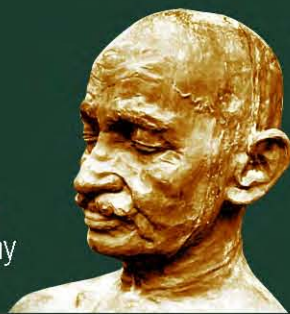


KERALA CALLING

Prophet and
Practitioner of
Green Economy



Cleanliness is a way of life—
**Let's
celebrate it !**
Suchitwotsavam

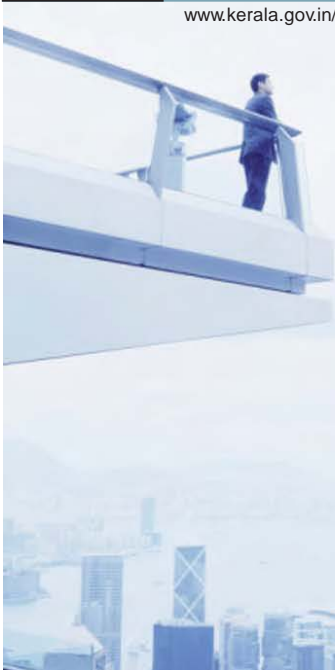


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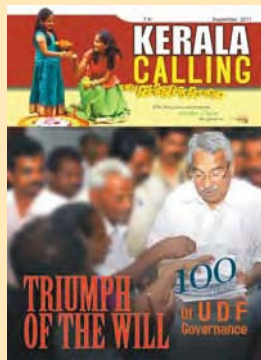
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RESPONSE



Editorial Materials

The articles/features appearing in this magazine are either commissioned or assigned. Nevertheless, other articles are also welcome. A maximum of 750 wordage is appreciated. Such items should be addressed to

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VIEWs expressed in the articles published in *Kerala Calling* are not, necessarily, those of the Government. *Kerala Calling* welcomes free expression of divergent views and exchange of ideas through its pages.

Of jackfruit and photo captions

The article related to jackfruit is also very beautiful and informative, but it is a bit late and a bit earlier, i.e., not in the season. It is nice to have a look at the foto feature in the September issue, but it would have been more enthusiastic if a brief note too was accompanied with the photos.

Jose Philip, Koothupuzha, Kannur

Burning Vamanan

Kerala Calling September issue has brought in the spirit of Onam in a very subtle and beautiful way.

Even the supporters of Mahabali himself are not angered at the act of the villainous and fraud Vamanan. It is when the evil intentions of Vamanan in pushing down Mahabali to the underworld at a time when people were all living together as one, is dissected in detail that the intentions of the new avatars of modern vamanas become clear.

Only after the effigy of Vamana who has destroyed Maveli, the embodiment of good virtues, is burnt, should the curtain fall on Onam week celebrations.

C. Vijayan, Easwari Nivas,
 Kalavoor (PO), Alappuzha

The bow that marvellous

The article about Onavillu gives new information about an old practice. In the context of the discovery of the temple treasure, this ritual will definitely draw the attention of many. The presentation of the article is charming with the bows gracefully placed.

Susmitha S.R

Attungal, Thiruvananthapuram

Imaging Emotions

Photo feature. A few photos, but lots of communication. True, this is a lot of reading. The artists successfully used the tool to visualise the cruelties of man. These images are really haunting me. I expect these photographs would have to create a pro-environment and pro-life attitude among Keralites.

Binita B.
 Headmistress, Mannam Memorial Model
 School, Malayinkil

Stamp of development

All the articles of September 2011 issue of Kerala Calling are quite captivating, illuminating and bear the stamp of development during the reign of UDF Government.

The last LDF Government has destroyed the well-known Kerala model of development. Industry, education, health sectors were in shambles. Even now the students' (?) wing of CPM violently disturbed the law and order when the Government tried hard to restart the developmental activities. Kerala faces the adverse effect of financial mismanagement by the last LDF Government. If it continued Kerala would have ended up in a debt trap.

The opening article "Well begun..." by Justice V.R. Krishna Iyer lead us to the possibilities and potentialities ahead of us. "Triumph of the Will" by Xavier Primus Rajan captures the glory of good governance that is possible only by will power and transparency. The following articles instil in us hopes of a brighter and more peaceful tomorrow. Congratulations to the team behind Kerala Calling.

B. Umesh

Valiyakoonambaikkulam, Kollam

Preserve indigenous farming

The article on 'Jackfruit' is really luminous. The biological diversity has almost vanished. The loss of indigenous plant species poses a threat seemingly less visible than the loss of animals, but at the same time is more critical. Unfortunately, the documentation of a field of conservation is generally ignored by the mainstream environmentalists and organisations - the preservation of gene pools from ancient plants. The need for maintaining a wide gene pool is necessary not only for the survival of these species but also for the preservation of genetic strain that can help scientists breed more bright yielding varieties of other plants. Sree Padre reminds us about the lost and almost lost indigenous plants, fruits and roots.

Jiji J.J.

President, 'SMECS', Thiruvananthapuram

EDITORIAL

Cleanliness, like charity, begins at home

Gandhiji had said that a lavatory must be as clean as a drawing room. The cause of many of our diseases is our bad habit of throwing out waste indiscriminately around. The average Malayali, known for his personal hygiene, throws all his filth around. From blowing noses in the open to spitting in public places and throwing garbage and kitchen wastes in water bodies, drains, rivers, the Malayalee is second to none.

It is a contradiction that though Keralites are first in education, awareness, consumerism, and are pioneers in migrating to all parts of the world and lead quality lives elsewhere, when they come back home, God alone knows what happens to them. They even lose their ability to react to the dirt, squalor, potholes, corruption... and even have no qualms in contributing to them.

Our State has become a garbage dump. Our rivers and water bodies are mixed with plastic, filth, solid and liquid, toxic wastes. This has set an ecosystem for breeding mosquitoes and germs of deadly diseases that fill our hospitals with large number of patients, causing alarm and near panic. Even diseases that have been deemed to have been eradicated have reared their ugly heads.

The alert government have identified this most dangerous and urgent problem and have lost no time in responding to it with a detailed and focused action plan. The State's Suchitwa Mission and local self government institutions are on their heels.

An one year long Suchitwotsavam has been launched on Gandhi Jayanti Day this year. The Department of Information and Public Relations will be using the logo and slogan, "Malinya Vimuktha Keralam" in all its publications, advertisements and activities.

Let each one of us open our ears and expose ourselves to the messages that come in regarding this most dangerous issue confronting us today, retain the same and act with the single minded purpose of weeding out the filth from our lives, disposing them safely.

From individual to family, which is the basic unit of society, should spread the message and practice of cleanliness. Keeping our homes clean and teaching our children the essence of cleanliness let's wholeheartedly participate in Suchitwotsavam and usher in a 'Malinya Vimuktha Keralam'.

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Pension scheme for NoRKs

THE government would institute a pension scheme for indigent Non Resident Keralites (NoRKs) above 60 years of age.

After inaugurating the NORKA Centre in the office building for the Department of Non-Resident Keralites' Affairs in Thiruvananthapuram, Chief Minister Oommen Chandy said that the pension scheme would be implemented with money drawn from the Pravasi Welfare Fund.

All NoR returnees would be included in the welfare fund scheme. A legal cell would be started under NORKA to offer support for the NoRs involved in cases to prove their innocence. The department would also take steps to help stranded NoRKs return home.

The State government would exert pressure on the Centre to get Malayali officials posted in Indian embassies in countries with a large number of NoRKs. A call centre was launched at the NORKA Centre in Thiruvananthapuram.

India's Toilet Revolution Remains an Elusive Dream

WHICH invention had the greatest impact on human beings? Neither James watt's steam engine nor Edison's electric bulb made it to the coveted slot, grabbed easily by the flush toilet.

But in India, a majority of the population - 68.3 crore - still has no access to a hygienic toilet. According to a 2008 Unicef study, only Ethiopia had a worse record. While 60 per cent of Ethiopians had no toilets, the figure for Indians was 54 per cent.

Apart from the national shame of people easing themselves on railway tracks and along national highways, inadequate sanitation costs the nation Rs. 2.4 trillion, about 6.4 per cent of the gross domestic product, in terms of public health. Diarrhoea alone claims four lakh lives annually of which 90 per cent are children.



Kochi - Muziris Biennale



THE first-ever International Contemporary Visual Arts Fest in India, 'Kochi-Muziris Biennale-2011' will be conducted in Kochi. A high-level meeting chaired by Chief Minister Oommen Chandy decided to conduct the festival in Kochi, Alappuzha and other centres every two years.

The three-month-long programme will begin on the Keralapiravi day in 2012. The programme will be led by government representatives and Kochi Biennale Foundation. 75 artistes from across the world are expected to participate.

Contemporary films, videos and sculptures will be part of the exhibition. The festival is aimed at developing Kochi as a centre of arts.

For the Rs 75 crore programme, the government share would be Rs.25 crore. Measures will be taken to provide assistance from the Central Government as well.

The Kochi Durbar Hall will be renovated into a centre of arts with ultra modern facilities spending Rs 5 crore already allotted. Rs. 5 crore more will be allotted for continuing programmes.

Cultural Affairs Minister K C Joseph said that for organising this, a coordination committee would be formed with Chief Minister as chairman and Cultural Affairs Minister, Tourism Minister, MLAs and MPs in Ernakulam and Mayor of Kochi as members. In the high-level committee meeting, Ministers T M Jacob, V K Ebrahimkunj, AP Anilkumar, K Babu, former minister MA Baby, Mayor of Kochi Tony Chammini, MLAs Benny Bahanan, Dominic Presentation, Cultural Affairs Principal Secretary Sajjan Peter and artists Bose Krishnamachari and Riyas Komu participated.

Boat tour of Muziris sites

Visitors to the Muziris heritage site located off Kodungalloor would be able to take a boat tour of the locale that abuts the waterway, in another six months.

The Kerala Shipping and Inland Navigation Corporation (KSINC) has set in motion work to construct five of the 14 boat jetties envisaged to enable visitors to check out the heritage and excavation site in an eco-friendly way, without causing air and sound pollution. "The five jetties would be ready by March 2012, while the rest would be built by March 2013," said Captain (retd.) C. Unnikrishnan, the corporation's MD.

The Rs. 4.60 crore estimated to be the cost of constructing the 14 jetties would come from the 12th Finance Commission. The jetties that would be built initially are the ones at North Paravur, Kottayil Kovilakom, Paliyam Krishna temple, Kottappuram market and Kottappuram fort. The roofed jetties would link the historic temples, churches, mosques and synagogues in the area. "There would also be a ticket counter, waiting area for guests etc."

Boats would be able to call at Pattanam, Kodungalloor, Pallipuram Fort, and Gothuruth, when more jetties are built in phase two.

While boats would ferry visitors through the waterway, bicycles would take them from one place to another on land. "This is part of the 'green archeology' concept that is sensitive to heritage and ecological issues. People can donate bicycles for the venture and we have already got 40 of them," said the director of Kerala Council of Historical Research P. J. Cherian.





KCHR bags Excellence Award

The award consisting of a plaque and citation was received by Dr P.J. Cherian, Director of KCHR from Vice Admiral KN Sushil, Flag Officer Commanding in Chief Southern Naval Command at an impressive ceremony at the Southern Naval Command Office, Kochi.

While acknowledging the contribution of Southern Naval Command in the underwater mapping of the area in 2007 and 2008 seasons, Mr Cherian sought the assistance of all agencies in taking the Pattanam research project forward.

The excavations at Pattanam have attracted global attention and have brought out important evidences on the vibrant maritime trade with Mediterranean, Red Sea and Indian Ocean rims, which can probably rewrite the history of ancient maritime contacts. Such evidences include imported and fine pottery assemblage comprising Roman, West Asian, Indian Rouletted Ware (RW) and a host of other unidentified fine

National Maritime Foundation (NMF) has honoured the Kerala Council for Historical Research (KCHR) with its Award for Excellence. The award has been instituted to recognise sustained performance and facilitate study, scholarship and discourse in respect of a broad spectrum of maritime issues, including marine resources, maritime law, maritime history, preservation of the maritime environment and disaster relief.

The Kerala Council for Historical Research has played a pioneering role in the Muziris heritage project which envisages retrieval of the historical heritage of the Kodungalloor – Paravoor region; heritage conservation with elements of responsible tourism and history education.



Dr P. J. Cherian (right), Director of KCHR from Vice Admiral KN Sushil, Flag Officer Commanding in Chief Southern Naval Command at an impressive ceremony at the Southern Naval Command



The 6 m. canoe made of Anjili wood and the wharf at Pattanam unearthed in the 2007 excavation from a depth of 2.45 meters

wares. The number of Roman amphora and Terra Sigillata shards excavated at Pattanam continues to be impressive and it is perhaps the largest assemblage of Roman pottery in India. It will have deeper implications in understanding the Roman role in Indian Ocean trade.

Dr P.J. Cherian informed the audience that the Pattanam canoe could be one of the oldest found in an archaeological context in South Asia. It was ranged between first century BC and first century AD by the laboratory of the Georgia University USA.

Vice Admiral KN Sushil in his felicitation speech complimented the endeavours of National Maritime Foundation and their decision to present the excellence award to KCHR. The Admiral also reiterated the importance of projects such as the Muziris Project and wished Dr. Cherian and his team all success. ■



A flower that changes colour

Think of a flower which changes its colour like a chameleon; it is purest of white in the morning, then gradually change to light pink in the afternoon and darken to rose-pink towards the end of the day! Yes, this changeable beauty is the perennial flowering shrub confederate rose or cotton rose; due to its colour changing nature it is also called 'Changeable Rose.'


The plant belongs to the family of our common shoe-flower and is most used as a visual treat in landscapes. Botanically the plant is 'Bibiscus - mutabilis'; the Spanish word 'Mutabilis' means 'changing'. Changeable rose branches upto a height of three metre and attain a maximum of 5 metres. During summer it exhibits abundant leaf growth and the plant will be virtually covered with green leaves. In our tropical as well as subtropical climates it is an evergreen plant. The flowers which are 4-6 inch in size can be single row or double row petalled. The plant flowers most in the summer season. It is assumed that the change in colour of flowers is actually its direct response to the temperature change in the atmosphere. An

interesting fact is that one can see flowers of three different colours in the same plant. After flowering circular pods with hairy nature are formed which resembles the real cotton balls. That is why this is named 'cotton rose.'

The plant likes both places receiving open sunlight as well as shady areas. As it is suited for drought prone areas too regular watering is also not essential. The plant should be pruned occasionally so that it attains good and remarkable shape.

Changeable rose is propagated by cuttings. The cuttings are rooted in a mixture of sand and leaf manure before shifting it to the main garden. It flowers throughout the year but the flowers only live for a period of 24 hours. Apart from this it likes organic foods like compost, dried cow dung, leaf manure, fish manure etc. Mulching at the plant base is also recommended. Changeable rose is suited for growing in borders, as a background for fences, around aquariums in the garden etc. Apart from its beauty changeable rose is also medicinal in nature with uses in treating allergies, burns, swellings etc. ■

PROPHET AND GREEN



"Once our villages are well developed there will be no dearth of skilled craftsmen and artists. The villages will have poets, artists, sculptors, language experts, researchers and so forth...

