



Kerala State  
Biodiversity Board

Quarterly Newsletter  
**GREEN LIFE**

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## Expert committee on HLWG Report submits recommendations

The three member Expert committee appointed by Kerala Government to study HLWG report, with Kerala State Biodiversity Board Chairman, Dr.Oommen.V. Oommen as Convener, and former Chairman, Rubber Board P.C.Syriac and Dr.V.N.Rajasekharan Pillai, Executive Vice President, Kerala State Council for Science, Technology and Environment as members, submitted their recommendations on Kerala perspectives.



Chief Minister Oommen Chandy receiving the Expert Committee report

The Expert committee convened 30 sittings in various parts of the state. Over 30,000 persons participated in these sittings and shared their opinions and grievances. 8976 written complaints were also received. Report of the Expert Committee was submitted to the Chief Minister Oommen Chandy.



Sitting of the Expert Committee

Important recommendations of the committee are., to conduct actual physical verification in all the 123 ESA villages demarcated by Kasthuri

rangan Committee and 120 Panchayats identified as ESZ I and ESZ II by Gadgil Committee and exclude human inhabited areas, farm lands and plantations from ESA, not to have buffer zones outside ESA, consider farmers in Western Ghats as "Landscape farmers" and provide all possible encouragements and financial assistances for eco-friendly farming practices, instead of turning to organic farming directly promote "Good Agricultural Practices" in Western Ghats areas as an initial step, subsequently encourage farmers to adapt Organic Farming Practices by compensating financial loss incurred by the farmers during the transition period from Chemical to Organic farming, proper branding of vegetables, spices and other products produced in Western Ghats areas, conduct of awareness programmes in order to gradually avoid use of persistent pesticides with high residual toxicity from these areas, provide financial incentives to farmers for shifting from short duration crops to long duration crops on lands having more than 30% slope, Government decision to give Pattayam (title deed) for those lands in high range areas which are in people's possession before 1977 January 1 should be implemented immediately, promotion of integrated farming and farm tourism, making SEIAA clearance compulsory for quarry activities, development of eco-friendly master plans for panchayats and strengthening of Biodiversity Management Committees.



*Whatever I dig from thee, O Earth, May that have quick growth again,  
May we not injure your vitals or your heart*

- Adharva Veda



**Dr. K.P.Laladhas,**  
Member Secretary,  
KSBB  
Chief Editor

## Inevitable scorching summer

The North East monsoon accompanied by thunder and lightning has reached its fag end and the scorching summer is round the corner.

With the increasing trends of global warming, predictions of severe climatic events have been made for India. The anticipated increase in precipitation, the melting of glaciers and expanding seas are projected to influence the Indian climate severely with an increase in incidence of floods, hurricanes and storms. Global warming is also posing a mammoth threat to the food security situation in India with recurring and severe droughts and ravaging floods engulfing the arable land. Rising temperatures on the Tibetan Plateau are causing the melting of the Himalayan glaciers, reducing the water flow in the rivers Ganges, Brahmaputra, Yamuna and other major rivers on which the livelihoods of hundreds of thousands of farmers depend. According to the Indira Gandhi Institute of

Development Research, Mumbai, if the process of global warming continues, resulting climatic disasters would cause India's GDP to decline by about 9% with a decrease in production of the major crops by 40%. A temperature increase of 2 ° C in India is projected to displace seven million people, with a submersion of the major cities of India like Mumbai and Chennai.

“Kerala reeling under severe summer”, “Water situation worsens”, “Power crisis cripples the state” has become common headlines in the daily news in recent years during summer season. Paradoxically come summer, Kerala, one of the states receiving high rainfall in the country, suffers acute water scarcity.

