.

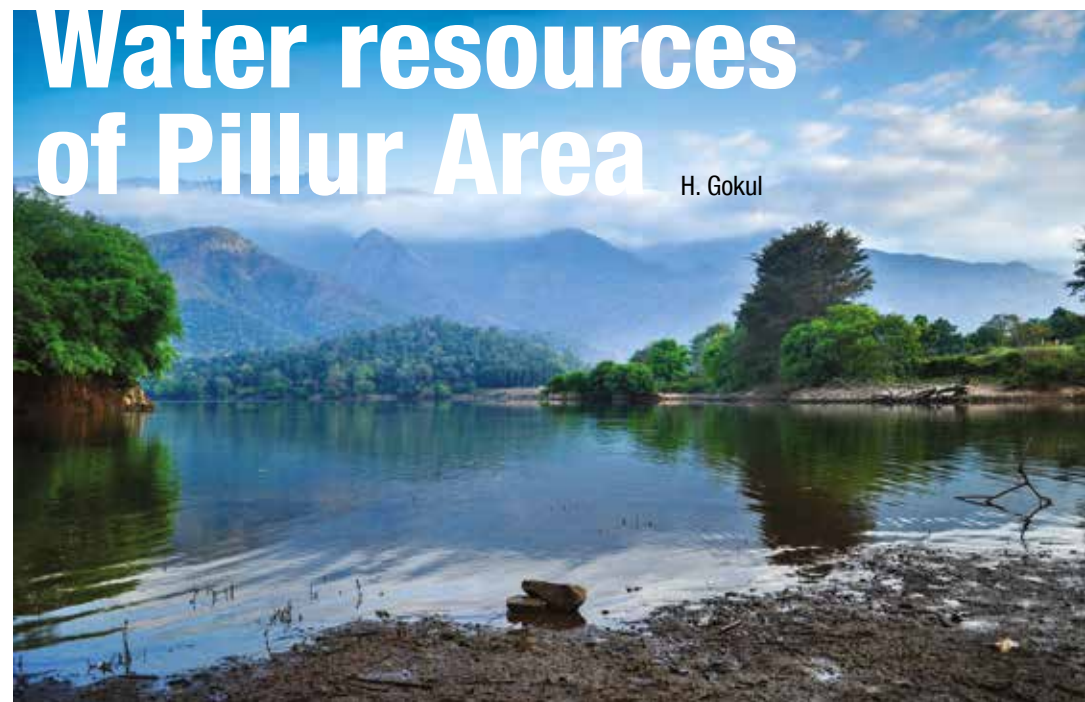
Text and Photos by L. Rasingam Phd, Botanical Survey of India, Hyderabad previously with Keystone Foundation

(This article is summarised from the full paper by Rasingam, L., and S. Jeeva. "Indigenous brooms used by the aboriginal inhabitants of Nilgiri Biosphere Reserve, Western Ghats, India." Published in the Indian Journal of Natural Products and Resources 4.3 (2013): 312-316.)



Water resources of Pillur Area

H. Gokul



Introduction

Important sources of water in the Pillur valley are springs, wetlands, streams, and rivers. The forests in the region play a vital role in keeping the water cycle replenishes. A spring is a natural groundwater discharge or emerging point. The wetlands are saturated zones which are formed due to the natural depressions in hilly areas. A stream is a small river which based on its characteristics are called as branch, brook, creek etc. When a number of streams and rivulets join courses at points and flow down as a single course they form a river. The most important rivers that flow towards the Pillur region are the Bhavani, Athikadavu and Kundah.

The Pillur area falls in the Southern part of the Nilgiris at the foothills just below the forests of Coonoor taluk. Pillur is also famous because of the hydroelectric project and the reservoir that was built along with the dam during 1961-67. Pillur dam is 88m high and 332m long and has a catchment area of 1191 square kilometre. The area is densely forested with dry deciduous, riparian and tropical dry evergreen types of vegetation. These forests are home to the Asian Elephant,



King Cobra and an interesting diversity of plants, birds and fishes. This area is home to the Irula people who have ancestral agricultural lands on which they grow food crops like millets, beans, banana and other cash crops. The forest is an important part of the Irula culture and economy. Many forest produce like *Eecham pillu* (Phoenix leaves), *Nellikai*, *Kadukai*, wild tubers, vegetables and fruits are harvested for sale and local consumption.

Pillur area is largely drained by the Bhavani river for which the watershed extends all the way up to the Upper Bhavani catchment in the Nilgiris. There are a number of springs and streams flowing out of the forests of Pillur. Most of the habitations are along these streams and this becomes an important water source for household as well as agriculture purposes. After the river was dammed the people residing on the banks of the reservoir were prevented from using the water from the dam.

