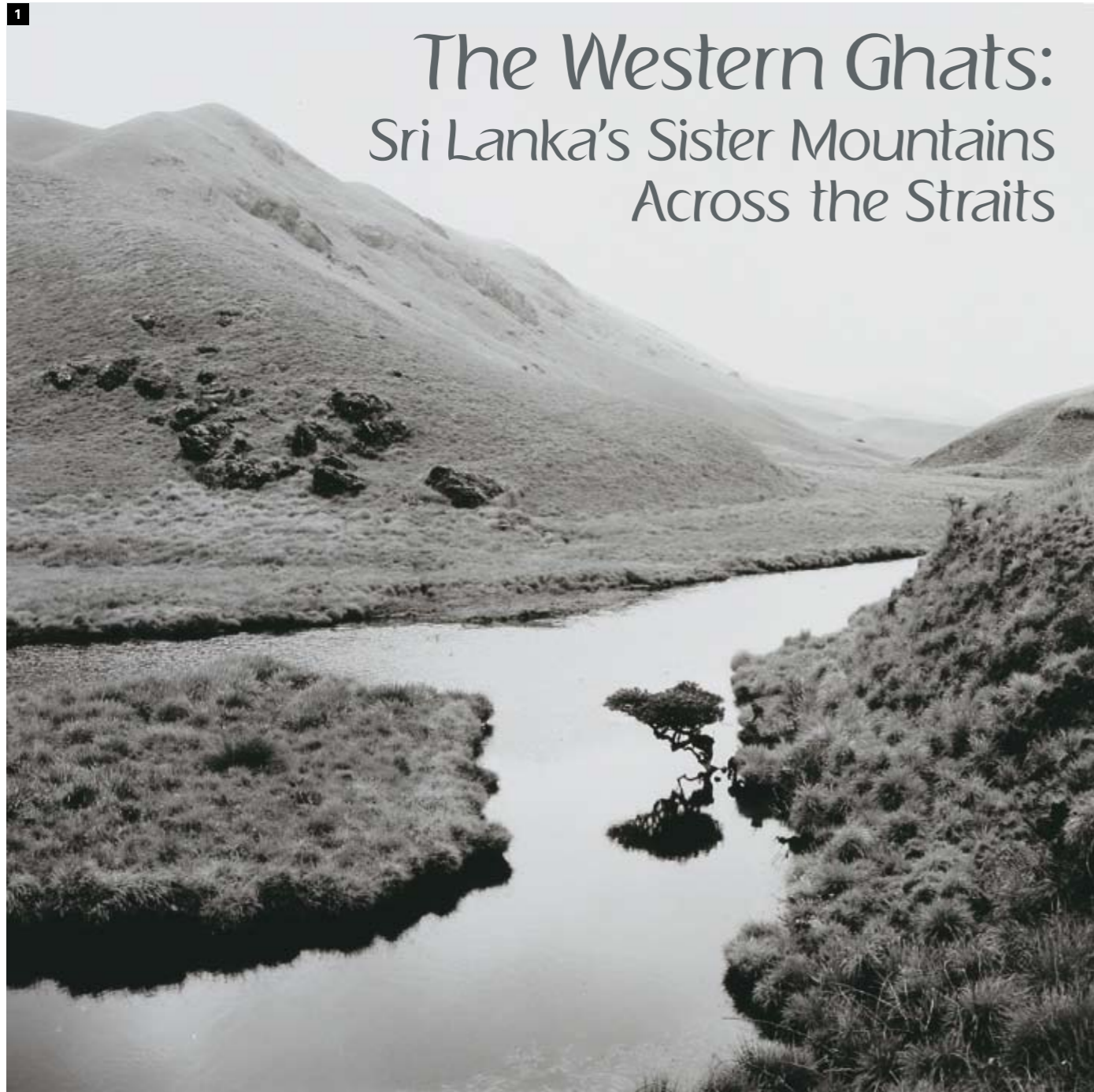


The Western Ghats: Sri Lanka's Sister Mountains Across the Straits



Hand-printed black and white photography draw us into the beauty of India's Western Ghats, and reveals how its ecosystem is paralleled in Sri Lanka – once joined to one another by an ancient land-mass. Words and photography by Ian Lockwood.

1 - Stream Reflection, Eravikulam National Park, Kerala

A stream weaves its way through natural grasslands in the upper plateau of Eravikulam National Park. The natural grasslands of the Western Ghats, like the *patanas* of Horton Plains, are rare and highly endangered ecosystems.