Today our villages are dung heaps. Tomorrow they will become beautiful like the garden of Eden. The inhabitants of the villages will be so capacitated as not to fall a prey to exploitation and trickery."



PRACTITIONER OF ECONOMY

At every Gandhi Jayanthi we ask: How relevant is Gandhi today? Not only in India, but the world over thinking people are raising this question.

Our times are very different from Gandhi's. The world and India have entered a new era. We hear the loud din of unprecedented advance in science and technology as well as the spread of information technology. New philosophies have taken root in our life both in the private and the public spheres. Our thoughts, attitudes and life-styles have undergone dramatic change.

New definitions and interpretations are being given to concepts, such as development, growth, progress. In these circumstances, what is the relevance of Gandhiji today? How relevant to our present day problems are the solutions Gandhiji suggested from his background? As we delve deeper, we find his relevance growing with each passing day.

Back in 1928, more than half a century before anyone had even considered the term "sustainable development", Mahatma Gandhi had warned about the unsustainability on the global scale, of Western patterns of production and consumption. Gandhi was asked how he felt about India progressing the way Great Britain had. His answer offers an inkling of his remarkable foresight. He said, "God forbid that India should ever take to industrialism after the manner of the West. The economic imperialism of a single tiny island kingdom (UK) is today keeping the world in chains. If an entire nation of 300 millions took to similar economic exploitation, it would strip the world bare like locusts."

Colonialism in New Garb

What Gandhi predicted has become true. The population of India has quadrupled, and the US - the world's greatest ever consumer - has a population of 300 million. The adage 'might is right' is being practiced without any restraint. The tendency to amass wealth far beyond one's requirement is on the rise. It takes new forms and modes. It is manifested in colonialism at multiple levels and in multiple forms. Man's inborn tendencies of greed and the craze for power have made him a slave to wealth and fame as well as to those who have become powerful through the acquisition of these. This tendency has become so entrenched in the human psyche that people can't even imagine the prospect of sharing one's wealth with others.

The global economy has become too lop-sided and out of synchronization. The financial catastrophe and the decline of trust in the liberalization and globalization model could mean some renewed receptivity for a new sustainable development paradigm - a green economy that truly concerned with equity, poverty alleviation, reducing resource use.



Timelessness of GANDHI

TTrue non-violence is a lifestyle; it means we do not violate anyone's space due to our existence; we do not violate the balance of nature. Ideal non-violence does not leave behind a footprint.

Non-violence towards our environment challenges us to leave behind the tiniest carbon footprint. It means that we desist from doing harm to others to maximum extent possible. "Nature has enough to provide for everyone's need but cannot provide for anyone's greed," Bapu said. This was his belief in non-violence which is timeless and which when violated has come back to haunt us in the form of the ozone hole and the effects of climate change.

Bapu based his entire philosophy on the principle of non-violence

- Tushar A Gandhi

only serve to add to the existing disparity.

For Gandhi, trusteeship was the tool for resisting the capitalistic allurements. He explained that individuals or institutions are not the owners of wealth; they are merely its guardians. Says Gandhi: "Huge economic disparity exists today. The foundation of socialism is economic equality. We will not be able to realize the dream of 'Ramaraja' if the current unjustifiable inequality, where a few indulge in luxury while the majority languish in poverty even without food, persists. My objection is only to resorting to violent means for effecting lasting reforms"

Gandhi was being very practical. He first practiced in his own life and only then preached to the others the central tenet of trusteeship that if some one has become enormously rich either by inheritance or through trade and business, it does not belong to him and that he has right only to what he requires to lead a respectable life like the others and what remains over and above is to be spent for the welfare of others.

Base of Gandhian Economics

Mahatma Gandhi was a champion of Green Economy. He had realized that only through a holistic approach to economic growth and development India's future can be secured. He named it Holistic Development. Truth and non-violence constitute the base of it. Modern factory culture will lead to violence, he had warned. He was critical of the factory culture, not of factories. His objection was not to machines, but to man becoming a slave of machines.

To a question by Dr.G. Ramachandran, disciple of Rabindranath Tagore, Gandhi said: "My own body is a most delicately manufactured machine. The spinning wheel is also a machine, even a tooth pick is a machine. My objection is not to machines, but to the illusion that machines spare man of labor." Gandhi's idea was not to finish off all machinery but to keep a control on its use instead of abusing it. Further it was man, and not the machine, that should be the master and should dictate the terms.

E.F.Schumacher, author of the classic critique on modern economics, *Small is Beautiful*, who called Gandhi the greatest 'people's economist', says: "Gandhi abhorred the industrial civilisation because it was based on callous exploitation of non-renewable resources. It made bodily welfare the sole object of

In an essay: 'Gandhi and the Greens: Road to Survival', Robert Hart writes: "In today's world, generally Gandhi's truest political heirs are the Greens." To substantiate his argument he quotes from the manifesto of the British Green Party: "A Green economy promotes security and cooperation. We want economic policies based on production for human need, not on private profit, regardless of the exploitation of people and the environment." The developed world, which has been all the way through the process of lavishness, is seems to be more receptive to Gandhian approach.

Very recently the United Nations has decided to address 'Green Economy' in the context of Poverty Eradication and Sustainable Development as one of the two key themes of the UN Conference on Sustainable Development - 2012 (Rio+20) to be held in Rio de Janeiro. It encompasses some of the most important challenges we face today: eradicating poverty, improving our relationship with the environment, addressing the potential negative impacts of global climate change, and creating a

new path for sustainable development.

(The green economy is defined as an economy that results in improved human well-being and reduced inequalities, while not exposing future generations to significant environmental risks and ecological scarcities. It seeks to bring long-term societal benefits to short-term activities aimed at mitigating environmental risks.)

Gandhi's vision for a new world order

Gandhi, more than anything, was a true visionary. Prominent social thinkers, including E.F.Schumacher, Henderson and Capra, who have understood and endorsed the Gandhian economics, have underlined the relevance of Gandhi's vision for building a new world order. They have interpreted as well as enriched Gandhi's trusteeship theory using the models of appropriate technology, intermediate technology, soft technology, technology with a human face and so forth. These three thinkers, even though in different ways, have agreed with Gandhi that accumulation of wealth through mega industries will

life, which reduced man to nothing but a clever animal."

Swadeshi the Gandhian Manthra of Green Economics

For Gandhi, the spirit and the soul of India rested in the village communities. He warned that once life in the villages gets perished, India too will get perished. He said: "Then India will not be India. And India's mission for the world will be defeated." He insisted that the village people should develop their skills and expertise in such a manner that their products have good market. In swadeshi, the machine would be subordinated to the worker; it would not be allowed to become the master, dictating the pace of human activity. Similarly market forces would serve the community rather than forcing people to fit the market.

In 1946 Gandhi wrote in 'Harijan': "Once our villages are well developed there will be no dearth of skilled craftsmen and artists. The villages will have poets, artists, sculptors, language experts, researchers and so forth. In short, everything necessary for living will be found in the villages. Today our villages are dung heaps. Tomorrow they will become beautiful like the garden of Eden. The inhabitants of the villages will be so capacitated as not to fall a prey to exploitation and trickery."

Central to Gandhi's philosophy was the principle of 'swadeshi', which, in effect, means local self-sufficiency. Gandhi also suggested the means to make this dream a reality. "We should at once start the reconstruction of our villages along these lines. It should not be an ad-hoc affair; it should be on a sustainable basis. Craft, art, health, education all these things



Babu Kuti at Sevagram - an epitome of cleanliness

should be integrated into one project. Basic education should be a beautiful combination of all these four aspects. It will encompass the complete education of an individual from birth to death. Hence I will not separate village reconstruction work from this".

Exploitation-free Society

Gandhi used to repeatedly warn that the goal of village reconstruction will be realized only when exploitation is ended. He pointed out that large scale industrialization will lead directly or indirectly to the exploitation of the village people. Because problems of market and competition will be at work: therefore, priority should be given to the manufacturing of products needed by the villagers, over against village self-sufficiency. "If this strategy of rural industries is followed, I have no objection

to the villagers using modern machines and tools which they can make and operate. Only they should not use them for exploiting others." (Harijan August 29, 1936). For Gandhi true development is equal development. Development that benefits one people at the cost of another is exploitation. Nothing more, nothing less.

Who, When?

The editors of the book, Gandhi and the Contemporary World, Antony Copley and George Paxton, write: "Gandhi's insights have also provided a bitter postmortem on development. At either point, his vision of an alternative society carries conviction."

They add, "But ... those which have experienced the destructive consequences of this quest are more likely to be convinced of the perceptiveness of Gandhi's critique. Maybe it is not so paradoxical that Gandhi's ideas are taken as or even more seriously in industrialised societies as in developing."

Communities and governments which seriously think about sustainable economy have recognized the importance and relevance of Gandhi's vision. People are looking out for alternative strategies. But who will start the process and from where? Who will save our villages, fast getting urbanized? This, no doubt, will be the main topic of discussion during the coming Gandhi Jayanthi. ■

The author is former Secretary, Kerala Gandhi Smarak Nidhi and Fellow, Gandhi Smrithi and Darshan Samithi, MHRD, New Delhi



Cowdung dried for use as manure

Suchitwotsavam

Cleanliness is a way of life... Let's celebrate it!

“Malinya Vimuktha Keralam”, a filth-free Kerala, is the sight that the State has set to achieve within the next one year. Inaugurating the year-long Suchitwotsavam, Chief Minister Oommen Chandy cautioned the people from thoughtless littering and requested peoples' co-operation for government ventures in this regard. New technologies have emerged, best suited for the state and the support of self help groups, students and social organisations will be vital.

Top priority is given to this mission by the Government as the State is in danger of getting infected by a range of diseases. Gone are the days when Kerala ranked high in the health sector. We have been proud of it and even to some extent, our arrogance have taken us to the present state of affairs - the Chief Minister said.

Finance Minister K.M. Mani presiding over the event said that throwing waste into the neighbour's compound, rivers and such other public places have become common. Revenue Minister Thiruvanchoor Radhakrishnan delivered the keynote address.

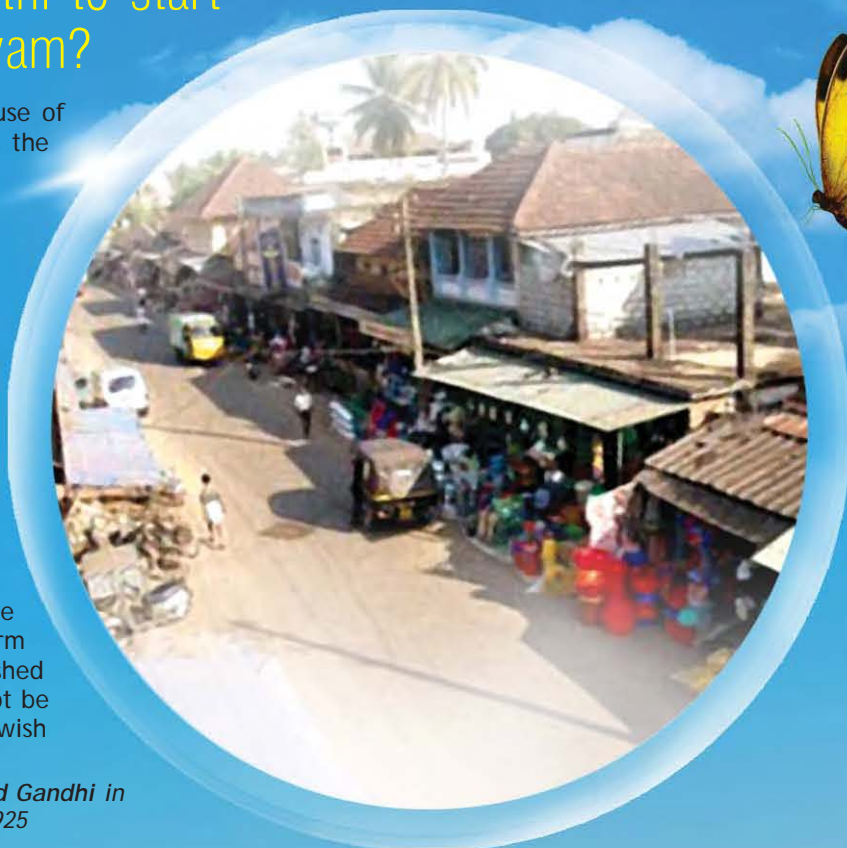
A total ban of plastics by January 2012 is the target of The Rural Development Department. The Government gives top priority for a filth and garbage-free Kerala. The State Government has given such a priority to this that “Malinyavimuktha Keralam” that its logo and slogan will be used by the Public Relations Department in all its publications, advertisements and activities as a part of awakening the concept in the minds of the people, said Minister for rural development, K.C. Joseph.



What better day than Gandhi Jayanthi to start – Suchitwotsavam?

Gandhiji said, "The cause of many of our diseases is the condition of our lavatories and our bad habit of disposing of excreta anywhere and every where. I, therefore, believe in the absolute necessity of a clean place for answering the call of nature and clean articles for use at the time. I have accustomed myself to them and wish that all others should do the same. The habit has become so firm in me that even if I wished to change it, I would not be able to do so. Nor do I wish to change it."

- Mohandas Karamchand Gandhi in the Navajivan of 24.05.1925



Eradicated contagious diseases are rearing their ugly heads, because of the garbage heap, Kerala has now become. Kerala, which was once world famous for its cleanliness and public health, is now in a very dangerous situation. It is the realisation that there is no way of forging ahead without finding a remedy to this situation which has made the government chalk out programmes in a war-footing for the year long Malinya Muktha Keralam programme, the Minister said.

The role of centralised agencies, decentralised waste disposal, subsidy for household biogas production units etc. in this programme are being deliberated upon. Public health, campaigns for dissemination of cleanliness messages, training programmes for treatment of solid and liquid wastes, kitchen gardens, biogas distribution, radio-TV messages, school sanitation programmes, campaign for reducing the use of plastics,

vegetable cultivation, campaigns through service cooperative banks, classes and workshops on public health etc. will be implemented as part of the action plan.

A committee presided over by the Chief Minister will supervise the state level programme. Industries, urban, panchayat, rural development, social welfare, education, health, tourism, SC/ST development ministers and secretaries will be members of this committee. The Minister in charge of each district will preside over the committee of the respective district with its District Collector as convenor. Committees will be formulated at the assembly constituency and three tier panchayat levels under the concerned MLAs and LSGD heads respectively.

Cleanliness is an all embracing ethic of sound living. It is also a state of mind and heart that involves our morals and worship. ■

In the wake of issues raised from the existing solid waste treatment plants from all over Kerala, and the outbreak of certain diseases, the Government have decided to observe one year as Malinya Vimukta Varsham from 02 October 2011 to 30 September 2012. The Malinya Vimukta Varsham aims at creating widespread awareness among various sections of society on cleanliness, on disposal of wastes at source itself and on improving the facilities for waste management.