Pillur dam on river Bhavani is one among the major water sources for drinking water supply to Coimbatore city. Tamil Nadu Water Supply and Drainage (TWAD) board manage and maintain this facility. At present the city of Coimbatore gets 65 MLD (million litres per day) of water from Pillur dam alone and this water has to be pumped from Pillur.

In our study of the water resources of Pillur area we found that the springs are drying up and when the local people were consulted about this they attributed it to changes in land use and climate. We were informed that the once perennial and ever

flowing springs and streams tend to go dry even before the month of March and April. People have earlier tapped these water through bamboos and drainage channels and now through pipelines by gravity. As the source is now running dry, people go in for alternate sources like dug wells and bore wells. And villages close to the dam, use the dam water for their daily uses like drinking, cooking, washing etc. When we tested the water in the dam we found high levels of coliform and this may be due to the prevalence of open defecation in the villages around. The quantity and quality of water are both an issue that needs to be addressed in the region.

Pillur water is for elephants too-

The Irula people often refer to the "Periya Aalu" who lives in the forest and comes in search of water. Yes the elephants have always been respected as a 'higher person' and as part of their society. The people told us that the elephants can smell water from 5 km away and need upto 200 litres of water on an average and can live upto 4 days without water as well.

Even though the people have encountered a lot of conflicts like damage to their farm produce, water supply pipelines and sometimes even loss to life, they have still kept their respect towards the elephants. Even today people say watch out for "Periya Aalu" on your way, irrespective of the time. The elephants tend to stay close to the water and roads especially during the summer. And the people are also mindful that the elephants too need this water.

Text by Gokul Halan, Additional Co-ordinator, Keystone Foundation

*Hopea ponga***A lonely dipterocarp
in Pillur** Shiny Mariam Rehel

Rumphius first mentioned the family, Dipterocarpaceae in 1750. The family comprises about 515 species in 16 genera and divided into 3 subfamilies viz., Dipterocarpoideae, Monotoideae and Pakaraimoideae (Appanah, 1998). It is confined to Asian tropics and a few extend to Tropical Africa. It is assumed that the origin of the family lay in the ancient southern continent of Gondwanaland (in a region now part of tropical Africa). In the Southeast Asian region where, at the time of their arrival, the forest might have been of modest stature, the dipterocarps grew into really big trees. It is speculated that they have evolved the physiological capacity to recycle mineral nutrients, thus attaining large size on poor soils. The dipterocarps are usually large evergreen trees, resinous, often buttressed and with scaly or fissured bark. The members of this family, playing a vital role as potential timber species that form an important means of economy in the timber market also act as source of other non-timber products for the livelihood of the forest dwellers.

In Asia, dipterocarps occupy a large variety of habitats from coastal to inland, riverine to swampy and to dry lands, undulating to level terrain, ridges, and slopes, well-drained to poorly drained and rich to poor in soil nutrients. They constitute a prominent element of the lowland rain forest and well represented in the understory. In India, 31 species of Dipterocarps have been reported, mostly confining to Northeast India and Andaman Islands. The Western Ghats contains 14 species belonging to 5 genera.

A striking feature of many dipterocarps is the phenomenon of mass flowering followed by mass fruiting. Enormous number of seeds and fruits ripen after a mass flowering and are released into forest floor. Each individual produce up to four million flowers, from which 120,000 fruits may set. The flower during the dry season and fruiting at the beginning of the rainy seasons. Flowering does not occur until trees are 20-30 years old, by which most of the trees grow to a larger height. Dipterocarpaceae show high rate of endemism, because of their poor seed



dispersal. They exhibit an ectomycorrhizal association with Russulaceae (family of mushrooms) members.

During the floristic survey by Keystone Foundation in Pillur region; we observed a large spreading tree which was identified as *Hopea ponga* (Dennst.) Mabb. It was the only member of the Dipterocarpaceae from this region and found along the riverbanks. It is endemic to the Western Ghats mostly confined to the states of Goa, Karnataka, Kerala, Maharashtra and Tamil Nadu.

The flowers were in panicle racemes (cluster of flowers) and whitish-yellow in colour. Flowering is from March to May. Study shows that thrips (a group of insects) appear to be ideal pollinators for mass flowering species. The fruit is a one seeded nut, closely surrounded by the bases of the accrescent sepals. The two external sepals develop into linear or oblong wings for dispersion. It usually bears fruits in April. The wood is very hard and used for construction and making of agricultural implements. According to the IUCN red list of threatened plants *Hopea ponga* is categorised as Endangered (Ashton, 1998). Timber logging and habitat loss are identified as the major threat to the species.

Literature cited:

Appanah, S. 1998. A Review of Dipterocarps: Taxonomy, ecology and silviculture Center for International Forestry Research Bogor, Indonesia, ISBN 979-8764-20-X.

