

ONE INDIA ONE PEOPLE

Patriotism Redefined

Oceans *the last frontier?*



Know your ocean

The bounty from the sea

Treasures from the deep blue

KNOW INDIA BETTER

Mangalore & Udupi

FACE TO FACE

Madhuchandan S.C.



MORPARIA'S PAGE

OUR LUCKY DAY!
... YET ANOTHER
SUSPICIOUS CATTLE
TRANSPORTER



I was just
a "COMMON
MAN"... now
modi says,
i'm a "VIP"

I sympathize ...
I was just
'HANDICAPPED'
before they made
me 'DIFFERENTLY
ABLED'



BRANDED
DRUG CO.

NO LAL BATTI
CULTURE NOW!
ONLY GENERICS



SIR... AT THIS RATE,
WE SHOULD BE SOON
PLANNING TO INVADE
POLAND



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JUNE 2017

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Oceans



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Madhuchandan S.C.

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Chatur Lal



P. Shiv Shankar



Air Commodore Pete
Maynard Wilson,
PVSM, Vr C, VM



Managing Editor

Mrs. Sucharita R. Hegde

Editor

Anuradha Dhareshwar

Assistant Editor

E.Vijayalakshmi Rajan

Design

H. V. Shiv Shankar

Marketing

Mahesh Kanojia

OIOP Clubs Co-ordinator

Vaibhav Palkar

Subscription In-Charge

Nagesh Bangera

Advisory Board

Sucharita Hegde

Justice S. Radhakrishnan

Venkat R. Chary

Printed & Published by
Mrs. Sucharita R. Hegde for

One India One People Foundation,

Mahalaxmi Chambers, 4th floor,

22, Bhulabhai Desai Road,

Mumbai - 400 026

Tel: 022-2353 4400

Fax: 022-2351 7544

e-mail: oiopfoundation@gmail.com

oiopsub@fouressindia.com

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visit us at:

www.oneindiaonepeople.com

www.facebook.com/oneindiaonepeoplefoundation

LETTER TO THE EDITOR

"Most impressed"

For a ninety-year-old living in a sequestered senior citizens' home, access to any monthly magazine is not easy. Under very fortuitous circumstances I had the good fortune of going through a few copies of *One India One People* couriered to me by a considerate friend.

The brilliantly coloured cover pages of each thematic based issue is adequate allurements for choosing it from among the many monthly/fortnightly magazines on display at the bookstores. I have cursorily gone through a few articles in each of the five issues. Without wanting to make any invidious distinction, I was most impressed reading the articles in the issues "Is India safe", "Water woes", and the "North East", as I considered these were of topical interest.

The Nirbhaya episode and the countrywide protests have not made the streets of the city any safer for the women who choose to go out unescorted. Abduction, rape and murder hit the head-lines every day. Which country is safe? Do we not read about trigger-happy goons shooting down children in schools in US and in Pakistan?

After two years of drought in succession most States fear there would be dearth of drinking water, a nightmarish future for many city dwellers. Suicide by farmers faced with barren dry land and mounting unrepayable debts hit the headlines daily. Most water bodies in Bengaluru are so polluted that they are covered with toxic foamy substance resembling snow. Lakes aflame, unbelievable, but true.

Ganga, Yamuna, Godavari rivers get so polluted that the water no longer is potable. The river Cauvery which is a rain-fed river is the bone of contention between Karnataka and Tamilnadu. Future wars may be to exercise ownership of rivers and large water bodies

There aren't many who can recall the names of the seven States in the North-east which continue to remain backward, partly due to inter-state distrust, lack of connectivity with their neighbouring States and discord between the different tribal communities. Even today, many students from these States who have enlisted in Universities in Delhi, Karnataka etc are viewed as alien, and often subjected to harassment and even physical abuse. The articles in the issue "North East", are informative and make for absorbing read. The photographs take the viewer almost to the picturesque sites

The last three pages of each issue are devoted to brief biographical sketches of very eminent Indians who have, in their chosen field, left their indelible footprints – very informative and readable tributes to the departed.

– Shyamsundar Savkur, Whitefield, Bengaluru

Letters should be addressed to:

The Editor

One India One People Foundation

Mahalaxmi Chambers, 4th Floor,

22, Bhulabhai Desai Road, Mumbai - 400 026

Tel: 022 - 2353 4400 Fax: 022-2351 7544

e-mail: oiopfoundation@gmail.com

WHO AM I?

*I am a proud Indian,
citizen of the world community,
inhabiting this lonely ...
but lovely little ... ★
planet ...*



Earth...



shyamsundar@gmail.com

Save our fish curry, oops, fish!

*Man must learn to leave the seas alone, except when he's eating the fish from there, of course, says **Nivedita Louis**.*

OCEANS – all blue tranquil waters, soothing breeze, endless stretches of sand and waves chasing each other. And a horde of people armed with buckets and mugs, clearing the oil spill. The recent incident at Chennai's beaches, when two ships collided and dumped their cargo into the Marina, we were actually surprised. We. The people who have the sole proprietary right to dump used plastic bottles, dinner plates, garlands, idols and everything that has lost favour with us, into the seas.

How could two ships dump their cargo into the sea? So, yes, we went in droves to clear the spill, with our restroom buckets. We love joining hands for a common cause as important as the 'Jallikattu'. Are the farmers committing suicide in thousands? Bah...it is their fate. Ours is a strange country where cows matter, and suicides find an obituary in the last page.

The fish we buy at the local market has been eating so much plastic that when we eat the fish, all we can feel is the plastic entering our guts. We term the conservationists who organise meetings and try to bring awareness about marine environment as 'silly', and keep munching on our mercury poisoned fish curry. So long as we get fish from the seas, all is well with the oceans. Ask a Bengali and he would give his life for a 'machhi', only next to his *dh*! We once had miles and miles of mangrove forests along the coast that protected us from calamities of the sea. All we have now is a vast emptiness, after mining every inch of sand for thorium, of course. The beach sand is the next valuable commodity after the sand inside the human skull, which proves our craniums are located elsewhere. We, the organised looters, love scraping every bit of charm and life and call ourselves the 'protectors' of this Earth. The Indian Ocean tsunami taught us all a valuable lesson – leave the seas alone. We never learn. Our fishermen dwell so close to the sea that they brush and wash straight into the sea. The tribe of fisher-folk is also on a steady decline, what is left over of the tribe are those hapless souls that escaped the

firing across the international border, who are now sitting ducks...oops, fishing ducks. As the lives in the oceans dry up, eventually these people lose their livelihood, which is already threatened by our 'consumerism' and freebies overdose.

Scientists and environmentalists have been steadily warning us of the depletion of oxygen in the oceans, and just as we took the climate change threat postulates as dark humour, we treat this warning as a crude joke. The warnings

have become so incessant that they are more frequent than our house help's vacations. At the drop of a hat, we get a climate change warning. Doomsday churches predicting the end of world mint more money than our poor environmentalists. The words environmentalist and conservationist don't find a place in our book of professions. What environmentalist? What saving the world? Have you gone nuts, *beta*? Take up engineering...computers, get paid in dollars! Eat KFC, big Mac. Yo! That's the way the world works. The marine life of our country is unique. The corals, the pearls...duh...do I sound like a jewellery connoisseur? Gone are the days we fished for pearls. We now

'cultivate' 'fresh water' pearls. As for corals, the effluents we let out into the sea have bleached them all white. Bleach us all white, I say!

Our oceans have been subject to decades of abuse and misuse. It is high time we realise the necessity of our fish fingers and fish n'chips in our fast-food dining, and for the sake of our poor fish, let us vow to save the oceans. For, there

is no bigger gift that we can give our children than nature's bounty. Let us not rob them off their Goan vacations and fish curry! ■



Nivedita Louis is a writer, blogger and social activist by choice. Bitten by the travel bug, and smitten by nature, she loves travelling and cooking. She blogs at www.cloudninetalks.blogspot.com.

Scientists and environmentalists have been steadily warning us of the depletion of oxygen in the oceans, and just as we took the climate change threat postulates as dark humour, we treat this warning as a crude joke.

Know your ocean

*Our oceans, which date back to millions of years, are a vast repository of flora, fauna, hydrocarbons and other countless minerals and resources. **Dr. M.V. Ramana** plumbs the depths.*

THE World Ocean Day theme for the year 2017 is “Oceans and our future”. Every year the World Ocean Day (June 8) is celebrated to gather information and knowledge about the ocean, the cause and effect of ocean’s pollution by various agencies, including human interference. Therefore, people need to be continuously educated by all possible means to save the oceans in order to have a better life on planet Earth.

The world’s oceans (including Pacific, Atlantic, Antarctic, Indian and Arctic oceans) are the habitat of more than 230,000 known species. Much of this ocean is unexplored; the number of species that exist could be much larger. The origin of Earth’s oceans remain unknown, but a few hypotheses suggest that oceans have formed in the Hadean, a geologic eon of the Earth predating the Archean period (4.6-4.0 billion years ago), and may have been the impetus for the origin or emergence of life. The oceans are great repositories of biomass as well as hydrocarbons, different kinds of economically viable minerals including polymetallic and phosphate nodules, precious metals and stones. Therefore, it is the responsibility of mankind to keep oceans clean, healthy and free from any pollution, or destruction of the marine environment in the name of offshore developmental activities, installation of offshore structures etc. It is well established that the oceans are huge depositories of hydrocarbons, as well as living resources. Therefore it is essential to strike a balance between exploration activities and protection of marine environment to enjoy the benefits of the seas and oceans. Significant reserves of oil and gas are found to occur below the seafloor of all the oceans in several parts of the world. For example; the offshore regions of America, Canada, Venezuela, Russia and gulf countries. The exploration, prospecting, drilling, and transportation can seriously damage the sensitive marine protected areas, and disturb the habitat of marine species.

What is an ocean?

An ocean is a large body of salt water occurring between

the continents. All the oceans are actually one big “ocean”, because they are joined. We can observe from Figure 1 (page 7) the spatial distribution of continents and oceans.

There are five oceans surrounding the six major continents and numerous offshore islands of different dimensions. It is believed that over vast periods of time, water remained as a gas, until the Earth cooled below 212 degrees Fahrenheit, and around 3.8 billion years ago, the water then condensed into rain which filled the existing basins and formed the oceans.

The largest and deepest among the five oceans is the Pacific Ocean, while the Arctic is the smallest and shallowest. Interestingly, the Pacific Ocean covers one third of the Earth’s surface. Large and small fish, crabs, starfish, sharks, whales, microbes, biomass, are found in all oceans. The Pacific, Atlantic, Indian, Southern (Antarctic), and Arctic Oceans come in descending order by their area. The word sea is often used interchangeably with “ocean” in American English but, strictly speaking, a sea is a body of saline water partly or fully enclosed by land. For example, the Caspian Sea and the Dead Sea are large saline lakes that are surrounded by land, and they lack a natural outlet.

Oceans combined contain 97% of Earth’s water. Oceanographers believe that less than five percent of the world ocean has been explored for harnessing hydrocarbons, which I will discuss at length here. As the world ocean is the principal component of Earth’s hydrosphere, it is the gateway to all known life, and forms part of the carbon cycle, which influences global climate and weather patterns. Some very unusual organisms live in deeper depths (>4000 meters) of the ocean, where oxygen is totally absent, and these organisms do not require energy from the sun for their survival.

What are hydrocarbons, and the Indian context

The term ‘hydrocarbon’ is self-explanatory, which means compounds of carbon and hydrogen only. All petroleum products associate in different molecular forms of these molecules.

The world’s oceans (including Pacific, Atlantic, Antarctic, Indian and Arctic oceans) are the habitat of more than 230,000 known species. Much of this ocean is unexplored; the number of species that exist can be much larger.



Figure 1: Oceans surrounding the major continents

Hydrocarbons play a key role in our daily life. You must be familiar with the terms 'LPG' and 'CNG' used to describe fuels. LPG is the abbreviated form of liquefied petroleum gas and CNG is compressed natural gas. Another term 'LNG' (liquefied natural gas) is also in news these days. This is also a fuel and is obtained by liquefaction of natural gas.

It is appropriate at this juncture to know about India in the context of its hydrocarbon potential. The Indian continent is surrounded by huge water bodies on all three sides except in the north, where India collided with Eurasia and gave birth to the mighty Himalayas. The western part of the Indian continent is bordered by the Arabian Sea, while the eastern side by the Bay of Bengal. The Indian Ocean forms the southern boundary of India. The Arabian Sea and the Bay of Bengal are interconnected by the Indian Ocean at the southern tip of India, i.e., Kanyakumari. Therefore, the Arabian Sea and the Bay of Bengal are integral components of the Indian Ocean. The living resources, i.e., fish, biomass etc., and non-living resources including hydrocarbons, deep sea minerals etc., of both Arabian Sea and Bay of Bengal require due attention and exploration to understand and to estimate the reserves.

India's economy

India, a nation of 1.3 billion people, has been declared in 2017 as one of the fastest growing economies in the world, with an economic growth rate of 7.1%. India is also the fourth-largest net importer of crude oil after the European Union, the United States, and China. The oil majors of our country such as Oil and Natural Gas Corporation Limited (ONGC), Oil India Limited (OIL), Reliance India Limited (RIL) and other state owned oil companies are continuously striving hard to protect the country's interest on energy security by knowing and forecasting the oil and gas reserves and

requirements. Of course, the existing oil reserves are inadequate against the growing demand, therefore India imports approximately 58% of its crude oil from the Middle East, mostly from Saudi Arabia and Iraq.

The shallow water oil fields such as the Bombay High in the west coast and other oil fields along the east coast of India, have been considerably exploited; therefore, there has been an increasing interest in deep water oil and gas exploration.

Without natural gas, oil and coal, the world would come to a standstill. Most of the modern industrial nations are dependent on fossil fuels, and the energy consumption has risen by about 70 percent over the past three decades. The International Energy Agency (IEA) in Paris projected that the consumption will increase at least by another 50 per cent by 2030. The greatest consumers are the USA, China, Russia and India. The demand for energy will continue to increase due to rapid industrialisation and urbanisation. The growing demand and increasing prices led to deep sea interest in exploring the oil and gas deposits buried at deeper depths i.e., beyond shelf and slope regions. Now advanced and fast growing technologies are available.

Favourable conditions for hydrocarbon formation

The amount, nature and location of fluid hydrocarbons within the basin is governed by the geometric shape and size of the basin, the nature of the stratigraphic fill and the types of structures, and most important, the thermal history of the basin. A basin is a depression like feature whose area spreads over a vast region (tens to hundreds of square kilometres). Analysis of the sedimentary basins identifies styles, basin evolution time, and trends that embody favourable combinations for hydrocarbon occurrence. Oil and gas are the remains of



Bombay High; these oil fields off the Mumbai coast have been considerably exploited

the organic matter in the marine environment, which decay under certain physical, chemical and thermal conditions over a period of time (geological time scale spans several thousands of years). During the decay, the less combustible elements are driven off, leaving behind the highly combustible elements such as carbon, hydrogen and oxygen. The elements carbon and hydrogen combine in several ways to form hydrocarbon molecules.