Each year, first we have crippling droughts and then devastating floods in the next few months. Even the common man has started talking about climate change and extreme weather events and farmers are dreading the drought time again. Climate change is one of the biggest environmental threats of this century to food production, water availability, biodiversity and livelihood. Shift in spawning season of fishes, time of

hatching of eggs of birds, changes in pattern of breeding and migration of birds, delayed blooming of flowers have all been attributed to climate change. Developing nations are especially vulnerable because they are highly dependent on natural ecosystems for their livelihoods and as sources of food, water and shelter. It is high time that ecosystem should be viewed as a “natural infrastructure”, an asset to be managed wisely for sustainable development. Proper management of water regimes is the most pressing natural resource challenge of this century. Ecosystem's capacity to be resilient relies on genetic diversity. Evolution and natural selection over centuries have resulted in a large number of traditional varieties of crops. They possess special traits like resistance to biotic and abiotic stresses and ability to adapt to drought or floods. But this genetic diversity has vanished.

Conservation of diversity on-farm, mitigation of biodiversity loss and ensuring sustainable natural resource management are key to survive the climatic shifts.

## KSBB project to conserve edible tubers of Wayanad

Kerala State Biodiversity Board has launched a project at Wayanad, in order to conserve the indigenous tuber crops. The project is being implemented by Edavaka Gramapanchayat and ‘Ferns, Wayanad’, an NGO. 53 varieties of tubers including wild ones were planted in Edavaka panchayat in order to set up a Tuber Crop Germplasm. The project was inaugurated by Veena.N.Madhavan, Sub-Collector, Wayanad during April 2013.

During the first phase of the project indigenous tuber crop varieties were collected and multiplied in farmer's fields. Farmers were encouraged to create a network of their own to

exchange tuber varieties and indigenous knowledge connected with their cultivation between themselves. The project will be extended in due course to



Sub Collector Veena.N.Madhavan inaugurating Tuber crops project

other panchayats like Mananthavady, Thavinjal, Vellamunda and Thonder nadu. ‘Community Tuber crop Germplasm centre’ will be established in Kavanakkunnu of Edavaka. Apart from conservation, wide publicity was given regarding the nutritional qualities of these tubers.

Tuber crops have always been the alternate food source in Kerala. But fragmentation of land, shift to mono cropping and change in food consumption pattern have caused large scale reduction in cultivation of tubers. The project will hopefully inspire farmers to revive cultivation of these local food sources.



Tuber crops have good climate change resilience. They offer greater scope for food production using less land, far less water and fewer nutrients in the background of negative effects of climate change on cereals. The projected rise in diabetic population in India to 80 million by 2050 emphasises the need to develop low glycaemic foods. The sweet potato being a low glycaemic index food is ideal for developing and popularising functional foods for such targeted population.



Dr. Oommen V. Oommen  
Chairman KSBB

*"To plant a seed, watch it grow, to tend it and then harvest it, offered a simple but enduring satisfaction... The sense of being the custodian of this small patch of earth offered a small taste of freedom."*

#### - Nelson Mandela, Long Walk to Freedom

It is these small patches of greenery in the urban ecosystems that significantly improves the quality of life in urban areas by their aesthetic and recreational value. Cities depend on their surrounding ecosystems for goods and services, and their wastes and emissions affect regional and even global ecosystems.

It is estimated that cities have contributed to some 80 percent of all greenhouse gas emissions globally and most of future urban growth is expected to be concentrated in small and

## Cities as Carbon sinks

medium-sized cities. The Cities and Biodiversity outlook published during Convention on Biological Diversity suggest that the habitats of urban dwellers will largely determine the health of ecosystems and that rich biodiversity can exist in cities. India is witnessing rapid urbanization, resulting in land use changes placing greater demands on natural resources leading to environmental degradation. Any urbanization activity has been associated with loss of wetlands and pollution of water bodies. Medium and high-rise buildings on the banks of water bodies discharge the effluents to them. Once the sponges of urban area, today, urban water bodies have turned into areas of health hazards choked with plastic and other non-bio degradable wastes which provide conditions conducive for spread of vector borne diseases. Healthy ecosystems and conservation of urban green corridors are vital for cities to function properly. Kerala State Biodiversity Board through its

urban biodiversity conservation programme aims at sustainable development of cities by providing a network of green spaces and restoration of ponds for the recreational purposes of the local residents. These restored natural water bodies provide a habitat for diverse aquatic life.