Ashton, P. 1998. *Hopea ponga*. The IUCN Red List of Threatened Species 1998: c.T33470A9786253. <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T33470A9786253>.

Keystone Foundation, 2015. Forest Plants of the Nilgiris – Southern Nilgiri Biosphere Reserve..

<http://threatenedtaxa.org/index.php/JoTT/article/view/1567/2876>

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The Pillur Slopes- A brief glance

Rev Phillip K. Mulley – Ecologist of the Nilgiris

The region topographically called Pillur Slopes traditionally extended from Nellithorai near Mettupalayam in the east to Mulli-Sundapatti valley on the Nilgiri Kerala border to the west. These Slopes are part of what Dr. William Noble calls (1968) Ghat Rain Forest. They appear best developed in sections of the landscape of the Nilgiris, originally known as '*Kombe kaadu*' in native parlance.

One of the less quoted writers on Nilgiris, Rhodes Morgan (1876) provides a typical description of the inhabitants of these slopes bordering the Coimbatore District from '*Soondaputti*' in the west. Morgan writes: "They are inhabited below the crest in the centre of dense forest and cultivating small patches of '*raggy*'. During the hot weather...especially spend their time in digging out the wild yam, and in scaling the ladders and rattan ropes for the hives of the great 'Cliff-bee'. They also obtain large quantities of honey from the large boles of ancient forest trees, there stored by a smaller species of bee. These men collect almost all forest produce such as soapnut, myrobalsms, dye barks etc.. which they sell for a trifle to the plains traders whose debtors they are, in return for salt, grain, chillies, and other necessities... and almost all hill tribes are very clever in killing the smaller species of animals such as the flying squirrel, mouse deer etc..". Badagas of much earlier times called these inhabitants '*MULLUDUGARU*' (Trap-

hunters). The entire stretch of territory from Nellithorai to Mulli was also called Mulludugaru Seemai. The 'herbal lore' of the area was also well known once upon a time.

Interestingly enough, a 12th century Hoyasala inscription refers to folks called '*BALAYARU*' and '*KAVALIYARU*' on these Nilgiri slopes and local traditions also attest to the presence of these hunter-gatherers. Francis, in his District Gazetteer of the Nilgiris (1908:152) calls the Irulas of the Bhavani Valley (obviously the Pillur Slopes) '*MUDDUMARS*' which in local parlance means "ancient people". Badaga oral history has persistently maintained the existence of a large population of 19 villages of their Tudur Seemai lying right on the northern flanks of the Pillur Slopes. These habitations of ballad-fame, came to be deserted when a serious epidemic razed the whole foraging region.

The stretch of plains adjoining Pillur Slopes seems to have once nurtured an extensive population. While its history remains largely a matter of conjecture, the local folklore mentions fortifications and heroine-rulers like Aravalli and Suravalli. The Pakkasurakottai erroneously with Hulikal Droog on the summit of the Pillur Slopes, actually pertains to the story of a giant-demon who ruled over the Pillur Slopes. Capt. Congreve (1846) narrates this legend according to which when Pakkasura was vanquished by Bheema, a deadly fever

pronounced as curse by the Giant-demon brought about a degeneration of these tracts.

When Sullivan first explored this region, he made a good 'carriage road' of the ancient path on the western brow that descended from the Nilgiris to Malabar through Melur and Manjakambai to Sundapatti and further on to Mannarkad (Fr. Fencio also used this track in 1603). This track came to be known as Sullivan Ghat since 1828. Sullivan also noted some distinctive features between the elephant population here and in Ceylon. It is also on record that, captivated by the exquisite scenery from here, he said, "if he could do as he wished he should like to spend his old days here".

