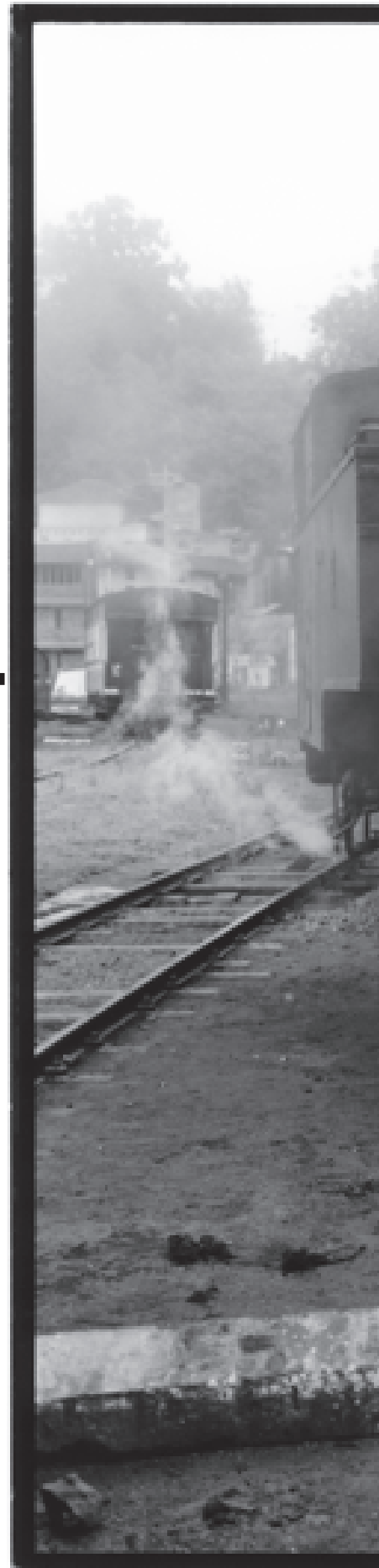


Text & Photos
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ECOLOGY & LANDSCAPE IN INDIA'S WESTERN GHATS

A Personal Odyssey

At the foot of the Indian peninsula, where three seas converge in a frothy swirl of salt and spray, a rugged mountain chain starts its northern journey. Most visitors and the numerous pilgrims at Kanyakumari (Cape Comorin) scarcely notice the hills overshadowing their ablutions and joyous play in the sea. It is early June and with the trade winds changing, the South West monsoon is making its first landfall. Enormous cumulonimbus clouds gather off the coast waiting to drench the land with the lifeblood of the monsoon...





▲ (clockwise, from top left)
Pilgrims bathe in the monsoon-fed
Banerthetum Falls in the heart
of Kalakad Mundanthurai Tiger
Reserve; Workers loading coal
into the steam locomotives,
Conoor, Nilgiri Hills; Enormous
Syzygium in mist, Bombay
Shola, Palni Hills; Coaker's Walk
panorama, Kodaikanal.





The hills in the background are the beginning of the Western Ghats, a 1,495-kilometre-long mountain chain that will guide the monsoon northwards as it brings the relief of rain to a parched subcontinent. Named after their step-like appearance in the northern ranges, the Western Ghats are a collection of heterogeneous geological formations that separate the wet Malabar Coast from the arid interiors of the Indian peninsula. In its western portions it is not uncommon to have 9,000-centimetres of annual rainfall while a short distance beyond the crestline, there are near desert-like conditions in the eastern rain shadow of the Ghats! Geologically and biologically they have common ancestry with other Gondwanaland landmasses in Madagascar and southern Africa. Today the Western Ghats form an uplifted spinal chord whose unique biodiversity shares a fascinating affinity with the island of Sri Lanka as well as the distant Himalayas. Their forested slopes play a critical role in water catchment and feed all of the major rivers of the Indian peninsula. Human population density in the peninsula is high but up until recently the Western Ghats have been veritable islands of diversity, free from the destructive habits that have ravaged the more accessible plains areas surrounding the hills.