2 - Tree Ferns in Blackburn Shola, Palni Hills

Large tree ferns (*Cyathea nilgirensis*) in Blackburn Shola just adjacent to the hill-station of Kodaikanal. Shola forests are tropical montane forests that are unique to the high altitude regions of the Western Ghats. Similar to Sri Lanka's cloud forests, sholas are stunted by fierce wind and are characterized by gnarled branches dripping with mosses and epiphytes. Sholas contain a wealth of endemic plant and animal species not found at lower altitudes.

3 - Nilgiri Tahr on hillside with Mist & Hills, Eravikulam National Park, Kerala

A herd of Nilgiri tahr (*Hermitragus hylocrius*) scampers down a hillside near the tourist zone of Kerala's Eravikulam National Park. Nilgiri tahr are endemic mountain goats found amongst the most inaccessible cliffs and escarpments of the southern Western Ghats. They feed exclusively on grasses and use the natural advantage of precipitous cliffs to escape from predators. Eravikulam was established in 1978 to protect this highly endangered ungulate. The park hosts an estimated 50% of the surviving wild Nilgiri tahr.

Several months ago, I found myself in the very fortunate situation of gazing over southern Sri Lanka from a high boulder protruding out of Sinharaja's ethereal rainforest canopy. I stared over the multiple greens as a Chestnut-Backed Owl called. The hazy, but unmistakable silhouette of Sri Pada (Adam's Peak) was mesmerizing. Gazing out, I was struck by the similarities between Sri Lanka's forest and hills and a mountain range that I know well: the Western Ghats.

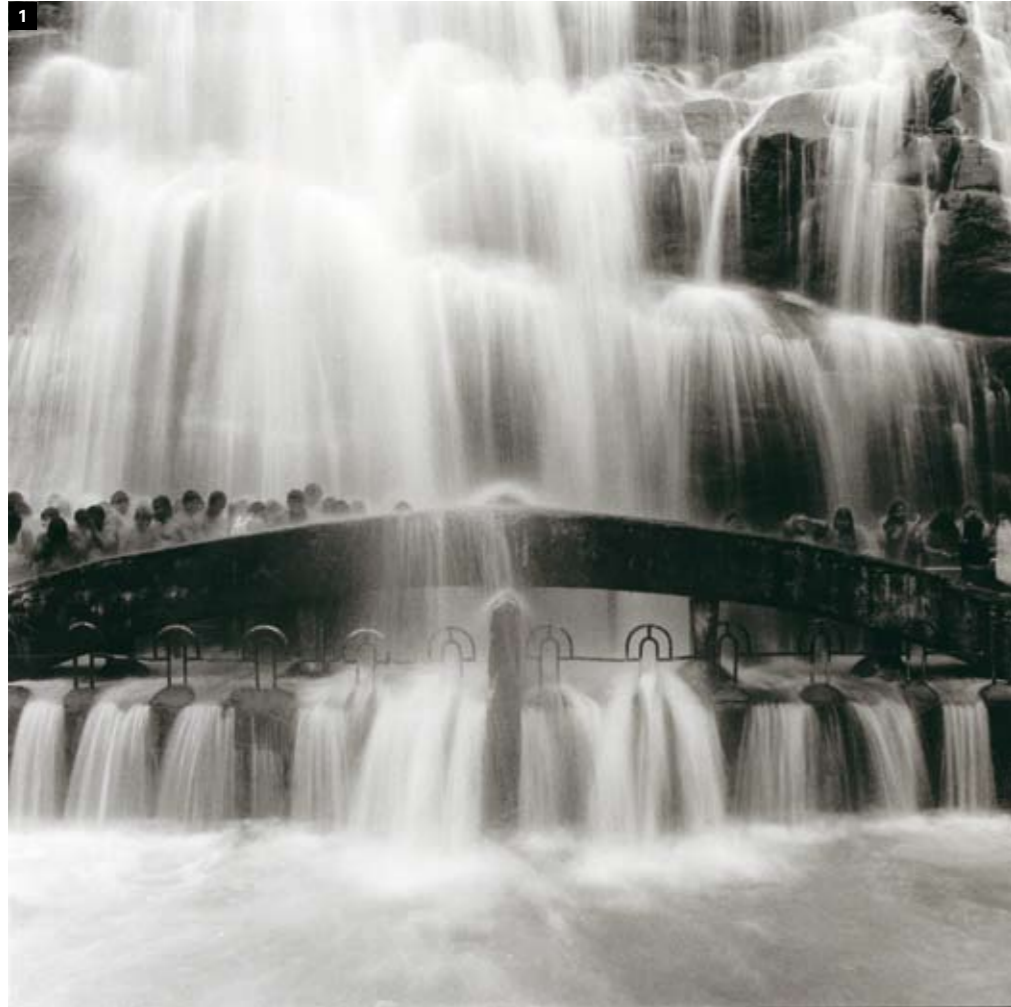
Across the Palk Strait, running up India's Malabar Coast is a vein of mountains that shares numerous similarities with Sri Lanka's Central Highlands. The southern Western Ghats, composed of several elevated ranges averaging 2,000m, are remarkably similar, both geologically and biologically to the mountains that dominate the interiors of central Sri Lanka. In fact, these mountain ranges were closely linked in the not-so-distant geological past! Today, seawater and political divisions separate the two areas, and most people are unaware of the links that connect the two mountain regions.