Let us hope that Kerala can take the lead in planning for sustainable cities to accommodate its dense population rather than becoming sources of large carbon footprints.



Vertical forests in towns - A novel concept

## National Biodiversity Garden & Traditional knowledge centre at Munnar

Kerala State Biodiversity Board has developed a comprehensive, long term proposal to establish a National Biodiversity Garden & Traditional Knowledge Centre in Kerala, which is pending for sanction by MoEF and NBA. This will be the first state of art Botanical garden showcasing the diversity of Western Ghats, strategically located in Munnar.

NBA Chairman Dr. Balakrishna Pisupati visited Munnar in connection with the project. The project will be implemented in three phases – Phase 1- establishment of physical infrastructure and facilities, core staff for the centre and research related facilities (2014-2017), Phase 2 – scaling up of activities at the centre and furtherance of infrastructure at field centers (2016-2018) and Phase 3 – full-fledged centre (2017-2020). The major mandate of the garden is to establish

a live conservatory of biodiversity of the Western Ghats and conservation of plants unique to the area. The garden will represent the themes of Biological Diversity, Ecology, Conservation, Heritage sites and protected areas of Kerala. This is expected to act as centre for rescue, recovery and rehabilitation of Rare, Endangered, Threatened and Endemic species of plants and other valuable plant genetic resources and will also play an important role in education and act as a centre of training in environmental awareness.

It will also undertake research and development programmes on documenting, bio-prospecting and sustainable use of medicinal plants and associated traditional knowledge of the area. National Biodiversity Garden and Traditional Knowledge Centre is expected to serve as a field guide of Kerala's rich biodiversity.



## KSBB EVENTS

■ Dr. Balakrishna Pisupati, Chairman, NBA along with Dr. Oommen V. Oommen, Chairman, KSBB and Dr. K.P. Laladhas, Member Secretary visited Munnar to identify possible sites for establishment of National Biodiversity Garden and Traditional Knowledge centre.

■ Dr. K.P. Laladhas, Member Secretary, KSBB attended the 27th meeting of National Expert committee of Access and Benefit sharing organized by NBA on 21st and 22nd November 2013 at Chennai.

■ KSBB organized awareness programmes for BMC Presidents and Secretaries of Malappuram, Kozhikode, Ernakulam and Kottayam districts through district panchayats. The programmes were targeted at creating awareness about the roles and responsibilities of BMC as Environmental watch group, identification of local environmental problems and solutions, strategies for implementation of PBR derived projects and accountability of BMC

■ A meeting of KSBB District coordinators was convened on 10/9/2013 at Trivandrum Hotel for review of activities, formulating criterias for selecting the best BMC, reconstitution of BMC's and for suggesting conservation projects in each district.

■ Kerala State Biodiversity Board with the support from National Biodiversity Authority is implementing an innovative approach to biodiversity education - "Panchayat as a class room and PBR as a reference book" in the schools of the state. The PBR prepared at LSG level will be used as a handbook for identifying local biodiversity, stressing the importance of native species. As part of this, one day training for student volunteers, BMC, ward members, teacher coordinators and NGO representatives was conducted at 5 districts; Thiruvananthapuram, Kollam, Ernakulam, Malappuram and Wayanad.

■ A lecture on Biodiversity conservation gap analysis and prioritization was organized by Kerala State Biodiversity Board and Kerala Academy of Sciences at Department of Botany, University college, Thiruvananthapuram on 6th September, 2013. Dr. Viswamabharan Sarasan, Head, Conservation Biotechnology, Royal Botanical Gardens, KEW, England gave a talk on the conservation strategies being adopted at KEW gardens, England.