These facets were beyond me when I was growing up in the southern portion of the Ghats. In those years I was interested in exploring the hills, climbing its highest peaks and discovering undisturbed places. This later developed into a passion for the area's geography, natural history, conservation challenges and landscapes. Many monsoons have come and gone and I have returned to Kanyakumari to wash my feet in the three seas and start a journey to travel the length and breadth of the Ghats. It is a journey in search of another India, unfamiliar to most travellers and even many of its inhabitants.

Agsthyamalai/KMTR

It is only a dozen kilometres northwards from Kanyakumari to the Ashambu Hills, an area that is regarded as the richest biological zone of the entire Western Ghats. Biodiversity and its demise in the Western Ghats is one of the reasons that the area has received significant attention in the last decade. The various ranges that makes up the Western Ghats have one of the highest rates of endemism in South Asia and have been designated as one of 34 'biodiversity hotpots' by Conservation International (the designation also includes Sri Lanka). The Ashambu Hills that are centred around the peak of Agasthyamalai (1,866 metres) are home to a range of ecosystems that are delineated by rainfall and altitude. Montane wet evergreen rainforests cloak the high hills while deciduous and dry scrub forests dominate the lower hills in the

eastern rain shadow. Aside from having populations of notable species such as king cobras, tigers and great pied hornbills, the area is known by scientists as a haven for endemic primates. They include the rare Lion Tailed Macaque (*Macaca silenus*), locally common Nilgiri Langur (*Trachypithecus johnii*), and shy nocturnal Slender Loris (*Loris lydekkerianus*).

I've visited the area on several occasions and been awed by the majesty of the landscape. It took me three different attempts and long hours of waiting for written permission from two state wildlife wardens and the environment secretary in New Delhi to get permission to climb Agasthyamalai. Now on this trip I am gazing up at the jagged peaks and evergreen forests as I make my way to Courtallam. Long reputed as the "spa" of southern India, it attracts large numbers of pilgrims during the monsoon when water falling on the crestline flows eastwards through evergreen forests to the dry plains near the city of Tirunelveli. Pilgrims bathing in the waters at Courtallam believe it to have healing, medicinal properties. Not a far-fetched idea when you think of the diverse forests that it flows through before cascading over the granite falls at Courtallam. Setting aside my camera gear for a change I take a herbal oil bath and rinse it off in the pounding thunder of the main falls and am quickly convinced of the water's healing properties.

Periyar/Sabarimala

Just north of the Ashambu is a relatively lower range of the Ghats that contains the expansive Periyar Tiger Reserve. It is famous for its man-made lake and abundant populations of elephants, gaur, sambar and other animals and birds. Although I enjoy watching Periyar's wildlife I am here to observe the Sabarimala pilgrimage into the dense rainforest on the western slopes of the protected area. Every year approximately five or more million devotees of the god Ayyappa congregate in a temple sanctuary built deep inside the forest sanctuary. It illustrates an important connection between religious tradition and forest protection in India. As Bittu Sahgal, the Mumbai-based conservationist and editor, once told me, "there isn't a mountain in India that doesn't have a temple, shrine or spiritual story associated with it." The challenge of coping with increased numbers brought about by better transport facilities and communication is daunting. I enjoyed walking the forest trails with other pilgrims but the impact of so many humans on the water, tree cover and land is telling. The forest department is successfully working with local communities to provide sustainable fuel wood (rubber trees from plantations) and eliminate plastic and other non-biodegradable waste.

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Palnis/Anaimalais

The highest mountains in the Western Ghats are found at the junction of the Palni and Anaimalai Hills in what is known as the High Range. This is an incredible area, largely converted to tea and eucalyptus plantations but still containing some of the least blemished landscapes in the entire Western Ghats. I've been coming to the High Range for years, drawn by the stunning, rugged landscapes found in the high plateaus and deep valleys. Now my journey has brought me here to the tea-planting town of Munnar to participate in an annual census of the rare and endangered Nilgiri Tahr (*Hemitragus hylocrius*), a mountain goat restricted to the highest reaches of the southern Western Ghats.