Understanding gas hydrates

India is currently the fourth largest oil consumer in the Asia-Pacific region after Japan, China and South Korea. Estimated to increase at the rate of seven percent a year, the demand for petroleum products in absolute terms is expected to be 245 million tons by 2018. Though India is blessed with adequate reserves of coal and hydro resources, the conventional hydrocarbon reserves (oil and gas) estimated so far are inadequate to meet the growing demand.

This huge demand and supply gap requires to be met either from imports and/or increase in domestic production, or switching over to other non-conventional energy fuels.

Gas hydrates are clathrates of natural gases (mainly methane), which are captured in water ice crystals. These clathrated compounds have been discovered in sediments

worldwide, wherever low temperature, high pressure, salinity, and sediment organic concentrations are conducive to their formation. Recent academic and industrial efforts to investigate and explore naturally occurring gas hydrates have expanded and deepened our knowledge of the distribution and occurrence of gas hydrates in deep sea sediments and permafrost regions

Conclusion

We have seen that the oceans are treasure houses of several living and non-living resources. Technologies are there to explore as well as exploit. Geoscientists, engineers, environmental scientists, as well as engineers of all branches have a definite role to contribute for sustainable economy growth. The Government of India and major oil Industries are continuously endeavouring to safeguard the energy security. ■



Dr. M. Ramana is former Chief Scientist, CSIR National Institute of Oceanography, Goa. During his career at NIO, he led several projects including Gas Hydrate Research (2000-2006) and later, several oceanography expeditions as Chief Scientist. Dr. Ramana was the recipient of the National Mineral Award in the field of Geophysics for his outstanding contribution in understanding structure and evolution of Indian Continental Margins in 1998. He retired from NIO in 2012.

The bounty from the sea

*The oceans provide us not just food and transportation, but also medicines and medicinal products used by our traditional branches of medicine. Their bounty is truly mind boggling, say **Dr. Anil Chatterji** and **Sumedha Chinnari**.*

THE ocean is a treasure trove of many living and non-living resources. Ancient Indian documents show that numerous marine organisms-based remedies and preventives were from the sea. The Greeks and Arabs also contributed substantially to the assimilation, codification, and development of these medicines. People in those days, however, realised that undiscovered wealth dwelled in the waters of the ocean throughout the world. As such, marine organisms began contributing useful new therapeutic agents as seen in traditional medicinal practices all over the world. Even today, approximately 80 percent of the world's population relies on traditional plant-based medicines for primary health care.

In Ayurvedic practices, the use of marine organisms has been known for centuries. The origin of Ayurveda is believed to be from 'Samudra Manthan' (churning of the sea) in which the Amrut – nectar of life – was produced. In Ayurvedic practices, marine organisms are grouped in three main categories: animal, plant and minerals. Corals, pearls, shells, conch, sea salt, sea coconut, etc., are the main sea organisms used for the preparation of different kinds of drugs in Ayurveda.

The following are some of the important and potential marine organisms useful in drug industries:

Seaweeds

In Chinese traditional medicinal practices, Kelp (*Laminaria*) and Sargassum – both brown alga, and red alga, are commonly used to prevent joint pain from inflammation. These seaweeds are proven to be wonderful in solving many bone related problems, and at the same time help in normalising thyroid and reproductive functions. Seaweed has been reported to draw a wealth of mineral elements from the sea that can account for upto 36 percent of its dry mass. The mineral macronutrients in seaweed consist of sodium, calcium, magnesium, potassium, chlorine, sulphur and phosphorus, whereas the micronutrients include iodine, iron, zinc, copper, selenium, molybdenum, fluoride, manganese, boron, nickel and cobalt.

Seaweed contains a large portion of iodine compared to the dietary minimum requirements. Brown algae showed the highest iodine content ranging from 1500-8000 ppm. Daily



Seaweeds contain many mineral macronutrients

requirements of iodine for adults are currently recommended at 150 µg/day, and as such only a small amount of seaweed is required to meet its demand. One gramme of dried brown algae provides 500-8,000 µg of iodine. Studies show that the human body adapts readily to higher iodine intake. The thyroid gland is the main tissue in the human body which needs iodine.

It has been reported that a large number of people all over the world do not get sufficient iodine because the land, plants, and animals that serve as common dietary sources contain low amounts of this compound. Seaweed is also one of the richest plant sources of calcium (4-7% of dry matter). One gram of dried seaweed provides 70 mg of calcium as compared to the daily dietary requirement of about 1,000 mg. So, the calcium requirement from seaweed is still higher than a serving of most non-milk based foods.

Spirulina, a micro-alga, is well known for its very high protein content ranging up to 70 percent of dry matter. Seaweed has also been reported to contain several important vitamins. Red and brown algae are rich in carotenes (provitamin A) and are used as a source of natural mixed carotenes for dietary supplements. Vitamin C in red and brown algae has been found ranging from 500-3000 ppm. Vitamin B12 which is not found in most terrestrial plants, is present in seaweed.

Seaweeds have been reported to be used for treating soft



Jellyfish has been exploited commercially in China since very long

swellings, including ovarian cysts, breast lumps, lymph node swellings, lipomas, and fat accumulation from simple obesity.

Mangrove plants

Mangrove plants have been used for medicinal purposes over the past few years. In some cases, the plant or its sap is used directly, while in other cases, the leaves may be heated or the plant material burned to an ash for various applications such as skin sores and scabies, leprosy sores, body pain, boils, washing wounds, headaches, splints for fingers, toothache, ulcers, and yaws. Mangroves are flowering plants, and their flowers are a likely source for honey. Native bees are usually found in the mangroves during the various flowering seasons, and these plants are now exploited by commercial apiarists with their exotic bees.

Sea cucumber

In ancient times, sea cucumber was used as an important ingredient in Chinese dishes. It is often known in medical literature as *fangcishen*. The Asian demand for sea cucumber has been so high that it now has to be collected from the US, Australia, and Philippines to meet the increasing demand. Although the Atlantic sea cucumber was collected primarily as food, it has recently been discovered to be an important source of medicinal component. Sea cucumber also has low fat content as compared to other food from the sea.

In traditional Chinese medicine, the sea cucumber has been reportedly used for treating disorders of the kidney system. Sea cucumber is now considered a valuable source for several kinds of important compounds that may be used as natural health products, and perhaps also be developed as drugs. The extracts prepared from sea cucumber could be put into easy-to-consume formats, such as capsules and tablets as

most people do not have access to its beneficial components. Russian, Japanese, and Chinese studies have shown that sea cucumbers also contain saponins (triterpene glycosides) which have a structure similar to the active constituents of ginseng, *ganoderma* and other famous tonic herbs.

Jellyfish

Jellyfish has been exploited commercially and considered an important food in China for over a thousand years. Semi-dried jellyfish represents a multimillion dollar business in Asia. Cannon ball jellyfish collagen has shown to have a suppressing effect on antigen induced arthritis in laboratory rats. Mucin, a protein substance, is also extracted from jellyfish and is used in drug delivery, cosmetic products, and food additives. With the great abundance of cannonball jellyfish in US coastal waters, turning it into value added products could have tremendous environmental and economic benefits.

Marine molluscs

There are many natural remedies for acute or chronic pain due to simple arthritis or rheumatism. These products are of marine origin, and have been proven to give effective relief without the unwanted side effects of the use of steroid treatment that is so common today. One such useful product for hip or joint pain is an extract prepared from green mussel, a marine bivalve, belonging to the molluscs group. Green mussel has been used to treat degenerative joint disease for many years. This mollusc contains many bioactive compounds including glycosaminoglycans, which is an anti-inflammatory compound. Green mussel has been shown to reduce the inflammation of rheumatoid arthritis and degenerative joint disease of the stifle. As early as the second century, the Romans have reported oysters and clams to be good aphrodisiac agents.



Sea cucumber is much in demand for its medicinal properties

Seahorse

The seahorse is a highly regarded and acclaimed marine animal in Chinese philosophy. In Asia, many people have been using seahorses for thousands of years as a cure for a variety of ailments. Chinese medicine manuals refer to it as being sweet in taste, warm in nature. Their active compounds are reported to enter the kidney and liver channels quickly. The therapeutic value of seahorses has been spread via folklore from generation to generation. In China, about 20 million seahorses are caught each year from the wild and have been used as an ingredient in traditional medicine over the past 600 years. Seahorses are reported to play an important role in balancing vital energy flows within the body, cure impotence and infertility, asthma, high cholesterol, goitre, kidney disorders and skin disease such as acne and persistent nodules formation.

Horseshoe crab

The horseshoe crab has been useful to humans today in many ways. A tribe inhabiting the north-east coast of Odisha, uses the tail piece of the horseshoe crab to get relief from different types of ailments by tying it on the arms or pricking it on the forehead. It has been reported that the tail tips are used for healing arthritis or other joint pains and such that they are sold by faith healers in West Bengal. The dead carapace of the horseshoe crab is often boiled with mustard oil and is used for treating rheumatic pain in many Asian countries.

Sea turtles

The eggs of sea turtles are prized as food, and used in traditional medicine in Asia and most parts of the tropical world. Latin Americans also use sea turtle eggs as an aphrodisiac and energising protein. In some parts of the world, nearly 100 percent of the eggs are harvested by humans immediately after they are laid.

Sperm whale

An important compound which is known as Ambergris is produced by sperm whales. Ambergris is a black, semi viscous liquid that forms around indigestible squid beaks. On exposure to sunlight and air, Ambergris quickly oxidises and hardens to a pleasantly aromatic, marbled, greyish, and waxy substance in which the squid beaks are embedded. When ambergris is heated, it produces a very pleasant, mild, sweet, and earthy aroma. From ancient times it has been used in the West as a fixative for rare perfumes, since it has the effect of making other perfumes last much longer than they would. It is said that a single drop of ambergris applied to paper and placed in a book will remain fragrant after 40 years and that once



About 20 million seahorses are caught in China every year

handled, the fingers will carry its scent for several days even when washed. To the Arabs it is known as 'ambar' and originally called 'amber' in the West. In addition to its common usage as expensive perfumery, it has been used in the flavouring of dried fruit and tobacco. In India, ambergris is collected from the Andaman waters, and is exported at a very high cost for various applications.

These above mentioned evidences strongly prove that marine animals have the potential for directly benefiting human beings through holistic care. This is especially true in chronic cases, where often, traditional medicine is found to be effective after modern medicine has failed. ■



Dr. Anil Chatterji is a marine biologist and biotechnologist. He was associated with the National Institute of Oceanography, Goa, for 35 years, and worked as a scientist. He has 150 scientific papers and equal numbers of patents to his credit. At present, he is a consultant for the Department of Biotechnology, Government of India, for establishing a new marine biology and biotechnology institute in India.



Ms. Sumedha Chinnari is a marine biologist and biotechnologist. She has a number of scientific papers to her credit. She is working for her PhD and is also instrumental in establishing a non-profit organisation – the 'Aquamarina Research Foundation' – in Goa.

Algal good to algal bad?

Did you know that terrestrial plants supply us with only fifty percent of our atmospheric oxygen? The rest comes from tiny plants or algae in water bodies called phytoplankton.

Dr. Ravi Naik takes us into this unfamiliar, but vital world.

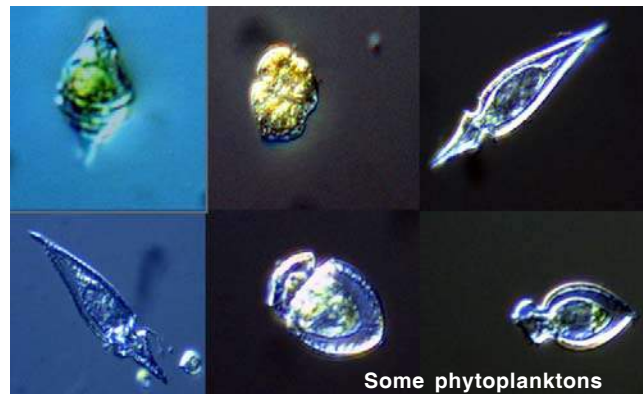
HELLO readers! Let me take you on an aquatic journey to understand what is this 'good' that can 'turn bad'? It is a very simple, yet a very important story, and has direct implications on our day-to-day life. This story is basically about the microscopic plants (algae) which live in almost all water bodies. They contain chlorophyll pigment and can prepare their own food using solar energy (photosynthesis). Hence, they are said to be autotrophic. The moment I say they are microscopic plants, it is obvious that these plants cannot be seen with the naked eyes. Still, they play an important role because they are plants.

We all know that terrestrial plants are important because they provide us with our life support, and that is oxygen. However, a majority of us might be unaware that only 50 percent of the total atmospheric oxygen is produced by terrestrial plants, and the remaining 50 percent is contributed by phytoplankton. Hence, it wouldn't be wrong to say that every second breath of a person is due to phytoplanktons. Such tiny organisms and such an important role they play in the world. It's worth a thought!

The role of phytoplankton

Phytoplankton are primary producers. They form the first stage of most aquatic food chains. They are eaten by primary consumers (zooplankton), which are in turn, eaten by secondary and tertiary consumers (small and large fish). In simple words, this food chain is connected from phytoplankton to whales; phytoplankton serve as the base of this chain. In addition to this, phytoplankton are also actively involved in fixing atmospheric carbon dioxide. These phytoplankton may either die or be eaten by other larger organisms. Once they die, the carbon dioxide fixed by them will settle along with the carcass on the seabed. Similarly, those organisms that feed on phytoplankton may excrete carbon in the form of faecal pellets, which again settle at the bottom of the ocean. This carbon remains here for several hundreds of years. This mechanism adopted by Mother Nature is beneficial to control the ever-increasing global warming.

Just as every coin has two sides, although phytoplankton significantly benefit mankind and the aquatic ecosystem, they may also cause some harm. In certain circumstances (due to natural phenomena or anthropogenic activities), these



microscopic plants grow to such high numbers that they can change the colour of the water, and such conditions are termed as algal blooms or red tides. This proliferation of algae can cause massive fish kills, contaminate seafood with toxins and alter the ecosystem; such blooms are generally termed as Harmful Algal Blooms (HABs).

The harmful blooms

These HABs may be toxic or non-toxic depending on their ability to produce toxins. This depends on the type of species that is responsible for the bloom. We can broadly classify bloom-forming phytoplankton species into three types: 1) Those that proliferate and discolour the water to the extent that the water turns so dense that it forms a canopy that blocks sunlight penetration into the water, and thus can cause damage to other autotrophic life present in the water body. In addition to this, dense blooms on decomposition can cause anoxia (absence of dissolved oxygen) and lead to indiscriminate mortality of aquatic life. 2) Species that produce toxins that can affect the gastrointestinal system and cause neurological illness to humans by entering into their system through sea food. 3) Species that are non-toxic to humans, but can kill invertebrates and fishes by clogging their gills. HABs may also have adverse effects on tourism and the food industry.