It has been accepted that solid and liquid waste management are the essential components of societal hygiene. But the peculiar characteristics of the State such as high water table in coastal areas, where most of the urban local bodies are situated and long period of monsoon season spread over six months in an year, makes the solid and liquid waste management a challenging job. Another peculiarity of the State is its very high density of dug wells, it comes to about 400 dug wells per square

kilometre, making the job of waste management at household level a difficult proposition. Small land holdings having wells for drinking water and household latrines with on-site excreta disposal system is a common scene in rural settings.

The seven components, or package of practices involved in sanitation are, (i) safe disposal of human excreta; (ii) solid waste management; (iii) liquid waste management; (iv) safe handling of drinking water; (v) home sanitation

Waste Management in Kerala Problems and Solutions





Committees with Chief Minister (State level), Ministers concerned (District level), MLAs (Assembly constituency level), Mayor/Chairman/President (local body level) as chairpersons are steering the Suchitwa Varsham Activities.

activities of Local Self Governments, the Suchitwa Mission will be strengthened at the State and District levels.

As part of the Suchitwa Varsham, an year long state level, district level, assembly constituency level, and local body level programmes such as seminars, workshops, discussions, processions, competitions, cleaning activities, etc. are planned. In addition to these programmes, several action programmes are also planned for implementation during the Suchitwa Varsham.

- Technology Upgradation in Solid Waste Management (SWM)

and food hygiene; (vi) personal hygiene; and (vii) community environmental sanitation. Over the years, Kerala has taken various initiatives to improve latrine coverage and waste management through intensive Information, Education and Communication (IEC) campaigns. However, these initiatives are yet to catch up with increasing population, emerging challenges and evolving environment.

The strategy adopted for waste management is reduction of waste at source, and segregation and treatment of biodegradable waste at source itself. The primary objective is to manage biodegradable waste at the level of households, markets, slaughter houses, hospitals, schools, offices, commercial establishments, etc. For carrying out the programmes, subsidies and incentives are offered for promoting and encouraging source level segregation and treatment. The existing solid waste management facilities in urban local bodies and grama panchayats will be strengthened in order to make them more effective and eco-friendly. As far as possible modern technologies for processing of municipal solid waste will be resorted to. In order to achieve source

level segregation and treatment of biodegradable waste, cooperation of all sections of society will be ensured through effective Information Education and Communication programmes. For providing technical support and monitoring of waste management



Emerging challenges of waste management in Kerala are many

Per capita generation of wastes in Local Self Governments in Kerala is higher than those in other States due to the peculiar consumption pattern in the State.

Primary collection is limited to urban Local Self Governments. Storage of waste at source is limited to a few cities and towns.

Plastic wastes and e-wastes are on the increase.

After attaining high coverage of sanitary latrines, the remaining target mostly consists of landless people or those having very low extent of land, where construction of toilets poses a major challenge.

High water table areas particularly in the coastal region and in low lying areas like Kuttanad pose a technological challenge.

Septage treatment has not been addressed so far.

- Filling up of gap in Small and Medium Municipalities
- Support for the newly formed Municipalities for SWM
- Support for SWM in Grama Panchayats
- Providing of Toilets in Public Places
- Establishment of Septage Treatment facility in all districts.
- Definite and targeted IEC programmes at State Level for influencing various stakeholders to mould positive attitudes towards waste management.
- Induction of engineering staff for Waste Management in all city corporations and major Municipalities for solid waste management activities.
- Enhancing Subsidy for SWM activities.
- Action for making source level treatment of solid waste generated at residential apartments of above four floors mandatory. Building Rules to



be amended to this effect.

- Formulation of a waste management policy for the State.

Challenges

There are certain issues required to be addressed for mitigating the environmental impacts, linked to Integrated Solid Waste Management Facility in general, and waste processing plants in particular. These include, flies, birds and dog menace, odour nuisance, leachate collection, treatment, and management, inadequate space for scientific composting practice, lack of boundary walls and barbed wire fencing for waste management yard, improved efficiency in composting, lack of Resources Recovery Centres, lack of engineered land fill facility, environmental issues linked to slaughter houses, dumping of biodegradable wastes such as meat and fish rejects, chicken waste etc. in open places and water bodies, poor upkeep of drains in waste management site, lack of waste water treatment systems; poor transportation system and inadequate mechanisation of plants.

Coverage of Sanitary Latrins

Kerala has a good record. We have extensive coverage of sanitary latrines

in the State. The coverage increased exponentially in the 90's backed up by a well organised programme and commitment of funds. Table 1 gives the progressive achievement in provision of household sanitary latrines in the State.

Solid waste generated

The sectoral status study on Municipal Solid Waste Management done in Kerala has indicated that the total solid waste generation in the State is about 8300 tonnes per day. Studies have also indicated that 70-80% of the total waste generated is biodegradable in nature and these putrescible waste needs to be managed within 24 hours. Of the total, 13% of the waste is generated by the five City Corporations, 23% by the 53 Municipalities and the rest by the 999 Gram Panchayats (2006 data).

Status of treatment

The five City Corporations and 53 Municipalities were supported with partial financial assistance from the Suchitwa Mission for establishing full-fledged Integrated Municipal Solid Waste Management Facility, with financial support from the State Plan. 27 Municipalities and all five Municipal Corporations have already completed the construction of Solid Waste Processing Plants and made the plants

Table 1
Household sanitary latrines: Access to sanitation facilities

Time line	1991	1995	2001	2005
Rural households with toilets (%)	44	73.4	81.3	94.9
Urban households with toilets (%)	73	90.0	92.0	98.3

Table 2: Municipal Solid Waste Generation in Kerala

Local Governments	Population (Census 2001)	Per capita waste generation in gm	Waste generation per day in tonne (2006)
5 City Corporations	2456618	400	1091
53 Municipalities	5810307	300	1935
999 Grama Panchayats	23574449	200	5312
Total		8338	

Table: 3 Status of Implementation of Integrated Solid Waste Management Projects in Urban Local Bodies

Components	No. of Urban Local Bodies			
	Nil	Minimal	Moderate	Adequate
Primary Collection	25	25	13	2
Source Segregation	53	9	3	
Transportation	25	4	31	5
Processing	16	34	13	2

operational. They have been following the treatment technology based on biological processing of Municipal Solid Waste, using mainly the Windrow Composting and biogas plants, as specified in the MSW Rules. However, there are gaps and issues in those LSGIs in the field of solid waste management. Present status of implementation of Solid Waste Management System in ULBs has been assessed and a summary of the same is given in Table 3.

Focus has been given by the Government for covering seven newly formed municipalities for solid waste management. Among the 972 gram panchayats only 10 panchayats are having centralised solid waste processing plants in the State. Sanction has been accorded for such processing plants in 63 more grama panchayats. Another 220 gram panchayats are having on the spot treatment facilities like biogas plants, in markets, slaughter houses, and hospitals. Focus has been given for providing treatment facilities in urbanised gram panchayats. As part of the 100 days programme of the Government, Suchitwa Mission has selected 100 gram panchayats for establishing solid waste processing facilities, of which 71 panchayats have already been prepared Detailed Project Reports.

Many LSGIs have been facing difficulties such as lack of adequate land for disposal of rejects from the compost plants, inadequacies of processing facilities and odour nuisance, excessive leachate generation, water pollution and other environmental issues from operation of the compost plants. The major issues faced by these plants are being highlighted by media and there are public protests in some urban local bodies. There is wide spread public concern over the management of Municipal Solid Waste especially in Corporation and major Municipalities. Hence, the Government is in the process of searching for alternate or better technologies for solving above

mentioned issues in these urban LSGIs. The selected technological options are to be tried under the Kerala condition, in consideration of its special waste characteristics, climatic conditions, land constraints, environmental sensitiveness, etc.

Segregation of waste

Segregation of wastes at source of generation itself is the key element promoted for managing wastes at household level, institutions and other

major waste generators. Encouragement has been given to segregate solid waste to at least two fractions namely, biodegradable and non-degradable. Biodegradable wastes include all organic fraction of solid waste, which is intended to be processed at source. If biodegradable, especially the easily biodegradable waste is separated, then the non-degradable and hazardous waste could be handled safely. Non-degradable wastes include plastics, metals, glass, etc. Homely hazardous wastes consist of CFL lamps, tube lights, discarded battery, discarded medicines, mosquito coils, remnant of pesticides, etc.

The main advantage noticed from cultivating the habit of segregation and storage of waste at source is that the problematic easily degradable waste can be removed daily for processing at household level or at community level, and the non-degradable and hazardous wastes can be stored for comparatively



As part of the 100 days programme of the Government, Suchitwa Mission has selected 100 grama panchayats for establishing solid waste processing facilities, detailed project reports of 71 panchayats have already been prepared.

a longer period, without mixing with biodegradable wastes. The first experiment in this regard in Kerala State was tried during 2003 at Kozhikode Municipal Corporation with the financial assistance of the Ministry of Environment and Forests, Government of India. Two bin system, green bin for biodegradable and white bin for non-degradable, were issued to the residents. House to house collection was introduced by involving Kudumbasree volunteers, which showed encouraging results.

Household level treatment

Technologies such as pit composting,

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SmartCity

Becomes a reality



Ground was broken for Smart City Kochi Pavilion on 8th October 2011 by chief minister Oommen Chandy. The function was held at the site of the project at Kakkanad in Ernakulam. PK Kunjalikkutty, Industries minister; Abdul Latif Al Mulla, group CEO of TECOM, Dubai; M.A. Yusuf Ali, Member, Project Monitoring Committee and Bajju George, managing director of Smart City Kochi attended the function. Chief minister Oommen Chandy said that the first phase of the mega IT infrastructure project Smart City Kochi would be completed by 2013.

The office complex would be completed first. The entire project is expected to be completed in five years time.

Tecom would invest Rs 2,000 crore for constructing the project on 246 acres of land in Kakkanad area of Ernakulam district. New York-based Canon Design has been entrusted with the designing of the master plan of the project. The draft master plan will be completed within one month and the final will be presented within six months, he added.

The project will be completed in three phases. 7,000 professionals will get employment in the first



Emerging Kerala 2012

phase and 90,000 people will be employed when the project is completed. The director board of the joint venture company of the project decided to enhance the stakes of the Kerala government from 16 per cent to 26 per cent.

The project expects an investment of Rs.1,500 crore and would be spread over 246 acres (99.6 ha). On completion, Smart City Kochi would be one of the largest IT parks in the country. The project is expected to have 8,800,000 sq ft (818,000 m²) of built up space with a minimum of 6,200,000 sq ft (576,000 m²) set aside for IT/ITES/allied services. This will be the first Smart City project in India and second in the world by the Tecom Investments group.

The project was originally initiated by Kunhalikkutty, the IT Minister in A K Antony's Government in 2004. Later when Oommen Chandy took over the Chief Ministership, the government invited the Dubai Internet City officials for a feasibility study, leading to the signing of the Memorandum of Understanding (MoU) in year 2005. Due to protest from opposition parties who alleged that the agreement is not in the best interests of the state and due to upcoming state assembly election, the government could not go ahead with the project. The Rs.2000 crore Smart City Project has thus finally taken off after taxing for about seven years. ■

Kerala is fast emerging as one of the most preferred investment destinations in the country. The State has shown tremendous growth in its industrial and services sectors in the past decade. A large number of investment projects were presented in the State in the 'Global Investor Meet' held in 2003. This paved the way for new projects. There are large investment opportunities across various sectors, like Tourism, IT, Education & Healthcare, Food Processing, Logistics, etc. There is also vast scope for private investment in major infrastructure projects like Vizhinjam Port, Cochin Metro Rail, High Speed Rail Corridor, Cochin-Coimbatore Industrial Corridor, Kannur International Airport, Oceanarium etc. In order to attract potential entrepreneurs to invest in these sectors, the State needs to highlight its advantages to the investor community and showcase the vast investment avenues available in the State.

The UDF Government has announced that Kerala would be made a Global Business Hub of South India. The Govt. has decided to make Kerala an Investment Friendly Destination. In order to achieve this, Govt. has already taken policy initiatives towards creating business friendly and enabling environment, facilitating Statutory Clearance Mechanism and acting as catalysts to economic growth. The new Industrial Policy IT Policy, Tourism Policy, SEZ Policy, Labour Policy are underway which will help in attracting potential investors to the State. There is a need to back these initiatives of the Government by appropriate Business Development Framework.

With a proactive Government and administration in place, a Business Development Framework to brand Kerala as an 'Investor Friendly Destination' has been branded 'EMERGING KERALA'.

Emerging Kerala 2012, an ambitious investment meet of Kerala State Industrial Development Corporation Limited will create a sea change in the industrial, social and economic sectors of the State.

Inspired by the Global Investment Meet, (GIM) of A.K. Antony Government in 2003, converging Kerala 2012 aims at attracting investors and thereby generate job opportunities in the State. ■



R RAMKUMAR

The Wildlife Board of India in its meeting in 1956 decided to celebrate Wildlife Week from October 2-8 every year, seven days in conjunction with the birth day of Mahatma Gandhi, the greatest exponent of nonviolence.

Kerala proudly conserves 29 per cent of its land area as forest and not less than 7 per cent of this area enjoy protection status (Protected areas). The Wildlife Week in Kerala also has another unique feature – October 4 is the elephant day. Elephants are part of parcel of malayalee life. The state has drafted a captive elephant management rules for the welfare of captive elephants. The man - animal conflict victims are entitled for compensation. The forest department has also taken steps to reduce the impact of crop raiding elephants and wild pigs by

The main objective in the Wildlife Week Celebrations is boosting public awareness about biodiversity conservation. The Sanctuaries and National parks of Kerala are rich pockets of rare and endangered species. They are treasure houses of gene pools and origin of perennial rivers. The wildlife conservation message is therefore clear that man alone is not the master of this universe and he is bound to protect all living beings for his survival.

The protected areas include wildlife sanctuaries of Neyyar, Peppara, Shendurney, Idduky, Chinnar, Chimmony, Wayanad, Aralam, Peechi-Vazhani, Malabar, Kurunjimala, Periyar and Parambikulam both Tiger Reserves, Thattakkad, and Mangalavanam bird Sanctuaries and Choolanoor Peafowl



A Week Wildlife



Global conservation priorities for marine turtles

Marine turtles worldwide are vulnerable and endangered, but their long lives and broad distribution make it difficult for scientists to accurately determine the threat level to different populations and devise appropriate conservation strategies. To address this concern, researchers have developed a new method to evaluate spatially and biologically distinct groups of marine turtles, called Regional Management Units, or RMUs, to identify threats and data gaps at different scales. The researchers identified 11 out of the 58 worldwide turtle RMUs that are most at risk. Of these 11, five reside in the Indian Ocean, four in the Pacific, and two in the Atlantic. Populations of four of the seven total species of marine turtle are included in this most threatened group. The researchers suggest that these results should be used to help set conservation priorities. Furthermore, this approach is flexible and can also be used to assess other widely distributed categories to generate a portfolio of conservation priorities that reflect the diversity of conservation needs associated with variation among different populations of a single species.

sanctuary. One community reserve at Kadaludy-Vallikunnu and the National Parks of Silent Valley, Eravikulam, Annamudi Shola, Mathilkettan Shola and the two Biosphere Reserves- Nilagiri and Agasthyamala boast of Kerala's rich and varied wildlife.

