

From left: Cicadas have amazing acoustic talents and are incredibly efficient sound-producing insects; Epiphytes are part of the forest canopy ecosystem; the Mourning gecko (*Lepidodactylus lugubris*) is a small gecko that reproduces by parthogenesis—without any males.



ONE TREE TO HARBOUR THEM ALL. LARGE AND HOSPITABLE, THE RAIN TREE IS A HAVEN FOR A VERITABLE MENAGERIE OF LIVING THINGS, FROM EPIPHYTES AND INSECTS TO AMPHIBIANS AND REPTILES.

By Tasneem Khan and Ryan Lobo (text and photos)

# THE LIVES OF A TREE



THE RAIN TREE CANOPY PROVIDES AN ECOSYSTEM FOR A PLETHORA  
OF CREATURES—MANY OF THEM ENDEMIC



Clockwise on this page: the slender, fast-moving Bronzeback tree snake (*Dendrelaphis cynochloris*); the Bay Island forest lizard of the agamid family; clusters of waxy star-shaped flowers belonging to a hoyo or wax plant; Crane flies link legs among dry leaves; and a centipede, which can inflict a painful, even life-threatening, bite.



*“As some vast Tropic tree, itself a wood,  
That crests its Head with clouds, beneath the flood  
Feeds its deep roots, and with the bulging flank  
Of its wide base controls the fronting bank...”*

*Samuel Coleridge*



**S**AMUEL TAYLOR COLERIDGE WAS probably talking about a rain tree (*Samanea saman*); originally from South America and known by several other names: monkey pod, *saman*, cow tamarind, *enal-vakai* in Tamil, *plavu* in Malayalam and *siris* in the Andaman Islands. They are found all over India, especially along highways, and were planted extensively by the British all over their tropical colonies, principally for the shade they provide.

In wet, tropical areas like the Andamans, these trees make remarkable habitats for epiphytes and host numerous other plants in their canopies providing an ecosystem for a plethora of creatures. Unlike many ‘introduced’ species the rain tree has, for the most part, integrated itself remarkably within most habitats with minimal negative effects and it provides a unique habitat for the life it supports both within and beneath its canopy.

Rain trees are immense and highly complex ecosystems. Countless years of evolution have resulted in plants and animals

The rain tree gets its name for several reasons. Sap-like exudations often fall to the earth like rain, mainly due to cicadas and other ‘sap sucking’ creatures such as lantern flies. Nectaries on the leaf petioles excrete sugary honeydew, which can drizzle off the tree. Vegetation under a rain tree is often thicker and greener than surrounding vegetation in part due to the tree’s exudations, which increase soil fertility.

Rain trees are legumes and enhance the nitrogen content in the soil round them with the help of rhizobium bacteria. This nitrogen-fixed soil further nourishes rich undergrowth

**RAIN TREES ARE FOUND ALL OVER INDIA, ESPECIALLY ALONG HIGHWAYS. THEY WERE PLANTED EXTENSIVELY BY THE BRITISH**



uniquely adapted to living in these trees, with precise and highly evolved physiologies, living in conditions the most extreme sci-fi film would have trouble imagining. To scrape the surface of this subject and grab a few glimpses of what makes a single tree a vibrant, thriving ecosystem, we set out to shoot a rain tree and the beings—many of them endemic—that live off it. Much of the micro fauna in the Andmans is yet to be studied extensively, which made identifying some of the animals difficult. The tree has various phylo-genetic characteristics that make it an ideal habitat for all kinds of life.

like elephant ear plants, which collect pools of water and rain tree honeydew in their ‘water resistant’ leaves.

Sitting up in a rain tree on a platform we had built many precarious feet above the ground, we could not see much of its bark, which was almost totally covered with plant life, rotting vegetation and roots. Rain tree bark is rough and fissured with horizontal >

**The June bug (above) and the dragonfly (left) weave their lives around the rain tree.**



ridges which retain moisture for orchids, ferns, mosses, lichens, succulents, fungi and creepers. There are over 90 species of orchid recorded in the Andaman Islands, of which many are endemic. Many orchid species find the bark of the rain tree ideal strata to grow upon. Besides epiphytes, forests of succulents and ferns grow on layers of humus high up in the canopy well attached to the fissured bark.

**I****TS SAP AND NECTAR FEED** insects, butterflies and birds. Its leaves as well as the leaves of hanging plants provide camouflage for flying insects and the homes of weaver ants. The dense undergrowth under a rain tree provides hiding places for frogs and snakes; leaves are often used as fodder and its sweet and sour podded fruit is eaten by squirrels, ungulates and sometimes by humans.