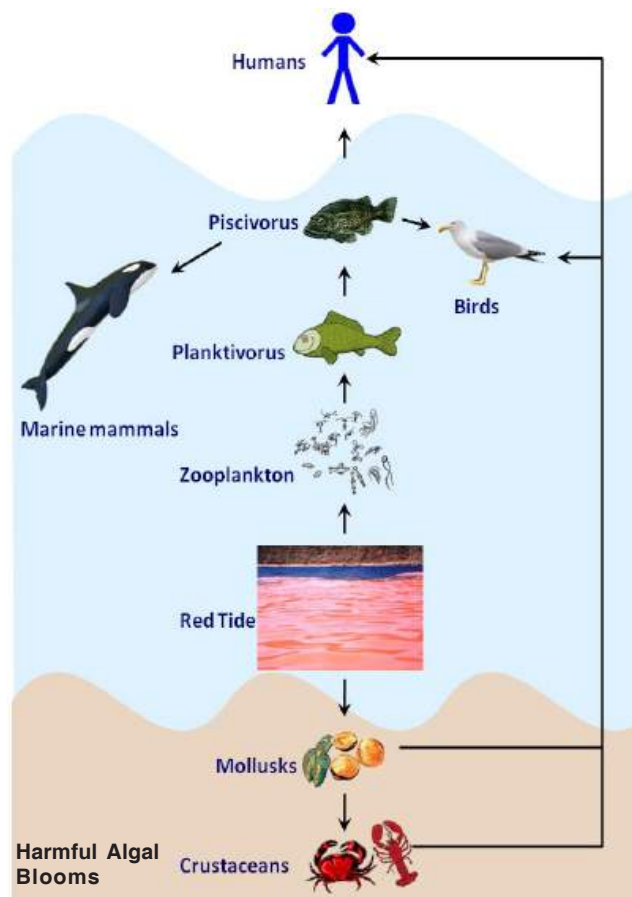
Among the toxic phytoplankton, there are few which can produce toxins that can cause serious and potentially deadly illnesses in humans. Basically, these toxins make their entry into the human digestive system through seafood, mostly through shellfish bivalves (clams, mussels, oysters etc.) These shellfish are the main victims of such toxins because of their

filter-feeding habit; that is, they feed themselves by filtering the waters from their surroundings to capture the microorganisms present in the water. However, during such feeding mechanism, they keep accumulating the biotoxins present in the surrounding water (if toxic species of phytoplankton present in the water or during a bloom of toxic species), and this accumulation of biotoxin in the shellfish tissues can cause illness to those who consume them. It is vital to understand the types of illness that occur due to consumption of shellfish with a high level of toxins, and also the symptoms of these illnesses. Actually, there are many toxic phytoplankton, but here I am going to tell you about only those which are more dangerous to human health, and such illnesses are as follows: a) Paralytic Shellfish Poisoning (PSP), b) Diarrhetic Shellfish Poisoning (DSP), and c) Amnesic Shellfish Poisoning (ASP).

The PSP is mainly caused due to the saxitoxin, a neurotoxin produced by phytoplankton, and the symptoms of PSP are a tingling sensation or numbness on face that starts from lips and spreads all over the face and neck, a prickly sensation at fingertips and toes, headache, dizziness, and in extreme cases, paralysis of respiratory muscles and death in a few hours. The DSP is caused due to okadaic acid produced by phytoplankton and the symptoms of the illness are; abdominal cramps, diarrhoea, vomiting and headache, and the symptoms occur within an hour of consumption. The ASP is caused due to domoic acid produced by marine phytoplankton, and the symptoms are as follows; nausea, vomiting, muscle weakness and memory loss. In extreme cases, death can occur. However, it is essential to seek medical assistance in any of the above illnesses, based on the severity of the symptoms.

The India story

It is evident that these phytoplankton blooms are problematic for the ecosystem as well as for human health. Adding to our concerns, these events are increasing worldwide over the years. A research survey by D'Silva et al., (2012) indicates the status of Indian waters in the context of HABs. In our research, we found that in the five decades HAB episodes along the Indian coast have shown an increasing trend. The reason for such increased HAB events could be because of: (1) Growing awareness (researchers started noticing the blooms, or else in the past such booms might have gone unnoticed) or improved research methods and techniques, (2) Species dispersal through currents, storms or cyclones, (3) Bioinvasion through ship ballast water, and (4) Eutrophication (nutrient enrichment) in coastal waters. These reasons may vary from one bio-region to the other, depending on the regional environmental settings. With the global increase in algal blooms, it becomes necessary for every



maritime country to have an understanding of the algal bloom scenario in their territorial water bodies.

Regular physical monitoring in coastal waters by researchers might not be a feasible option; however, the awareness among coastal dweller can solve the purpose at a significant level. It is also important to transfer this scientific vision to social vision for the benefit of society, that would otherwise be affected either in terms of health or the economy. It is clear that on a relative scale, anthropogenic activities are contributing more in increasing events of HABs. In other words, we are unknowingly playing with our second breath and contributing into it turning from good to bad. It's time for bridging the gap between the scientist and the common man to establish a stronger network for bloom detection in coastal waters. ■

Dr. Ravi Naik, a biological oceanographer, works as a project scientist at Plankton Biology Lab of National Centre for Antarctic and Ocean Research. Currently, he is trying to understand the phytoplankton community dynamics from polar waters, and their response to climate change, by being associated with the southern ocean biogeochemistry project. He believes that science should not be trapped within scientific journals and scientific community, but needs to reach the non-scientific component of the society in a simpler form.



A graveyard of beauty?

*The world of coral reefs is a multi-hued, fascinating one. But are we doing enough to protect this fragile ecosystem? **Karn Ragade** tells us the sad truth.*

JACQUES Cousteau very aptly said that, “Water and air, the two essential fluids on which all life depends, have become global garbage cans”.

As school going children, while learning geography, the most astounding topic was the beauty of the coral reefs. This marvelous bounty of weird shapes, sizes, colour and texture, thriving in the turquoise depths of the oceans and seas has been an attraction to man for generations now. It is said the oldest coral reef dates back to 500 million years, which means its creation is still a mystery.

How are coral reefs formed?

Corals are diverse ecosystems formed underwater, which are held together by an exoskeleton of calcium carbonate (CaCO_3). This CaCO_3 is secreted by the corals which support and protect the polyps from which the coral is formed. Coral reefs are also built by colonies of tiny marine animals in cluster groups. These animals can include sea anemones and jellyfish. Though this ‘rainforest of the sea’ occupies only 0.1 percent of the world ocean surface, it is home to nearly 25 percent of marine life.

Along with being a wonder of the world, the coral reefs are a major tourist attraction in many places. Corals need sunlight, clean water, warm water temperature and salt water to thrive. All of these in essentially adequate amounts can ensure that the reef blossoms and blooms.

The withering away

What has caused this bountiful formation to wither away? Tourism, oil spills, and climate change have played a major role in the mass depletion of this natural marvel. It is a known fact that since industrial revolution, human intervention and its effect on biodiversity are clearly visible today. From

thunderstorms and flash floods in monsoons, to dry, hot and scorching summers, to blizzards in winter, to depletion of marine ecologies and life in water, to ocean acidification and calcification of coral reefs, man plays a pivotal role in causing this damage.

AquaView, an online scuba magazine wrote in 2013 that “As coastal construction increases and global temperatures rise, an estimated 33 percent of corals are in danger of extinction. Marine studies have shown an 80 percent decline in some forms of coral over the last decade”.

Corals cannot survive if the water temperature is too high. Global warming has already led to increased levels of coral bleaching, and this is predicted to increase in frequency and

severity in the coming decades. Such bleaching events may be the final nail in the coffin for the already stressed coral reefs and ecosystems. Climate change is a grave and perilous problem that is looming large and causing major damage to life.

Encroachment

on land is something that doesn't surprise us, but the fact that live coral is removed from reefs for use as bricks, road-fill, or cement for new buildings, is astounding. Corals are sold as souvenirs to tourists and to exporters who don't know or don't care about the long term damage done, and they are harvested for live rock trade.

Pollution is another major reason for the depletion of coral reefs. Urban and industrial waste, sewage, agrochemicals are freely let out into open waters. These toxins dumped directly into the ocean or carried by river systems from sources upstream damage the reefs. Some pollutants, such as sewage and runoff from farming, increase the level of nitrogen in seawater, causing an overgrowth of algae, which smothers reefs by cutting off their sunlight.

Tourism can be as major a hindrance as encroachment,



The beautiful coral reefs are said to date back to 500 million years

with activities like careless boating, diving, snorkeling, and fishing that happens across the globe, it is definitive that marine life is adversely affected by it. With people touching reefs, stirring up sediment, collecting coral, and dropping anchors on reefs, we have accelerated the rate of extinction of these reefs. Some tourist resorts and infrastructure have been built directly on top of reefs, and some resorts empty their sewage or other wastes directly into water surrounding coral reefs. What are we doing?



An oil slick moving onto coral reefs at Galeta at low tide after the Bahia las Minas refinery spill, Panama, April 1986

Oil spills from major and minor fishing vessels and VLCs (Very Large Containers) cause oil slick to coat the top layer of the water. Since the oil is denser than water, it becomes impossible for sunlight to penetrate through the oil layer, thereby causing the temperature to drop inside the water, making it difficult for the coral reef to thrive. Even the slightest difference in temperature can cause damage to the coral reef.

Exposing corals to small amounts of oil for an extended period can be just as harmful as large amounts of oil for a brief time.

Coral reefs come in contact with oil in three ways:

- Oil floating on the surface of the water is deposited on the coral when the water level drops at low tide.
- Rough seas mix up the lighter oil products into the water column where it descends to the coral reef.
- Heavy oil gets mixed with sand and sediments from the oceans becoming dense and heavy enough to sink to the coral reef and smother them.

Once oil comes into contact with corals, it can kill them or impede their reproduction, growth, behaviour, and development. The entire reef ecosystem can suffer from an oil spill, affecting the many species of fish, crabs, and other marine invertebrates that live in and around coral reefs.

How can we make a difference?

A nature conservancy organisation based in Arlington (Texas), USA, has provided us with some simple ways which each of us may practice to slow down the rate, and eventually

end the threat of extinction of coral reefs across the globe:

- **Research what you put on your lawn:** Although you may live thousands of miles from a coral reef ecosystem, these products flow into the water system, pollute the ocean, and can harm coral reefs and marine life.
- **Support reef-friendly businesses:** Ask the fishing, boating, hotel, aquarium, dive or snorkeling operators how they protect the reef. Be sure they care for the living reef ecosystem and ask if the organisation responsible is part of a coral reef ecosystem management effort.
- **Practice safe and responsible diving and snorkeling:** Do not touch the reef or anchor your boat on the reef. Contact with the coral will damage the delicate coral animals, and anchoring on the reef can kill it, so look for sandy bottom or use moorings if available.
- **Volunteer for a coral reef cleanup:** You don't live near a coral reef? Then do what many people do with their vacation; visit a coral reef. Spend an afternoon enjoying

the beauty of one of the most diverse ecosystems on the Earth. ■



Karn Ragade is a faculty member of English Language and Literature for the Middle Years Programme at the prestigious Victorious Kids Educaress, a model IB school in Pune. He has spent many years in social service. He continues to pursue his interest in the same by volunteering with organisations to rekindle maritime awareness among masses, and also by supporting basic first-aid training.

You should know

- Around 70% of the Earth's surface is covered by oceans.
- Ocean tides are caused by the Earth rotating, while the Moon and Sun's gravitational pull acts on ocean water.
- The largest ocean on Earth is the Pacific Ocean, it covers around 46% of the Earth's surface.
- The Pacific Ocean's name has an original meaning of 'peaceful sea'.
- Located to the east of the Mariana Islands in the western Pacific Ocean, the Mariana Trench is the deepest known area of Earth's oceans. It has a deepest point of around 11000 metres (36000 feet).
- The Pacific Ocean is surrounded by the Pacific Ring of Fire, a large number of active volcanoes.
- The second largest ocean on Earth is the Atlantic Ocean, it covers over 21% of the Earth's surface. The Atlantic Ocean's name refers to Atlas of Greek mythology.
- Amelia Earhart became the first female to fly solo across the Atlantic Ocean in 1932.
- While some disagree on whether it is an ocean or just part of larger oceans, the Southern Ocean includes the area of water that encircles Antarctica.

Treasures from the deep blue

The bounty of the oceans is truly amazing, and not yet fully explored, says Dr. Samir R. Damare. Treat the oceans with love and respect, and they will yield up myriad tales of adaptation and survival, he promises.

BIOMOLECULES are the compounds which form the basis of life: they build up the living system and are responsible for their survival and sustenance. Biomolecules are large molecules of many sub-units bonded together. These could be divided broadly into four categories, viz., carbohydrates, proteins, lipids and nucleic acids. Carbohydrates are made up of sugars, proteins of amino acids, lipids of fatty acids, and nucleic acids of nucleotides. Carbohydrates provide the energy and building blocks for the living beings; proteins are mainly the enzymes responsible for functioning of the metabolic processes; lipids for vital structures in cells and are important energy stores; nucleic acids are molecules of heredity.

The oceans cover more than 70% of the Earth's surface with the Pacific Ocean covering 46%, while the Indian Ocean covers 20% of the area. Although still a debatable topic, it is believed that life originated in oceans more than 3,000 million years ago. Oceans harbour highly diversified life forms, which is still not described to the fullest. Oceans support the life in the forms of the minute viruses up to giant sperm whales. It is indeed an irony that lot more efforts have been taken to explore space as compared to the oceans. Oceans present a whole gamut of environmental conditions with respect to temperature, light, pressure and nutrients, naturally. Beyond 3000 m, the temperature is close to 4°C, giving it an appearance like a 'huge refrigerator', except the hydrothermal vent regions where the water temperatures have been reported up to 700°C. The water column exerts a tremendous hydrostatic pressure, with the pressure increasing by 1 atmosphere for every 10 m depth (for reference, the pressure on earth's surface at sea level is 1 atmosphere). Similarly, there is a complete absence of light beyond 200 m depth. Hence, the life there adapts to live in the absence of light.

The magic of adaptation

The biological adaptation of marine organisms to the whole range of environmental condition existing in oceans has made them a reservoir of interesting biomolecules for both basic research and biotechnological improvements. Some of the examples of the products and technologies that could be

harvested from the oceans owing to the conditions existing therein, are cold-active enzymes, anti-freeze compounds, surfactants, biodegradation at low temperatures (low temperature in deep-sea and polar regions), thermostable and solvent stable biocatalysts, biohydrometallurgy (high temperature and metals at hydrothermal vent regions), novel biocatalysts/enzymes (high pressure in deep sea), novel metabolites, halotolerant biocatalysts (high salinity from saturated brine areas), bioremediation (oil well regions with hydrocarbon seeps), anaerobic biotransformation, and biodegradation (anaerobic conditions from oxygen minimal zones).

Terrestrial organisms have been the first and most studied model species, but the biodiversity of the oceans is far larger than that of terrestrial systems. The sea contains a plethora of organisms, each with a multitude of molecules, metabolites, and proteins. However, this overwhelming number of marine resources remains largely unexplored. Technical and biological reasons have been responsible for this under exploration in the past. Recent technological advances are being introduced into the marine "blue" biotechnology, due to which the doors are now opening fast to explore the richness of the oceans.

Enzymes, the best representative of the protein biomolecule, are the most explored from the marine environments followed by the polysaccharides, the carbohydrate. The enzymes obtained from the marine environments differ from the terrestrial ones mainly on their ability to act in the saline conditions. Owing to the different extreme conditions existing in the oceans, the enzymes found here can also be called as extremozymes.