The State Forest Department as part of Wildlife Week Celebrations organises various competitions for public and the students. Wildlife photography, essay writing, pencil drawing, water colour painting and poster design competitions are the colourful events of the week. The State level inauguration of wildlife week was held on October 2nd at S.M.V. High School in Thiruvananthapuram and the valedictory function was held at Thekkady on October 8. Government have decided to exempt the general public from paying entry fee to visit Tiger Reserves, National Parks and Sanctuaries during the wildlife week. The winners of the various competitions in the wildlife week are also exempted from paying entry fee to all protected areas from the next one year from October 2 to 11.

Lion Tailed Macaque in Silent valley, Nilgiri Tahr in Eravikulam National Park, majestic Tigore at Parambikulam, Gaur and Elephants of Thekkady, colourful birds at any birds sanctuaries and Giant Grizzled Squirrel at Chinnar are the specialties of Kerala forests. More details can be had from www.forest.kerala.gov.in.

The wrtier is Assistant Publicity Officer, Department of Forests & Wildlife



for



Dr. DEEPAK N KURUP

October 4th,
Elephant Day

An elephant in Wayanad, Kerala, made headlines towards the dying months of the 20th century. "Onnarakomban" meaning one and a half tusker as he was called in Malayalam had then become a habitual crop raider and therefore was branded a rogue. That was one elephant of really monstrous proportions, almost one and a half times as big as a normal adult tusker, but having only one intact tusk and the other broken. It came to be seen almost everywhere where human habitation occurred.

The elephant had a peculiar penchant to feed on the banana the paddy the jackfruit or almost anything that man cultivated. After persistent demand from the public, the Forest Department finally decided to capture it. A team of wildlife veterinarians and officials tracked the animal for almost a fortnight before they could successfully tranquilise it at Muthanga range. By the time the elephant revived, it found itself tethered to a rope and was slowly being guided towards the "Kraal" specially made for it.

Onnarakomban, however, could not quite make it to the kraal but died a short distance from it. A post-mortem relieved 17 bullets inside its body. Obviously, it was already a dying animal with one of the eyesight totally lost. It was entirely man induced circumstances that made it a crop raider

Onnarakomban wasn't the only victim of human-wildlife conflict. The decade before saw many similarly gruesome incidents in Wayanad where tuskers have been seen with their lower jaw and tongue blown up while eating jaggedly couched explosives. Elephants limp about with broken legs and maggot ridden wounds. Such was the scale elephants were persecuted along the

Unsung saga of the Asian Elephant

Wildlife Week 2011

Here is once again an occasion to reflect on nature, to remember our fellow life forms, the plants and animals. To remember that we are not alone on this planet and that we cannot pull on independently, but rather our survival is inextricably linked to the survival and well being of all other life on earth.

The earth that we have mutilated and the air and water we have polluted, and nature and wildlife we have decimated are still very much that we derive our sustenance from.

We are trying slowly to atone for our sins and undo the mistakes. But we have to hasten these efforts, and the processes must go beyond setting up Sanctuaries and convening conventions.



When one more Wildlife Week comes and goes, we have to reiterate ourselves that we care much for a greener future for our children, living in harmony with nature.

Wayanad –Bandipur-Mudumalai belt during a certain period. There was almost a continuous sequence of selective butchering of tuskers for their ivory. And then farmers also waylaid elephants with wiretraps and shot guns, when the latter came in direct line of their agricultural holdings.

The finest elephant habitats of Kerala had already started showing a skewed elephant sex ratio around this time with only a few adult males for as many as a hundred females. Sighting a fully grown adult tusker has become such a rarity in most wildscapes of Kerala though sub adult tuskers as well as makhnas, or the tuskless males could still be seen around this time.

The elephant evolved over 60 million years ago, is slowly finding itself driven to a wall with shrinking and fragmented habitats. Requiring nearly 150-200 kg of green fodder and almost as much water everyday, the elephant has to range great distances almost on a continuous basis for their survival. Uninterrupted traditional pathways (elephant corridors) have either been blocked or interspersed with agricultural holdings. Highways and railway tracks cut through prime elephant habitats. In

the north-east of India 74 km of railway line pass through forests between Siliguri and Alipur duar. Elephants and other animals succumbing to train hits, is a common phenomenon along these areas as well as along the Walayar-Coimbatore track. Elephants venturing out into agricultural holdings and human habitation come into direct conflict with man often resulting in the slaughter of one or the other. Year round toil of the farmer can overnight be razed down or devastated by the crop raiding pachyderms.

The greatest challenge to elephant conservation lies in the consolidation of large, uninterrupted home ranges for the species. From what used to be a vast realm of the subcontinent barring the north-west of India, elephant population in the north-east and the terrain of the erstwhile ranges have either dwindled or severely fragmented. In the south, 8 populations are fragmented from one another in northern Karnataka. Along the Crestline of Western Ghats, populations survive along the Brahmagiri, Nilgiri and Eastern Ghats encompassing the protected areas of Wayanad, Nagerhole, Bandipur, Billigiri Ranganaswamy Temple Hills (BRT Hills) Wildlife

Sanctuary and Mudumalai, and another one along the Nilambur-Silent Valley-Coimbatore stretch.

The other populations are Anamalais – Parambikulam and Periyar-Srivilliputhur and the southern most population at Agasthiyamalai.

With international pressure against ivory trade, the International Union for Conservation of Nature and Natural Resources (IUCN) had already enforced a ban in 1989, together with better surveillance on the trafficking on wild animals, their parts and better enforcement of wildlife act & rules, trafficking in ivory appears to have dwindled somehow and tuskers have slowly become visible in many of our forest areas. There is perhaps nothing more magnificent than seeing a wild tusker treading majestically along the elephant ranges of our land. Availability of genetically variable populations is the key to their long-term survival. Creation and management of elephant corridors connecting protected areas and non-protected areas will determine the fate of the Asian elephant. ■

The writer is Dy. Director, Wildlife Education (Retd.) Department of Forests and Wildlife, Government of Kerala.

Naming the Fish

Given the vast cross cultural diversity prevailing in India, including in classification of living beings using the observed characters and naming them in vernacular language, preservation of local names of organisms would go a long way in conservation of the rich biodiversity. Fishes are no exception to this rule, as we in India consider fish as one of the first 'avatars' as science also place fish at the base of evolutionary ladder of vertebrate animals. To know the correct name of a fish is satisfying not only for a fisherman engaged in catching fish but also for a naturalist trying to find out what lives in our country. Moreover, conservation can be effected locally only when local/vernacular names are conserved.

The Western Ghats region of Kerala, which is also a global freshwater biodiversity hotspot, is rich in endemism of freshwater fishes. With around 200 fishes that are there in our inland water bodies, compiling all the existing vernacular names of freshwater fishes and finalising one name for use in official literature would be a challenging task. The restoration of vernacular names of the freshwater fishes will be helpful for the natural history studies and even conservation of the species. The locally available name of species has much to say about the geography, ecology,

meteorology, traditional knowledge, etc. It is understood that the revitalization of these local names is helpful to generate a historical sense and awareness. In order to meet the challenges of biodiversity conservation and save species from extermination all-round information on the name bearing life form is very essential. The folk name is one of the pre-requisite for the proper understanding of the natural history of a species. It is inclined to believe that this principle would have guided our ancestors to name, popularize and transfer the information to the generations succeeded.

Use of incorrect vernacular names, including many misnomers often poses greater difficulty in documenting fish, especially when the Kerala State Biodiversity Board is now in the process of preparing biodiversity registers for all the Panchayats of the State. Moreover, this information would also help standardising the data on freshwater fish fauna of the 44 rivers of the state.

The scientists, naturalists and local fishermen in Kerala are grouped together in a workshop christened "Meeninu Oru Peru" on 30th September 2011 at Thiruvananthapuram, organised jointly by Kerala State Biodiversity Board (KSBB) and Department of Aquatic Biology and Fisheries, University of Kerala. The workshop finalised names of about 170 freshwater fishes of Kerala, keeping in abeyance names of fishes with confusing identity.



Karum kallotti

Aascharya paral





Chenkaniyan 1

When another catfish was discovered again from subterranean habitats in 2011 from Thrissur, it was scientifically named as *Kryptoglanis shajii* (in Latin language 'crypta' means a vault or tunnel and 'glanis' means a catfish) after the fish taxonomist in Kerala Dr C.P. Shaji, the authors propose the name 'Mudu' in Malayalam, which is something in between 'mushi' and 'kadu', two types of catfishes in Kerala, a name perfectly suits the fish. The freshwater puffer fish *Carinotetraodon travancoricus*, which swells up like a balloon when taken out of water is named "Aattunda", based on its presence in rivers and round shape.

Barbs, represented by over 20 species in Kerala, are also given specific names in the workshop.



Chem mullan paral

Some of the popular and unique Malayalam names given to freshwater fishes by the local people, particularly tribes were retained. For example, the names of peninsular hill trout *Lepidopygopsis typus* ('Brahmanakanda'), *Channa barb Puntius ophicephala* ('Eettilakanda'), Carnatic carp *Barbodes carnaticus* ('Pachilavetti Paral'), Knife fish *Notopterus notopterus* ('Ambattan kathi'), *Osteobrama bakeri* ('Chem Mullan Paral'), *Puntius denisonii* ('Chenkaniyan' or the popular 'Miss Kerala') were retained. The listing also would help preserving local names of fishes for the future generation.

The proposed names will be kept in public domain for public inputs and circulated widely and the finalised list of Malayalam names will be given to State Institute of Languages and to the concerned government departments for use as official language of fishes in Kerala. ■

Dr. A Biju Kumar, Department of Aquatic Biology and Fisheries, University of Kerala

Though the folk nomenclature and local names are often created based on specific characters of fish, it is not true in all the cases, as the same name is given to different species in the same geographical area. For example, the name 'Kallotti' or 'Kallu nakki' is given for fishes belonging to the genera *Garra*, *Bhavanaia*, *Travancoria* and *Homaploptera*, all inhabiting hillstreams of Kerala and possess the habit of attaching themselves to the rocks. Now they are given separate names as the genus *Garra* is known by the common Malayalam name 'Kallotti' and the individual species as 'Chuttan Kallotti' (*Garra stenorrhynchus*), 'Venna Kallotti' (*Garra hughi*), 'Neela Kallotti' (*Garra mcllelandi*), 'Kullan Kallotti' (*Garra menoni*), 'Periyar Kallotti' (*Garra periyarensis*), 'Karim Kallotti' (*Garra surendranathini*) and the name 'Kallotti' is given to *Garra mullia*, the most common species in all the river systems of Kerala. The names finalised in the workshop considered all the prevailing Malayalam names of a particular species and accepted the one which is extensively used and the one that highlights some special features such as appearance, shape, size, habit, habitat, life styles and behaviour, colour, utility, etc.

A large number of new fishes recorded from Kerala were also given Malayalam names in the workshop. For example, a barb (commonly known in Malayalam as 'paral') discovered from Kallada river in Kerala is scientifically named as *Puntius exclamationis*, following the black exclamation mark-like markings on the lateral sides of the fish. The proposal in the workshop was to



Aattunda



Kurudan mushi

name it "Ascharya Paral", one addition to Malayalam vocabulary of fish names!

The catfish fish discovered from wells of Kerala (scientific name *Horaglanis krishnai*) is blind as lives in subterranean water, and is given "kurudan mushi". 'Mushi' is the name commonly used for catfishes in Kerala. In the Red Data book of IUCN, *Horaglanis krishnai* is listed as Data Deficient since, although it has been recorded from subterranean wells in a small area, very little is known about its status, threats, habitat requirements and habitat condition. The distribution has not been visited since 1979 and the status of the species is currently not known. Better awareness about this fish would help collecting information locally.



Ambattan kathi



Dr. Vainu Bappu

A Malayali in the Galaxy

He built nearly everything at once from scratch. In effect he created three astronomical institutions, a national society, a national journal and a 2.34 metre telescope.

This was a tribute paid to Dr. M.K. Vainu Bappu, a Malayalee astronomer, by Harlan J. Smith, Director of Mc Donald Observatory in the 18th general assembly meeting World Astronomical Union held in Greece at the university of Petras on august 23, 1982 a couple of days after his unexpected demise .27 years have passed since he left this world, following a heart surgery at Munich in Germany, but time has left no change in the devotion he inspired in the minds of astro physicists all over the world and he still lives in their hearts.

But we Malayalees have forgotten him. When 2009, was celebrated as World Astronomical year, we ought to have remembered him and paid tributes to this world renowned scientist who brought immense fame to the Keralites.

He became the fellow of the Belgium Academy of Science, honorary member of the Astronomical society, chairman of world astronomical conference, director of Indian institute of astrophysics, chairman of the board of Indian astrophysics journal, and president of the inter national astronomical union.

Dr. M.K. Vainu Bappu, was the architect of the revival of astronomical studies in India. He received the Shanthi Swaroop Bhatnagar award the highest and the most coveted award in science and technology in India for his excellence in scientific research. He was the recipient of mega Natha Saha award and S.N. Bose medal. Government of

Dr. Vainu Bappu not only contributed to the science of astronomy and astro physics but also in building the foundation of astronomical studies in India. In the role of a brilliant and distinguished scientist, a wonderful speaker and professor who could hold a class entranced with his lectures, a prolific writer, an efficient administrator



India honoured him with Padma Bhushan in 1980. The Kavaloor observatory and its telescope were also named after him.

He was the first Indian astrophysicist credited to have discovered a comet in modern times, an enthusiastic observer of stars. His research papers had appeared in inter national journals especially about the observation of stars, structure of solar atmosphere, Stellar association of galaxies and the formation of rings in uranus which were held in high esteem.

It was as a part of his research at Harward University that he happened to see a new comet. while he was watching the starry abyss that opened up before a winter night sky in 1949 when the galaxies shining by the combined light of stars the intrinsic luminosity and spectacular display of lighting up the sky captured his attention. it was an unusual experience as diffusive regions of light with conspicuous tails amd motion. it was a comet approaching the earth from the frozen depths of space.

The excellent observation of this heavenly body and the discovery of a comet hit the news head lines. vainu bappu was selected by the astronomical society of the pacific to receive the prestigious Donohoe comet medal in 1949 in honour of his creditable contribution to the astronomical world and the comet was named after him.

The discovery of a comet is of simplification and an exciting experience for an astronomer, but only on three close encounters one can compute its orbit and elliptical path, by this time other astronomers will come forward with the



claim of discovering it. So while naming a comet it is a practice to consider the name of first three observers and hence Bork and Newkirk were also honoured along with him and the new comet came to be known as Bappu-Bork-Newkirk.