The Western Ghats are a collection of heterogeneous geological formations that separate the wet Malabar Coast from the arid interiors of the Indian peninsula. Starting at the tip of India at Kanyakumari, the mountains rise abruptly from the sea and plains. The Western Ghats continue in a nearly unbroken 1,500km mountainous spine and end at the Tapi River on the border between Maharashtra and Gujarat. From Karnataka northwards, the Ghats meet the expansive Deccan Plateau. The northern reaches of the Ghats, called the Sahyadris, are younger volcanic mountains and are a unique physical feature in South Asia. Compared to the southern Ghats and

Sri Lanka's Central Highlands these ranges are lower in elevation. The Sahyadris fall in steep, dramatic 'ghats' (steps) to the sea along the Konkan coast north of Goa. It is here, in places like the hill station of Mahabaleshwar, that one can see the obvious reasons for the name 'Western Ghats'.

The southern Western Ghats, including the Ashumba, Anaimalai, Cardamom, Palni and Nilgiri Hills, share the same ancient geological history as that of the Central Highlands. As the Central Highlands separate Sri Lanka's distinctive 'wet' and 'dry' zones, the Western Ghats delineate the two distinct climatic zones of peninsular India. Both of these hill ranges are made up of very old horsts that were uplifted in Pre-Cambrian times. Biologically rich, the Western Ghats and Central Highlands are both blessed with high rates of endemism (a term used to describe species that are isolated to a limited area and found nowhere else). In recent years as a global alarm has sounded on declining biodiversity, the Western Ghats and Sri Lanka have been designated as one of 25 'Global Biodiversity Hotspots'. This designation, made by Conservation International – one of the leading organizations dealing with biodiversity – considers the two mountain ranges as one critical unit under threat from anthropocentric forces.

The southern Western Ghats are characterized by a variety of habitats that are based on altitude and proximity to the coast where the Southwest monsoon makes landfall every June. The slopes on the windward side of the Ghats, mainly in the states of Kerala, Karnataka, Goa and Maharashtra, receive abundant rainfall and support evergreen rainforests. Sanctuaries such as Periyar in Kerala and Kalakad Mundanthurai in Tamil Nadu contain



1 - Bathing at Lower falls, Courtallam, Tamil Nadu.
In June when the southwest monsoon rolls up the western coast bathers and pilgrims flock to the south Indian 'spa' of Courtallam. Waterfalls like this symbolise the close relationship between people, natural forests and the life-giving water of these streams.

2 - Manavan Shola Panorama, High Range, Kerala
In this image, enormous tree ferns (*Cyathea nilgirensis*) tower over a stream bed in one of Kerala's largest sholas and newest national parks. Endemic Western Ghats bird species, such as the White Bellied Shortwing (*Brachypteryx major*), Grey-Breasted Laughing Thrush (*Garrulax jerdoni*), and Black & Orange Flycatcher (*Ficedula bigrorufa*) can easily be seen in this shola!



excellent examples of this rainforest habitat. These multi-storied forests host a variety of creatures from the endemic Lion Tailed Macaques (*Macaca silenus*) to large Great Pied Hornbills (*Buceros bicornis*). Visitors familiar with Sri Lanka's Sinharaja World Heritage site will find significant parallels in these forests.

Above the lowland rainforests of the Western Ghats, and protected by steep escarpments, are plateaus whose biotic composition is influenced by the colder temperatures and high-velocity winds. Many of these plateaus were developed as hill stations during colonial times.