Different enzymes which have been obtained from marine environments are proteases, lipases, xylanases, amylases, cellulases, etc. Proteases obtained from the deep-sea are perfect candidates to be used as additives in the detergent powders which help in removal of stains from the clothes efficiently without the need to heat the water, thereby saving energy. Similarly, enzymes obtained from the hydrothermal vent regions are tolerant to high temperatures and active which are useful in the food industry, for example, xylanases and lipases.

Among other biomolecules, polysaccharides are the most abundant renewable biomaterial found on land and in oceans.



Plants and organisms in the deepest oceans; here, life has adapted itself to live without light

The most famous example is *agar* obtained from the red alga *Gelidiummamsii*. The *agar* obtained from this is used in the food industry – for making jelly.

The biomolecules which are attracting more and more people towards ocean research and exploration are the drugs from the sea which could be used for therapeutic purposes. Over 30,000 different marine natural products have been described, and hundreds of patents have been filed. As of February 2016, marine-derived compounds which have been FDA-approved or are in Phase III, II or I of drug development (<http://clinicaltrials.gov/>) and are part of the global marine pharmaceutical clinical pipeline, are only 38. The potent molecules of marine origin are analgesics, anti-alzheimer agents, anti-asthma agents, antifungals, anti-infective, anti-inflammatory, anti-tumour, cytotoxins, DNA polymerase inhibitors, gene inhibitors, immunostimulants, immunosuppressants, osteoarthritis treatment, protein synthesis inhibitors, etc.

These biomolecules are mostly obtained from a particular class of bacteria associated with other larger life forms like sponges and coral. These molecules are produced as a defense mechanism which is being harvested by us for clinical applications as stated above. But again, this poses a severe environmental threat as overharvesting of such sponges can drive them to extinction and cannot assure a steady supply to be used as raw material. This is where technological

developments in molecular biology come into picture, where gene (nucleic acid) responsible for the production of these biomolecules (proteins) could be transferred to bacteria which are easy to cultivate and harvest in laboratory conditions. This approach will help us to use the molecule of our interest without harming nature, and thereby maintaining ecological balance.

The assignment of the exact biological functions to genes, proteins, and enzymes in the marine environment, is the least developed aspect. More efforts are required to describe the kind of life forms existing in the oceans, and explore them for the possible adaptations exhibited by them. Oceans are the last frontiers of humanity, and need to be treated with love and care. ■

Dr. Samir R. Damare is a PhD in Marine Sciences from Goa University (National Institute of Oceanography, Goa). After completing his PhD, he moved to Germany for carrying out post-doctoral research. He came back to India in 2009, and joined as Scientist at CSIR-National Institute of Oceanography, Goa, in the Biological Oceanography Division, and has been working there since then. His research focuses on exploration of marine resources for biotechnological application. He has been studying the diversity of microbes present in the special marine habitats and their survival strategies therein. He is a recipient of the CSIR Young Scientist Award for the year 2010 in Earth, Atmosphere, Ocean and Planetary Sciences.



Did you know?

The Indian Ocean is the world's third largest ocean and covers 20% of the Earth's surface, after the Pacific and the Atlantic Oceans. The lowest point in the Indian Ocean is the Java Trench, which is about 7,258 metres (23,812ft.) deep. There are many islands in the Indian Ocean; among the most well-known are Mauritius, Seychelles, Madagascar, Maldives and Sri Lanka. The Northern Indian Ocean also is the most important transport route for oil as it connects the oil-rich countries of the Middle East with Asia. The Indian Ocean provides home to many endangered sea species such as turtles, seals and dugongs (also called sea cows).

The ocean's impact on climate

*The oceans play a very critical role in climate change, and it's time we understood that, says **Karn Ragade**, as he explains the dynamics.*

OCEANIC climate is a climate which generally features cool summers and fairly cool winters. This is often seen on west coasts with higher middle latitudes of continents. The technical definition of oceanic temperature would be, a climate having a monthly mean temperature of below 22°C in the warmest month, and above 0° C in the coldest month.

This typically lacks a dry season as the precipitation is evenly dispersed across the year. Oceanic climates can have much storm activity as they are located in the belt of the stormy westerlies. Many oceanic climates have frequent cloudy or overcast conditions due to the near constant storms and lows tracking over or near them. The annual range of temperatures is smaller than typical climates at these latitudes due to the constant stable marine air masses that pass through oceanic climates, which lack both very warm and very cool fronts.

Ocean and climate change

The ocean is an important component of the climate system. It provides the surface temperature boundary condition for the atmosphere over 70% of the globe. It provides 85% of the water vapour in the atmosphere. It exchanges, absorbs and emits a host of radiatively important gases. It is a major natural source of atmospheric aerosols. However, the ocean is dynamic and its surface properties will vary on all time scales, allowing great scope for feedback between the ocean and atmosphere.

Over the last two decades, the importance of the ocean to understanding, and predicting the evolution of the climate system has been recognised. Now, a climate model needs to possess a coupled ocean and atmosphere to be taken seriously, because oceanic processes, through the ocean's thermal and dynamic inertia, intrinsically contain the long time scales on which climate changes.

How oceans affect climate

Sea level rise: The heat capacity of the oceans provides a

thermal lag on the climate. The heat capacity depends on the parts of the ocean that are involved; for time scales from seasonal to decadal, the ocean mixed layer is dominant, whereas for millennial time scales, the interior ocean is also important, and the 'effective' heat capacity is larger, perhaps 50 times that of the mixed layer alone (*Wigley and Raper, 1991*). Actions by us have accelerated this rate of thermal lag and this is in turn increasing the heat capacity of the oceans, which is what is causing the ice caps to melt, thereby causing the rapid increase in sea levels.

The Arctic: In the winter of 2006, huge amounts of warm, salty water suddenly flowed into Kongsfjorden in Svalbard.

The warm Atlantic water changed the composition of the plankton community in Kongsfjorden. Small Atlantic zooplankton with low energy content swept in and replaced the large, energy-rich arctic zooplankton species, which only thrive in cold water.

This sudden climate change in Kongsfjorden set up a chain reaction in the food web. Both black-legged Kittiwakes and Little Auks rely on energy-rich prey to feed themselves and their chicks. Such food is plentiful in nutrient-rich Arctic waters. When water temperatures in Kongsfjorden rose several degrees, kittiwakes and little auks had quite different food on their plates.

The climate change in Kongsfjorden had impact on both these seabird species, but in different ways. The altered availability of food primarily hit the Little Auk. The Kittiwake managed better, making use of the capelin the water masses had brought. But the two species' metabolism also reacted differently to the changes.

In spring and summer, the oceans of the Arctic are extremely productive; masses of different seabirds and sea mammals come to the Arctic to feed on zooplankton and small fish. Changes in the marine environment in the Arctic can thus affect species that spend much of the year elsewhere. A wide range of alterations in the Arctic marine environment have been shown to be caused by climate change. For example, some sub-Arctic species

In the last 100 years, average global temperature has increased by 0.74°C, rainfall patterns have changed, and the frequency of extreme events increased. Change has not been uniform on either a spatial or temporal scale, and the range of change, in terms of climate and weather, has also been variable.

and a few from temperate regions have experienced a northward shift in habitat. This led to changes both in the occurrence of key species and in the food web. Simultaneously, the occurrence and reproductive rate of some arctic species declined, especially the ice-dependent species.

There is documentation showing increased primary production in open water in the Arctic Ocean. Overall, available studies imply that the effects of climate change arise mainly through increased inflow of warm water from the Atlantic and Pacific oceans to the Arctic Ocean, longer residence time for these warm water masses, and changes in sea ice, rather than through direct warming.

In the last 100 years, average global temperature has increased by 0.74°C, rainfall patterns have changed, and the frequency of extreme events increased. Change has not been uniform on either a spatial or temporal scale, and the range of change, in terms of climate and weather, has also been variable. Ocean acidification, climate change and global warming are just some of the extreme level events that are heading our way. Scientists believe that an increase in one degree in global temperature can cause major shifts in the sea levels, causing ice in the glaciers to melt and submerge a fairly large amount of our coastline. From a two degree to six degree change in global temperature, we can expect the next desert to be in Australia, and the now Sahara desert to be the next Savannah grassland. This type of paradigm shift in the geographical structure of the Earth means that we are nearing the next mass extinction.

A few key impact of climate change on marine environment are very well elucidated from the WWF Panda organisation on their website:

Coral bleaching: One of the most visually dramatic effects of climate change is coral bleaching, a stress response caused by high water temperatures that can lead to coral death. Recent years have seen widespread and severe coral bleaching episodes around the world, with coral mortality reaching 70% in some regions.

Stormy weather: Most scientists believe that global warming will herald a new era of extreme and unpredictable weather. Tropical storms and heavier rainfall may increase, and so too would the consequent physical damage to coral reefs, other coastal ecosystems, and coastal communities. Hurricanes Hugo and Marilyn hit the US Virgin Islands National Park in 1989 and 1995, respectively, and did massive damage to coral ecosystems.

As the oceans warm, the location of the ideal water temperature may shift for many species. A study has shown that fish in the North Sea have moved further north or into deeper water in response to rising sea temperatures. Other species may lose their homes for other reasons. The

distribution of the penguin species in the Antarctic peninsula region, for example, is changing with reduction in sea ice due to global warming.

Altered lifestyles: Rising temperatures can directly affect the metabolism, life cycle, and behaviour of marine species. For many species, temperature serves as a cue for reproduction. Clearly, changes in sea temperature could affect their successful breeding.

The number of male and female offspring is determined by temperature for marine turtles, as well as some fish and copepods (tiny shrimp-like animals on which many other marine animals feed). Changing climate could therefore skew sex ratios and threaten population survival.

Rising sea levels: Global sea levels may rise by as much as 69 cm during the next 100 years due to melting of glaciers and polar ice, and thermal expansion of warmer water. Rising water levels will have serious impacts on marine ecosystems. The amount of light reaching offshore plants and algae dependent on photosynthesis could be reduced, while coastal habitats are already being flooded. Rapid sea level rise will likely be the greatest climate change challenge to mangrove ecosystems, which require stable sea levels for long-term survival.

Decreased mixing: Vertical mixing in the ocean is important for many reasons, including transporting nutrients from deep to shallow waters, and surface water rich in oxygen into deeper waters. In some areas, changes to ocean temperature profiles induced by climate change are causing a reduction in the amount of mixing, and for example, reducing oxygen levels at depth.

Acidic oceans: After absorbing a large proportion of the carbon dioxide released by human activities, the oceans are becoming acidic. If it weren't for the oceans, the level of carbon dioxide in the atmosphere would be much higher.

The effect could be that fish, squid, and other gilled marine animals may find it harder to "breathe", as the dissolved oxygen essential for their life becomes difficult to extract, as water becomes more acidic. And shellfish, crabs, lobsters, and corals may find it more difficult to build their calcium carbonate shells. In some areas, calcium carbonate shells may even start to dissolve. ■



Karn Ragade is a faculty member of English Language and Literature for the Middle Years Programme at the prestigious Victorious Kidds Educaress, a model IB school in Pune. He has spent many years in social service. He continues to pursue his interest in the same by volunteering with organisations to rekindle maritime awareness among masses, and also by supporting basic first-aid training.

Art, the medium

Can art be used to comment on the socio-political realities of the past, and the present?

Shoma A. Chatterji shines the torch on a unique exhibition held in Kolkata recently, where various forms of art were used to decode a myriad experiences and realities.

ART is fluid, liquid and free-flowing, that refuses to be constricted by rules or confined to openings and closures. It has more fluidity than water which takes the shape of whatever vessel it is poured into. Art may transcend any enforced discipline of shape, form, style, texture, colour, line and dimension, and yet be able to stand on its own and make its own statement without uttering a single word. Art can be the most powerful form of self-expression for the artist who chooses his/her subject without subjecting himself/herself to any conditions at all, political, emotional or any other.

All this and much more came across in a recent exhibition held in Kolkata entitled *Things Lost/Remembering the Future*. It was a pan-South Asian exhibition that explored the ideas of loss, being, and regeneration through the lens of personal and public memory. The



Ashmina Ranjit of Nepal, whose unique video was featured at the exhibition

exhibition is the first of a series that hopes to open up new channels of communication and understanding, of the region's unique political/historical reality, and its cultural sub-texts. Curated

by artists Kurchi Dasgupta and Amritah Sen, *Things Lost/Remembering the Future* focuses essentially on the small, the forgotten, the misrepresented, as opposed to the official and the monumental. It looks upon the present from both the past and the future, and investigates the processes through which historical narratives habitually emerge. We hope it will allow an alternative perception of history to spill through, one that links the South Asian experience to the larger, Global South.

Every single artist whose work was put up at this group exhibition provided a lucid, literary explanation of the subject on display, and yet, as a viewer, knowledgeable or novice in understanding art, one was free to make one's personal interpretation of the personal or the political or both, without referring to the written explanations at all and yet a meaning emerged from this appreciation.



Maimoona Hussain of Maldives explored the theme of child abuse



Sunil Sigdel's work above, is a scathing indictment of the 2022 Qatar World Cup

The artistes and their art

Ashmina Ranjit of Nepal created a strange video where she walks back into the town she was once rooted to, and then had moved away to come back and find her past. She is constantly walking backwards which must have been a challenge unto itself because walking backwards especially when the camera is on, is not easy. According to Ashmina, "this video documents a metaphor that has been visualised and performed, one that captures what *'Things Lost/Remembering the Future'* is invested in – silenced or lost memories, the personal and the small, and the many processes through which mainstream history emerges." The work is intriguingly titled, "*Same River, but the Water?*" and that in itself opens up a new basket of questions for you.

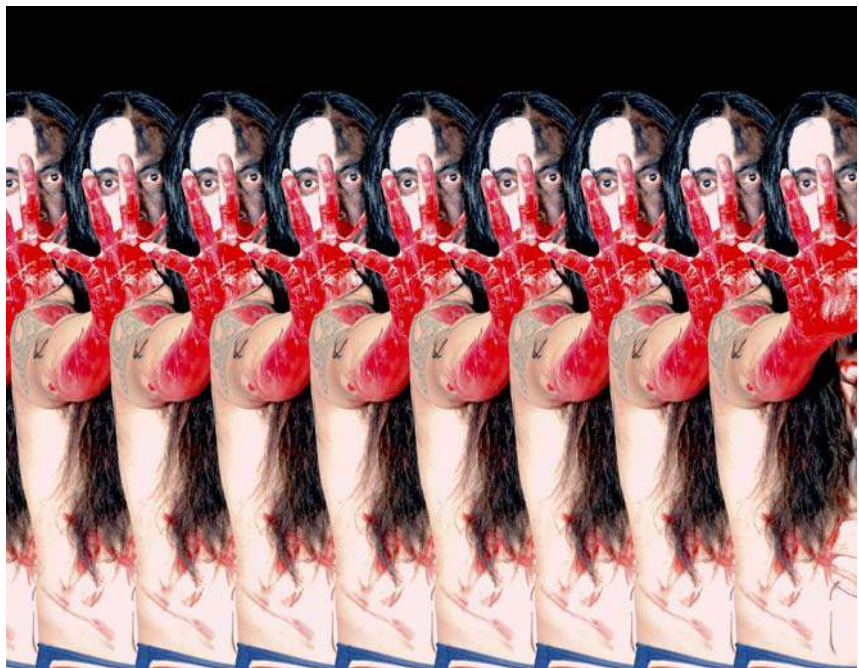
Pala Pothupitiye of Sri Lanka had chosen to display two of his works at the exhibition. One was an ink-on-paper drawing titled *Fractured Prosperity*, while the other is named *A Story of the Future from the Past*, where he uses acrylic, pencil and ink and creates a digital print. The works are so finely etched that they offer a striking example of a blend of colour, fine lines, strokes and paints that divide the space into two equal parts, and make the total work appear like two beautifully worked out cartographical maps. Pala's works have

consistently commented on Sri Lankan politics while bringing us poignant images of the Sri Lankan experience that rises directly from its soil and culture. Raised within a thriving crafts tradition, Pala fuses it with his training in the Western tradition, and attacks our received notions of land, identity and culture.