■ Vattavada is popularly known as cool season vegetable production hub of Kerala. Conservation and greater use of local varieties, organic farming, revival of agro ecosystems and integrated farming systems, conservation of high altitude fishes, ecological restoration of areas under monoculture plantations and prevention of forest fragmentation are necessary for the sustainable development of the area. As an initial step towards implementing an integrated development programme at Vattavada, KSBB has initiated a scheme to promote organic cultivation here.



NBA Chairman Dr. Balakrishna Pisupati visiting Munnar accompanied by Dr. Oommen V. Oommen and Dr. K.P. Laladhas

## Restoration of Ambalappara quarry-first phase completed



The first phase of the pilot project "Biodiversity enhancement, eco restoration and water management" funded by Kerala State Biodiversity Board to explore the feasibility of developing abandoned quarries into rain water harvesting areas and eco-restoration of degraded land, was completed at Ambalappara quarry, Thrikkakara, Ernakulam.

Quarrying results in irreversible ecological fall outs on the environment as it is often done in or near sensitive natural environment. The Ambalappara quarry is a perennial source of water and is connected with Edapally thodu. But the area was highly degraded. As part of this programme, plastic wastes from the water reservoir and the premises were completely removed. Approximately 3 acres of land area in the project site along the Edapally canal side was cleaned and various plant saplings were planted. Vetiver grass, mangroves, ferns, avenue trees, medicinal plants, birth star trees and coconut trees were planted in the area. Plants suitable for butterfly garden were also planted.

In a bird survey conducted on 10<sup>th</sup> Nov 2013, 30 different species of birds were spotted at the project site. The second phase of the project will focus on rain water harvesting and establishment of treatment methods.



## RED LIST

### Malabar Civet *Viverra civettina*

## Malabar Civet

Malabar civet is one of the rarest and most threatened mammals of the Western Ghats belonging to the order Carnivora and the family Viverridae.

They are more dog like in appearance with long legs, canine heads and muzzles. Longevity is approximately 15 years. The coat is long and grey in color and there is a prominent black bristly dorsal extending from neck up to the tip of the tail. There are large black spots on the flanks which do not form any pattern. The tail has five white rings. This species is thought to have originated in Asia and subsequently spread to Africa during the Miocene period. This carnivore has been pushed

to the brink of extinction by hunting and habitat loss. Malabar civet was declared possibly extinct in 1978 and was rediscovered nine years later. But it was never been photographed and there has been no published proof of its continued survival for over a decade. Wild life Trust of India during 2006-07 conducted a twelve month survey to



locate the remaining population of the species but no conclusive proof of the existence was obtained. The Malabar civet once inhabited the lowland forests, swamp and riparian forests in the coastal plain districts of Western Ghats. Due to the massive deforestation of natural area, they have disappeared from the entire stretch of the coastal Western Ghats. The species appears to be largely confined to thickets in cashew plantations and highly degraded lowland forests in northern Kerala.

Malabar civet is listed as Critically Endangered, in the IUCN Red List of Threatened Species and is included in Schedule I, part I of the Indian Wildlife (Protection) Act, 1972.

## Buffalo genome decoded

A Bangladeshi company, Lal Teer Livestock Limited, and Beijing Genomics Institute (BGI) have jointly unravelled the complete genome of water buffalo, opening up a new horizon in developing better breeds of the animal that is vital for milk and meat. According to available statistics, world's current buffalo population is 168 million, of which 161 million are in Asia with India, China, Pakistan and Egypt being the top four abodes of water buffaloes. Buffaloes constitute 30 percent of the cattle population and contribute more than 60 percent of the total milk yield in India. The first genome project — Human Genome Project — was declared in 2003 and till date genomes of some 25 species (plants, animals) have been decoded.