Ootacamund ('Ooty') in the Nilgiris and Kodaikanal in the Palnis both have dramatic views over the lower plains. The panoramas are not dissimilar to those of Ella Gap near Nuwara Eliya in the Central Highlands. The unique grasslands/*shola* ecosystem, found above 1,800m, dominates the higher plateaus that have escaped

development. Sholas are stunted high-altitude rainforests with very close affinity to Sri Lanka's cloud forests. Both forest types, for example, have rhododendron trees (*Rhododendron arboreum*) that presumably migrated from the Himalayas at a time when the climate of South Asia was cooler. Although sholas have suffered as habitat has been lost to hill stations, tea estates and eucalyptus plantations, there is a growing movement to protect and restore them in the Palni and Nilgiri hills.

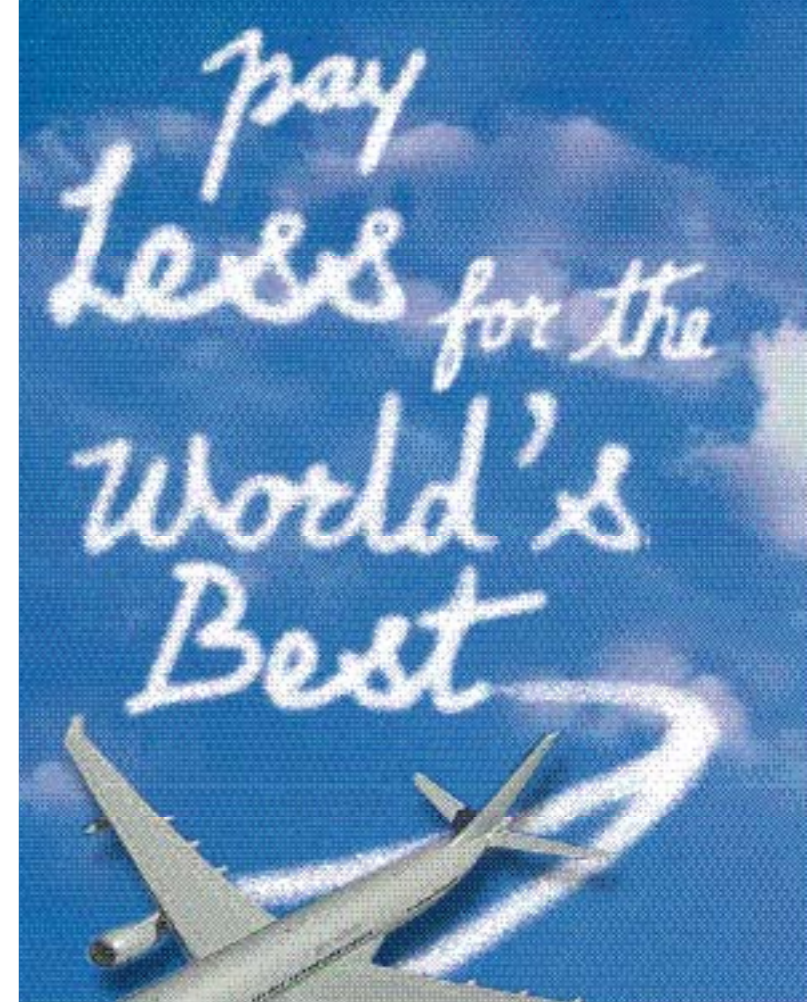
One of the most interesting linkages between the Western Ghats and Central Highlands is the high-altitude grasslands. Horton Plains's grasslands (locally called *patana*) are similar to the montane grasslands of the Nilgiri and Palni hills. Anyone who has seen both habitats will testify to the unmistakable similarity in the landscapes. A perplexing and unusual feature is the fact that in the Western Ghats, the grasslands dominate ridges and open slopes while sholas are mainly found in

Getting there
The Western Ghats can best be visited from a number of Indian cities. **Tiruchirappalli** (or 'Trichy') has easy access to the Palni Hills, host to remnant *shola* forests and the quaint hill station of Kodaikanal. **Cochin** and **Trivandrum** are excellent ports to explore Periyar Tiger Reserve, the Cardamom Hills and the High Range (home to tea estates, Anai Mudi and Eravikulam National Park). **Bangalore** is the best point of access to the Nilgiri hills, the colonial hill station of Ooty and national parks such as Bandipur and Nagarhole. **Mumbai** is the closest large city to the Sahyadris.