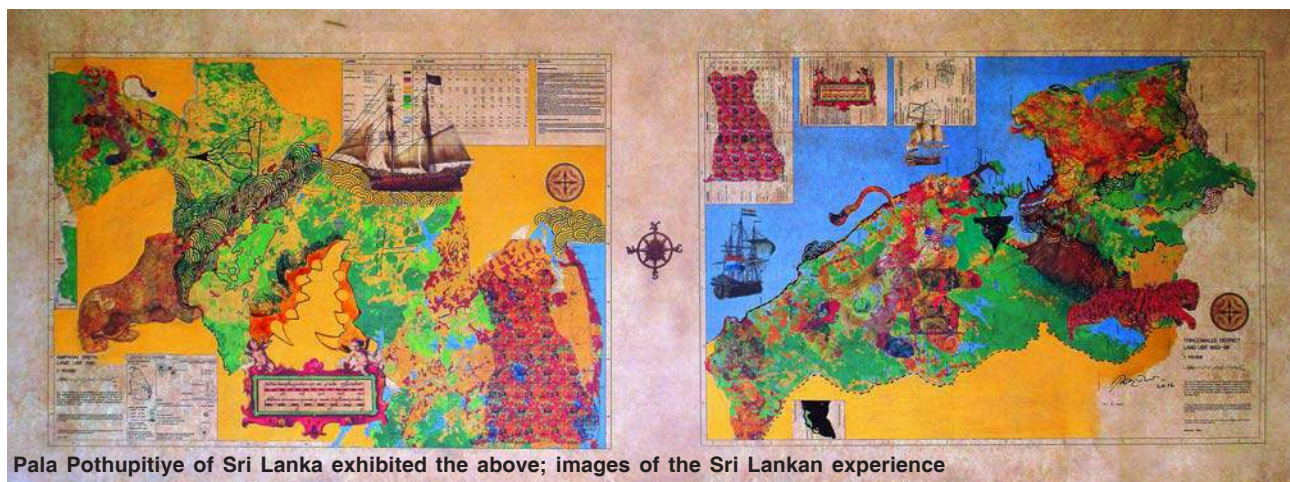
Aye Ko is from Myanmar. His single piece of work *Transfixed Look* is a big digital photograph that repeats the same image of the same face with wide eyes looking through the bloodied, spread-out fingers of a hand. It carries the

message of regimentation of troops blended into the horrific bloodiness of war. Aye Ko moved over from painting to performance and one guesses that that face and hand is his own as he wishes to use his own body as his subject in his works. According to the explanation, "He allows the political turmoil around him to inscribe itself upon his mind and body and channels his resistance to it through movement and performed action. In a country that is just beginning to open itself up to contemporary art, the fact that Aye Ko chooses to express himself through performance is in itself an act of resistance."

Huma Mulji of Pakistan/UK had put up an astounding series on a once-upon-a-time breadmaker called Karamatullah. One is a colour photograph of Karamatullah, while one paper is almost blank with a caption given below perhaps to signify the complete disappearance of the manual breadmaker who baked 40 loaves of bread in his home, using a recipe that his father had used as an employee of the British army in pre-Independence and



Aye Ko's *Transfixed Look* forces one to think about war and politics



pre-Partition Pakistan (then India). In a frenzied, competitive market economy, his nameless bakery cannot compete, and he survives on belief, past glory, and a handful of faithful customers.

Says Huma, "The text and photos are based on our conversations over the years. Without spelling it out, he speaks of the pressure of the Cantonment Board, run by the Pakistan army, to close down the bakery. Karamatullah lives in an area which is now prime property, and his rundown little shop and house, is surrounded by posh homes, gifted to retired Army Generals. The work is a docu-fiction, based on 'facts' gathered from our conversations between 2009 and 2015." This viewer interpreted this amazing series as a scathing critique on globalisation that has erased the existence and artistry of people like Karamatullah.

Maimoona Hussain of Maldives has placed two photographic expressions of two pieces of sculpture that express the lifelong mental torture that happens to a victim of child abuse. Hussain's work is a digitally documented sculpture. One we thought had immense value, given the fact that she is speaking as a woman in Maldivian society, about the violence faced by women and the silence habitually imposed on them.

Some of the works are drawn from intimate and personal memories and experiences, while some memories are

individual, but the creative comments have a collective impact. For example, there was one work by the Nepal-based performance artist who also works on art. His name is Sunil Sigdel. According to his own statement on *Blue Slavery in Golden Construction*, "It is an offering to those workers, who are labouring at the construction of the magnificent infrastructure and stadium for the upcoming 2022 World Cup. Recently, I did a performance on the subject in Moesgaard Museum, Denmark. I wore a labourer's used, blue uniform and hooked a gold painted iron hammer (symbol of the World Cup Gold) that weighed six kgs on the back of my uniform. My body was bent backward and I was in physical pain."

The eleven men dressed in blue workman's overalls, without heads, bent differently across the canvas, with their backs stapled with golden pins stand out as a scathing indictment on the 2022 World Cup. It is a collage that "represents the workers as a football team that has lost the World Cup even before it has started off in Qatar." It is a diptych. The



Huma Mulji of Pakistan/UK exhibited a series on breadmaker Karamatullah

entire work is adapted from the artiste's personal performance and the missing heads reflect how the brains of the workers are chewed away, turning them not only into slaves but to human machines doctored to do as told. A beautiful exhibition the curators and the artists wish to take on a tour across the South Asian cities and countries. ■

Shoma A. Chatterji is a freelance journalist, film scholar and author. She has authored 17 published titles and won



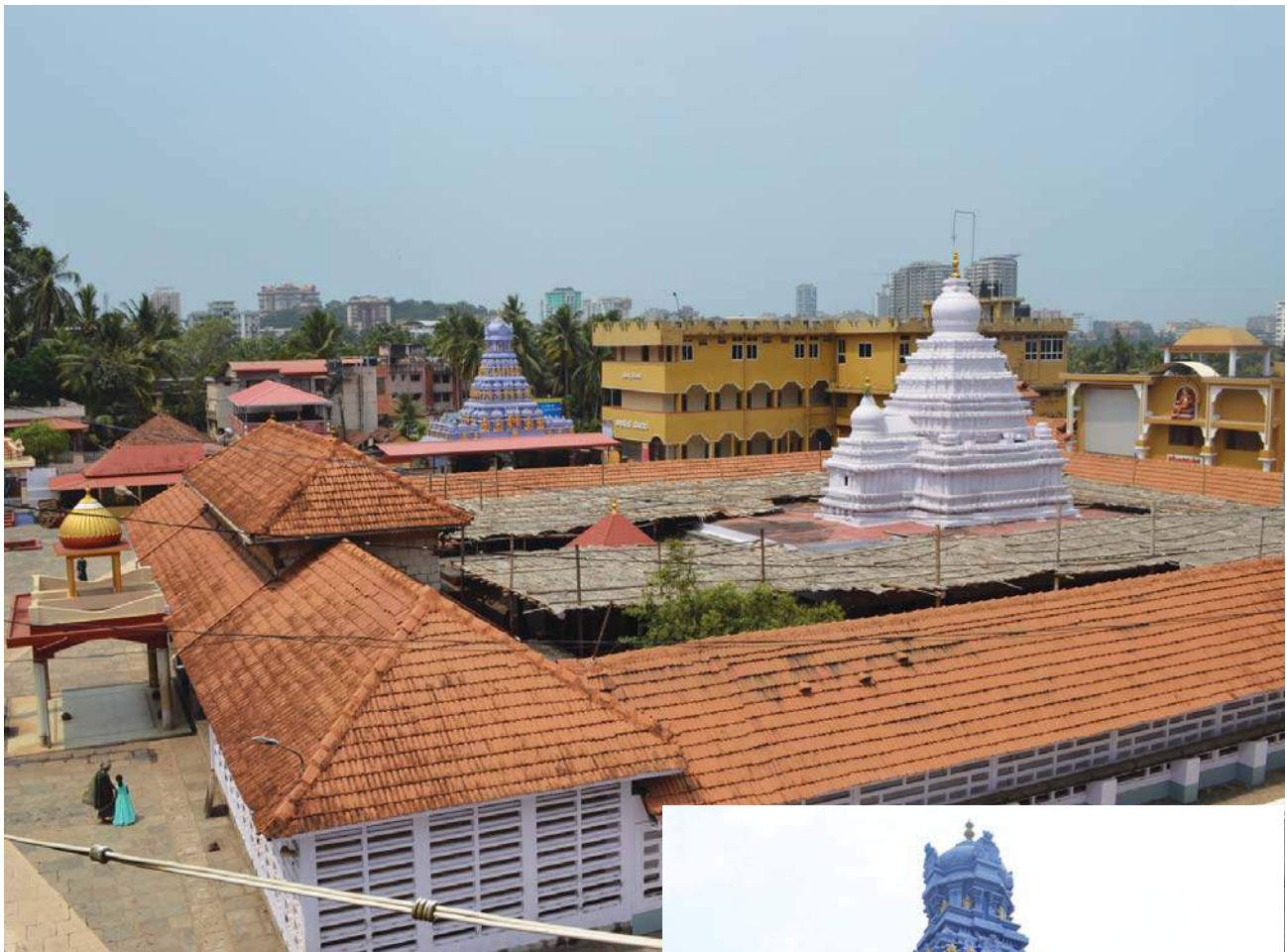
the National Award for Best Writing on Cinema, twice. She won the UNFPA-Laadli Media Award, 2010 for 'commitment to addressing and analysing gender issues' among many awards.



Mangalore

The sublime city

The city of Mangalore has seen itself dominated by various powers – from Indian dynasties to the Portuguese and British. What exists today is a multi-linguistic, coastal land, rich in history and culture, with beautiful vestiges of religion, monuments and food left behind by each of its rulers.



The Kadri Manjunatha Temple, a tenth century temple dedicated to Lord Shiva

A three-faced, six-armed statue is in front of me at the Kadri Temple, Mangaluru aka Mangalore. Named Lokeshvara, it is one of the finest bronze statues in South India. The inscription at the statue dates it to 968 AD, and identifies it as the statue installed by Alupa King Kundavarma. I am intrigued. My imagination of Mangaluru history does not extend so far back. That Mangalore was garrisoned, and it featured prominently during the Anglo-Mysore wars I knew, but that it had a history of more than 1000 years was a complete surprise to me.

A city with many names

I am in for more surprises. The Greek historian Ptolemy had referred to this place as Maganoor. Sixth century Christian records refer to this place as Mangarouth. A seventh century copper inscription talks about an Alupa King of Mangalapura. The city locals believe that the name Mangaluru or Mangalapura comes from one of the oldest temples in the city – the Mangaladevi Temple.

Mangalore is multi-linguistic with people speaking different languages – Tulu, Konkani, Beary, Malayalam, Kannada etc. The Tulu people call this city Kudla or Kodyala, the Konkani, Kudala. Kudla means a junction; Mangalore is on the banks of the River Netravati that flows into the Arabian Sea. So the confluence could have gotten the city, the name Kudla. The



The entrance to the temple

Malayalees call it Mangalapuram, and the Bearys Maikala. Mangala means blessed, so Mangalapuram is a blessed land. The name Mangalore, however, is an anglicised form of Mangaluru.

A peek into the city's history

Mangalore is the headquarters of the Dakshina Kannada district of Karnataka. It has been governed by many rulers including the Alupas, Vijayanagara, Keladi and Mysore.



The hot water springs at Kadri Manjunatha Temple

As mentioned, a seventh century copper inscription mentions that the capital of Alupa was Mangalapura. The Alupas ruled the South Kanara region for more than a 1000 years, shifting their capital from Mangalapura to Udayapura, and then to Barkur, and finally back to Mangalapura again. The Alupas were feudatories to various powers in the South like the Kadambas of Banavasi, the Chalukyas, Rastrakutas, and Hoysalas.

After their decline in the beginning of the 15th century, the region came into the hands of Vijayanagara Kings. These kings relied on good horses that were imported from Arabia and Persia. So ports such as Mangalore and Barkur were important to them for trading. Post Alupa period, the coastal district also saw the rule of a number of local ruling families like Savantas of Mulki, Chautas of Ullal, Bhairarasa Wodeyar of Karkala etc.,



Barkur, the town and port, were very important to the Vijayanagara rulers

some of who were feudatories to Vijayanagara Kings, then to Keladi rulers and finally to the Mysore rulers.

The Portuguese arrival

The Portuguese influence on the coast started during the latter half of Vijayanagara rule. When Krishnadevaraya ascended the throne, he had good relations with the Portuguese. However, the Portuguese were in constant battle with the Arabs over trade in the coastal belt. Finally in 1526, under Lopes Vas de Sampayo, Mangalore went into the hands of the Portuguese. Here it is worth mentioning the battles of Abbaka Devi – the Queen of Ullal, with the Portuguese. She was one of the first women freedom fighters battling against foreign invasion. She took the help of Malabar chiefs, stopped



The Mangalore Mangaladevi Temple, one of the oldest temples in the city (Photo: H.V. Shiv Shankar)



Kudroli Gokarnatha is a modern style Shiva temple
(Photo: H.V. Shiv Shankar)

paying tribute, and constantly fought with the Portuguese. Finally, she was subjugated with the help of strong troops from Goa, and on 5th January, 1568, the Portuguese got complete victory.

After the decline of Vijayanagara power in 1565, the Nayakas of Keldai ruled the region. They were from the Veerashaiva agriculture family. They built a number of forts, *basadis*, in their rule of 200 years. Meanwhile, the Portuguese power declined during the middle of 17th century.



The Sultan Battery, which is actually a watch tower constructed during Tipu Sultan's time

Hyder and Tipu take control

In 1763, Hyder Ali defeated Virammaji, a Keldai queen, and garrisoned Mangalore. Mangalore was important for Hyder Ali. He established a dockyard and left the port in the hands of Latif Ali Baig. The English were quite worried with this move as they felt that Hyder Ali would cause trouble for them, intercepting them in the western sea. So they captured the port in 1768, but had to return the port to Hyder Ali. After Hyder's death, Tipu Sultan succeeded him. After his death in



Panambur Beach, which is popular for water sports



A view from Sultan Battery

1799 in the final Anglo-Mysore war, the west coast went into the hands of the British.