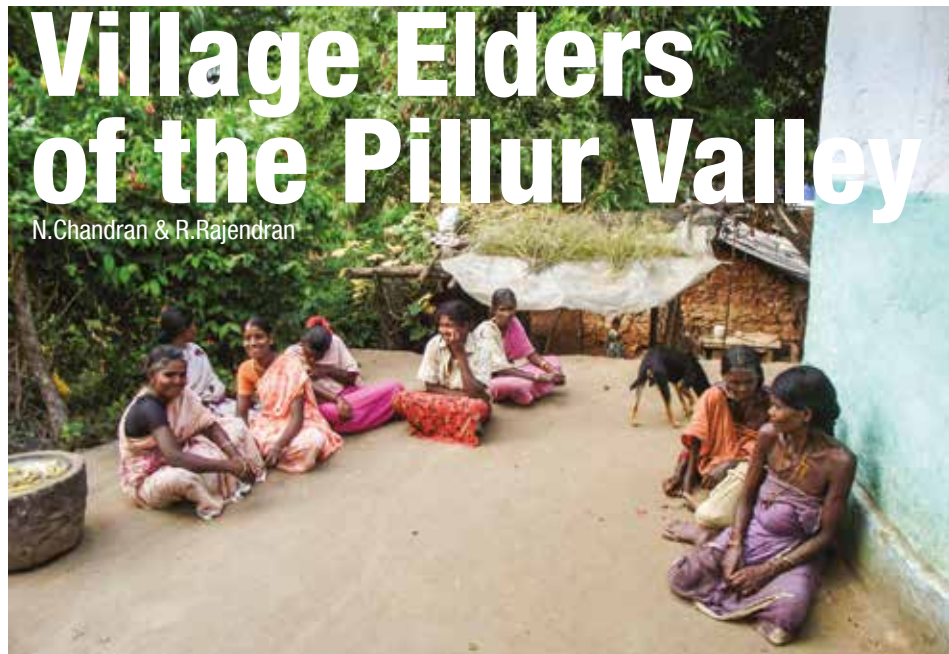
Aforesaid apart, the Pillur Slopes in modern times have come to be utilised for the harnessing of water resources. An old Badaga epithet called these slopes "water-cliffs" (Neerubare). In addition to the hydel power generated through Pillur-Parali-Athikadavu scheme as part of the Kundah system, the supply of water to the urban agglomeration of Coimbatore is a most notable landmark in the history of this micro-region.

Rev Mulley blogs at fromamongstthebluehills.blogspot.in and can be contacted at philipk.mulley@gmail.com



Village Elders of the Pillur Valley

N.Chandran & R.Rajendran



In May 2016, the Botanists at Keystone Foundation were proud to launch yet another pictorial field guide of the Nilgiri Biosphere Reserve. This time it was plants of the Pillur Valley. The ethno-botanical information in the book makes it special and this would not have been possible without so many of the elders of the region who encouraged us and also took part in the many workshops that we conducted.

The many elders who contributed to the book are mentioned below. They came together to also tell us that they found their children had no access to books about their own culture and it would be good to have a book about the wild fruits and vegetables from the forest. So while the field guide was being compiled we also brought out a small publication on the wild foods of the Pillur Valley. It is the concern that these elders had for the conservation of their traditional knowledge and for the transfer of this knowledge to the younger generation that inspired us to bring out these publications.

For more than five years now the elders of the Pillur Valley have taken a keen interest to teach their children about the forests and the uses of the various plants that are found there. Rajamani akka has a regular group of 10-12 children who she takes out for a walk around the village and the forests on the boundary of the village. She is keen to teach the children about herbal cures that they can use to heal themselves when they have cuts, wounds, fevers, stomach aches etc. She tells the children about the elephants and how they would come into their agriculture fields in the past and about listening to the Hornbills call, indicating that rains could be expected any time. She keeps a kitchen garden where she grows vegetables for her home use and she is careful to keep the garden organic. This garden then becomes a good classroom where the children too learn about organic ways of growing food.

Like Rajamaniakka there is Nanjamma paati who is a grandmother living in Neeradi village. About 8-10 children

from the village are keen to go with her to learn about herbal cures and wild foods from the forests. Siva amma from Korapathy village is an expert on birds and medicinal plants and shares her knowledge with around 14 children of the village. Marudan aiyya from Gethekad village used to have a regular group of 10 youngsters who would trail him for information about the forests and the medicinal plants that grow there. Today these young people are away in hostels and working outside, while the younger ones in the village are keen, Marudhan aiyya wants to take them for the trails only if they can write and take notes. He is keen that the children take this learning from the village elders as seriously as their school work.

Besides these elders Vijaya amma and Nagamma from Kodiyur village have been more than willing to share their knowledge about fruits from the forest, tubers and other wild foods with the children of the village. Raysee from Maanar village keenly tells the children about medicinal plants that are known to her from her elders. Nagammal and her grandmother Kaliyamma from Kilpillur were keen that their knowledge of the forest should be known to their children and must also be available in the form of a book that the children can use to read.

Over the years these elders of Pillur have served to document the richness of their forests through assisting the work for the books and also by ensuring that their knowledge is passed on to their younger generation. In doing so, they have shared with the young people their love and respect for the forests while also teaching them about the bounties of that forest.

N. Chandran is a Village Coordinator at Pillur. R. Rajendran is the Field Assistant at Keystone Foundation.



RECENT WINTERING RECORDS OF THE KASHMIR FLYCATCHER (*Ficedula subrubra*)

A. Bhoopathy



Kashmir Flycatcher had been sighted in very few places in the Nilgiris in the last year and the past. Rumors spread more than the truth! The sightings of the bird in Nilgiris were recorded in Doddabetta, Avalanchi, Cairn hill, Ooty Botanical garden and Sims Park in coonoor the past. It is actually rare to see the bird in a lower elevation than Ooty, we spotted the bird at 1718 meters above the mean sea level which is quite low compared to Ooty and Coonoor. This change in the bird's behavior or the change of location is due to the climatic changes happening.