Manali Kallat Venu Bappu, the only child of C.K. Bappu and Sunnanna Bappu belongs to Tellicherry in north Malabar, he was born on August 10, 1927. C.K. Bappu his father hails from an aristocratic family of Kakkuzhi Kunhu Bappu Gurukkal, a famous Sanskrit scholar and poet who lived in Tellicherry (1826-1878) his father was a scientist in the Nizamia observatory at Hyderabad. He was one among the astronomers who had mapped and catalogued both the northern and southern skies for an international project for photographing and mapping both hemispheres, Vainu Bappu inherited from his father a deep fascination for the mysterious cosmos. Even as a boy he was very keen in the observation of stars and the heavenly

bodies which excited his interest. After completing his post graduate degree in physics, he followed the footsteps of his father and joined the Nizamia observatory as a scientist. Even while studying, he had published articles on variable star observations. A paper published by him in 1946 as an amateur astronomer about the formation of stars and other celestial objects enabled him for securing a scholarship in Harvard, America, to do research on Wolf-Rayet stars in the Palomar observatory in California.

After obtaining his PhD degree he was offered the Carnegie scholarship for undertaking post doctoral research in Caltech University. In Hale observatory he was assisted by Collin C. Wilson and together they discovered an important phenomenon in stellar chromospheres which came to be known as Bappu Wilson effect. This phenomenon has been now used to locate the position and distance of stars and measure their quantum of light.

After a couple of brilliantly successful years as post doctoral research work at Caltech university he decided to return to India in 1954 on the advice of PM Jawaharlal Nehru to participate in the reconstruction of India. He could have obtained a comfortable job in the States, but he courageously left the centre of world astronomy and reached India which lacked any of the structure of modern astronomy.

A man who had left indelible marks in the course of astronomy and cosmology passed away following surgery on August 19, 1982.

As an expression of gratitude to this well known astro-physicist a minor planet was named in memory of him by the astronomical union in 1986. This planet (Asteroid) No. 2596 existed between the orbits of Jupiter among a swarm of heavenly bodies which is 281 million kms away from earth. It was originally discovered by R.M-

West, a close friend of Vainu Bappu in the European southern observatory in Chile on 19th May 1979.

Dr. Vainu Bappu not only contributed to the science of astronomy and astrophysics but also in building the foundation of astronomical studies in India. In the role of a brilliant and distinguished scientist, a wonderful speaker and professor who could hold a class entranced with his lectures, a prolific writer, an efficient administrator this multifaceted personality contributed decisively to the astronomy and astrophysics of India and enlarged our perception of the universe. In life as in death, his name is enshrined in the galaxy of eminent astrophysicists. ■



KANTHIMATHI



Navarathri Aura

Festivals and festivities are an intrinsic part of our civilization. Festivals are occasions to renew our bonds with our fellow beings and to spread cheer and hope. They are also opportunities to reaffirm our commitment to leading a virtuous life; a life sans hatred, ill-will and violence.

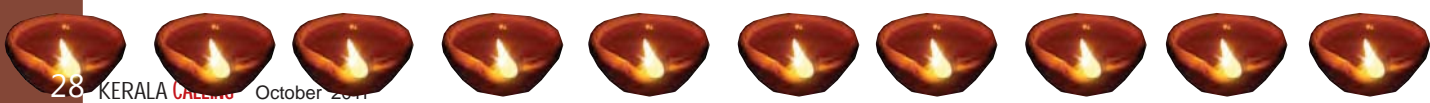
Coming in the line of festivals that heralds the victory of good over evil, the Navarathri festival has a special place in Hindu festival calendar throughout the country. Also known by names as Dussehra and Dasara, Navarathri is dedicated to the worship of Mother Goddess, in her varying personifications. The first three days of this nine-day festival is dedicated to Durga, Goddess of Valour. The Goddess of Wealth Lakshmi is revered during the next three days. The final three days are in honour of Saraswathy, Goddess of Knowledge and Learning.

The ninth day called the Mahanavami is observed by people of Kerala with religious piety. 'Poojawaipu' forms an important aspect of this day. In



homes and temples, people seek the blessings of Goddess Saraswathi by arranging books and implements. During the course of 'Poojawaipu', learning is temporarily suspended. People also defer from taking up tasks that require skill. Accordingly, educational institutions and most offices do not function on that day.

On the following Vijayadashami day, the 'Poojaeduppu' ceremony is observed. Learning and work is recommenced. People believe that any learning initiated on this day will become highly successful. As such, 'Poojaeduppu' is marked by reading holy books and scriptures. The 'Ezhuthinu Iruthu' or 'Vidyarambham' is another noteworthy





in Kerala

aspect of the day. Toddlers and children are initiated to the world of letters and learning. Elders and learned men guide children to read and write. Generally, children are guided to write 'Om Hari Shri Ganapathaye Namaha' on sand or rice. This sacred chant is also written on the child's tongue using a gold ring. It is an encouraging sign to see young ones make their initiation, in the presence of parents and other family members. This ceremony is also a manifestation of the cultural significance that Kerala gives to education and learning.

The Navarathri festival has traditionally been a preferred time for displaying for one's artistic talents and skills. Music and dance performances abound during this festive period. The classical music recitals at the Sree Padmanabha Swami Temple in Thiruvananthapuram are devoutly followed by music enthusiasts. Musicians deem it a privilege to perform in the Navarathri Mandapam adjoining the temple.

For the sizeable Tamil population in Kerala, Navarathri is the time to deck up homes with the 'bomma kolu'. Clay dolls of various characters from Hindu mythology are aesthetically arranged in different tiers or steps. Friends and family are invited and treated to tasty eats and gifts.

In recent years, akin to other parts of the country, Kerala has also seen several make-shift 'pandals' with beautifully decorated idols of the Goddess. People gather to offer prayers and to admire the artistry of the idol makers. Clearly, it is a heartening state of cultural diffusion and assimilation and reflects the secular ethos of our beloved country. ■



DEEPAVALI the Festival of lights

Deepavali or Diwali is the most popular festival of the country and is celebrated with great fervour by people of almost states. Lights, fireworks and crackers occupy the pride of place in this festival of lights. Like any other festival, there are interesting legends associated with Deepavali. It is believed that Lord Krishna vanquished the demon Naragasura on this day. People also believe that Deepavali marks the return of coronation of Lord Rama, after his victorious return to Ayodhya after his 14-year-exile. The essence of this annual festival is to reiterate the fact that "truth and justice will always prevail."



Diwali Specials



Rava Laddu

Sooji rava - 1 cup , powdered
 Sugar - 1 cup , powdered
 Ghee - ½ cup , powdered
 Cardamom - 5 Nos. , powdered
 Cashew nuts - 15-20, chopped
 Raisins - 10
 Chilled Milk - one bowl

Heat 2 tsp ghee in a kadai and fry raisins, cashew nuts to golden colour. Remove and keep aside. Add 1 tbsp of ghee. Fry powdered rava till it turns light golden. Heat one cup sugar adding ½ cup water in the same kadai. Bring to one string consistency, add powdered sooji (fried), cashew bits, raisins and powdered cardamom. Mix well and quickly. Remove from fire immediately. Keep cool milk in a bowl. Dip your hand in the chilled milk and make laddus.



Besan Laddu

Besan, sugar - 2 cups each
 (yellow) Kesari powder - a pinch
 Sugar crystals - 2 tsp
 Cloves - 10 nos
 Raisins, Cashew nuts - 12 each
 Oil - for deep frying
 Cardamom - 7, powdered

Method: Make a thick batter with besan adjusting enough water. Mix kesari powder in little water and add to the batter. Heat oil in a vessel, when it is hot, hold a large colander ladle slightly above the oil. Pour one ladle of the besan batter and spread gently. Remove the boondies from the oil when they are slightly crisp. Complete the process by converting all the batter into boondies.

To make the sugar syrup

Heat sugar in Kadai, adding one cup water when it comes to one string consistency, put all the boondies, fried cashew nut bits, Raisins, cloves, powdered cardamom and sugar crystals (kalkkandu). Quickly mix and remove from the fire immediately.

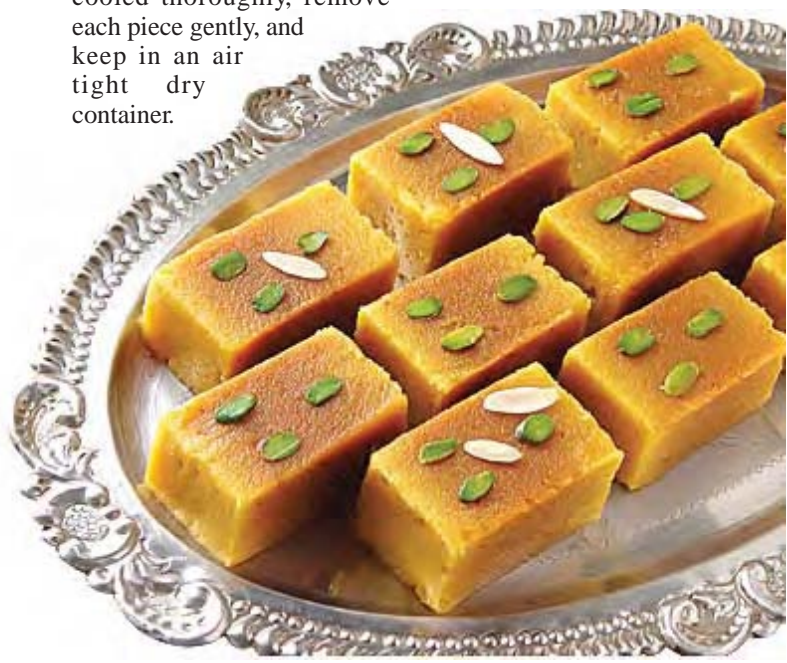
How to make laddos

Put one ladle of this into a polythene cover. Press it with both the palms to make into round laddus, holding a cloth.

Mysore Pak

Bengal gram flour - 1 cup
 Sugar, ghee - 2 cups each
 Water - ½ cup

Roast Bengal gram flour in 2 tsp ghee till the roasted smell comes. Heat water in a pan. Add the sugar when it boils. When the sugar dissolves add the roasted flour and stir well, over a moderate heat. Add ghee little by little stirring continuously. When it starts leaving sides of the pan, pour into a greased plate. Cut into square or rectangular pieces when it is still warm. When cooled thoroughly, remove each piece gently, and keep in an air tight dry container.





Chutney Dal Sweet

Chutney dal, sugar - 2 cups each
Milk powder - 1 cup | Milk - ½ cup
Cardamom - 10, powdered | Ghee - ½ cup
Cashewnuts, raisin fried in ghee. As required powder
chutney dal and sugar finely. With it mix milk powder and
cardamom powder. Sprinkle enough milk to make a thick
dough like that of chappathi. Place it evenly and cut into
equal sized pieces. Decorate with raisins and cashew nuts.



Basoondi

Milk - 5 liters
Sugar - 2½ cups
Badam, pista - 12 each, chopped
Cardamom - 10, powdered

In a wide mouthed thick bottomed vessel or frying pan, pour milk and boil well. When the cream is formed remove the cream to the sides and boil the milk. Mix the cream well. Stirring continuously, add chopped or grated badam, pista, powdered cardamom and sugar. When the sugar is well mixed remove from the heat. When it is slightly cool, serve in small cups.

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can lead you through
the right path

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Evolving face of Kerala State Lotteries



Kerala State Lotteries has exerted a multi spectral influence over the life of Keralites right from its inception in September 1967. All through the five decades, there were ups and downs in the lottery arena due to the influence of the so called other state lotteries.

Ever noticed a lottery agent /seller walking through the road with lottery tickets in his hands? He may be a cripple or a blind person or a hunch back or some other poor man. It is the sole

income source for many a down trodden family in society. All his dreams came to a sudden end when the number of lotteries in a week had been reduced to one per week, consequent to a series of legal proceedings. Government have instructed to limit the number of weekly draws to one per week and six bumper lotteries per year. This was a blow to nearly 35,000 agents and 2 lakhs sellers of lottery tickets in the state; most of whom belonged to the lower strata of

society. Their earnings were limited and their livelihood was curtailed. Later, division bench of the High Court's observation that number of lotteries to be conducted by the State is only the policy matter of the State, sent trade unions of all parties in the lottery arena demanding to restore the weekly lotteries on every day of the week.

The determination and social commitment of the new Government of Kerala under the leadership of Sri.

Oommen Chandy, took the decision to restart all the lotteries by including it in the 100 Days Programme of the Ministry and weekly lotteries on all days of the week was introduced from 2.9.2011

Human Touch

The Hon'ble Finance Minister Sri. K.M. Mani has given a human touch of kindness to the Kerala State Lottery by starting the *Karunya Lottery*. As the name itself suggests, it is for compassion; kindness to cancer, kidney, heart diseases and palliative care patients. The earnings from the 4 weekly lotteries of Karunya lottery in a month are exclusively set apart for financial assistance for the treatment of such patients. Nearly 8 crores rupees is expected from the four lotteries as profit every month for this purpose.

The Kerala State Lotteries gain much importance in this context, with another frontier for it to conquer. Its social commitment towards the poor, the critical patients or the needy does not bring down the amount of prize money it disburses. The department gives away lakhs of rupees worth of prizes a week through its seven weekly lotteries and six bumper lotteries every year.

Record Earnings

A landmark in the history of Kerala State Lotteries is that of the conduct of Thiruvonam Bumper Lottery 2011. It has marked an all time increase in prize money with Rs. 5 crores as I prize and the cost of one ticket prized at Rs. 200. Of the 34,95,000 tickets printed, 30,23,055



tickets were sold out, fetching an all time collection of Rs.60,46,11,000/-

After the restoration of the weekly lotteries, it is noticed that considerable revenue is earned from the newly structured weekly lotteries from September 2011.

Year	Revenue earned from sale of tickets (in Rs. Crores)
2006-2007	236.26
2007.2008	333.91
2008.2009	484.76
2009-2010	625.74
2010-2011	557.69 (conducting only one weekly lottery and six bumper lotteries from 9/2010)
2011-2012	350.53 (Up to Sep/2011)

It is pertinent to note that the turn over for the month of Sep/2011 alone comes to Rs. 95.87 crores compared to Rs.67.96 crores in August. This month it will cross Rs. 100 crores. The department is thus all set to achieve an all time yearly performance of over 1000 crores this year by the re introduction of all the lotteries.



Weekly lotteries

As stated earlier the restored weekly lotteries come with a new look and more attractive prize structures at present.

Pratheeksha Lottery

Every Monday (I prize Rs. 75 lakhs, cost of ticket Rs. 40)

Dhanasree Lottery

Every Tuesday (I prize Rs. 60 lakhs + Swift Dezire car, cost of ticket Rs. 40)

Win-Win lottery

Every Wednesday (I prize Rs. 40 lakhs +50 sovereign, cost of ticket Rs. 20)

Akshaya Lottery

Every Thursday (I Prize Rs. 25 lakhs, cost of ticket Rs. 20)

Bhagyanidhi lottery

Every Friday (I prize Rs. 40 lakhs + Innova Car cost of ticket Rs. 20)
 Karunya lottery - Every Saturday (I prize Rs. 1 crore, cost of ticket Rs. 50)

Pournami lottery

Every Sunday (I prize Rs. 51 lakhs, cost of ticket Rs. 20)

Apart from the above, Bumper lotteries namely Vishu, Thiruvonam, Pooja, X'mas New Year, Monsoon and Summer are also conducted every year.