The division of Kanara by the British

Earlier, the entire coastal belt of Karnataka was named as Kanara by the Portuguese, who named the area after the common language spoken here – Kannada. This name continued till 1860, after which the Kanara region was divided into North Kanara and South Kanara by the British. South Kanara was a part of Madras Presidency, and North Kanara went into Bombay Presidency. South Kanara then had the present Dakshina Kannada, Udupi, Kasaragod districts and Aminidivi Islands. Till 1956, Mangalore was the capital of this district.

Today however, Dakshina Kannada forms the southern coastal district of Karnataka bordered by Udupi district in the North and Kasaragod district in the south, i.e., a part of Kerala. Aminidivi Islands belongs to Lakshadweep.

A city with so much history has plenty to see. Here are a few must see destinations in the city and around it.

Things to do

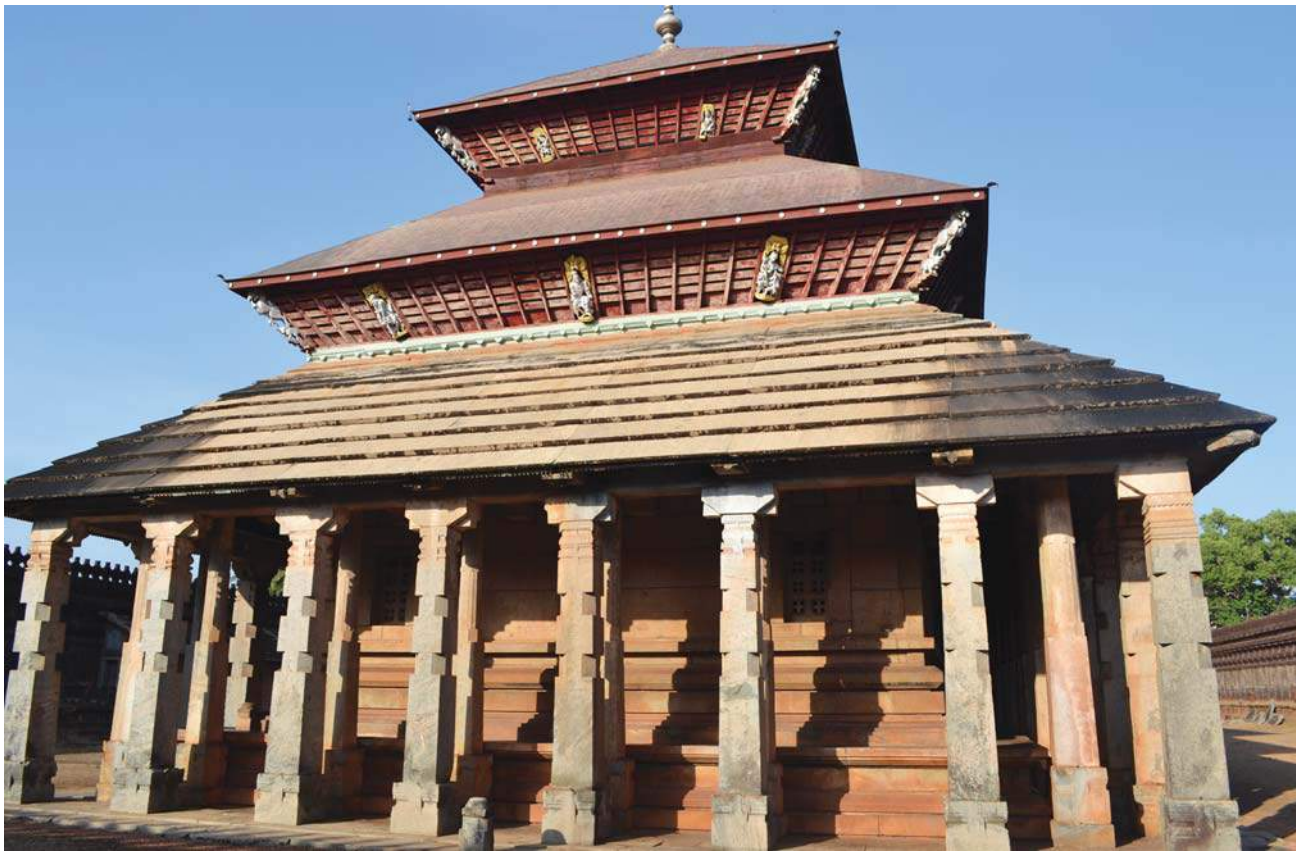
Temple hopping: Head to Mangaladevi Temple at Bolara if you wish to see an ancient temple built in Kerala style architecture, with wooden enclosures. The city, you guessed

right, got its name from the deity Mangaladevi. There are many legends associated with the temple, one of them mentioning that it was built by Parashurama, an incarnation of Lord Vishnu.

Kudroli Gokarnatha is a modern style Shiva temple built in 1912 by a Billava family. It was later renovated sometime in the 90s and designed as a Chola styled temple. The temple sees a huge gathering especially during Navaratri when life size idols of Navadurga are beautifully decked up and showcased here.

Kadri Manjunatha Temple is an ancient 10th century temple or slightly older, again dedicated to Lord Shiva. It is located south of Kadri hills and is said to be the site of both Buddhist and Hindu religions. Pre-historic caves, the Naga style Kadri Temple, bronze reliefs, are some of the attractions here. Kateel and Polali are some other temples worth visiting.

Beaches and sandy shores: Plenty of beaches exist in the city. Panambur Beach is one of the popular beaches with good facilities and water sports. But it can get quite crowded, especially during weekends. Head to Tannirbhavi Beach for a less crowded experience. You could catch a ferry from Sultan Battery which is actually a watch tower constructed during Tipu Sultan's times. Or you could travel via road to reach the beach. Other popular beaches are Suratkal that has an



The Mudabidre basadi

operational lighthouse, and the beach at Ullal, i.e., 16 km from the city. Ullal, the sea town, also boasts of historic structures like Queen Abbakka's Fort, Someshwara Temple and beach, Jain temple, St. Sebastian Church etc.

Visit Jain Heritage Centre at Mudabidre: Mudabidre is fondly termed Jain-Kashi as it boasts of numerous Jain monuments. Though the Jains came as early as third century to South Kanara, their hold got strengthened during the 11th-12th century. They built a number of *basadis*, tombs, sculptures etc. Mudabidre was one such centre and it has 18 *basadis*. One of the most famous temples here is the Savira Khambada Basadi (a 1000 pillar temple), also called as Thribhuvana Tilaka Chudamani. It is a three-storey structure built during the time period 1429-1462 AD. It was built in phases, the first part

built during 1429, the *mukha mantapa* added during 1451, and the pillars added during the final phase. None of the granite pillars on the *mantapas* are alike. The inner sanctum consists of the image of Chandranathaswami made of five metal alloys or *panchaloha*.

Churches and cathedrals: Christianity saw a rise during Portuguese times in Mangalore. Evangelical institutions, educational establishments, churches were built during these times. The Society of Jesus was established in Mangalore in 1878. Before that, the German Evangelical Mission of Basel set up the Basel Mission in 1834. These missionaries learnt the language of the locals – Kannada – to bond with the locals and spread their message more efficiently.

Some of the popular churches in the city are Milagres,



The Someshwara Temple (left); and Someshwara Beach (Photo: H.V. Shiv Shankar)



The Milagres Church, one of the popular churches in Mangalore

Saint Aloysius, and Rosario Cathedral. The Rosario Cathedral is one of the oldest churches built in 1526, the Milagres Church or the Lady of Miracles was built in 1680 AD, while the Saint Aloysius building was constructed in 1885 by Fr. Joseph Willy. One of the attractions at Saint Aloysius Chapel are the paintings by Br. Antonio Moscheni, an Italian Jesuit who depicted the life of Jesus. The paintings are beautifully done in bold colours. The artist took two and a half years to paint the chapel.

Sample Mangalorean delicacies: Mangalore is famous for its coastal dishes. As it hosts diverse communities – Catholics, Konkani, Bunts – you will find unusual and interesting dishes in the Mangalore cuisine. Being a coastal town, fish and chicken dishes are popular here. Various fish fries, prawn masala, chicken *ghee* roast are some dishes worth checking out. Some

unusual items to try out here are *Kori roti* – dry rice wafers mixed with chicken curry, *Neer dosa* (rice crepes), *Pathrode* – a dish made of Colocasia leaves etc.

Don't leave the city without trying out Mangalore ice creams at Ideal Ice cream. It has won awards in the Great Indian Ice Cream competition, 2013, for its vanilla ice cream flavour.

Other attractions: For museum lovers, there is a city museum that holds a small collection of rare coins, weapons, old photographs, paintings etc. Pilikula Theme Park – a 370 acres park is also a nice getaway that boasts of a biological park, a heritage and artisan village of 35 acres that showcases the Dakshina Kannada culture, a science centre and arboretum. The biological park is also a breeding centre for the King Cobra. ■



The coastal villages of Mangalore



The Ideal Ice Cream shop; a must-visit place!



Udupi

A divine town

Text & photos: Usha Hariprasad

The town of Udupi in Karnataka is a beautiful and intriguing mix of stories of the divine, colourful markets, tales of spirits, and rituals associated with snake worship. Visiting Udupi is akin to buying into divinity, even if for a short while.

THE lanes catch my attention. There are some quirky items here. Dried *kokum* (*Garcinia Indica*) for instance, aptly termed Malabar tamarind, for its usage in Goan and South Kanara cuisines, the small *Appa* mangoes that make delightful pickles, or the raw jackfruits that sees itself in varied Konkani and Udupi recipes. These are some unique finds that I discover at the Car Street in Udupi, so named because the temple chariots or cars go through this street.

Of course, the reason I have come to Udupi is not to drool over these markets, but to get the blessings of Lord Krishna at the famous Krishna Mutt. So I head to the Mutt and stand in the queue meant for devotees. And I learn some interesting facts by speaking with the devotees in the line.



The colourful streets around the temple



The Udupi Sri Krishna Temple

The history

Udupi hitherto was known as Rajatapitapura. A localite who is also a frequent visitor to this temple mentions that the name Udupi is a recent one. In fact, it first occurs in a 1366 stone inscription. The name Udupi could be derived from ‘Udu’ which is a Sanskrit word for stars. When joined with the word “pa” it signifies the lord of stars – apparently the Moon.

“Years ago, Moon is said to have done penance here to escape the effects of a curse. Pleased with his devotion, Lord Shiva appeared, gave his blessings – thus the moon was liberated. The Chandra-maulishvara or the Chandreshvara Temple opposite to the Mutt is a consequence to this event,” explained a lady in front of me.

However, this is just one of the derivations of the word Udupi. There are plenty of other interesting analyses as well. For instance, ‘Udupu’ also means serpent – the area is famous for its snake worship.

After an hour of standing in the queue, I finally get a glimpse of Krishna through a window with nine square holes. The stone idol is beautiful, holding a rope and a churning rod. It has an interesting story behind it. The black statue is said to have arrived from Dwarka in a ship. The ship apparently got caught in a storm near Malpe at Udupi. Sri Madhwacharya, a saint, rescued the ship. In return, he asked for a Gopi Chandana (soft clay) lump from the ship owner, and found the idol inside this lump. The saint retrieved the idol and consecrated the idol at the present Krishna temple.

I finish my prayers and walk around. The temple inside has other idols too of Garuda, Mukhyaprana (the wind God), and of the Saint Madhwacharya. The saint Madhwacharya, a 13th century philosopher (1238-1317 C.E) was a strong proponent of Dwaita Vedanta, a philosophy that advocates dualism where God and individuals are distinct entities. Udupi thus has become an important seat of Madhwa Brahmins – the followers of Madhwacharya.

As I walk inside the temple premises, I also find a small



The Kanakana Kindi or Kanaka's Window
(Photo: H.V. Shiv Shankar)



Barkur Temple in the heritage town of Barkur

tank known as Madhva Sarovara. The *swamiji* or the priest enters the sanctum for worship only after taking a bath at this tank. I am told that it is a beautiful sight during Teppotsava or boat festival event at Udupi, where hundreds of earthen lamps are kept around the tank.

As I come outside the temple, I find a small window to the west of temple hall. This window is popularly known as Kanakana Kindi or Kanaka's Window, and one can glimpse the idol of Krishna from here too. It is said that Kanakadasa, a shepherd, was not allowed inside this temple. And so he prayed to the Lord from outside. Pleased with his devotion, the idol rotated 180 degrees to the west, the rear wall collapsed, and he was able to glimpse the idol. The slit now forms Kanaka's window.

Surrounding the Sri Krishna Temple are a couple of other temples as well, like the eighth century Anatheswara Temple, Chadramaulishwara Temple and the temple dedicated to Raghavendra Swami, a renowned Madhwa saint. I come to know later that Udupi has this tradition of first visiting the Chadramaulishwara Temple, then Anatheshwara, and finally the Udupi mutt. Anyway, I have done this backwards!

I also learnt that the worship of Krishna is a bit different here. The saint Madhwacharya handed over the administration of the Krishna worship to eight disciples of his. The shrines of these eight pontiffs are known as Ashta Mathas or Eight Mutts. Every two years, the pontiff of one of the Mutts takes over the responsibility of Krishna Pooja. This transition follows a cyclic

order, and the ceremony is known as Paryaya.

Earlier, the transition used to happen every two months. But it was changed to the current two year system by a saint in the 15th century named Sri Vadiraja Swami. Paryaya generally falls in the month of January. During Paryaya, the Udupi temples and the car street sees a lot of activity. There is a grand procession with elephants, bands and pipes playing, that accompany the new pontiff who is going to take charge next. The handover of temple duties takes place inside the temple.

Apart from the temples, some other things worth checking in the city are:

The colourful lanes and streets surrounding the temple:

Earthenware, handicrafts, spices, herbs, the traditional *sevai* or noodle machines, grinders, *idli* stands etc., dot the lanes. I assure you that some of the items are very unusual, and you would never have seen them before.

Udupi Museum: Udupi has an interesting Numismatics Museum at the Corporation Bank premises. It boasts of more than 1,800 coins. One of the oldest coins dates back to 400 B.C. Some other destinations worth checking out are the Hastha Shilpa, a heritage village spread over six acre land, and the cattle shelter at Neelavara, Udupi, that shelters aged, homeless cows.

Destinations near Udupi

Visit Pajaka, a spiritual centre: Pajaka, a village 13 km from Udupi is the birth place of the saint Madhwacharya. There



The beautiful Kunjargiri Hill (left), where the Pajaka Temple (right) is located: Pajaka is also the birthplace of Saint Madhwacharya

are many relics of the saint at this birthplace. The place is scenic with the beautiful Kunjargiri Hill, with an ancient temple of Goddess Durga that bears the conch, discus, bow and trident in her hands. The demon Mahishasura lies at her feet.

Visit the heritage town Barkur: Barkur is 16 km from Udupi. Ruins dot this sleepy hamlet that is located on the banks of River Seeta. Ironically, it was a major political centre for 500 years and was the capital of Alupas during the 11th-12th century. And it might surprise you to learn that it was also a commercial hub with trade links to countries like Africa, Egypt, and Afghanistan. The place boasted of some 365 temples in the past, yet today, it has only a few 30-50 temples. Some of the oldest temples that you can check out are Panchalingeshwara, Bhairava Ganapati at Chowlikere, Somanatha and Someshwara. There are also ruins of a Jain *basadi* here – the Kattale Basadi group of monuments.