This rare visitor was spotted on 22 December 2015 by Mr. A. Bhoopathy, naturalist and conservationist, along with his grandson A. Indrajith at Sakatha Village near Kotagiri in The Nilgiris.

കാട്ടുപൂവ്

നിലമ്പൂരിലെ കുട്ടികൾ തയ്യാറാക്കിയ പരിസ്ഥിതി മാസിക



നാട്ടുവിശേഷം (1)

1. നിലമ്പൂർ ഡി എഫ് ഒ ഓഫീസിൽ വെച്ച് നിലമ്പൂർ നോർത്ത് ഫോറസ്റ്റ് ഡെവലപ്പ്മെന്റ് ഏജൻസിയുടെ ജനറൽ ബോഡി മീറ്റിംഗ് നടന്നു. നിലമ്പൂർ വനമേഖലയിലെ വിവിധ ആദിവാസി ഊരുകളിലുള്ള വനസംരക്ഷണ സമിതികളിലെ അംഗങ്ങൾ ഈ യോഗത്തിൽ പങ്കെടുത്തു. നിലമ്പൂർ മേഖലയിൽ വിവിധ ആദിവാസി ഗ്രാമങ്ങളിൽ ഊരുകൂട്ടങ്ങൾ നടന്നു. മെയ് മാസത്തിൽ കേരളത്തിൽ നിയമസഭ തെരഞ്ഞെടുപ്പ് നടന്നു. നെടുങ്കയം ഗ്രാമത്തിൽ ഒരു ബുക്ക് ഉണ്ടായിരുന്നു. മുണ്ടക്കടവ്, മാഞ്ചിരി, നെടുങ്കയം ഗ്രാമങ്ങളിലുള്ളവർക്ക് സമ്മതിദാനാവകാശം നിർവഹിക്കാനായിരുന്നു അത്.

നാട്ടുവിശേഷം (2)

ഇത്തവണ വേനൽക്കാലം അതിരുകൂലിയായിരുന്നു. വേത്ര മഴ ലഭിക്കാത്തതിനാൽ എല്ലാ ആദിവാസി ഊരുകളിലും കുടിവെള്ള ക്ഷാമം അനുഭവപ്പെട്ടിരുന്നു. എന്നാൽ മെയ് അവസാനവാരം എത്തിയ മഴയോടെ ജലദാർഢ്യത്തിന് ഒരുവിധം പരിഹാരമായിട്ട്. പൂഴകളിലും അരുവികളിലും ചെറിയതോതിൽ വെള്ളം ഒഴുകാൻ തുടങ്ങിയിട്ടുണ്ട്. പുതുമഴക്കൊപ്പം പൂഴയിൽ രാവു പകലുമില്ലാതെ മത്സ്യങ്ങൾ പിടിക്കാനായി ഗ്രാമങ്ങളിലുള്ളവർ മത്സരമായി.

തന്ത്രങ്ങൾ (3)

മനഞ്ഞിൽ മീൻ: പൂഴകളിലും അരുവികളിലും തോടുകളിലും മെല്ലാം കാണപ്പെടുന്ന പാമ്പിനോടു സാദൃശ്യം തോന്നുന്ന ഒരു മത്സ്യമാണ് മനഞ്ഞിൽ. വെള്ളത്തിനടിയിൽ കിടക്കുന്ന പാറപ്പൊത്തുകളിലോ മരപ്പൊത്തുകളിലുമാണ് സാധാരണയായി ഈ മീൻവർഗ്ഗങ്ങളെ കൂവുന്നത്. ചൂണ്ടയിലാണ് ഈ മത്സ്യം സാധാരണയായി പിടിക്കാറുള്ളത്. ഇതിന്റെ മാംസം നല്ല രുചിയുള്ള ഭക്ഷണമാണ്. മനഞ്ഞിലിന്റെ തൊലി ഉണക്കി വെള്ളത്തിൽ തിളപ്പിച്ചു തുടർച്ചയായി കുടിക്കുന്നത് ശ്വാസം മുട്ടൽ (ആസ്തമ) രോഗികൾക്ക് നല്ലതാണ് എന്ന് പാരമ്പര്യവൈദ്യം.