Computerised Management

Achievement in all fields of operation is attributed to the consolidation of activities performed via the total office automation through the Lottery Information Management System (LIMS) from Feb/2008. The core functions covered are sale of tickets and payment of prize money ensuring considerable level of accuracy and pace in the matter of services to the agents and the public.

To make tickets more secure, modern techniques like bar coding, random numbers etc are successfully adopted in printing tickets. A unique re-engineered process under the departmental software adopted for data storage, retrieval, manipulation,

■ R LAKSHMINARAYANAN

transmission or receipt of data avoids all possibility of data loss commonly occurring in other applications in case of any server crash. More over a method of drawing more prize numbers especially of smaller denominations within limited time is also being explored.

Welfare Measures

Reiterating the social commitment, the Kerala Lottery Agents Welfare Fund has been restructured by including the sellers also. The present Government, as part of the 100 Days Programme has implemented more welfare measures to the members of the fund like the scheme of one time issue of tickets of Karunya-1st lottery worth Rs. 1000/- to the members of the Welfare Fund free of cost during the 100 Days Programme and most of the members have utilized the above benefit. It is estimated that a total of 2,78,940 tickets were issued to the District Welfare Officers as per requests for distribution among the members of the Welfare fund and the total value of tickets thus issued free of cost comes to Rs. 139,47,000/-. In addition, an extra gratia payment of Rs. 1000/- per member was also disbursed in cash to 14,248 members amounting to a total expenditure of Rs. 1,42,48,000.

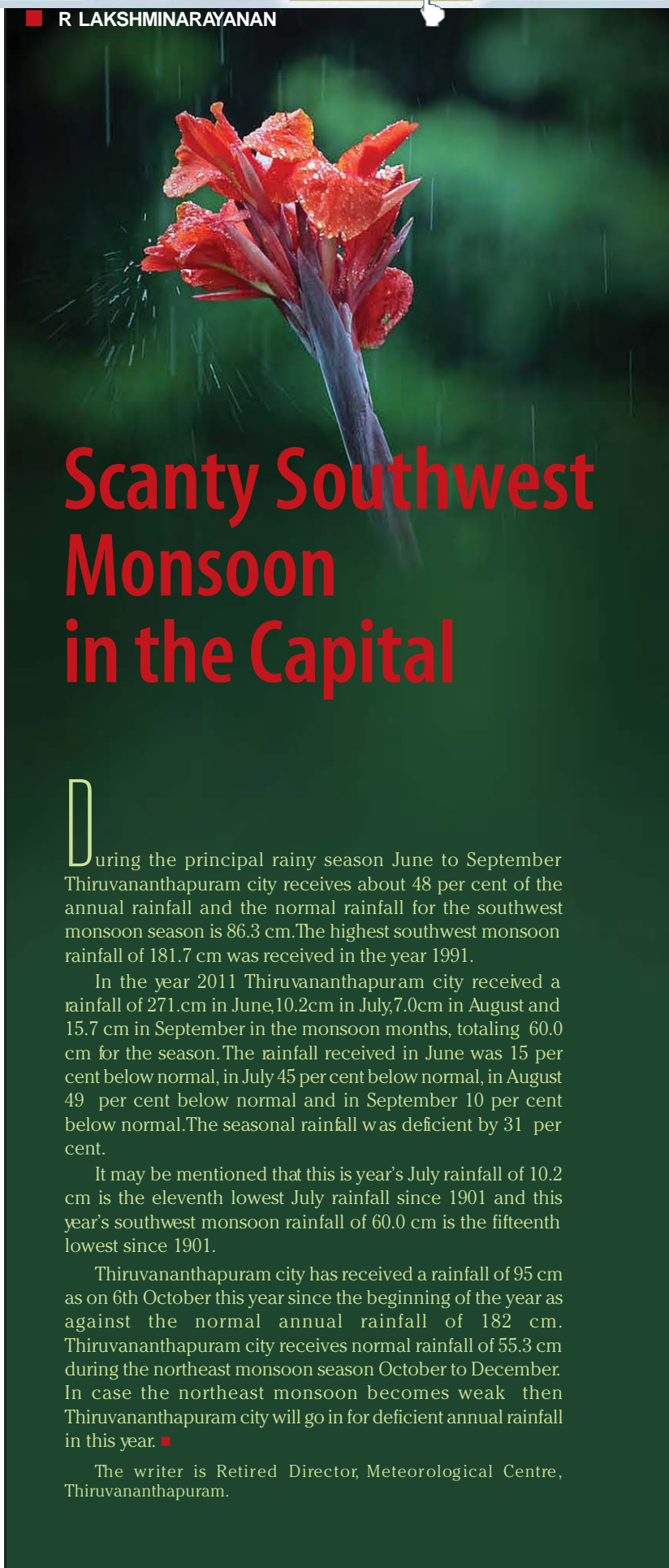
Other benefits from the Welfare Fund includes pension, educational award, scholarships for education of children, financial assistance for treatment, Rs. 1lakh and Rs. 50,000 respectively for accident death or normal death, financial assistance for the marriage of members of their daughters etc. A total of Rs. 3,08,24,802/- has been disbursed by different means to the members of the Welfare Fund during the period from 5/2011 till 30.9.2011

Today with more than 35000 agents and about 2 lakhs retail sellers spanning over 14 districts, Kerala State Lotteries is a major benefactor to the development of the state. It provides self employment to the poor and thereby alleviate poverty. In addition to it, the Karunya Lottery is a soothing touch to the poor patients suffering from cancer, kidney and cardiac diseases.

A new turn

These show that a major turn has occurred in the proclaimed objective of Kerala State Lotteries as these are conducted at present for newer projects/ purposes specifically earmarked. The Honb'le Minister for Finance has announced while declaring restoration of weekly lotteries that the revenue from a newly launched lottery would be fully earmarked for financing philanthropic activities. It is well-known that people in the lower strata of the society forms the majority buyers of lotteries and as such, the commitment of Kerala State Lottery to these sections is well fulfilled.■

The writer is Director, Kerala State Lotteries



Scanty Southwest Monsoon in the Capital

During the principal rainy season June to September Thiruvananthapuram city receives about 48 per cent of the annual rainfall and the normal rainfall for the southwest monsoon season is 86.3 cm. The highest southwest monsoon rainfall of 181.7 cm was received in the year 1991.

In the year 2011 Thiruvananthapuram city received a rainfall of 271.cm in June, 10.2cm in July, 7.0cm in August and 15.7 cm in September in the monsoon months, totaling 60.0 cm for the season. The rainfall received in June was 15 per cent below normal, in July 45 per cent below normal, in August 49 per cent below normal and in September 10 per cent below normal. The seasonal rainfall was deficient by 31 per cent.

It may be mentioned that this is year's July rainfall of 10.2 cm is the eleventh lowest July rainfall since 1901 and this year's southwest monsoon rainfall of 60.0 cm is the fifteenth lowest since 1901.

Thiruvananthapuram city has received a rainfall of 95 cm as on 6th October this year since the beginning of the year as against the normal annual rainfall of 182 cm. Thiruvananthapuram city receives normal rainfall of 55.3 cm during the northeast monsoon season October to December. In case the northeast monsoon becomes weak then Thiruvananthapuram city will go in for deficient annual rainfall in this year. ■

The writer is Retired Director, Meteorological Centre, Thiruvananthapuram.



Vechur Cow Breeding Programme

The Government has embarked on a project to conserve and propagate the world famous Vechur cows, known for their miniature size and quality milk.

The Rs 1.7 crore Kerala Livestock Development Board (KLDB) project, funded by the National Project for Cattle and Buffalo Breeding (NPCB), envisages the creation of a Vechur cow population at the KLDB farm in Puthur, Thrissur, which is exclusively dedicated to Indian breeds.

"The Vechur project is part of

propagating more of the local breeds. They might have a lower milk yield compared to foreign varieties, but the maintenance cost is also lesser, as they require less feed," Agriculture and Animal Husbandry Minister K P Mohanan said.

A three-phase project, the KLDB intends to build up, gradually, a population of Vechur pure-breeds at Puthur in the first phase. This phase will also focus on bringing together farmers who raise Vechur cattle. It is estimated that Kerala has less than 500 Vechur cattle

and about 100 dairy farmers growing them. It is also intended to ensure the purity of the breed.

While their numbers are increased, the second phase will focus on insemination of Vechur cows with semen from Vechur bulls only. Phase III aims at embryo transfer.

Over the years, indigenous breeds have lost out to foreign varieties and cross-breeds. According to the 2003 census, Kerala has 21.22 lakh cattle. Of this, indigenous breeds account for just 3.87 lakh.

Vechur cows from Kottayam district are one of the most sought after cows in the world. These dwarf cows attracted the attention of the world when its patent had been registered by a German firm.

It is said that average vechur male reaching a height of about 87 cms and the female about 82 cms, can even be grown in flats. Eating anything from kitchen wastes to wall posers, the vechur cow's daily yield of milk is between two to three litres. This animal has been made out as an ideal cow for the milk requirements of every household.

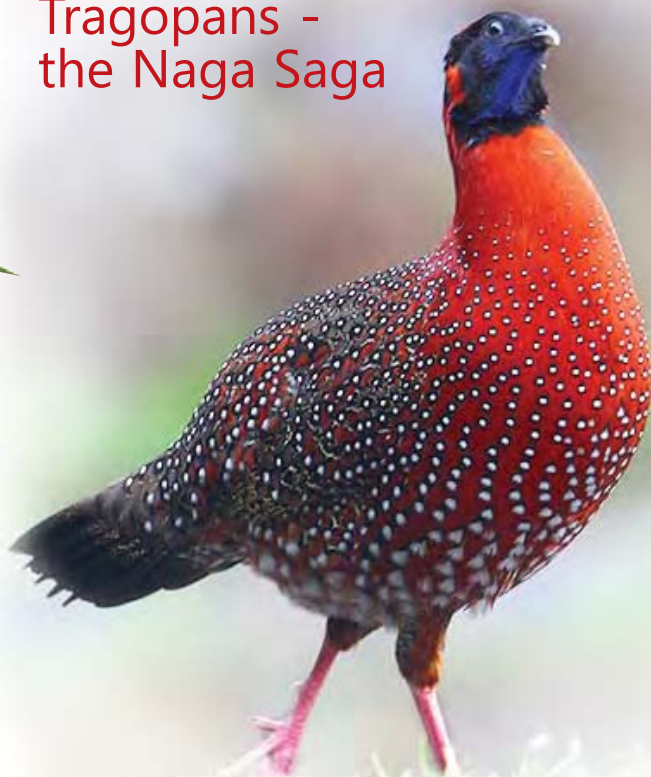
The veterinary college, Mannuthy has been engaged in a project of breeding vechur cows which have a long waiting line of buyers. The veterinary college has a good specimen of bulls and cows.

Rated as the smallest cow in the world, the Vechur Cow is valued for the large quantity of quality milk it produces in terms of its food intake. With an average weight of 107 kg., the highlights of Vechur cows are dwarfism, small intake of food, high resistance to diseases and a pleasant, quiet disposition.

XPR



Tragopans - the Naga Saga



Hunting is banned in India. But it continues to be a way of life for many tribes still. The tribes of Arunachal and Nagaland stand ahead, leaving many rare species threatened. The gorgeous pheasant tragopans of Nagaland are one of the best examples. Hundreds of these stunning beauties were killed for meat along with many other rare species. Community elders declared a ban on logging and hunting in a 70 sq km chunk of village forest to form the Khonoma Nature Conservation and Tragopan Sanctuary. Within two years of the ban, birds responded to the protection by re-colonising the forest. Today birdwatchers from all over the world arrive to see Blyth's Tragopan.

Cut in Canadian funding



Environment Canada

A federal cut has left the Canadian Environment Network with an uncertain future. Its core funding is gone as a result of Environment Canada's chop to money provided annually to the organization's parent body. Environment Canada cut the \$547,000 it gives the Canadian Environment Network. That prompted layoffs at its national headquarters and cuts to regional offices. The national network is an umbrella organisation for more than 640 environmental groups. The cut is part of a rigorous process to manage spending.

Nature's mystery prevails

The mystery about the cosmos is expanding along with the findings. If not sure, ask about US astronomer Saul Perlmutter, 52, and Adam Riess and Brian Schmidt who shared the Nobel Prize for Physics for their discovery in 1998 that the universe was expanding at an accelerating rate. But their discovery left an even larger mystery -- what is this dark energy that is propelling the universe to expand so fast?





Another member new to nature

Opisthobranchs are marine gastropods. This psychedelic gastropod is one of many

such species that have been discovered recently. The bright colouring of this shell-less gastropod is defensive. Lacking protective shells, they have evolved potent chemical defences and many display brilliant warning colouration. Recent molecular studies indicate that opisthobranchs are not monophyletic – that is, they do not share an exclusive common ancestral species. Thus a challenge remains to precisely reconstruct the evolution of these and related groups, while at the same time exploring their species diversity.



To learn space NASA goes underwater

Named as NEEMO 15, NASA's Extreme Environment Mission Operations undersea mission will take place between Oct. 17 and 29. As part of the NEEMO project, NASA employees and contractors live in the Aquarius Reef Base undersea research lab for up to three weeks at a time. The 2011 NEEMO mission will be the first to simulate humans visiting an asteroid. A six-member crew led by Walker will spend 13 days beneath the surface in the Aquarius habitat, testing concepts and techniques for asteroid exploration. This near-zero gravity environment presents a unique challenge where anchoring, tethering, and translating devices will be necessary for surface operations.



Fading saffron of Kashmir

The world's most expensive and fragrant spice, Kashmiri saffron yield is cut by almost half in the last decade, thanks to the erratic rainfall and snow. The crop was grown in over 5,700 hectares of Jammu and Kashmir in 1997. The area of cultivation has now dropped to almost half the original size. It has been observed that the changing temperature patterns and rain since 1999 have impacted saffron production.





Indian Railways is stronger than James Bond

The Daniel Craig 007 film tantalisingly titled ‘Bond 23’ will have to make changes in his action plan in India. When he jumps from a speeding motorbike onto the roof of a moving train and, while on the run leaps from one moving train to another, the sequence can’t show passengers squatting on the roof.

The filmmakers have accordingly scrapped the plan to show both moving trains packed with travellers huddled on the roof to comply with railway ministry terms. The film will be viewed across the world and it will seem as if all trains here have people travelling on rooftops, which is not true.

Keeping the “safety issue”, a top priority and causing ‘least inconvenience to passengers’ are the other conditions Minister for Railways Mr. Dinesh Trivedi has asked James Bond to be the railways brand ambassador. For this, the minister has come up with punch line. This will be for a two-minute spot and 007 will have to say something on the lines of “Indian Railways is stronger than James Bond”.



Somali children win guns as recital prizes

An Islamist-backed radio station in Somalia has awarded assault rifles and hand grenades to the winners of a children's Koran recital competition.

Andalus radio, which is run by the al-Shabaab militia, said on Monday that the first prize was an AK-47 and £450. The runner-up received an AK-47 and £320, while the child who came third received two F1 hand grenades and £250. The three children also received religious books.

The Koran recital contest has been running for three years and takes place after Ramadan. In 2009, prizes included hand grenades, anti-tank mines and an AK-47.



