

Notes From The Edge

By Suprabha Seshan

Introduction

On a blustery, wet day – in the monsoon of 2001 - we ventured for the first time into Mukurthi National Park, thanks to a remarkable individual within the Tamil Nadu Forest Department named Frederick Solomon who was about to retire as a Ranger of the Park. His love and knowledge of that landscape, its wildlife and its native plants instantly encircled us and drew us in to a high hidden fold. That first encounter was spent in rapid-fire exchange of botanical trivia at the beautiful little orchidarium Solomon had created at Avalanche. This was followed by a second visit which was quickly followed by a third! Those initial trips to Bangitappal and Sispara were truly heady, exhilarating. Virtually overnight they revolutionized our work in species conservation at the Gurukula Botanical Sanctuary in Wayanad. We began to seriously engage with an entire landscape over a period of time when before we had only intermittently visited places.

Every time we met Solomon we badgered him with questions and observations. From a chance query – *“how pristine is Mukurthi”* - dawned the realization that the plants of the Park and particularly of the grasslands, had not been systematically inventoried. Solomon suggested we conduct a study. In his wisdom, Dr. Paul Raj (the Warden), supported this. We made our proposal to the TNFD Headquarters which quickly granted permission. Meanwhile, Solomon retired, Dr. Paul Raj was transferred and the new Warden Ashok Upreti inherited us – a ragtag crew of gardeners with grand and impassioned visions for his charge, the wondrous but beleaguered Mukurthi National Park.

Within a few weeks we began our first extended project in a location other than home. Our first task was to reconnoiter the terrain at the height of the monsoon under constant cover of thick mist and chilling rain. Once this was done, the plant inventory began in earnest. Before speculating any further about the state of the Park we needed to know which species were there. The TNFD recognized the importance of this and for two enchanted years gave us an unfettered run of this ethereal mountain realm.

It was no coincidence that the study should happen just when the GBS garden in Wayanad was bursting at the seams with rare native species ready to be turned out to larger areas, particularly to degraded habitats where these species are naturally found. The individual plants whose behaviors and progress we observe on a daily basis over decades and the wilder vaster landscapes and environments to which they belong, bracket a rich minefield of issues on two important fronts: one involving time and the other involving space. Mukurthi National Park offered us a chance to grapple with the big side

of things, big time and big space. From a 50 acre garden we were catapulted to a 77 sq km mountainland, a tropical high altitude system brimming over with unimaginably beautiful plant species.

Ecologies in collision: MNP: a paradoxical beauty

And upfront, very soon, we met head-on with a disquieting possibility: that the grasslands of Mukurthi might be deteriorating, even dying. How could we know this? The same way we know when any living thing starts to slump. We simply see it or sense it. If the signs are disturbing enough we consult the specialists. Ecosystem decay is the process whereby a patch of habitat, if it becomes too small and isolated, or too disturbed too frequently, or too choked with non-native species, starts to lose its own species, its capacity for self sustenance and more significantly, for self repair. A habitat can retain its full complement of species if it continues to receive immigrants from others. This immigration and exchange of genetic material fosters health. Without this exchange, depleted or isolated populations lose vigour and give way to dominating or aggressive species.

However, the only immigration that can be observed in MNP is of exotic species.

The fact that exotic plant species can be found in every valley of the Park is itself a sign of ill health. The fact that some native species are found in patches of less than 20 sq meters (and nowhere else on the planet) is highly worrying to plant conservationists like us. The fact that some species reported from the Upper Nilgiris are not to be found in *this* final refuge or anywhere else, is singularly alarming.

Despite the best of efforts, we worry that Mukurthi teeters on the terminal brink. From what ecologists say, the collapse of a wild system may be gradual for a long period and then sudden. There will come a point beyond which things just give up and buckle under the strain. No one can say precisely when since ecosystems remain relatively mysterious. But it is unequivocally understood that, despite improvements in protection, most of the world's wild places (if not all of them) are further deteriorating from the combined effect of stresses on different fronts. Three of the most severe of these are: the spread of invasive exotic species (microorganisms, plants, fungi and animals), global climate change (with its highly unpredictable consequences) and habitat fragmentation (the attenuation of wilderness areas into small, isolated segments).