## Mountains- Key to a sustainable future

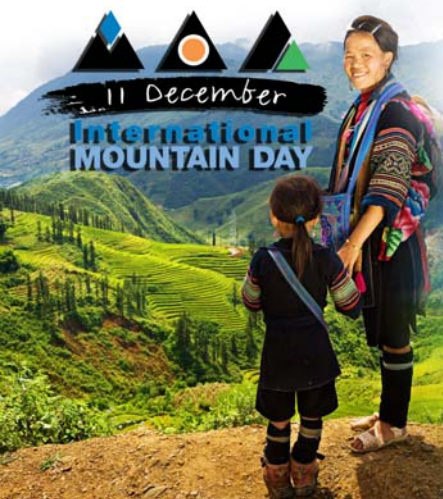
The focal theme of World Mountain Day-2013 was “Mountains: Key to a Sustainable Future”.

Covering around 27 percent of the earth's land surface, mountains play a critical role in moving the world towards sustainable economic growth. Mountains not only provide sustenance and wellbeing to 720 million mountain people around the world, but indirectly benefit billions more living downstream. Mountains provide freshwater, energy and food – resources that will be increasingly scarce in coming decades. However, mountains are extremely vulnerable to climate change, deforestation, land degradation and natural disasters. The challenge is to identify new and sustainable opportunities that can bring benefits to both highland and lowland communities and help to eradicate poverty without contributing to the degradation of fragile mountain ecosystems.

Commitment and will to advance this cause were strengthened during the International Year of Mountains in 2002 and mountains have gained an increasingly high profile on agendas at all levels. The Year also led to the adoption of resolution 57/245, in which the General Assembly designated 11 December as International Mountain Day and encouraged the international community to organize events at all levels on that day to highlight the importance of sustainable mountain development.

Mountains of India play a key role in forming the ecosystem of the country. Many mountains of India are denoted as the abodes of the gods and are famous with tourists due to the fresh air, religious significance, and thrilling adventure sports opportunities. All these mountains offer a magnificently rejuvenating respite from the exhausting heat that covers majority of India during the months of April and May. India is home to some of the tallest and gallant mountain ranges in the world. These ranges come with some of the most attractive sceneries and ecosystems in the world. The diversified altitudes and ranges feature a wide range of flora and fauna.

Mountain ranges such as Western Ghats, Himalaya, Aravalli, Eastern Ghats, Nilgiri, Shivalik, Vindhya, and Satpura mountain ranges make a significant contribution towards maintaining the beauty of geographical features, landscape and balanced environment.



## GREEN FINGER Medicinal Grove in the Metro

A.V. Purushothama Kamath, residing at Thammanam situated at the center of Cochin, is on a mission to preserve what some of his community members had helped create over 300 years ago, the collection and categorization of plants for the legendary work *Hortus Malabaricus*. The *Hortus Malabaricus*, prepared under the guidance of the Governor of Dutch Malabar, Henrik Van Reede in the 1600's was undertaken with the assistance of about a 100 physicians including three prominent Konkanis, Ranga Bhat, Vinayaka Pandit and Appu Bhatt.

Farming is a passion for Kamath. Both his father and grandfather were farmers. Purushothama Kamath's, 'Gurukul' is a lush green homestead at the heart of the city with many medicinal plants in it. The plot is spread over an area of 1.5 acres. A natural canopy is formed by plenty of trees, several types of plantains, various varieties of flowers, spices, 34 kinds of hibiscus, orchids, oranges, lemons, West Indian and Brazilian cherries, guavas, pineapples, more than 34 varieties of mango trees and a lot more. There is the rare 'Valliplavu', which grows to a height of only around four feet and bears very sweet jackfruit near the roots.

"I like to leave a few fruits for the birds and squirrels to have their fill. Regarding medicinal plants, 25 years

back I read about rare medicinal plants facing extinction and wanted to do my bit to save at least ten of them. That's how I began." -says Kamath.