Navy installs device on ships to scare away pirates

With piracy in the Gulf of Aden and off the Somalia reaching alarming proportions, the navy, which has been in action against the brigands for the last three years, has begun installing a device on its warships to scare the pirates away.



The Long Range Acoustic Device (LRAD), as it is called, shouts, threatens and warns in a variety of languages.

LRAD is a non-lethal system but, if required, can injure the targeted personnel with literally ear-splitting, very high decibel tones and noise beams of up to 150 dBSPL. The Indian Navy has acquired the system from a US firm, which holds its patent.

We wish to die with a rage to live

The victim was heading home when his motorbike was bumped by a car from behind. He stopped to argue with the men in the car, and ended up being stabbed.

This is not a stray incident. Road rage has entered the basic vocabulary of urban India, and the

resultant deaths have become just another statistic. Anger management experts say road rage, also called intermittent explosive disorder, is a term used to refer to violent incidents resulting from stress caused by accidents or incidents on roads. In its simplest form, it sees a driver reacting angrily to another, cutting him off,

tailgating, gesturing or shouting. At its worst, it ends in sudden death.

Experts say road rage frustration is not caused by traffic, no matter how heavy, but is a "learned cultural habit of retaliation when you feel like retaliating". In other words, it is not about how bad the traffic is, it is about how badly you react to it.

Boeing - P-8I reconnaissance aircraft for Indian Navy completes first flight

The first Boeing P-8I reconnaissance aircraft for the Indian Navy has completed its initial test flight in the US ahead of its scheduled delivery in 2013.

The long-distance maritime reconnaissance and anti-submarine warfare aircraft -- part of an eight-plane contract signed by India with Boeing in January 2009 for \$2.1 billion -- took off from Boeing's Renton Field in Washington state Wednesday and landed about two-and-a-half hours later at the Boeing Field in Seattle.

engine Soviet-vintage fighter jets MiG-21s after 2012.

IAF chief Air Chief Marshal NAK Browne said that from next year only pilots with experience would be operating the MiG-21s, often dubbed as 'flying coffins' for its high crash rate. Of the 793 MiG-21s inducted into the force since 1964, over 350 have been lost in accidents, leaving about 170 pilots dead.

Only pilots with experience to Fly MiG-21s

Following a spate of crashes, the Indian Air Force (IAF) has decided to stop training its rookie pilots on the single-



Tax benefit for ransom

Holding that paying ransom to save a life is not an offence, the Madhya Pradesh High Court has, in a significant judgement, allowed a businessman to claim reduction in his tax liability for the money he paid for his release from the clutches of kidnappers.

Jain, director of a bidi manufacturing company in Sagar in Madhya Pradesh, was kidnapped by the notorious Raju Bhatnagar gang on August 5, 1987, while on a business trip. He was released 22 days later after a sum of . 5.5 lakh was paid to the kidnappers.

Trophy apartments command astronomical prices, defying economic slowdowns and slumps in the property market. In Mumbai, where over half the people live in slums, certain high-end flats are said to have been sold for gravity-defying rates.

A 10,000 sq ft apartment in the 60-storey Imperial Heights at Tradeo fetched its developer over Rs.90 crore a couple of years ago. More recently, a sample flat measuring 4,000 sq. ft. on one of the lower floors of the building went for Rs.32 crore. At Nepean Sea Road, the upcoming skyscraper Lotus Villa is touted as one of the most expensive buildings in India. Sources said a few duplexes – over 10,000 sq ft each – sold in excess of Rs.60 crore each. The builder had earlier quoted Rs.100 crore for each flat, but failed to receive any offers at that price.

On Pali Hill, Bandra, two apartments in the newly constructed 20-storied Sandhu House are believed to have been sold for Rs.38 crore each to a Dubai based NRI.

Gravity defying rates for high end flats





■ Dr. S SIVASANKARAN

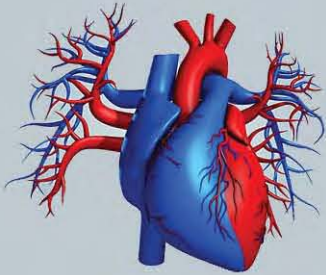
The main theme for the 12th World Heart Day celebrations was "One World, One home, One Heart". To express the World unity to fight against the non communicable diseases, the United Nations General Assembly convened a high level meeting which was a historical event. A similar assembly was held only once before, and that was the call to fight against AIDS. World Heart Day is essentially deserved to make people aware of the preventive strategies by which people can avoid succumbing to

modern life style diseases. It is carried out under the auspices of World Heart Federation, since 2000. From this year onwards, September 29th will be observed as the World Heart Day, instead of the last Sunday of September

Four behavioral risk factors four diseases

The four behavioral risk factors which lead to ill health of mankind are

unhealthy diet, physical inactivity, tobacco use and indulgence in alcohol. These four habits lead to cardiovascular diseases, diabetes, respiratory diseases and cancer. These diseases account for more than two thirds of the causes which lead to death. Cardiovascular diseases represent the diseases like heart attack, stroke, heart failure and kidney failure. In fact they contribute for half of the deaths due to non communicable diseases



Life style diseases

Give your heart a chance



throughout the world. When man landed on the moon, Finland was the heart disease capital for the world. By organized public health effort, the heart attack and stroke mortality in Finland is now reduced by 80% over the last 40 years. During the same period, Kerala and the developing world got caught in the process of globalization, are now competing to become the diabetes capital for the world. Kerala is the first state in the world where tobacco smoking in public places was banned by a legal action. The social implications of alcohol consumption are possibly worst in Kerala. The concepts for improving physical activity and healthy diet, including legislations were discussed in detail at the United Nations General Assembly meeting.

The contribution of lifestyle related diseases by the developing and the developed countries

'Red Alert'

The most affected in this wildfire of lifestyle related diseases are women and children in Kerala. Nature wants human beings to be at their best at early adult life, so that we can give birth to healthy offspring. Once we parent a baby, we enter into a natural attrition of becoming old. Our ability to hear and see comes down, our bones and muscles become weak, all our major body organs decline in their efficiency and we slip into old age. What is happening in Kerala, therefore, is a form of premature aging, and we are now prolonging our life expectancy by consuming more medicines. Recognizing this fact, that women succumb more to the life style changes of globalization, American Heart Association started the "Go Red For Women Campaign" as early as 2004. This red alert is all the more relevant to Kerala and the developing countries.

Frightening data

The data arising out of studies in Kerala are really frightening. The age adjusted cardiovascular mortality in Kerala is twice that of an American and thrice that of Japan. In 1967, the coronary care unit study in Kerala showed that the male to female ratio for heart attack admissions were 23: 1. In the recent similar study the ratio has sharply declined to 4: 1. Children of Kerala have the highest records of blood pressure than any where else in the world. Breast cancer incidence in Kerala has increased



by more than four fold. Diabetes during pregnancy has increased four times, and more than two third of the people have fragile bones and low vitamin D levels. Vitamin D is other wise called the sunshine vitamin since our body can synthesize this vitamin from sun's rays, if we expose our body to the sun.

2 four 50

The present wildfire of life style related diseases in women in Kerala can be summarised as 2 four 50. This stands for two behavioral risk factors namely unhealthy diet and physical inactivity, since women in Kerala are not initiated to the use of tobacco and alcohol use at adolescence and early adult life. This two risk factors lead to four health problems : diabetes, cardiovascular diseases, osteoporosis (weak bones) and cancer. This could easily account for more than 50% of the hospitalizations and death of women in Kerala. We give our children more than the normal adult tolerant levels of sugar salt, fat and cholesterol and make them inactive by the academic pressure. We are very careful to ask for a pediatric dose when we visit a medical store, but conveniently forget the fact that the child's body volume is small when we are at a festival or bakery. The secularism we practice has harmed us more since we celebrate all the religious, regional and personal festivals with lot of feasting.

How inactive are we?

Kerala as a society has shied away from physical activity, irrespective of the good climate and water sources we have. We do not encourage our children to play cycle or climb trees, or swim in the ponds. Most of the junctions in Kerala

had two or three cycle shops in the 80's are now replaced by bakeries, and scooter workshops. So the third shop automatically to open in the vicinity will be a medical store. The advent of Television in 1983 has worsened the scene by taking away the leisure time activity. Further, television advertisements make the marketed energy dense foot products, carbonated drinks and health drinks popular. Modern life has induced a decline in physical activity in the order of about 5 times, since both work related, transport related and leisure time related physical activity has dwindled.



What makes us different?

The behavioral risk factors and diseases are the same throughout the world. The younger age onset of risk factors and diseases, and the inability of usually used markers of body fatness like body mass index to predict the risk factors and diseases, make India and Kerala different. The high prevalence of risk factors and diseases in the young was considered to be because of the large number of people in that age group existing in the developing world. But systematic study of the age adjusted patterns clearly reveal that for the same age, an individual in Kerala stand twice the risk compared to an American and three times the risk compared to a Japanese for dying due to cardiovascular diseases.

The components of globalization are universal, what makes us different is the fact that we are the best example of small people (hence body volume to buffer is less) and we cover our body too much. Since we are dark skinned we synthesize 5 times less vitamin D in our skin than the light colored people. Women in the reproductive age group need 6 times more vitamin D because they need to transfer the vitamin to the developing baby. Data from India and Kerala point to the fact that in adolescent children, the vitamin D deficiency is of the order of 60 to 95%. It is a shame that we cover our children so badly in the westernized dress and lose the natural source of this vitamin at this crucial age. It is a paradox that the father of our Nation impressed us the need for simplicity in life. It is more pertinent to remember that children do not have any choice neither in their studies nor in the dress they wear, they are forced on them in the name of identity. In the modern world when we have clear identity cards from the pre KG level, we should allow the children to wear comfortable dress. Human body should sweat by exercise and not by covering in three layered uniforms. The collar is the chimney for the shirt, and closing it with a neck tie is the best way to discourage exercise.

The lack of vitamin D and metabolic abnormalities in child bearing age group is documented to affect the next generations making them susceptible to lifestyle diseases at a younger age itself as shown in studies conducted at Mysore and Pune. The low birth weight babies in India are not chubby, but have enough body fat and lack the muscles. This deficiency of muscles is a major factor which makes us susceptible to life style diseases at a younger age and without becoming seemingly obese. The best way to overcome this deficiency is to adopt a physically active childhood and adolescence. Adolescence is the last opportunity to build the best possible bones and muscles. We need to change our social norms. Girls should be allowed to play, swim and cycle in the sun. No wonder the animals who eat natural food, move about in the sun and do not cover their body, do not succumb to heart attack, stroke, cancer and broken bones. We need to ensure that the girls of Kerala grow up as healthy mothers with

proportionate body shape, composition and metabolic profile to mother a healthy baby. Let this be the single important message for Keralites for this World Heart Day ■

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MUNDUR M K KRISHNAN



Kombil Gopalan Nair Vasudevan, popularly known as Kalamandalam K. G. Vasudevan, is a typical example of Thekkan and Kalluvazhi Chitta in Kathakali. Vasudevan was born on 8th December 1937 at Keerikad- Ramapuram of Karthikapalli Taluk in Alappuzha District, in an average family in the princely state of Travancore. He had his primary education from Keerikad U.P. School. He was keenly interested in various forms of art from his childhood itself. During his primary education he used to practise Kathakali Vesham under famous Guru Evoor Raghavan Pillai. He had his 'ararigettam' - first stage performance - at the same period. During this period he had a number of mini 'veshams' - roles. In 1953 he joined Kalamandalam which was established by Malayalam's patriotic poet Vallathol Narayana Menon. Accordingly he was trained under famous Gurus like Padmasree K. R. Kumaran Nair, Padmasree Vazhemkada Kunju Nair, Padmabhushan Ramankutty Nair, Kalamandalam Padmanabhan Nair. He had shared stages with eminent Kathakali artists like Guru Kunju Kurupu., Chenganoor Raman Pillai, Mankulam Vishnu Namboothiri, Kalamandalam Krishnan Nair, Kizhapadam Kumaran Nair, Vazhemkada Kunju Nair. He is famous for his 'Sthree Veshams' such as Urvashi, Lalitha, Damayanthi, Mohini etc. He was an exponent in sampradaya of Kalluvazhi tradition.

He had worked as Vesham instructor in Gandhi Seva Sadanam Kathakali Academy at Perur, Near Ottapalam for a period of Ten years. Later he was employed as Kathakali teacher at Government High School, Vellinezhi which is known as Citadel of Kathakali. Vasudevan got a long galaxy of enriched disciples including Sadanam Krishnankutty, Sadanam Balakrishnan, Sadanam Ramankutty, Naripatta Narayanan Namboothiri, Sadanam Harikumar, Kavungal Divakaran, Pariyanampatta Divakaran, Vellinezhi Haridasan, Kalanilayam Gopinathan, Sadanam Manikandan, Kalamandalam Pradeep and so on.



Kalamandalam K. G. Vasudevan

A Versatile Character in Kathakali

He was honored by Central and State governments, various trusts such as M. S. Namboothiri Smaraka Puraskar of Kathakali Club Irinjalakuda in 1994, Kerala Kalamandalam in 1998, Pattikamthodi Award in 2005 Kerala Sangeetha Nataka Academy Award in 2006, Devi Prasadam Puraskar in 2008, Kendra Sageetha Nataka Academy Award in 2010.

K. G. Vasudevan has settled at Mundur a village famous for its short story writers, Mundur Krishnankutty and Mundur Sethumadhavan in Palakkad District. He was a member in the advisory board of Gandhi Seva Sadanam Kathakali Academy, Perur. Vazhemkaqa Kunju Nair Memorial Trust and actively involved in the literary movements like Purogamana Kala Sahithya Sangham and library movements.

Generally it was believed that feminine characters have not much significance in the art of Kathakali. Contrary to this, K. G. Vasudevan had his roles as both male and female characters. He enacted the predominant characters like Rugmangan, Nalan, Bhahukan, Krishnan in 'Pacha Vesham', Keechakan and Ravanam in 'Kathi Vesham'.

In 1950's the eminent poet Iyyankode Sreedharan composed the Kathakali plays named Manavavijayam, Snehasandhesam as his contribution for the popularization this art. K. G. Vasudevan had prominent roles in these

plays. Shakespeare's famous plays like King Lear and Hamlet were recomposed for Kathakali in Malayalam. These Kathakali plays were acted on more than 700 stages in India and abroad. While he was at Kalamandalam he was a member in the troupe which visited foreign

countries like England, France, Germany Italy, Switzerland, Canada, USA, Japan, Iran etc. Even at the age of 73, Vasudevan is active on stages throughout the country. He is visiting his European countries in September 2011 to perform Kathakali on various stages. ■





Famed by the tag line God's Own Country, Kerala is a global tourism destination. It is the only super brand in tourism from the country and is one of the trend setters in tourism business as well as a true role model because of its continuous and consistent innovation in diverse and authentic tourism products and services.

Kerala the lush green tropical land wedged in between the Arabian Sea and Western Ghats is truly an ideal destination for developing all forms of tourism preferably nature based, culture and heritage tourism. Tourism was declared as an industry in the state during the year 1986. After the launch of Kerala Tourism policy in 1995 the state witnessed great progress, planned development and advancement in its economy through the growth and promotion of tourism.