ഇവർ ഇങ്ങനെ (4)

സുധ ബാബു: സുധ വാണിയംപുഴ ഗ്രാമത്തിൽ ജീവിച്ചുവരുന്നു. പ്രാഥമിക വിദ്യാഭ്യാസം മാത്രം സിദ്ധിച്ച സുധ ഇന്ന് വാണിയംപുഴ, ഇരുട്ടുകുത്തി, തരിപ്പപ്പൊട്ടി, കുമ്പളപ്പാറ എന്നീ ഗ്രാമങ്ങളിൽ കീഴ്നോൺ ഫൗണ്ടേഷനും നിലമ്പൂർ നോർത്ത് ഫോറസ്റ്റ് ഡെവലപ്പ്മെന്റ് ഏജൻസിയും ചേർന്ന് നടത്തിവരുന്ന സമുദായാധിഷ്ഠിത ആരോഗ്യ പദ്ധതിയുടെ പ്രധാന ആരോഗ്യ പ്രവർത്തകയാണ്. അറിഞ്ഞോ? സുധയെ മറ്റുള്ളവരിൽനിന്ന് വ്യത്യസ്തയാക്കുന്നത് അവർക്ക് വനത്തിലുള്ള ഭക്ഷണയോഗ്യമായ മിക്ക സസ്യങ്ങളെ കുറിച്ചും അറിയാമെന്നുള്ളതാണ്. പാരമ്പര്യമായ ഈ അറിവുകൾ ഉള്ളുകൊണ്ടു സംസാരിക്കുമ്പോൾ അത്തരം അറിവുകൾ വേണ്ടത്ര പരിഗണന അർഹിക്കാത്തതുകൊണ്ടാണെന്നറിയില്ല സുധ വിനീതയാകുന്നു. അവയ്ക്കു പുറമെ വിവിധയിനം ഔഷധസസ്യങ്ങളെക്കുറിച്ചും സുധയ്ക്കു നല്ല ധാരണയുണ്ട്. ഈ പാരമ്പര്യ അറിവുകളെ മറ്റുള്ളവർക്ക് വ്യക്തമായി പറഞ്ഞുകൊടുക്കാനുള്ള കഴിവും സുധയ്ക്കുണ്ട്. സുധ ഭർത്താവ് ബാബുവിനും മൂന്നു കുട്ടികൾക്കൊപ്പം താമസിച്ചു വരുന്നു.



പക്ഷികൾ

ഇരുട്ടത്തലച്ചി - എല്ലാദിവസവും
മൈന - എല്ലാദിവസവും
മുളംതത്ത - എല്ലാദിവസവും
കൊക്ക് - എല്ലാദിവസവും
എര - എല്ലാദിവസവും
മരംകൊത്തി - എല്ലാദിവസവും
പുത്താകീരി - എല്ലാദിവസവും
ഉപ്പൻ - എല്ലാദിവസവും
ആനാഞ്ചിപ്പക്ഷി - എല്ലാദിവസവും



അറിഞ്ഞോ?

1. നെടുങ്കയം ഗ്രാമത്തിലുള്ള പതിനാലു വിദ്യാർത്ഥികൾക്കായി രൂപീകരിച്ചിട്ടുള്ള ഒരു പരിസ്ഥിതി പഠനക്യാമ്പ് നടന്നു. ആദ്യ ദിവസം ജീവന്റെ വല, പരിസ്ഥിതിയിലുള്ള വേട്ടക്കാരും ഇരകളും എന്നീ കളികൾ വിദ്യാർത്ഥികൾക്കൊരു പുതു അനുഭവമായി. രണ്ടാം ദിവസം ഗ്രാമത്തിലുള്ള മുതിർന്നവരുമായുള്ള സഭാഷണങ്ങളായിരുന്നു. കാലഘട്ടങ്ങൾ തമ്മിലുള്ള വ്യത്യാസം, ഭക്ഷണങ്ങൾ തമ്മിലുള്ള വ്യത്യാസം എന്നിവയായിരുന്നു.
2. മുണ്ടക്കടവ്, നെടുങ്കയം എന്നീ ഗ്രാമങ്ങളിലുള്ളവർക്ക് കാർഷിക ആവശ്യങ്ങൾക്കായുള്ള യന്ത്ര സാമഗ്രികൾ കൃഷിവേനിലൂടെ ലഭ്യമായിട്ട്. ട്രാക്ടർ, പൂൽവെട്ടി യന്ത്രം, കത്തികൾ, കൈക്കോട്ടുകൾ എന്നിവയാണ് ലഭിച്ചത്.
3. പാട്ടക്കരിമ്പ് ഗ്രാമത്തിൽ വ്യക്തിഗത വനാവകാശ നിയമ പ്രകാരം ലഭിച്ച വനഭൂമിയിൽ വീടുകളുടെ പണി വളരെ വേഗത്തിൽ നടന്നുവരുന്നു. കൂടാതെ ഗ്രാമത്തിൽ കുടിവെള്ളക്ഷാമം പരിഹരിക്കുന്നതിനായി ഒരു കുടിവെള്ളപ്പാമ്പിന്റെ നിർമ്മാണവും തുടങ്ങി.