For several days I climb up and around Anai Mudi, which at 2,694 metres, is the highest peak in peninsular India south of the Himalayas. It is a grand old weathered mountain whose profile changes dramatically depending on your vantage point. Perhaps most notable is the moonscape-like landscape, with its dominance of grasslands interspersed with pockets of shola forests set amongst the sheer granite cliffs of the mountains. This mosaic of shola and grasslands is an important and unique feature of the undisturbed southern Western Ghats above 1,700 metres. It is all the more remarkable here in Eravikulam National Park since most of the remaining shola-grasslands habitats have been converted to non-native eucalyptus and pinus plantations. It is no wonder that the Nilgiri Tahr, a grasslands loving ungulate, is an endangered species! My days are a blissful mix of strenuous hiking, long contemplative hours scanning the hills and exaltation at the splendour around me.

To the east of the High Range is an azure eastern extension of the Western Ghats. These are the Palni Hills, named for the temple town on their northern slopes. I came of age in these hills and have enjoyed exploring their remotest corners over the last 37 years. At their centre is the hill-station of Kodaikanal, built around a bowl shaped valley and artificial lake. It is unique in India in that it was founded by Americans rather than the British, Mughals or other historical people who established such summer escapes from India's famous heat and dust. Today the township grapples with the mixed blessings of a boom of middle-class tourism and development that is straining its carrying capacity. The town attracts an eclectic mix of citizens: organic coffee farmers, cheese makers, tree planters, environmental activists, educators, artists of every stripe, spiritual refugees and others looking for different visions of India.





Nilgiris & Karnataka Ghats

Separated by the Palghat Gap and just north of the industrial city of Coimbatore is the large tableland of the Nilgiri Hills. In the early 19th century the Nilgiris was the first south Indian upland to be colonised by the British for use as a summer retreat. Ooty (now renamed as Udagamandalam), at the centre of the Nilgiris quickly developed into a popular holiday retreat and large settlement. Civil servants, soldiers, planters, missionaries and scientists were amongst those that flocked to the Nilgiris. The landscape was radically changed as European vegetables, tea and non-native tree species were introduced amongst the growing human habitations. Since independence in 1947, the hills have been further developed for recreation, hydroelectricity and even light industry. Nilgiri landscapes are frequently used as a backdrop for the

flirtations of the misty-eyed lovers in Bollywood films. The anthropologist Paul Hockings argues that the Nilgiris are one of the most studied and documented regions of all of Asia!

Being a bit of a romantic I opt to take the Nilgiri Mountain Railway from the sweltering plains to the cool misty heights of Ooty at 2,000 metres. The rack and pinion steam-driven engine slowly pulls a small string of coaches up the steep escarpment to the lofty tableland. I appreciate staying in an old colonial guesthouse and take walks to look for endemic bird species. The sholas have been all but wiped out and it takes several hours in a jeep to reach the remnant natural habitat that is protected in Mukkurthy National Park. On the way I stop to see a mund, or traditional village of the Toda tribe. As predecessors to the arrival of the British, the Todas have an unsurpassed knowledge of the hills and their natural



▲ (from left to right) A farmer pauses from threshing his rice near Mulshi Lake, Maharashtra; Woodcutters emerging from Kukaal Shola, Palni Hills.

history. In recent years the Edhikwehlynawd Botanical Refuge has initiated a revival of the their pastoralist culture, pre-Dravidian language and unique architecture. My visit is short but I promise to return to spend more time with these people who know the Western Ghats so well.