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protected valleys. Horton Plains is just the opposite, with the grasslands found in the valleys and cloud forest crowning ridges and slopes! Both habitats have experienced die-back in recent years, something that continues to mystify scientists studying these habitats.

Dry, deciduous forests still carpet many of the slopes on the eastern face of the western Ghats. Forests of teak, *Terminalia sp.* and bamboo make a secure home for some of India's largest herds of elephants. The forests also support a sizable prey base for a host of carnivores. The area north of the Nilgiri Hills is one of the best surviving examples of this type of vegetation. Here, Nagarhole, Mudumalai and Bandipur sanctuaries help protect a significant area of this deciduous and semi-evergreen forest. The area has many similarities to Minneriya and Kaudulla National Parks set amongst Sri Lanka's cultural triangle. The rare Slender Loris (*Loris tardigradus*) is restricted to this type of habitat



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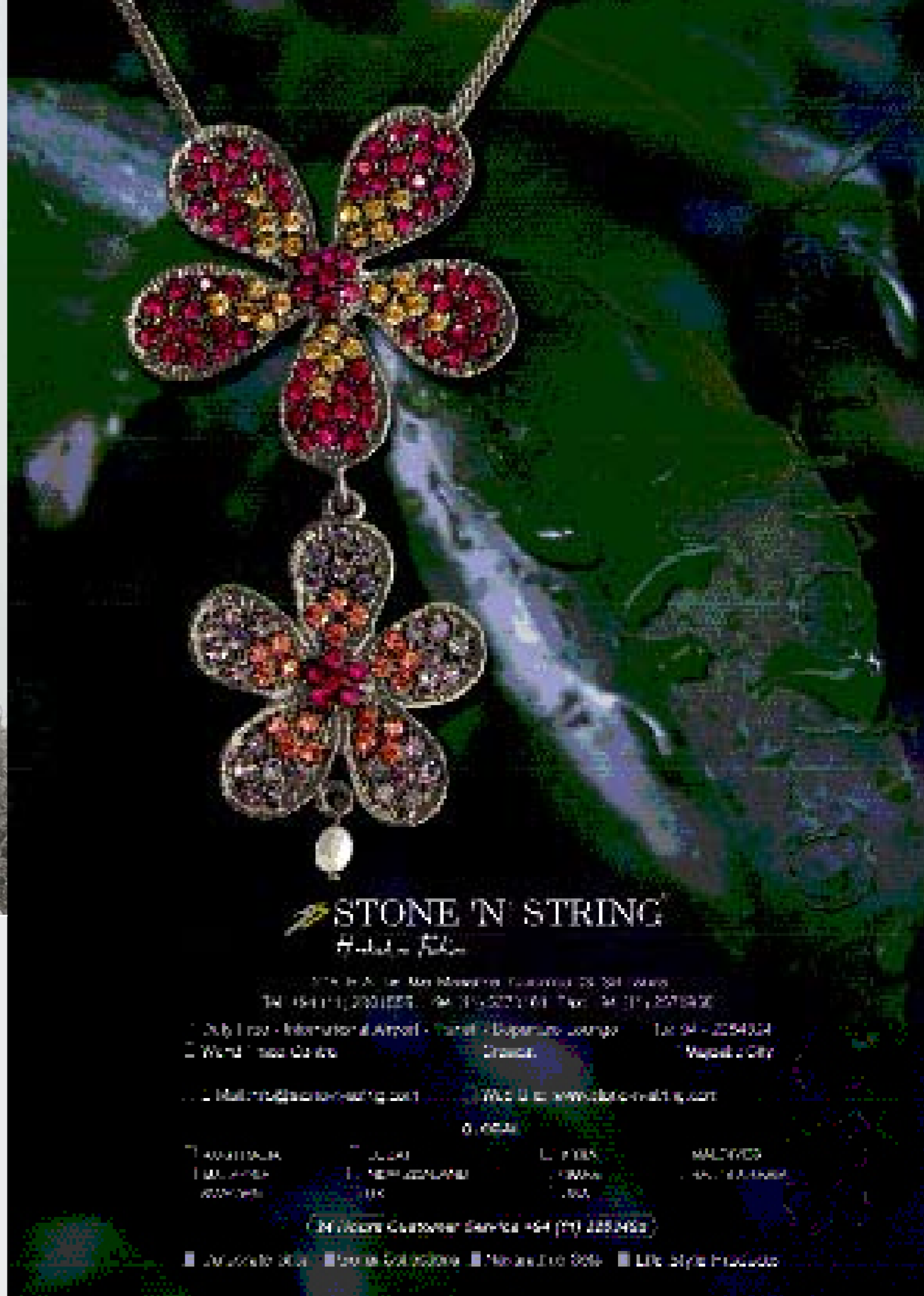
in southern India and Sri Lanka.