Tropical montane systems along with the Arctic tundra are amongst the most vulnerable. They will most likely be the first to disappear as the climate warms. Cold-loving species will have no higher, cooler place to move to. Species from lower latitudes or elevations will move up as temperatures rise. Where will temperate plants and animals go once they've reached the North Pole? Or if they are in the tropics, once they've fled to the tops and edges of mountains?

In other words, these systems *have their backs to the wall*. And of the southern montane grasslands of India, Mukurthi's condition may be the more critical for historical reasons. Being smaller and more invaded by aggressive exotics, with a high percentage of endemics that are very vulnerable, the grasslands of Mukurthi may well succumb (perhaps to exotics, perhaps to sholas, perhaps to scrub, perhaps to lower elevation species) and they may well succumb soon. And the way things are going, *soon* could mean: *within our lifetimes*.

In truth these tropical montane grasslands are flagship systems and hence the silent struggles of Mukurthi (and perhaps Eravikulam and Kudremukh) are both symbolic and real. Their decay represents the slow deaths of a million other places and their health for sure is linked to the health of all. These systems generate and sustain the waters of our survival; they are composed of a fabulous array of plant forms that turn the mountains into giant orographic collectors of rain and mist and thus into the fountainheads of many of our rivers. Since they are also greatly pleasing to our aesthetic sensibilities they offer a chance to mitigate the colliding forces of global warming, habitat degradation and wanton despoliation: the broad range of unrestrained, often senseless activities that degrade and destroy the last of our wild spaces and habitats.

The Magic of Mukurthi

Mukurthi is enchanting, despite all its colonial travesty and contemporary contradictions. Its soft rounded upland with edges that fall perplexingly away 1000 m or more is exceptional in its beauty. Its vastness is both beguiling and rare: it appears to stretch unto infinity and yet you know it is a mere 77 sq km in size. You come to love that quickening in its wind and return again and again to be uplifted by its crisp clean air. It is a place where relatively few people come, but those who do, fall helplessly under its spell. This wild and graceful land, with all its invaded loveliness, its open wealds and staggering views, is surely a metaphor for the vanishing wildernesses of our homeland, like the other grassland forest systems of the Western Ghats.

July 2003

Cold mountain air with a special monsoonal edge numbs our faces and hands as we walk the many trails that wind along the valley bottoms or traverse the rounded hills. The meadows ripple with Hedyotis flowers. Each of us appears and disappears like the rhododendron forms through the white silent mists of Mukurthi. We are challenged in so many ways to make sense of this complex and ancient terrain with its tiny flowers, heaving meadows, the presence of tiger, sambhar and tahr everywhere we go, its confusing histories. We have to juggle so many factors in our minds as we make our observations: the role of winter frost, the significance of fire, the wind, the hard biting heavy monsoon rain, the slope of the terrain and its aspect. We have to make our own tracks through all this despite the many studies that have been done here, despite the fact that the Nilgiris were one of the most botanized places in the tropics and there is very little that we can expect to find that will be new or different. Yet the silence and the slow rambling over many visits generate all kinds of surprising insights. We are aware that we walk in the footsteps of Gamble, Fyson and Wight, three of the botanical giants who worked in the south over 100 years ago. We are aware that these wildernesses have diminished hugely since their time. We are achingly aware that some plant species are so fragile they may disappear in our own lifetimes. Is there the smallest chance that we can make a difference? This is why we are here now: to find out if we, together with all our collaborators and colleagues can nudge these communities towards greater health instead of untimely decay and death.

Our walks are always slow. There is so much to see, savour and puzzle over. Gardeners have a certain pace, a kind of slow stride that lingers long on every other step. Mukurthi as we come to know it has the feel of a tapestry being woven with exquisite and meticulous care. There are multiple dimensions to connect, the wild present, the great spans of evolutionary time, the way plants are distributed not only here but across the entire Western Ghats. Little things intrigue us. For instance, the fact that the valerians are blooming profusely in one valley but not another. Or that Pimpinella, Andrographis and Senecio seem to have flowered earlier than usual. Or that half the scapigerous Impatiens species on earth can be found within the boundaries of this Park and nowhere else. Or that Alchemilla indica, a gregarious herb forming thick mats in valley bottoms has its closest relative in the Himalayas. That, likewise, Gentiana, Senecio, Rubus, Potentilla, and Geranium are largely temperate genera.