The Western Ghats wind their way through Karnataka on their way to the tri-junction with Goa and Maharashtra. The hills here are relatively low (averaging about 1,200 metres) but contain some of the most extensive tracts of existent natural forest. There are spectacular wildlife sanctuaries in Bandipur, Nagarhole and Bhadra. These areas hold secure populations of India's mega-fauna and are a major attraction for wildlife tourists and scientists. Unfortunately there are also areas where ore is abundant and mining has ravaged the landscape. Kudremukh National Park, just east of Mangalore, is infamous

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▲ (clockwise, from top left)
Nilgiri Tahr, the endangered mountain goat; Upperfalls, Courtallam, Tamil Nadu; *Impatiens phoenicea*, a small but exquisite endemic balsam of the southern Western Ghats; Rajmachi Fort under a January sky, Lonavla area, Maharashtra.

for its open cast iron ore mine that has gouged an enormous hole in the centre of a fine rainforest and shola-grasslands habitat. Mining and pressure to dam up rivers for massive hydroelectricity schemes continues to seriously jeopardise the primeval nature of the Western Ghats. The demand for electricity in growing urban areas on the plains has put enormous pressure on the relatively strong conservation laws that protect much of the hilly area in the Western Ghats.

Sahyadris

The northern reaches of the Western Ghats or Sahyadris start at the tri-junction of Goa, Karnataka and Maharashtra. The most startling difference is in their appearance and it is quite obvious to any observer that they have very different geological origins than the southern ranges. The southern Western Ghats and Sri Lanka's Central Highlands are composed of pre-Cambrian metamorphic schists, charnockites and are characterised by steep granite escarpments and a few high plateaus. The Sahyadris, in contrast, are relatively newer volcanic formations (60 to 65 million-years-old) that are linked to the surge of volcanic activity that created the massive Deccan Plateau. It is here, in the clearly defined divisions of lava, that the Western Ghats get their name. Biologically speaking, there is more diversity in the southern Ghats than in the Sahyadris, although the northern mountains continue to be islands of biodiversity in an otherwise devastated landscape.

I got to know the Sahyadris intimately when I taught for several years at the Mahindra United World College of India located just west of the boomtown of Pune. A highlight for me was exploring the hills, waterfalls, canyons, caves and forts that surrounded our campus. More than two millennia ago, Buddhist traders and monks excavated basalt caves into stunning temples and monastic residences in the hills of western and central Maharashtra. In the 17th century the great Marathi king Shivaji used the formations of the Sahyadris to build forts in his battle against the Mughal Empire. When urban areas in Mumbai (Bombay) developed, the hills were largely left alone. A few have since become tourist sites but most of the 150 plus forts and numerous caves are forgotten on hilltops and ridges with difficult access.

I'm at the end of my journey exploring the northern limits of the Western Ghats just south of the Tapi River and the industrial city of Nashik. Some of the most spectacular, isolated Sahyadri scenery is found here around Shivaji's Ratangad, literally meaning "jewel fort". The monsoon has retreated as cold dry winds from the north have replaced the humid warm air of the Indian Ocean. Even though it is quite close to the megalopolis of Mumbai, the access to the fort is difficult and it takes a good deal of planning before we can make our way to its vicinity. We eventually find the way by driving into the Deccan and then returning to the hills to circumnavigate a large artificial lake. The path leads along sparsely planted agricultural fields and then through cool evergreen forest. We eventually reach the flaky, vertical ebony walls of the lower fort. Rock cut steps and iron supports are essential in permitting us to breach the basalt ramparts. The path passes through beautiful arched entrances, each with their guardian deities carved into the supporting pillars of their protective turrets. It is late afternoon when we finally ascend a knife-edged ridge and are treated to a grand panoramic view across different ranges of the Sahyadris. A dizzying abyss drops 1,000 vertical metres to the Konkan plains. To the north, an enormous volcanic plug that had withstood years of weathering stands separated from the main fort-mountain. In the distance, the final jagged ranges of the Sahyadris and the high point at Kalsubai grace the horizon. Somewhere to the north are the Dangs and the Tapi River, the geographic end of the Western Ghats. The sun sets over the hazy Arabian Sea and a Peregrine falcon takes a final survey of the hills. My friends and I bed down in the grass of the fort and look forward to clear views of the cosmos and the beginning of a new day in the Sahyadris. ■

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