Peering through a macro-zoom lens at various beings (who often peered back), the tree looked

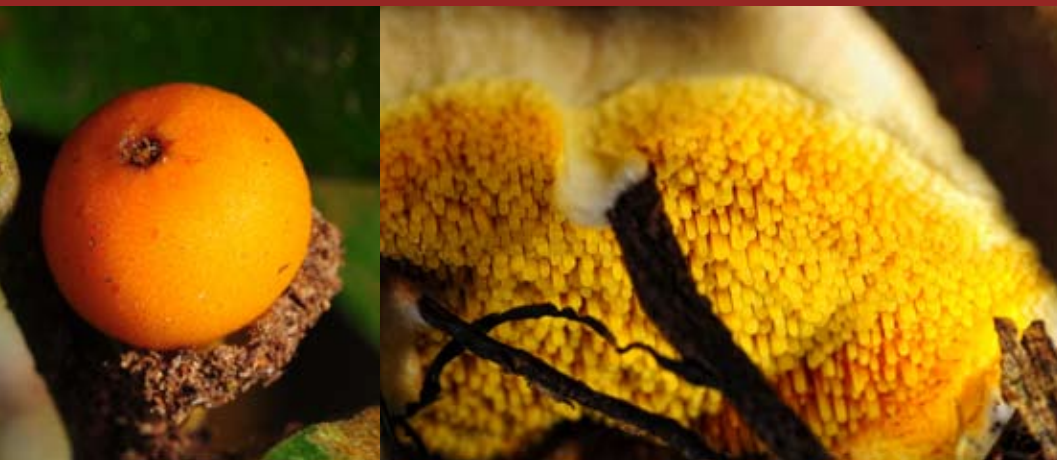
would fall from the sky, big enough to knock you off your perch thousands of relative feet down into the undergrowth. Rain would crash into spider webs, remaining suspended, surface tension holding drops together and giving spiders a hard time housekeeping. Depending on what species you were, sounds at the micro level would be very different: very high frequency sounds would be audible. The world would be a very different place to the one that we mammals experience.

Bright green tendril-eyed slugs covered in toxic slime slide over leaves and fissures many relative meters deep in the bark; train-sized grazing millipedes scuttle deep in rotting leaf litter, secreting cyanide; crane flies hold each other like trapeze artists suspended over the abyss and sap-sucking cicadas remain motionless and perfectly camouflaged until dusk when they start to sing: decibels of cicada song might ring in your ant-sized ears for a very long time.

Tiny creatures lose heat quickly so you would need to generate a lot of energy to survive. Imagine using your arms to fly like a dragonfly that can do anything a helicopter can do except a lot better. The energy expended would be immense and you would have to eat a lot to survive. From a distance, a rain tree looks peaceful but at the micro level it's a war zone. To live in a rain tree, you would have to be perfectly adapted to do so. Eat and live, or be eaten.

Geckos the size of dinosaurs and with incredibly powerful jaws for creatures of their size creep along the trunk in search of prey, and bright green spiders on legs higher than construction >

## PEERING THROUGH A MACRO-ZOOM LENS AT VARIOUS BEINGS, THE TREE SEEMED PRIMEVAL, ALMOST ALIEN



The fruit of the Strangler fig (left); and exotic-looking mushroom (right).