We find ourselves marveling at the ingenuity of grass....the positioning of meristematic tissue at the base of the leaf allowing for great generosity: a whole world of grazers and carnivores springing forth. Grasses, obviously, like to be eaten, burnt, and trampled upon! We find ourselves pondering upon the Toda and Badaga graziers and their several thousand head of cattle, and all the dung and urine that must have charged this place for millennia, and the consequences of their removal. We observe bees in the mist, buzzing from flower to flower, and realize that entire lives get lived in the cold and the wet and the wind and the biting rain....that entire mountain sides

of Impatiens, that flower in the peak of the monsoon, must get their pollinations done by very tough (and very waterproof) beings.

The heterogeneity of the ecosystem has to be experienced on foot. We must explore that spur and that ridge and that mound and that hollow. As we turn around a grassy knoll, we discover an unbelievable expanse. More angles, different perspectives. Huge spaces. Wildness incarnate. Woods nestled on other cliffs, facing other directions, overlooking valleys that open southwards, the Bhavani puzha tumbling way below. We learn that southwards implies something significantly different from westwards. There are other presences here, other goings on, other spaces.

The rich swards of Mukurthi with their island forests roll away in the pearly mists to drop suddenly without any warning over vertiginous cliffs to the plains and plateaux of Kerala. To the north and west lies Wayanad, then Nilambur to the south west, and then Silent Valley and Attapadi to the south. This is a stunning country where overtowering edges meet quiet modulations. On a clear day we can see almost all of Mukurthi in a glance, a seemingly vast and uninhabited land. In a single sweep of your head you might gaze upon crest-lines, escarpments, deep drops, bumps and bosses, as well as cloven and sheer faces that run for miles upon miles. There are horizontal and vertical planes intersecting dramatically at the edge of the Park, showing us in plain relief that we stand on the edge of Horst or block mountains produced by the processes of faulting and subsidence or upliftment along fracture lines.

The Tragedy in the Beauty

As our mission was to closely examine this last natural refuge of the Nilgiris in terms of its rare plant communities, we needed to uncover its paradoxical beauty for ourselves by becoming very intimate with it. Over two years we spent some 250-person days walking every valley, fold, mound and cliff from Bangitappal to Sispara. We came to know its 200 and odd grassland plants quite well and also its scarce and special animals. In all this exploring, there was one refrain that dogged our footsteps: this wilderness is possibly a dying wilderness, one that is reeling under the collective and colossal effects of humanity. Yet because the area is protected and awarded the highest degree of protection as a National Park, it is believed to be safe.

This is a dangerous belief and pure folly. Wattle does not respect a Park boundary. Nor do gorse or broom. Furthermore, this is not a case that we can lay solely at the door of the Forest Department. The pressures on our wildernesses come from humanity's collective impact, from the insatiable demands we make on our environments. The folly lies in our failure to perceive how complex living systems operate under duress and in failing to try to correct our mistakes while we still have a chance.

There is neither rhyme nor reason as to why the great expanses of the Nilgiris have been so tragically reduced. A good part of the destruction seems utterly whimsical. Our colonial forebears were homesick for the native plants of the British Isles and had no qualms in turning them loose upon the Nilgiri countryside. A good part of the transformation was deliberate. Because the grasslands were perceived as wastelands they were planted up with “useful” exotic woody species like Wattle, which have turned out, 50 years later, to be aggressive, invasive and destructive to the fragile and highly localized mountain ecologies. Furthermore, despite good intentions, no truly comprehensive conservation strategy has been developed for this rare and unusual environment. Our first and immediate concern is that we need to work quickly and well *together* if we hope to protect Mukurthi. We need to have some basic things we all agree upon, that will improve the life of the various species that live there, that we all care for, be it the Nilgiri Tahr, or the Tiger or the Laughing Thrush or the last of the evanescent *Impatiens*. We need to think in terms of the whole *and* of the parts. The biosphere is, after all, a seamless interwoven skin: the living surface of the earth.