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Diary of Nilgiri Natural History Society



Diary of the NNHS

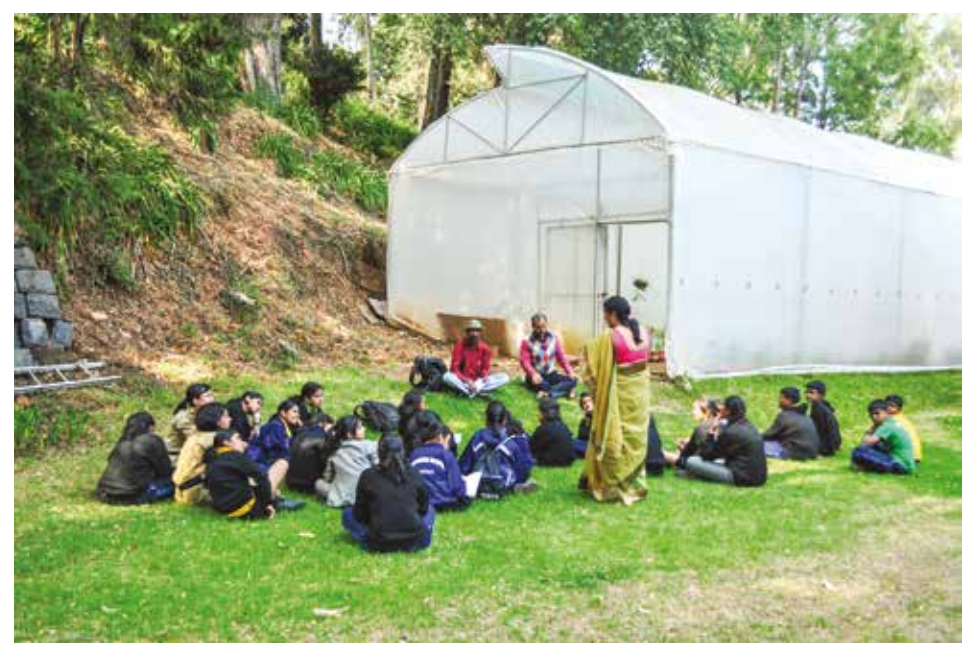
We had a slow start to the beginning of this year, with January having gone past as soon as it came with the new year! At the end of January we had a call from the Nilekanis asking if somebody from NNHS would take them for a trek through Longwood Shola. That was certainly a much needed prod to get going and since then our activities have rolled on with the usual enthusiasm.

World Wetlands day was round the corner and that helped to break the lull for NNHS as we planned a walk around the wetlands and interacting with school children at our Happy Valley Restoration plot which is in the town of Kotagiri. In the first week of February we started to clean up the site and also put up name boards for some of the common trees. Students from the local schools joined us to plant some trees and later we did a small birding trail around the site. Indeed sighting the black and orange flycatcher there was a happy moment. More about this event can be found at the following link:

Nature Education Program for Schools

Isha Home School: We held a 2-hour workshop was to create a room for discussion between the students, their accompanying teachers, and our nature educator. We didn't want the kids to be

indoctrinated into a school of thought. We wanted the students to themselves create an understanding of bees and the ecosystem. A documentary screening, Kurumba art and painting, and beeswax candle making stations were set up for the kids. Constructive arguments and questions were exchanged between the students and our nature educator. Most of which were answered. Truth be told, it seemed like we learned more from the children that day.



Brindavan Public School: Almost 150 students of classes 4th and 5th participated in the viewing of two short documentary films about Nilgiris and its biodiversity. They even took part in an exciting game 'Predator & Prey' that taught them about how different organisms interact in nature. Two student volunteers Anushka Kale and Sujith Jonathan helped us conduct this program.

Lawrence School: In March we organised a trek for the students of the Nature club and we have resumed our weekly Friday meetings where current conservation issues such as biodiversity of the Nilgiri Biosphere Reserve, deforestation, identification of native species, the threat of alien invasive species are discussed. We also plan on running activities such as creation of a plant nursery of native species and a small afforestation program.

Hebron School: Around 40 children from Hebron came to Kotagiri to understand restoration and importance of Shola forests. This was organised by NNHS in collaboration with the teachers at Hebron.



Nature Education Camps at Village Centers

“Have you heard the story of Rangaramar malai (also known as Rangasamy peak) and how our ancestors came about?” enquired the elder in a nostalgic voice. A group of 20 odd kids sitting around him shook their heads and waited in rapt attention as the elder brooded over the subject. This was a typical scenario that played out at most of our summer camps which were ideated to engage the indigenous youth from different parts of the Nilgiri Biosphere Reserve.

The summer camps have now become a regular feature of our work and the children of the areas look forward to it too. At each camp we spend time on activities, games and discussions on how they perceive their immediate environment. This year too the camps were held in Punanjanur/ Srinivasapura Colony, Aracode/ Banglapadigai, Nilambur, Dhimbam and Pillur in the months of April/May.