Kamath travels throughout the state to collect medicinal plants from forest areas and homesteads. Holiday trips with family even become occasions for collecting rare plants. These are planted and grown organically in a forest-like environment. They are irrigated daily. Two natural ponds maintained in the plot provide water for irrigation.

He is very particular in finding out details regarding the plants he has collected and the conditions peculiar to a region that help a plant to flourish. This he does by referring several ancient texts and partly from Botanists. Beside each plant is a signboard that spell out the genus and medicinal properties of the plants. According to Kamath, there are lots of 'duplicates' among these exotic plants. They are often mistaken for the original species.

Pointing to a short tree with almond-shaped leaves growing in clusters, he says, "This is really 'Malaveppu', but was thought to be 'Devadaru,' which is usually not found in Kerala, but in the Himalayan region. "

Some of the herbs and plants that he has collected during the course of his many travels across the country are,



Purushothama Kamath near the rare 'Valliplavu'

'Nakshatra' trees, trees corresponding to each Malayalam birth star, nine varieties of the Tulasi plant, Parijata, Rudraksham, Bhadraksham, Neelambari, Nagalingamaram, Asoka, Simsipa, Fig and Red Sandal wood.

Many rare medicinal plants are also found here like 'Orila Thamara,' 'Garudapacha,' 'Samudrapacha,' 'Keezharnelli,' 'Guggulu,' 'Pinari,' 'Arogyapacha,' 'Chittamrit,' 'Angolam,' 'Kattukaachil,' 'Analivegam,' 'Kallurukki,' 'Koduveli,' 'Kalloorvanji,' 'Aattuvanji,' 'Chakkara kkolli' and 'Ekanayakam'.

He has collected and planted over 1,000 species of medicinal plants in his garden over the past 2 decades, but Purushothama Kamath thinks that his sacred mission is still not complete.

## ECO HEROES 'Hammer' Simwinga

What can stop gun-wielding poachers from decimating Africa's endangered wildlife? Sunflowers. At least it can if you're "Hammer" Simwinga, the tenacious conservationist who has used creative sustainable development ideas to restore Zambia's North Luangwa National Park and transform poverty-stricken villages.

When Simwinga began work with the North Luangwa Conservation Project in 1994, the local economy was almost entirely dependent upon illegal poaching. Even children risked their lives walking deep into the forest to help poachers. Health standards were horrible, families were penniless, and wildlife had disappeared. Slowly, one village at a time, Simwinga introduced alternatives such as sunflower planting and processing for oil, beekeeping to generate profits while saving trees, and sustainable farming to improve both soil and nutrition. The NGO he eventually created, 'North Luangwa Wildlife Conservation and Community Development Programme', has helped more than 35,000 people and 60 villages. Along with new agricultural techniques, Simwinga's projects reduced child mortality by introducing critical midwifery training and pregnancy care. Community schools have also been built through his programme, helping local children learn to read, write, and go on to secondary school for the first time. A decade later, the results of his efforts are plain. The project has boosted the income of its roughly 35,000 participants a hundredfold. 64 different villages have gained access to microcredit and training, enabling them to set up grinding mills and sunflower-oil presses, and to launch sewing and carpentry businesses.

Today, 86% of participants eat three meals a day, compared with just 20% in 1986. Now, local people truly appreciate, enjoy, and value the wildlife that has returned.



## New Mammalian Carnivore discovered

\*A new species of Tapir was discovered in Brazil and Colombia in what is claimed to be one of the biggest discoveries of the Twenty-First Century. The new mammal is already known to local indigenous tribes and is the smallest of the five known species of living tapirs. Described in the *Journal of Mammology*, the scientists have named the new tapir *Tapirus kabomani*.

\* The world's newest discovered mammalian carnivore the Olinguito looks like a wild, tree-climbing teddy bear with a cat's tail. Its habitat is restricted to the lush high altitude cloud forests of the Andes at 5,000 to 9,000 feet above sea level, a bio diverse region home to a wide-range of species found nowhere else. The Olinguito (*Bassaricyon neblina*) is a member of a little-known, elusive group of mammals olingos, Olinguito is nocturnal and spends most of its life in trees.