There are many cogent reasons why the world needs places free of exotics though that may well be an impossible task to achieve. Improved benefits to humanity are surely the least of those reasons. Better ones range from aesthetic to the ecological. Water, for instance, gurgles perennially out of these grasslands. The grasslands are truly a sponge, whereas wattle plantations tend to dry out the hill slopes while impoverishing them.

Moreover, we need to clear the exotics out of Mukurthi because they will soon make us forget what was there, that these southern mountains had things other than wattle, daisy and broom. Grassland with exclusively native species will give us perspective first of all. Perspective on the difference between untrammelled and invaded. Perspective on the difference between wildness and trash. But for this we need to feel for ourselves, in some kind of fierce and absolute way, the utter importance of wild things and wild places. We need to regard them and treat them as sacrosanct.

We certainly cannot afford to lose any more time. The IUCN estimates that a fifth of all plant species may disappear in the next few decades. If indeed one out of every five plants could be extinct by 2030, what moral responsibility does that charge us with? Especially when we now know undeniably that the health of ecosystems, and therefore of humanity, comes from the wealth of species, from life-diversity. Southern India, with its environments already shattered and overburdened by the lives of its people, may lose its plants even sooner. And what sort of a life will we have without our plants and our forests?

A Chance to Heal

Paradoxically, the Mukurthi study has brought our little garden's work into a discomfitingly public domain almost overnight. We are familiar with how plants work, how they behave, what they indicate. Most importantly, we know *what wonders some can do and what havoc others can wreak*.

Plants are the basis for all ecosystems: *any* high school student knows this. And yet, humankind's real awareness and appreciation of them, our once abundant knowledge of the power of plants, degenerates to pathetic levels, much to its own peril. We urge the stewards of the environment to work more closely with the plants. If anything, they can absorb the looming desolation of our era. If we work with the plants we may gain some time, we may stand some chance of reprieve. At the very least we may slow down the dreadful decay.

We have ideas on how the rare and fragile plant members of the Mukurthi uplands could be nudged to better futures and how the disturbed and degraded areas of the Park could be healed. These ideas have sprung up not only from our field trips and observations but also from our insights over 25 years into the plants of the Western Ghats, as well as the innumerable discussions with individuals similarly concerned and their insightful, practical and timely contributions to the issue, both in general and specifically. The timing for the study could not have been more perfect: it happened just as "restoration and rehabilitation" were entering the local environmental debate, just as environmentalists in India started waking up (rather late) to the fact that exotic species are the biggest single threat to our native flora and therefore to our landscapes.

There is an enlightenment of sorts that appears to be slowly happening. Whether it will evolve fast enough to spare our final refuges from the ravages of exotics and tourists, from further senseless plantations, from climate change and total ecosystem collapse really remains to be seen. It depends on every single one of us who would be ecological citizens, not merely onlookers and speculators, who are ready to act swiftly and accordingly.

This dawning of a new era took place at a meeting in February of 2005 organized by our friends in the Palnis and Nilgiris, and which the Forest Department attended in a terrific show of support. People are indeed starting to put their collective experience together and drafting a much-needed plan for the high altitude ecosystems of the Western Ghats. We are glad to be part of this and we hope beyond hope that good sense has finally dawnedupon all of us.... and that it is not too late.

With thanks to:

The Tamil Nadu Forest Department: PCCF Dr. Sukhdev

Wildlife Wardens: Dr. Paul Raj, Mr. Ashok Upreti

Former PCCF: Sri Subbarayalu

Rangers: late Sri. Ramakrishnan, Sri. Devaraj

Guards & Watchers: Nandish, Kullan, Karuppaiah and Kumar

*Fellow gardeners, plant lovers and habitat healers: Bob Stewart, Tanya Balcar
Ashfaq Ahmed, BNHS for many illuminating discussions at Avalanche BNHS Station.
Steady supporters in more ways than one: Jagdeesh Puppala and other members of
Foundation for Ecological Security.
Nilgiri Wildlife and Environment Association: especially T. Ravi for enthusiasm and
encouragement.*

Special thanks to Frederick Solomon, with whom it all began in the first place

Our two year study can be summed up in one sentence:

**Get the Exotics Out, Or Else....the Grasslands of Mukurti
Will Surely Die.**