Enjoy the beaches: Six kilometres from Udupi is Malpe, a charming port, and a busy fishing harbour. The beach at Malpe is clean, well maintained, and boasts of water sports like jet skiing, para gliding, etc. From here, take the boat service and head out to the St. Mary's Island. St Mary's is a group of

islands that is famous for its volcanic rocks. It is said that Vasco da Gama in the year 1498 had set foot on these islands. A one hour ride will take you to these islands. Barring a few coconut trees and a couple of straw huts, there is only the deep blue sea and the rocky basalt formations to keep you company. At Malpe, there is also an ancient temple dedicated to Balarama - Sri Krishna's brother.

Another beach worth checking out is Kapu Beach, located 13 km from Udupi. It is a pristine beach, not as populated as the Malpe Beach. It has an added attraction of a 1901 circular light house open to visitors. There is also a 700-year-old Janardhana Temple, ruins of a Jain Basadi that are worth checking out.

If you are looking for non-commercialised beaches, then you could check out Muttu Beach and Kodi Beach as well.

Monuments at Karkala: Thirty seven kilometres from Udupi is the town of Karkala that abounds in stone sculptures, Basadis and other Jain monuments. A 41.5 feet high statue of Bahubali atop the Gomata hill of Karkala, Chaturmukha Basadi on Chikka Betta are some of the Jain monuments worth checking out. The granite monolith, one of the tallest in Karnataka, was



The eighth century Anatheshwara Temple



The Kattale Basadi group of monuments



St. Mary's is a group of islands famous for its volcanic rocks
(Photo: H.V. Shiv Shankar)

installed around 1432 by a descendant of Bhairarasa dynasty known as Veerapandya Bhairarasa Wodeyar. Every 12 years, the Jain religious rite 'Mahamastakaabhisheka' is performed on the statue. The ceremonial anointment of the statue is done. A huge number of devotees turn up to watch this grand ceremony. The Chaturmukha Basadi on the opposite hills, constructed in the late 16th century, has the images of Jain Tirthankaras, furnished with copper.

If you have time, you can also check out the famous shrine of Saint Lawrence at Attur, quite near to Karkala. It is a beautiful church with the miracle statue of the Saint.

Try Udupi delicacies: Udupi cuisine is different. The cuisine relies heavily on local vegetables like yam, gourd, pumpkin, banana stems and flowers, mangoes and jackfruits during its season. Coconut and coconut oil is generously used. The jackfruit finds itself in many *avatars* ranging from *idlis*, *dosas* and even sweets. Udupi *gojju* – a sweet, tangy gravy of either mangoes, pineapple, or bitter gourd generally, is a part of the banana leaf meal. Some other signature dishes at Udupi that are a must try are *idlis* steamed in jackfruit leaf, jackfruit pulp

steamed in banana or teak leaves, Hayagreeva- a sweet dish made of cooked Bengal gram and jaggery etc.

Be a part of a snake ritual: *Naga aradhane* or serpent worship is common in these parts, and is done by a community or a particular family for either fulfilling desires, or for the welfare of the community. The ritual is quite elaborate. The figure of serpent with hood is first drawn on the floor and is enclosed in a circle of diameter 10-15 ft. The figure known as Mandala is filled with different colours. A dance drama then takes place throughout the night accompanied by drum, cymbal and singing. The characters are generally Nagapaatri – a person representing the spirit of a snake, and a snake maiden

known as Nagakanika in the ritual. The snake is both enraged and appeased in the dance performance. A large number of devotees gather for such events, and spend the whole night watching these proceedings.

Enter the spirit world: Spirit or Kola worship is another event worth checking out. Kola generally takes place at night. In the spirit worship, the priest dresses up in costumes, masks and goes into a trance. The ritual is often accompanied with musical instruments, pipes, percussion etc. Offerings are also given to the spirit. When the rituals finish, the spirit addresses the gathering, solves disputes, suggests solutions and blesses the devotees. The spirits could either be of ancestors, martial heroes, and attendants of Shiva etc.

You will see a number of shrines dedicated to spirits in this region. ■



The writer is a freelancer who is fond of travelling, discovering new places and writing about travel related destinations around Bangalore at Citizen Matters. Currently, she works in a trekking organisation.

Our Last Six Issues

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Water woes	Safety	The Northeast	Humour	India's Heritage	India's Space Journey

“I am completely against cow slaughter. It’s not about religion. The cow gives us so much.”

Madhuchandan S.C. is the man behind Organic Mandya 2020, an ambitious project to turn the district of Mandya in Karnataka, known as the farmer suicide capital of the state, fully organic. (See *One India One People*, August 2016). He helped set up the Mandya Organic Farmers Co-operative Society, which today has 4,000 farmer members. They hope to convince the rest of the 300,000 farmers by 2020, to go fully organic. The main catalyst for Organic Mandya was the belief that Indian farmers were brainwashed into using chemical fertilisers and pesticides to improve their yield, eschewing native customs and wisdom. The Co-operative Society has also opened retail outlets in Mandya and Bangalore to sell their organic products, including many varieties of native rice, which are once again becoming popular.

To aid in these efforts, the Society has now tied up with a Mandya *gaushala* (cow protection shelter) to make available cattle for the farmers, in what Madhuchandan describes as a ‘win-win’ situation. In a telephone interview with **E. Vijayalakshmi Rajan**, he spoke about the reasons behind this, and why he is against cow slaughter.

Tell us about the tie-up with the Mandya *gaushala*.

A year ago, this *gaushala* in Mandya approached us for partnership and support. Organic farmers need cows. The much-touted White Revolution introduced the Jersey and Holstein-Friesian (HF) cows, but their *mootra* (urine) and dung are not useful as we don’t really consider them to be from the cow family. The milk they produce is not of great quality too. Hence, when the *gaushala* approached us, we thought it would be a win-win partnership. The farmers belonging to the Mandya Organic Farmers Co-operative Society could adopt the native breed cows at the *gaushala* and thus be able to access cow urine and dung, so necessary for their organic cultivation. In turn, the *gaushala* would be ensured of proper care for their cattle. Instead of aggregating 300-400 cows at one place, we thought why not distribute them to organic farmers who will take care of the cattle, while having access to cow urine and dung, so necessary for *Jivamrita*.

What is *Jivamrita*?

It is a mixture in various proportions, of cow dung, water, cow urine, dicot powder, jaggery and some mud from the fields where the mixture will be used. This is fermented and micro-organisms grow in it. This is not sprayed or used directly on the plants. Rather, it is used on the soil, which increases the fertility of the soil and helps plants to grow well.





Madhuchandan (right) with *desi* cattle

What are the other reasons behind this increasing demand for the native breeds of cows?

There is a lot of debate today about whether the A1 protein found in the Jersey and HF cows is good for humans to consume, as opposed to the predominantly A2 protein found in our native or *desi* breed of cows like Hallikar, Malnad, Gidda, Sindhi and Gir, which is full of goodness. The A1 protein is said to cause many health problems like diabetes etc. Did India have lifestyle diseases like diabetes and gastric issues earlier? We must all revert to milk from the native breeds.

Aren't *gaushala* cattle beyond their productive age?

Yes, that's true. Cows which are meant for slaughter are rescued and kept in *gaushalas* to live out their lives. But even cows which are beyond their reproductive age continue to be of use to us. Cow dung and urine are very important ingredients in Indian organic farming, as already mentioned. Also, the bullocks are sent for ploughing and to pull carts. We have to also remember that cows like to be around people. So if they are adopted by the farmers, they get to live on farms which is good for their well-being. Cows and bullocks are more economically valuable to farmers for their dung and urine, than they can ever be for their meat. That itself is the best argument against cow slaughter.

Is one cow per farmer enough?

As per a study conducted by Subhash Palekar, the eminent agriculturist, one cow can support up to 30 acres of land. So an organic farmer who gets a cattle, is happy. So far, 300 cows and bullocks have been adopted by our farmers. By the end of the year, we hope that at least 1,000 more will be adopted by the farmers.

There is a lot of brouhaha in the country today about the ban on cow slaughter.

I am completely against cow slaughter. It's not about religion.



A Jallikattu event; the best bulls are showcased here

The cow gives us so much. All of us have grown up drinking cow's milk. We still continue to drink it. That's our connection with this animal, from a very young age onwards. And even once it's past its prime, it still continues to give so much. For a farmer, the cow and the bull are akin to his mother and father, that's how much he gets from them. So cow slaughter should definitely be banned.

What about the ban on Jallikattu (a spectator sport where able-bodied men seek to climb on a running bull), that was being sought in Tamil Nadu?

We shouldn't ban traditional cultural events like the Jallikattu. First of all, those who are asking for a ban on this sport, how can they comment from the outside? Unless you are part of a culture for at least six to seven years, how can you claim to understand it? In Spain, the bull fights end with the death of the bull. In Tamil Nadu, Jallikattu is bull chase, and not a bull fight. Bulls don't die in Jallikattu.

Our ancestors started this event to showcase and give prominence to the best of the bulls, so that breeders could seek them out to mate with their cows. That's how the best genes and traits of the native breeds were passed on. It is easy for the intellectuals and the educated to comment on the social media without understanding the reality. Blindly knocking off rituals is wrong.

Tell us about the progress of Organic Mandya 2020?



We have as of date, 4,000 farmers who are part of the Mandya Organic Farmers Co-operative Society. Of this, 2,700 are men and the rest are women farmers. We hope to achieve our target of a fully-organic Mandya district by 2020! ■

The writer is Assistant Editor, *One India One People*.



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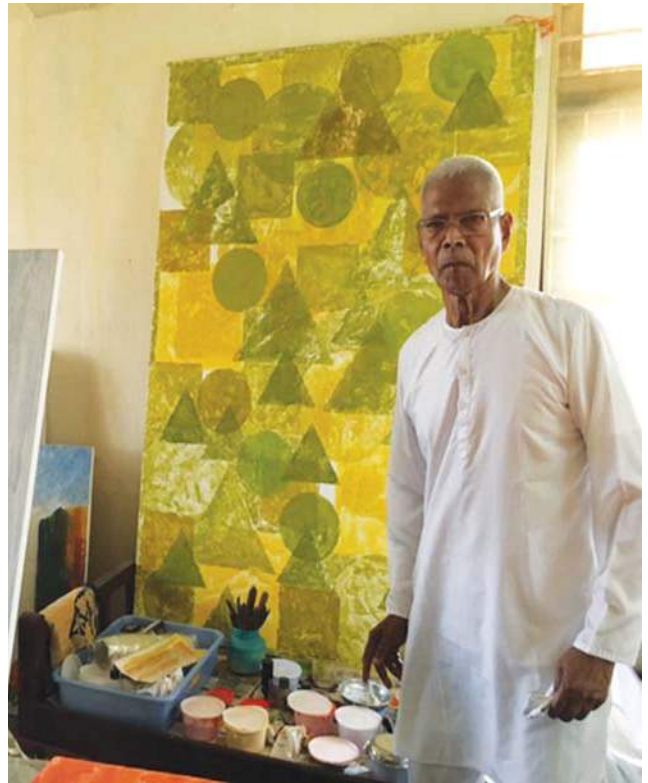
*That age and disability are no barriers for creativity, was proven ably by 82-year-old artist Vishwanath Ram Kantak recently, when he displayed his paintings at the prestigious Jehangir Art Gallery, Mumbai. **Veena Adige** visited this exhibition, and came away impressed.*

I want to show the world that age and disability are no barriers for success", said 82-year-old Vishwanath Ram Kantak, and proved it when he exhibited 40 huge and 40 small paintings done in the evening of his life. Kantak is frail, slightly bent, and is affected by Parkinson's disease which makes his hands tremble and his gait difficult.

A commercial artist, he wanted to hold a one-man show, and he did it from March 21-27 this year at the prestigious Jehangir Art Gallery in Mumbai. It was also a dream come true, for it was Adi Jehangir, the chairperson of the Gallery himself, who inaugurated it. And people flocked to see his paintings. From far and near, people came, saw and were conquered by the sheer beauty, the colour combinations and the perfection in Kantak's art.



This painting represents the Hindu trinity of Brahma, Vishnu and Shiva



Vishwanath Kantak with his art



A geometric design in free hand

'Marvellous,' said Adi Jehangir who spent over an hour observing all the paintings thoroughly, and even came back a day later to see them again. 'A true inspiration.' 'Enchanting,' said another art lover. 'Touching', 'mesmerising', were some of the words used by the viewers on seeing the paintings.

The exhibition was open to the public for seven days, and Kantak sat watching the reactions of the viewers, feeling very pleased and happy, a smile on his face. The exhibition literally took at least a decade years off his age, and he looked younger than he did when he first came to Shantikunj, the senior citizens home run by the Vidhyadhiraj Charitable Trust in Panvel, Navi Mumbai, where he now lives. His apartment at the end of the road is full of colours, painting paper, brushes and other paraphernalia needed for his profession. And he is still painting feverishly, enthused by the success of his first exhibition, planning yet another one in a few months time.

The artist

Born in Goa in 1935, Vishwanath Ram Kantak came to Mumbai and studied at the J J School of Art, and worked as a commercial artist for a few years. He worked in several agencies in Mumbai and Kolkata and was an Art Director. He then chose to be a freelancer, reaching Ramkrishna Mission in the USA, where he lived for a decade before returning to India. Though his son lives in the US and comes to India often, Kantak has chosen to spend his time at Shantikunj in Panvel, where he arrived in 2011.

He was in the US when he was diagnosed with Parkinson's disease, and he immediately returned to India. He was a bit dejected till the seed of a one-man show sprouted about a year back, and he took up the brush again. His stint at Ramkrishna Mission in Chicago, US, is reflected in a couple of paintings which has Lake Michigan as its backdrop. Kantakji visited several art places there, absorbing various styles, colour combinations and designs and utilised them in his creations. I met him a year back when someone who saw him painting exclaimed, 'Kantakji is absolutely normal. Who says he has Parkinson's disease?' And I went to see him myself. I marvel at the clarity of the pictures, the detailed thoughtful expressions which bring out the elixir of life. They are neat, clear and confident. For one who has Parkinson's disease, it is a miracle. He is at his canvasses for as long as it is possible. He tires soon, but his enthusiasm and passion overcome it, and after a brief rest, he is back painting.

His hands shake, his gait is slow, yet when he holds a brush his hands are steady, and there is a spring in his frail legs when he begins his work. Vishwanath Kantak showed me his paints and brushes explaining that he bought the best ones. 'I bought these beautiful expensive foreign sets which can flourish and create exciting shapes and colours'.

His enthusiasm and hard work, his focus and dedication to his art made him create beautiful paintings which reflect his spiritualism. One can say that he is obsessed by the Trinity of Hindu Gods and sees them everywhere. He sees them in the sky, in the water, on earth, anywhere and everywhere and his feelings, his dreams come alive through these exquisite paintings which express them beautifully. The neatness, the fluidity, the smoothness that symbolises his paintings are some things which one has to see and believe. Even the geometric designs are free hand and perfect.

'The blue background in my trinity paintings represents the sky. One of the paintings which you can see here represents Brahma, Vishnu and Shiva', he explains. Neat, well matched colours and shapes represent the holy trinity. Another one represents the essence of Gita. A third one speaks of one of the 36 qualities embedded in all human beings.