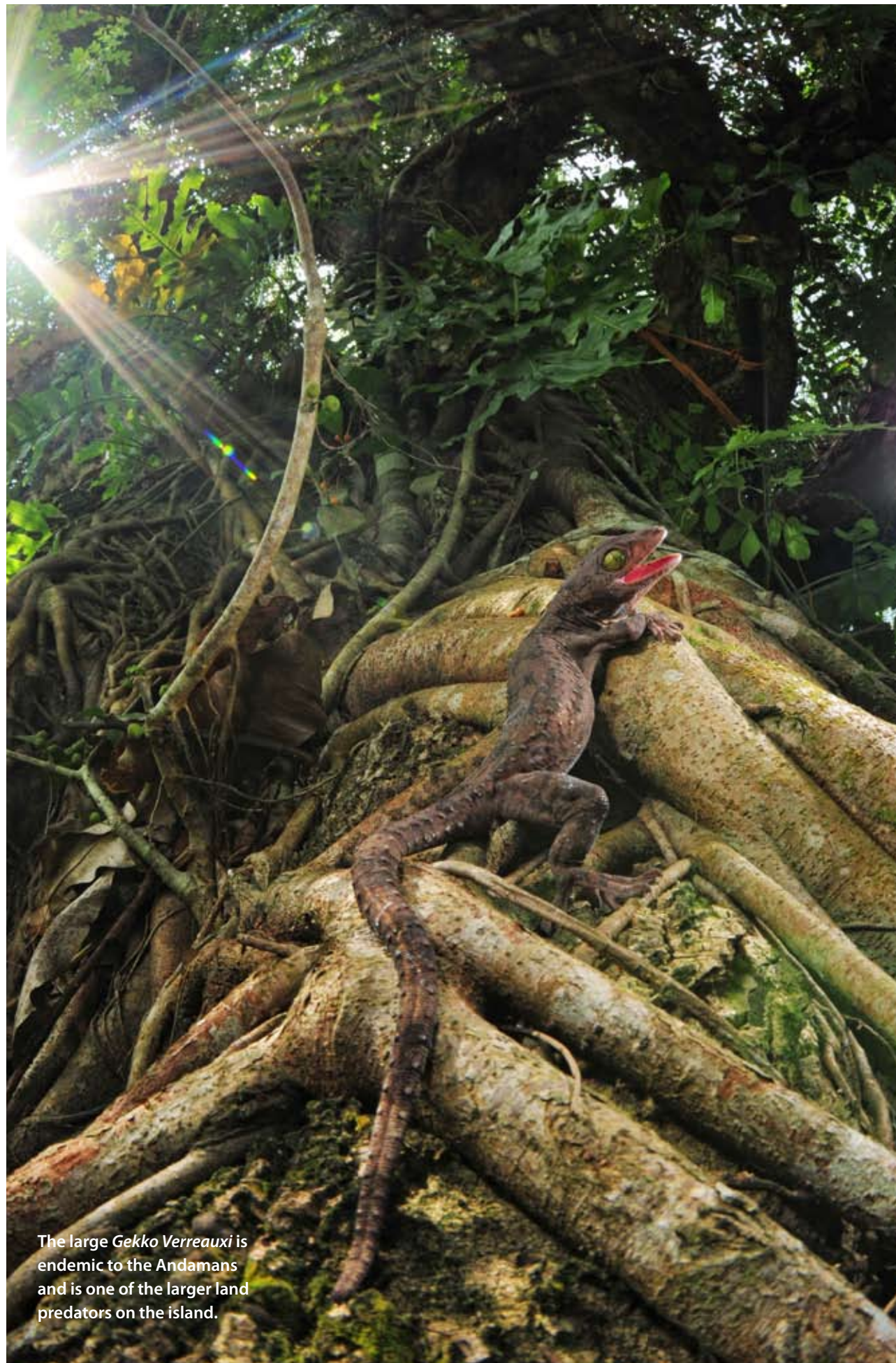
primeval, almost like an alien habitat. Twisted plants growing over, through and under each other competed for precious sunlight and grew in all directions, hanging, creeping and soaring skyward. Fruit, leaves and flowers emanated from the morass which, magnified, appeared to be crawling with creatures straight out of *Jurassic Park*. To give you a better idea of life high up in the branches, imagine you are the size of an ant. Shrunk to this size, you'd have a lot to wary of. Droplets the size of trucks