Traditional Markets for Kerala Tourism

Since 2000 tourist arrivals including both domestic and foreign to the state increased at a fast pace despite minor set backs during certain years. Among the foreign tourist arriving in India, nearly 15 to 20 per cent are visiting Kerala. The major tourist generating markets for the state includes European countries like United Kingdom, France, Spain, Austria, Germany, Italy, Netherlands followed by Canada, USA, Australia etc. Besides the traditional markets the state is also receiving tourist from our neighboring countries, Russia and Middle East countries. Currently the Americans are not showing much interest in visiting the state because of long haul travel. The average stay of foreign tourist in the state is sixteen days when compared with the country's average of nearly one month.

Domestic tourists especially from states like Uttar Pradesh, Madhya Pradesh,

Rajasthan, Gujarat, Haryana, Maharashtra, Goa, West Bengal and Punjab form the major tourist market for Kerala Tourism. The state is also receiving a major share of tourist from south Indian states like Tamilnadu, Karnataka and Andhra Pradesh. The major tourist season of the state commences from October and ends in March.

Key Strengths of Kerala Tourism

The pleasing weather, serene backwaters and lagoons, traditional house boats, idyllic beaches, misty hill stations, tropical forest, exotic wildlife, authentic and colourful festivals, unique art forms, folklores and architecture, heavy monsoons, authentic ayurvedic treatments, rich and varied culture, history and heritage monuments like forts, museums and palaces attracts all forms of travellers from all over the world.

The new edition of Lonely Planet which is the "Bible of Travellers" says - A



traveller visiting this spectacular land of Kerala is unable to take a strong decision regarding the selection of tourism products, services and destinations because of its diverse range of products and services available to him. This clearly mentions the monopoly and uniqueness of the state in tourism business. Kerala is considered as one of the safest and tourist friendly destination in the world.

The initiatives taken by the state particularly in the fields of Eco-Tourism, Festival Tourism, Responsible Tourism, Rural Tourism, Cultural Tourism, Heritage Tourism and Village Tourism has already received global attention from global organizations like WTTC, WTO, UNEP and IETS (International Eco-Tourism Society. World Travel and Tourism Council (WTTC) has selected Kerala as a Partner State and National Geographic Traveler Magazine after two years of continuous research, has chosen Kerala as one among the 50 must see destinations to be visited by a tourist in his lifetime.

Due to severe economic recessions recently in developed countries middle class travelers from there prefer to visit destinations like Indonesia, Singapore, Maldives, Sri Lanka and Malaysia. Kerala will have to face stiff competitions due to this aspect because the above

mentioned countries can offer quality tourism products and services at a price lower than that of Kerala. Among the countries, Sri Lanka poses a stiff challenge because of its greater involvement in developing and promoting tourism as a vehicle for economic growth after the end of political problems in the country. The presence of diverse range of attractive USP's (Unique Selling Propositions) like Eco-Tourism, Ayurveda, Art forms, Backwaters, Festivals, Fairs, Folklores, Handicrafts, rich and vibrant Culture and a varied Heritage and History is of advantage to Kerala for countering this situation effectively.

Challenges Ahead

Historically Kerala faces stiff challenges from Rajasthan and Goa in terms of receiving foreign tourists because both of them have excellent and diverse USP's to offer to the tourist. Neighbouring states like Karnataka and Tamil Nadu also creates severe competition for the State. The steep increase in the tariff of luxury hotel rooms and travel costs are serious problems faced by the travellers during their visit to the state. The airfare from Delhi to Cochin and other sectors is increasing very heavily during short intervals which

cannot be afforded by the middle class tourists.

Lack of proper infrastructure development and maintenance at the right time especially of roads, water supply, sanitation, waste management, absence of adequate safety and security measures, insufficient facilities and services for refreshments, shortage of guides preferably in the remote tourism destinations and shortage of sufficient quality hotel rooms are yet another area of concern for the growth of the sector in a sustainable manner. Due to shortage of rooms the state is not in a position to tap the full potentials of the season and the demands of tourists.

Ayurvedic centers, Hotels, Resorts, Home Stays, Travel Agents, Tour operators, Houseboat operators and Entertainment companies including water theme parks expects a steady tourist arrival to the state despite the above problems. Attractive packages including both readymade and tailor made are provided by different service providers including KTDC in order to face competition effectively and to attract more tourists. As usual the state expects yet another positive season and is ready to offer diverse, attractive and authentic tour packages in order to take full advantage of the oncoming tourist season. ■



Kerala Tourism

A favorable Season ahead



Organ indiscipline may trouble the heart



Broken biological clocks in blood vessels may contribute to hardened arteries, even if the main timer in the brain works fine. The finding, from transplant experiments with mice, suggests that throwing off the daily rhythms of the body's organs can have serious health consequences.

A wealth of evidence shows that holding back on sleep and working against the body's natural daily, or circadian, rhythms can raise the risk of developing illnesses such as heart disease and diabetes. Scientists assumed that the diseases resulted from malfunctions in a master clock in the brain, which synchronizes sleeping, waking and other body functions with the rising and setting of the sun.

But recently, scientists have discovered that the liver and other organs have their own internal clocks that may work independently of the brain clock and are set by meal times or other cues. It wasn't clear until now whether disrupting these body clocks could also contribute to disease.

The finding may help explain why shift workers, people with sleep disorders and others who disrupt their circadian rhythms by staying up late or eating meals at the wrong time tend to be more vulnerable to heart disease.

Brain against weight loss?

In obese people, even when the brain knows the body isn't hungry, it responds to food as if it were, new brain-scan data show. That means that when obese people try to shed weight, they may find themselves on the losing side of a battle with neural centers that unconsciously encourage them to eat.

For instance, in normal-weight people a neural reward system that reinforces positive feelings associated with food turns off when levels of the blood sugar glucose return to normal after a meal — a signal that the body's need for calories has been sated. But in obese people, that reward center in the central brain turns on at the sight of high-calorie food even when their blood sugar levels are normal. For the study, nine lean and five obese adult volunteers viewed pictures of foods such as ice cream, french fries, cauliflowerer or a salad while undergoing brain scans. Throughout the procedure, researchers asked the recruits to rate their hunger and

how much they wanted a particular item.

Volunteers arrived for their brain scans several hours after eating, and the researchers used insulin pumps to establish volunteers'



blood sugar levels at either normal background values. The surprise was that the part of the brain that allows people to consciously exert willpower over food intake largely turns off in obese people. This suggests that their brain differences may perpetuate obesity.

A new study published in *Animal Behavior* shows that crows are capable of recognising symbols designed to represent different quantities and is one of many different studies currently looking at the behaviour and intelligence of crows. The study, conducted by a team of Japanese scientists looked at eight jungle crows. The idea behind the first experiment was to determine if crows were able to determine which container held hidden food based on a symbol on the lid of the container.

The birds were presented with two opaque containers, one with food and one without. The symbols used were the number "two" and the number "five." The container with the number five on the lid was the one holding the food. When the birds were presented with the containers they had a 70 percent success rate in choosing the container with food.

The study confirms, according to the researchers, that crows are able to distinguish between quantities of items. Other studies on crows over the last few years have also determined that crows are capable of distinguishing between the human faces of men and women.

Crows can distinguish symbols





Baby sharks from artificial uterus

An artificial uterus, designed to give live birth to sharks has been designed by scientists. The uterus, a series of tanks, tubes, and fluid-exchange systems, is a proof-of-concept for now. But one day it could boost the dwindling numbers of the grey nurse shark.

Grey nurse sharks, known as sand tiger sharks in the United States, are regionally endangered off the east coast of Australia. Though not intentionally targeted

by commercial and recreational fishing, many are caught and die by accident. And the death of even one is a huge loss, since babies are so hard to come by.

After mating, a female produces as many as 40 fertilized embryos, separated between two separate wombs. The embryos take nearly a year to fully develop, but they begin hunting long before that. After about two months, their own yolk sacs

go dry. Hungry, they start eating their brothers and sisters. Only one shark—the biggest and strongest—is left in each womb.

The artificial uterus developed is essentially complex aquarium, with air vents, bacterial filters, peristaltic pumps, observation ports, water exchange systems and a host of monitoring sensors. When born, the pups were average size. They all survived to be released in the wild after about three months.

New way to store light and optical communication

Due to its high data carrying capacity and low loss, light can serve as an ideal information carrier. However, due to the high speed at which it travels, light is difficult to store.

Because the ability to store light is important for optical networks as well as long-distance quantum communication networks, researchers have been investigating various light storage techniques. Scientists have now added storing light as mechanical excitations. The team of physicists, have published their study on storing optical information as mechanical excitations.

The physicists have



performed a proof-of-principle experiment in which they stored optical information as mechanical excitations inside silica microspheres. The microspheres serve as optomechanical resonators, which have resonating cavities that allow the scientists to generate mechanical excitations.

International year of Chemistry

Chemistry- our life, our future

The United Nations Organization declared 2011 as the International year of Chemistry, an year long celebration of the achievements of chemistry and its contributions to humankind. Events for the year are being coordinated by the International Union of Pure and Applied Chemistry (IUPAC), and by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). It coincides with the centenary of International Association of Chemical Societies and the hundredth anniversary of Nobel Prize in Chemistry to Marie Curie. Marie Curie has a special place among the Nobel laureates. She was among the very few to bag two Nobel prizes in two different streams of science.

The UN resolution calling for the International Year of Chemistry in 2011 was submitted by Ethiopia and co-sponsored by 23 nations. A case was made that chemistry makes a vital contribution towards achieving the goals of the UN Decade of Education for Sustainable Development, 2005-2014.

The theme of IYC2011 is "Chemistry-our life, our future," and focuses on the "achievements of chemistry and its contributions to the well-being of humankind." It aims to raise awareness of chemistry among the general public and to attract young people into the field, as well as to highlight the role of chemistry in solving global problems.

GEETHA S PERUMON

ring composting, vermi composting and biogas plants are being promoted for processing of biodegradable wastes at household and institutional level. Aerobic windrow composting, vermi composting and biogas plants are being promoted for processing of biodegradable waste at community level. In order to help the local bodies, the State Government in the Local Self Government Department has issued a comprehensive guideline on standards, specifications, operation and maintenance of protocol for the above mentioned processing technologies.

Menace of plastics

There are a lot of environmental and operational issues due to mixing of waste plastic carry bags with municipal solid wastes. Therefore, the LSGs are facing lot of problems in their waste treatment activities due to higher percentage of waste plastic. More over unscientific disposal of waste plastic carry bags led to various environmental issues in the State. The Plastic Waste (Management and Handling) Rules, 2011 notified under the Environment (Protection) Act, 1986 insists that the local bodies take action for collection of waste in plastic carry bags and for using the collected carry bags for mixing it with bitumen for road tarring and or co-incineration in the kilns of cement plants. The LSGs, as part of their waste management projects, are planning to establish Plastic Shredding Units at Grama Panchayat and Municipality level, for shredding the collected waste plastic carry bags. There is therefore an urgent need for utilisation of these shredded plastic carry bags for road tarring or co-incineration in the Cement Kilns, as stipulated in the said Rules.

Sewage and septage

In Kerala, most of the rural and urban areas are having Leach Pits (single / double pit) or Septic Tank and Soak Pit Systems for on-site treatment and disposal of human excreta. Septic tank is basically a settling tank, and sludge accumulated at the bottom of the Septic tank is getting anaerobically degraded and refractory part of sludge is not biologically degradable. There are, therefore, requirements for draining septage from septic tanks and pit latrines constructed with sealed bottom, mostly

by lowering of concrete rings. In compliance with the order of the Hon'ble High Court, in the WP (C) 34496/09, earnest efforts have been taken for identifying land, issuing Government order for providing a provision for co-treatment of septage in the ongoing JNNURM/KSUDP projects, identification and finalization of feasible technological options for co-treatment and Standalone Septage Treatment Plant, earmarking funds for establishing one model Standalone Septage Treatment Plant (STP) and preparing tender documents for tendering the work of establishing model Standalone Septage Treatment Plant. The LSGD has taken action through the KSUDP to include co-treatment facility for the septage treatment in the Sewage Treatment Plants, which are being constructed at Thiruvananthapuram, Kollam, Kochi and Kozhikode. Standalone Septage Treatment Plant is proposed to be established exclusively for treatment and disposal of septage where there is no city level Sewage Treatment Plant. Action has also been taken to establish Standalone Septage Treatment Plants in districts of Kottayam, Alappuzha, Thrissur, Palakkad, Malappuram, Wayanad and Kannur and Idukki.

Mandatory responsibilities of Local Self Government Institutions

The Solid waste management is a mandatory responsibility of Local Self Government Institutions... implementation of the Municipal Solid Waste Rules has been effected, which necessitates Integrated Solid Waste Management System (ISWMS) comprising of segregated storage of waste at source, primary or secondary collection system, street sweeping, regulated transportation, processing and disposal of rejects through engineered landfills.

The Solid waste management is a mandatory responsibility of Local Self Government Institutions as per provisions of the Kerala Municipality Act 1994, Kerala Panchayat Raj Act 1994 and the Municipal Solid Waste (Management & Handling) Rules, 2000 notified under the Environment (Protection) Act. In order to make the waste management system more efficient, implementation of the Municipal Solid Waste Rules has been effected, which necessitates Integrated Solid Waste Management System (ISWMS) comprising of segregated storage of waste at source, primary or

secondary collection system, street sweeping, regulated transportation, processing and disposal of rejects through engineered landfills. Thus, as per the provisions of the above legislations, the LSGs have been assigned with the mandatory responsibility to provide basic infrastructure for collection, conveyance, treatment and disposal of Municipal Solid Waste. They are also responsible for operation and maintenance of such facilities. The District Collectors are responsible for overall co-ordination of solid waste management activities undertaken by the LSGs as per the MSW Rules. Therefore, the State Government is responsible for coordinating assisting the LSGs for implementing the MSW Rules.

Suchitwa Mission

The Suchitwa Mission which came into being in 2008, has been responsible for assisting LSG Institutions in the field of sanitation, solid waste management, liquid waste management, and establishment of modern slaughter houses in rural as well as urban areas. The Mission implements the Total Sanitation Campaign (TSC) in the State, which envisages improved sanitation facilities.

The emphasize of the programme is on Information Education and Communication (IEC), Human Resource Development and Capacity Development activities to increase awareness on sanitation among the rural people, and generate demand for sanitary facilities. It also provides subsidy for construction of toilets. Later, provision has also been incorporated to provide partial financial assistance for solid and liquid waste management installations.

The programme follows 'community led' and 'people centred' strategy and 'demand driven' approach. The implementation of TSC is proposed on a project mode with district as a unit. In Kerala, the programme is monitored and coordinated at the State level by the Suchitwa Mission under the LSGD. Components of TSC are, Start up activities, IEC activities, Rural Sanitary Marts/ Production Centres, Provision of Revolving Fund, Individual Household Latrines for APL & BPL, Community Sanitary Complex, School Toilets, Balwadi Toilets, Solid and Liquid Waste Management. ■

Authors are Executive Director and Director respectively of Suchitwa Mission, Government of Kerala