There are, of course, distinct endemic species that are specialised to either the Western Ghats or Sri Lanka. For example the Western Ghats has the Nilgiri Langur (*Presbytis johni*), a leaf-eating monkey found in sholas and rainforests in the southern Ghats. Sri Lanka has the similar-looking but distinctive Purple Faced Monkey (*Presbytis senex*) found in the Central Highlands and wet rainforests. The Dull-Blue Flycatcher (*Eumyias sordida*) is only found in Sri Lanka's hills while the Nilgiri

flycatcher (*Eumyias albicaudata*) is restricted to similar hills in the Western Ghats. Names, however, can bear little indication to endemic status! Species like the Ceylon Frog mouth (*Batrachostomus moniliger*) and Malabar Trogon (*Harpactes fasciatus*) illustrate this phenomenon. The Malabar Trogon is a bird often associated with the Western Ghats. It is, however, not truly 'endemic' because it is found widely in Sri Lanka. Likewise, the Ceylon Frogmouth inhabits several rainforest sanctuaries in southern India!

1 - Rhododendron Tree (*Rhododendron arboreum nilagiricum*), Palni Hills, Tamil Nadu.

The Western Ghats host a number of endemic species of plants and animals. Several of these have distant Himalayan cousins, like this endemic Rhododendron tree. Although it is a distinct species, it has relatives in the Himalayas, as well as Sri Lanka! This suggests a very ancient link between the Himalaya, the Western Ghats and Sri Lanka. Scientists believe that changing climate and geological conditions have isolated these populations. This species of Rhododendron tree grows on high altitude grassy slopes in the southern Western Ghats.



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1 - Winter Light in Peppara, Kerala
 Sunlight filters through the rainforest along an ancient pilgrim's path in Peppara Wildlife Sanctuary. This forest is part of the biologically rich zone that surrounds the peak of Agasthyamalai. This rugged and little known part of the Western Ghats has the closest affinity to Sri Lanka's Central Highlands.

Kurinji Flowering

The kurinji plant (*Strobilanthes kunthiana*) is a unique variety of shrub that blooms in the high altitude hills of India's Western Ghats every 12 years. It bloomed in 1982 and 1994, and is now expected during the 2006 spring and monsoon. The kurinji plant is associated with the grasslands/shola ecosystem and is a unique botanical feature of the southern Western Ghats.



During the years that it blooms, whole hillsides of native grasslands are covered in the mauve colours of the flower. In fact, some historians associate the name of the Nilgiris (literally 'blue hills') with the blooming of the kurinji flower. The kurinji blooming used to be much more widespread, but expansive plantations of non-native tree species have all but obliterated the rolling grasslands of the upper plateau. Excellent flowerings can be expected this year in Tamil Nadu's Nilgiri and Palni Hills as well as the High Range of Kerala.

Another interesting parallel between the Western Ghats and Sri Lanka's central highlands is the presence of prominent peaks.

Sri Lanka's Sri Pada has been revered for several millennia, but few people know that across the straits a similar, pyramid-shaped peak lords over the Ashambu hills near Kanyakumari. Agasthyamalai (or *Pothigai* as it is known in Tamil) has long been worshipped by the people living in its shadow and is now protected for its high levels of plant diversity. Anai Mudi the highest peak in the Western Ghats (2,690m) has similarities with Sri Lanka's Pidurutalagala (2,524m) in appearance as well as vegetation. Anai Mudi plays host to the most secure populations of Nilgiri tahr (*Hermitragus hylocrius*), an endangered mountain goat that is only found in the southern Western Ghats.

One of the reasons that the Western Ghats have been designated a 'biodiversity hotspot' is because of the intense pressure on the habitat. Hill stations are expanding into undisturbed areas, tea plantations have gobbled up large swathes of rainforests and there is tremendous pressure from mining companies and large-dam builders. As in Sri Lanka, native forests have been replaced with exotic trees (such as eucalyptus and pinus species), an unfortunate fact that has been very difficult to reverse. A number of individuals and organisations are working to reverse some of these negative developments and growing awareness is a key part to protecting this marvellous mountain range.

Ian Lockwood is an educator, photographer, and environmentalist currently working as a teacher of geography and environmental systems at the Overseas School of Colombo.

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