\*A biodiversity survey of New Caledonia's tallest mountain, Mount Panié rediscovered the 'lost' Crow Honeyeater. The Crow Honeyeater, is currently listed as Critically Endangered by the IUCN Red List, but this bird has not been seen for decades.

\**Goniothalamus keralensis*, a new species of *Goniothalamus* (Blume) Hook. f. & Thomson belonging to the family Annonaceae was located in the forests of Idukki district in Kerala. *Goniothalamus* is one of the largest palaeotropical genera of plant in family Annonaceae. The new plant is similar to *G. wightii*, but differs in having longer leaves with acuminate or acuminate-caudate apex, shorter pedicels of flowers, smaller sepals which are deciduous in fruits, stamens with glabrous and convex connective, fewer carpels with very short or indistinct style and funnel shaped stigma. Seeds are consistently two in each carpels. This endemic species is found as a low canopy plant in the evergreen and riparian forests. The finding made by the members at Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala have been published in the scientific journal of *Taiwania* (58(3): 171-175-2013).



Olinguito

## Children's Biodiversity Congress held at Thiruvananthapuram



Chief Minister Oommen Chandy inaugurating Children's Biodiversity Congress

The 6<sup>th</sup> Children's Biodiversity Congress was held on 15<sup>th</sup> and 16<sup>th</sup> of November 2013 at Kanakakkunnu Palace, Thiruvananthapuram. It was inaugurated by the Chief Minister Oommen Chandy. 291 students and 137 teachers from 75 schools of Kerala participated in the Congress.

Chief Minister, in his inaugural address said that programmes such as Children's Biodiversity Congress will enable the young generation to become more conscious about conservation. Conservation of our environment is not something that threatens our livelihoods; the two should go hand in hand, CM said. He urged the students to realize that biodiversity is the base of life. Chief Minister released 10 Malayalam Brochures on the Flora and Fauna of Kerala, prepared by the Board. The inaugural function was presided over by K.Muraleedharan MLA. P.K.Mohanthy, IAS, Additional Chief Secretary, Environment Department welcomed the participants. Dr. Oommen V. Oommen, Chairman, Kerala State Biodiversity Board gave the introductory speech. Planning Board Member C.P. John and the Principal Chief Conservator of Forests V. Gopinathan, IFS delivered the felicitation address. The vote of thanks was proposed by Dr. K.P. Laladhas, Member Secretary Kerala State Biodiversity Board.

Various competitions on Painting, Poster Preparation, Cartoon Drawing, Elocution, Quiz and Project Presentation were held during the congress. 71 projects were received from the students.

The valedictory function held on 16.11.2013 was presided over by Dr. K.G. Sreekumar, Chief Executive Officer, Kerala State Medicinal Plant Board. Dr. N. Omanakumary, Board Member, KSBB, Dr. Oommen V. Oommen and Dr. K.P. Laladhas distributed the prizes to the winners. The overall trophy was won by St. Antony GHSS, Kozhikode. Vote of thanks was extended by G.S. Unnikrishnan Nair, Scientific Officer, KSBB.



Prize distribution

## Pomegranate - Good for heart

Pomegranates could reverse some of the damage done by junk food, research suggests. A supplement made from the fruit helped to keep the blood vessels healthy, a key step in keeping heart attack and stroke at bay.

In the first study of its kind, researchers at the ‘Catalan Institute for Cardiovascular Sciences’ in Spain looked at the effect of a pill packed with pomegranate plant chemicals called polyphenols on the circulation of pigs. Pigs were chosen because their cardiovascular system is similar to ours. Feeding them fatty food damaged their blood vessels and in particular, their delicate lining or endothelium. This lining is important as it releases substances that control the expansion and contraction of blood vessels. Damage to it can be a first step in atherosclerosis. The blood vessels of the pigs fed with fatty food were less elastic. The animals also produced less nitric oxide, a blood vessel widening-gas and had other signs of heart problems. However, daily dose of a supplement with 200mg of polyphenols called punicalagins, cancelled out many of the effects.