The summer camps kicked off at Punanjanur in BRT hills, where the Sholiga kids seemed a bit shy to express their creative side but were a fantastic group when it came to outdoor activities. They related to topics like web of life with games and they also possessed an appreciable amount of knowledge on their cultural practises, forest foraging particularly medicinal plants.

The next camp was at the Irula hamlets of Galidhimbam and Mavanattam which are located in the core area of the Sathyamangalam Tiger Reserve. The kids here were particularly good at expressing their imagination through art and storytelling.

The camp at Nilambur saw 12 kids from Nedumkayam a Paniya hamlet and they were quite excited when they found out, what we have planned for them. What was very interesting here was that out of the 12 kids 9 were girls. Elders from the nearby Paniya hamlets shared their knowledge on the variety of wild foods that were native to the area and on how to cook them.

The camp in Pillur area was held for a day at Pillur dam and the next day at the gorgeous ‘Neeradi’ an Irula hamlet on the banks of the Bhavani River. The kids about 15 of them from the hamlets in the vicinity of Neeradi were an energetic and intrigued bunch. They were patient enough and interacted with us for long hours on both the days in spite of the scorching summer heat. Here we could discuss the issue of damming a river, the basic idea behind them, livelihoods associated with



it and its effect on the fragile ecosystem.

The final summer camp was at Banglapadigai in Aracode area. About 25 kids from the nearby Irula hamlets took part in it. If there was something very different and unique from the other areas it was the elders programme. Three elders well over their 50’s were entrusted with this responsibility. One was a Headman, a goat herder cum medicine man and one who had a dangerous encounter with an elephant and yet lives to tell the tale. This group took some time to remember the many stories and songs about their folk that they are familiar with. The children heard them all with great excitement.

What did we learn at these camps – the indigenous children were very sensitive to the changes in their environments and foresee their landscape being devoid of trees in the coming years. They believe more dams will be built, wildlife will be hardly seen in their landscapes, tar roads, lots of automobiles and big houses. They see themselves having to leave their remote landscapes in search of livelihood options.

Treks and Trails:

Longwood Shola : This is by far one of our most popular trails and we have requests for conducting these on a regular basis. The accessibility of the trail along with its relatively easy nature and at the same time set in a rare forest like a Shola gives it a special level of popularity. We have advertised this trail on our website and also placed posters about it at some select hotels in the district.



Tarnadmund trail: A special landscape, sacred to the Todas and very typical of the Nilgiris is the forest and grassland around the Toda hamlet of Tarnadmund. We organised one trail here that was well received and something we hope to continue in the future.

We have had a number of discussions with indigenous village groups that are heading eco-tourism initiatives (Banagudi Village and Kodithenmund) in collaboration with the Tamil Nadu Forest Department in the region and are planning modes of working together.

A project to document the ecology, culture and conservation of the Sacred Bikki (*Elaeocarpus serratus*) of the Nilgiris

In February NNHS was awarded a project by the Natural Heritage Division

of INTACH Delhi, to survey the status of the *Elaeocarpus serratus* (“Bikke” in Badaga dialect or commonly known as the Malabar/Nilgiri Mock Olive tree) and *Elaeocarpus tuberculatus* (Nilgiri Rudraksha tree) which are sacred to the different communities in the Nilgiris. These trees are venerated as sacred trees by most of the hill communities as well as used for medicinal purposes. Population surveys to assess status of these trees as well as a survey of the myths and beliefs associated with these trees are being conducted in the various habitations as well as in the neighboring sholas. This project gave us an opportunity to hold discussions on culture and conservation with a number



of elders of the communities around the Nilgiris and to also spread awareness on the need to conserve special trees. Saplings of *Elaeocarpus* were distributed, a report was prepared and posters in Tamil and English were also made.



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 (250words).

Articles should be submitted by email to: anita@keystone-foundation.org or

Authors should provide complete information including an email address and phone numbers. Articles needs 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
Solins, 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.



Vanilla walkeriae Wight **Orchidaceae**

Shiny Mariam Rehel



The scientific name commemorates Anna Maria Walker of Sri Lanka with whom Robert Wight collaborated.

HABITAT AND DISTRIBUTION : A rare orchid found in the deciduous forest and scrub jungles from plains to 500m. It is distributed in Peninsular India and Sri Lanka.

An epiphyte; without or very minute reduced leaves. Stem succulent and acts as leaves. Flowers during March to April. Fruiting occurs from April onwards. The flowers are very showy with a green tinge.

It is a wild relative of *Vanilla planifera*.

Reference:

Forest Plants of the Nilgiris, Southern Nilgiri Biosphere Reserve, Keystone Foundation. 2015