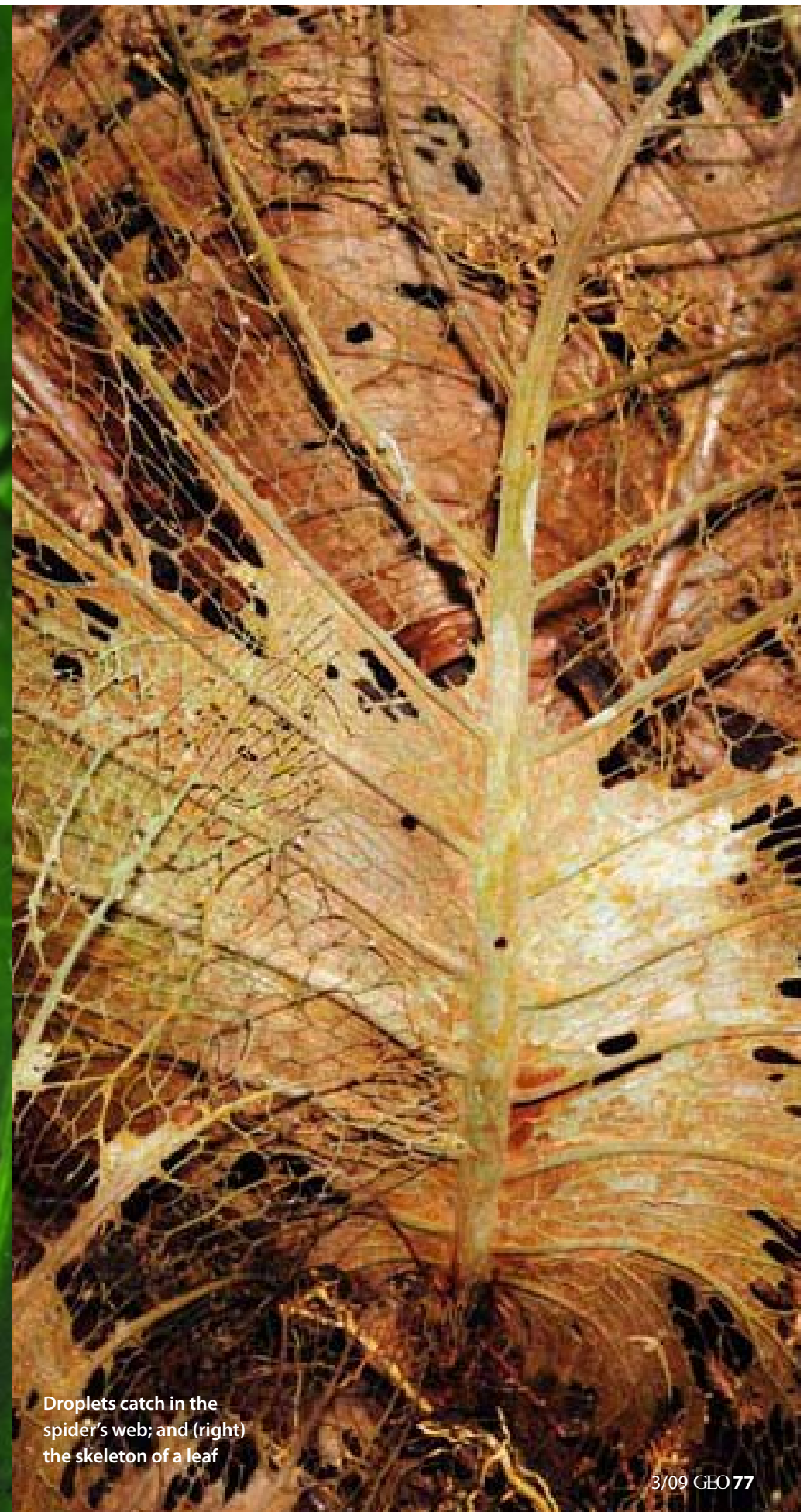
The hermaphroditic green slug and (below) eyeball to eyeball with *Gecko verreauxi*.







The large *Gekko Verreauxi* is endemic to the Andamans and is one of the larger land predators on the island.



Droplets catch in the spider's web; and (right) the skeleton of a leaf





A frog from the Ranid family lurks in the damp undergrowth of the rain tree.



A stick insect blends in perfectly with the rain tree's closed leaves at night; the leaves open fully to catch the sunlight (below).

cranes spin webs the size of football fields across branches to capture the unwary. Flying mynas and bulbuls feed off the honeydew, flitting from flower to flower, foraging through the undergrowth on the branches, looking for insects to eat. Eight-eyed jumping spiders lie in wait under dead leaves and huge centipedes with venom enough to make grown men sob dart along roots and under bark.

**I**N THE MIDST OF THIS GRAND OPERA, the rain tree leaves would move of their own accord, folding as the sun descends or is obscured by tropical monsoon clouds. In fact, the tree changes its silhouette every day, following the light. The leaflets are light-sensitive with an amazing ability: they can change their position according to atmospheric conditions. They spread horizontally in bright sunlight, preventing light from penetrating the dense crown and utilizing as much of it as possible. However at night, or in very dry weather or when clouds diffuse sunlight, the pairs of the leaflets fold together, the leaf stalks droop and each pinna twists on its thickened base making the leaves lie sideways. This allows the dew or rain to drip through the canopy. As a result, the grass and vegetation under the tree is extremely green and lush, growing right up to the base of the trunk. The last place you would seek shelter in a rainstorm is, paradoxically, under a rain tree for its light-sensitive leaflets would have folded together, allowing rain to fall to the earth with minimal impact on the tree.

Rain trees are huge with symmetrical spreading crowns, wide rounded bases, evergreen foliage, pink and yellowish gold flowers, which look like powder puffs, and dark, sword-like pods. The tree is native to South America and can attain a height of 25m with a trunk diameter of up to 40m, and its massive canopy can spread over hundreds of square metres.

These trees are living cities of life, providing for and maintaining complex ecosystems and relationships between numerous plants and animals. What we have managed to cover here are only a few of the creatures that make this tree a unique and vibrant evolving ecosystem. □



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