Researchers conclude that enriching a diet with pomegranate polyphenols can help in preventing and retarding endothelial dysfunctions, which are among the first signs of atherosclerosis and strokes.

## Finger Monkey

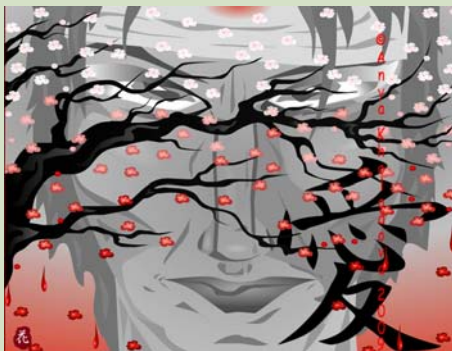
High in the rain forest canopy of South America lives a tiny animal that dodges behind tree trunks and branches, alternately freezing and dashing, just like a squirrel. It has brown fur and a long tail like a squirrel—but it’s really the pygmy marmoset, world’s smallest monkey.

A full-grown pygmy marmoset could easily sit in an adult human’s hand, weighing a mere 119 g (4.20 oz) on average and measuring, an average, 136 mm (5.35 in). But the tail is longer than its body. It helps the little monkey keep its balance as it gallops

## Ghost of the tree

### Folktale from Japan

In Wakegori, Japan, there is a very ancient cherry-tree, called Jiu-roku-zakura, or “the Cherry-tree of the



Sixteenth Day”. It is called so since it blooms every year upon the sixteenth day of the first month and only upon that day. Though the natural habit of a cherry-tree is to wait for the spring season to blossom, the time of Jiu-roku-zakura’s flowering is a very cold season. People believe that there is the ghost of a man in that tree.

He was a samurai and the tree grew in his garden. It used to flower at the usual time, about the end of March or the beginning of April. He had played under that tree when he was a child; and his parents, grandparents and ancestors had hung to its blossoming branches, season after season for more than a hundred years.

through the treetops. Their neck is very flexible, and they can turn their head backward to spot predators. Since they are so small, pygmy marmosets prefer living in dense rain forests where there are lots of hiding places among the plants. They can become prey for cats, eagles, hawks and snakes.

The ability to climb is very important for pygmy marmosets, because tree sap is their favourite food. Sometimes they feed on insects, nectar and fruit. Pygmy marmosets communicate with each other by chattering and trilling in high-pitched voices. Living in a group is very useful for pygmy marmosets: there are more pairs of eyes to spot predators, and everyone helps take care of the little ones.

Seasons and years passed. He himself became very old,—outliving all his children; and there was nothing in the world left for him to live except that tree. But in the summer of a certain year, the tree withered and died. The old man deeply sorrowed for his tree. The kind neighbours found another young and beautiful cherry-tree for him and planted it in his garden, hoping to comfort him. But his heart was full of pain; for he had loved the old tree so well that nothing could console him for the loss of it.

At last there came to him a happy thought: he remembered a way by which the perishing tree might be saved. In those days it was believed that one can really give away one’s life to another person, or to a creature or even to a tree.

He went into his garden, bowed down before the withered tree, and spoke to it: “ I beg you, once more to bloom,— because I am going to die in your stead.” Then he spread a white cloth under that tree, and performed hara-kiri (ritual suicide by disembowelment with a sword) after the fashion of a samurai. The ghost of him went into the tree and made it blossom at that same hour. Every year it still blooms on the sixteenth day of the first month, in the season of snow.



Like nearly every other primate species, pygmy marmosets are threatened by loss of habitat and fragmentation, from building roads through forests to clearing land for farming. They are also heavily collected for the pet trade, even though they do not make good pets.