He uses crayons, pencils, water colours and even oil colours to produce a perfect combination which is neat and very subtle. Most of his paintings are freehand, but he has also used computerised sketches at times. Kantakji's dedication is so great that even a few days before the exhibition, he was still ready to produce more till the authorities asked him to put a brake since there was not enough place to display all his creations! The result of his dedicated and continuous hard work, which fuelled his passion and produced such wonderful masterpieces, was in front for the world to see. Besides paintings, he has also created some fabulous artifacts. One of them is a huge falcon which is very attractive and neat. The falcon stands for success, victory and rising above a situation. Egyptians see it as the sign of the rising sun, while Europeans consider the falcon as a warlike symbol and associate it with the Germanic sky God Woden. Falcons are birds of prey which can be trained to hunt other birds and animals and can be seen all over the world except Antarctica. Falcons symbolise superiority, spirit, light, freedom and aspiration. It is also the king of all birds where many gods were shown with the head or body of the Falcon (including Ra). Vishwanath Kantak visualises the falcon as a symbol of rising above a situation. His firm belief that age and disability are no barriers to success is reflected in this beautiful sculpture. ■



Veena Adige is the Associate Editor of Bhavan's Journal, the fortnightly magazine of Bharatiya Vidya Bhavan. She has authored four books including *The Legacy of Baba Amte*. She has written many short and long stories, and freelances for several magazines and newspapers, including *Woman's Era*, *DNA*, and others.

Whither opposition?

*With the near marginalisation of the Congress party in Indian politics, the country today lacks a good opposition party, says **Lt. Gen. Vijay Oberoi**. For a healthy democracy, a good opposition is vital, he states.*

THE results of the recently concluded elections in a number of states including the mother of them all, Uttar Pradesh, have resulted in major gains for BJP (Bharatiya Janata Party)/NDA (National Democratic Alliance), and a further dwindling of the opposition, led by Congress/UPA (United Progressive Alliance). While this augurs well for a strong government that can govern better than before, the further marginalisation of the opposition is not at all good for democracy, as democracies work best when checks and balances are firmly in place. Historically, it has been proved that ruling parties with huge majorities have resulted in flawed, if not highly authoritarian political decisions, which have hurt the polity in a number of ways. Examples of the Nehru, Indira and Rajiv eras immediately come to mind.

Need for a strong opposition

In a democracy and one as chaotic as ours, it is well established that political parties with huge majorities and weak oppositions have adversely impacted on the growth and fortunes of the nation in many crucial issues. Hence, while it is important that the ruling party should have the confidence of the majority of citizens, which is so today; there should also be a credible and effective opposition, so that any propensities for forcing agendas that may be harmful for the nation, are kept in check. It is only then that good governance, progress, economic growth, security and sovereignty of the nation, improvement in the lives of the masses, and similar other aspects will remain on an even keel.

After the recent state elections in



Have Sonia Gandhi and Rahul Gandhi become liabilities for the Congress?

both large and small states, it is fairly obvious that the domestic political power equation has shifted heavily to the ruling BJP. Obviously, the electorate has reposed its faith in the party, whether on account of anti-incumbency, inadequate governance, corruption, or other reasons. I have no quarrel with this, and hope the BJP and its allies forming the NDA will deliver. However, a complete decimation of the other political parties is also not good for our democracy. Democracies thrive when there is a credible opposition, otherwise there are likely to be adverse effects, which may well be increased imposition of policies not suited to a diverse nation as ours, or in the worst case, even authoritarianism of some variety. After all, one should pay heed to that old adage - *"Power corrupts, and absolute power corrupts absolutely"*!

At present, the Lok Sabha comprising a total of 545 seats, has 339 seats forming part of the ruling NDA, led by BJP, and 206 in the opposition, of which the principal

opposition is the UPA, having only 48 seats. The others support one side or the other depending on prevailing issues or agendas. In the Rajya Sabha, on the other hand, the equation is so far favourable to the opposition, as it has a total of 171 seats, while the NDA has only 74 seats. The equation in the Rajya Sabha is set to change, as present incumbents finishing their tenures are likely to be replaced by more BJP/NDA representatives, on account of the rise of the BJP/NDA ruled states.

The decline of Congress

Within the opposition, the Congress party has more seats than the others in both Houses. However, in the last three years or so, the Congress is on the decline, mainly because it continues to be led by the same leaders that are actually responsible for its rapid implosion, viz., the mother and son duo of the Gandhi dynasty. One does not need to be a rocket scientist to understand that if the present leadership in the Congress party continues, there is

(Continued on page 42)

The epistle

*If you have ever received a love letter, you will know the surge of adrenalin and the range of emotions one experiences, says **A. Radhakrishnan**. He hopes love letters will never go out of fashion!*

I was besotted with this girl in my office. My mouth went dry trying to talk to her. So I wrote a tome of a love letter to her, spread over five foolscap sheets, typed double-space. Her reaction was a mere 'nice', and when I persisted, she told me to get lost! It left me a crippled shell of a man. I faked a laugh, but the tears were real.

Love letters are defined in the dictionary as 'a letter expressing romantic love for the recipient'. That someone has taken the time to put down how much they love you, in writing, is amazing. Nothing is better than love. And of course, salt!

It is romantic to express feelings of love in a written form. Delivered by hand, mail, carrier pigeon, or romantically left in a secret location, it may be a short and simple message of love, or a lengthy explanation of feelings.

The history

One of the first love letters in the world, more than 3,500 years ago, is one carried from Rukmini to Krishna by her Brahmin messenger, Sunanda, as mentioned in the Bhagavatha Purana. Ancient Egypt had the royal widow, Ankhesenamun writing a letter to the King of the Hittites, Egypt's old enemy, beseeching him to 'send one of your sons to Egypt to marry me', to the down-to-earth: let me 'bathe in thy presence, that I may let thee see my beauty in my tunic of finest linen, when it is wet'.

The love letter flourished from the start of the 18th century to the first half of the 20th century. Prior to the rise of telecommunications, letters were one of the few ways for a couple to remain in contact, particularly in wartime: as the

'being apart' often intensified emotions. Addresses of desirable young ladies were even swapped by soldiers, so that an initial communication and possible start of a relationship could be initiated. A normal communication sometimes could lead to a letter expressing love, longing and desires.

The coming of the permissive society and the instantaneity of the Information Age, in the second half of the century, made the distanced and nuanced art of the love letter fall somewhat into disrepute. The electronic age notwithstanding, the humble love letter may possibly still play its part in life, even if in new formats.

Letters are preferable to face-to-face contact because they can be written as the thoughts come to the author's mind. Feelings are more easily expressed than if the writer were in the beloved's presence. It may be made to an existing love or in the hope of establishing a new relationship; and the increasing rarity and consequent emotional charm of personal mail may also serve to emphasise the emotional importance of the message. A love letter can be written in any structure or style, as a sonnet or other form of poem.

Some stationery companies produce paper and envelopes specifically for love letters, some scented, though most people prefer to spray them with their own perfume. This emphasises, in the receiver's mind, the physical connection that occurred between them in this form of communication, and thus may strengthen the overall impact of the letter.

The celebrated letters of love

Love letters in modern times can

also be extended to not only a lover but also to a friend, parent, child, or other important recipient. Hannah Brencher, founder of 'The World Needs More Love Letters', has dedicated her life to showing total strangers that they are not alone in the world.

Among the celebrated love letters are that of Johnny Cash wishing wife, June Carter Cash a happy 65th birthday (1994):

Happy Birthday Princess, We get old and get used to each other. We think alike. We read each other's minds. We know what the other wants without asking. Sometimes we irritate each other a little bit. Maybe sometimes take each other for granted. But once in a while, like today, I meditate on it and realise how lucky I am to share my life with the greatest woman I ever met.

Winston Churchill tells wife Clementine of his undying love (1935): *Time passes swiftly, but is it not joyous to see how great and growing is the treasure we have gathered together, amid the storms and stresses of so many eventful and, to millions, tragic and terrible years?*

Napoleon Bonaparte sent his love to Josephine de Beauharnais (1796): *Since I left you, I have been constantly depressed. My happiness is to be near you. Incessantly I live over in my memory your caresses, your tears, your affectionate solicitude. The charms of the incomparable Josephine kindle continually a burning and a glowing flame in my heart.... I thought that I loved you months ago, but since my separation from you I feel that I love you a thousand fold more.*

Beethoven pens his love for his

'Immortal Beloved' whose true identity remains a mystery (1812) : *Though still in bed, my thoughts go out to you, my Immortal Beloved, Be calm, love me today, yesterday; Oh continue to love me; never misjudge the most faithful heart of your beloved. Ever thine. Ever mine. Ever ours.*

Alice Mongkongllite gives tips for writing an amazing love letter!

- People love to know how loved they are and that desire is timeless. A love letter is what will last, what will be remembered.
- Some of the most beautiful letters are written from one friend to another, or from a parent to a child.
- Write about when you first met or, even better, the moment you fell in love with them or your love deepened. Share what the person

brings to your everyday life. Call attention to the little things you love about them (like how she looks when sipping her coffee). Talk about things you're excited to do (travel, start a family), and your shared dreams.

- Antarctic explorer Robert Falcon Scott's body was found with the picture of his wife Kathleen, and the last love letter that she wrote to him. Small details are particularly important to writing a meaningful letter because they make people 'feel seen and appreciated.'
- Write what you have to say, whether that's three pages or three sentences.
- The format isn't as important as the message. It's fine to make a little drawing, do something visual, or include little scraps. Some of the

best love letters have been emails or texts.

- The actual delivery doesn't matter. If you're very shy, you could leave the letter for them to find when you're not around, or you could hand it to them with another gift.
- The best love letters strike a balance between considerate and uncensored. You have to feel vulnerable for it to mean something. Love letters. Pure, old-fashioned, will never go out of style. ■



A. Radhakrishnan is a Pune based freelance journalist, poet, short story writer and counsellor, who when not busy on social media, loves to keep people happy.

Whither opposition?

(Continued from page 40)

little hope for the revival of this oldest party of the nation, despite the Congress win in Punjab. Yet, the other leaders and the rank and file of the Congress party seem unable to grasp this obvious truth, and are continuing to repose their faith and fortunes with them!

In the army, we had learnt that if a particular leader is unable to lead well, for whatever reason, it is best to replace him and select someone else. History is replete with instances where this has been done and the dwindling fortunes changed for the better. Why the Congress party does not do so is a mystery or in this case, perhaps '*a mystery wrapped in an enigma*'!

Frankly speaking, very few men and women in our country want to see a return of the old Congress party in power, but we do want an effective and credible opposition in Parliament for ensuring that checks and balances continue, and there is no imposition of authoritarian or near-authoritarian rule by an individual or a political party. The Congress party still has a few credible leaders and

administrators, especially among the younger lot, but no apparent move to get rid of the current inept leadership is discernable. Is it a continuation of the sycophantic and dynastic culture of the past, or are the others unable or unwilling to see the bold '*writing on the wall*'? Already, staunch and senior members of the party, including those who have held important positions in the party hierarchy, are '*abandoning the ship*'.

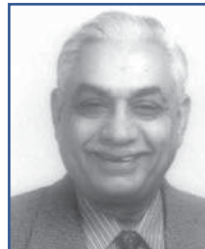
The move to drastically change the Congress leadership must emanate from within the party, and the earlier it does so, the better it will be for both the party and the nation.

While a change in leadership in the Congress will undoubtedly be helpful to the party, it will also result in smaller political parties climbing the bandwagon. It is only then that a credible opposition to the BJP juggernaut will emerge. The Congress, besides being the oldest political party of the nation, still has a pan-India structure of committed party workers, albeit in a somnambulist state at present, and has the funds and the organisation to revive the party's fortunes, provided they prevail on the present leadership of the party to step down, willingly or by other means,

and let younger and more competent leaders take charge. Even if they do not win forthcoming elections, they would be able to play the part of a constructive opposition, if they are able to prevail on the others in the opposition to their way of thinking.

For BJP/NDA, it makes eminent sense not to want any change in the jaded leadership of the Congress party, as it makes their job easier to wrest both additional seats and states from the Congress. There is no lack of evidence for prosecuting the Gandhis in many cases of malfeasances and financial inappropriateness, but Prime Minister Narendra Modi has quietly stayed even obvious prosecutions like the National Herald and Vadra cases, to cite only two.

Hence, getting the Gandhis to step down will have to be an entirely Congress affair. Are they up to it? I have my doubts as there are no discernable signals despite



all the humiliation the party has suffered in the last many years. ■

Lt. Gen. Vijay Oberoi is a former Vice Chief of Army Staff.



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What a ride!

US President Donald Trump has put on display for the American public and the world at large, a dizzying array of policy reversals and utterances. Where and when will this roller-coaster ride stop? asks Dr. P.M. Kamath.

US President Donald Trump completed 100 days in the White House on 30 April 2017. To mark the day he gave a speech in Harrisburg, Pennsylvania - a swing state that helped him to get the presidency. In the post-World War II period, Trump is a unique man in the White House with absolutely no political experience as a senator, a governor or even as a city councillor.

Most winning candidates know when electioneering ends and effective governance begins. But not Donald Trump, whose speech was in 'campaign style'. He continued his vicious attacks on media calling them 'incompetent and dishonest.' His contempt for the media is such that he chose not to attend the White House Correspondents' Dinner in Washington, DC., giving Hasan Minhaj, an Indian-American stand-up comedian an opportunity to make fun of the President and at the same time laud American commitment to the freedom of speech!

Successes claimed

In his speech, President Trump claimed a few successes in the foreign policy and domestic policy areas in his brief period of administration. He had angered China, by talking to Taiwan's President. (China is irrationally sensitive on the issue—irrationally, because though it has trade, economic and investment interests in Taiwan and the latter has also invested in mainland China, it objects to any other nation keeping in touch with Taiwan, particularly the US.) After taking an assertive stand against



Donald Trump, with now-fired FBI Director James Comey, in happier times

China and accusing it of manipulating currency, self-interest made Trump reverse his stand and publicly commit to One China policy. He found soon after his ascending to the Presidency, that China had stopped manipulating Yuan's value to enable it to compete with the US goods, which he had accused China of doing during the campaigns! Trump invited Xi Jinping for a summit meeting on April 6-7 at his Florida golfing resort, Mar-a-Lago where he hailed the US-China bilateral relationship. Trump then went on to claim how he has successfully handled, North Korea, another serious security threat, with the help of China. Trump offered an anti-missile system to South Korea and after it became operational, also offered to meet North Korean dictator, Kim Jong Un.

He has translated his campaign promise to keep all American jobs for

Americans, under his slogan 'America First'. After assuming office, he imposed a tax on companies shifting jobs outside the US. H1B visa restrictions affect the Indians most because allegedly, Indian companies based in the US hire work force from India at a lower salary, instead of hiring Americans.

Tried and failed

Trump, the candidate was very critical of Muslims. Just seven days into the office, on 27 January, he issued an Executive Order debarring travellers from Iran, Iraq, Libya, Somalia, Sudan, Syria and Yemen for 90 days, all refugees for 120 days, except civil-war torn Syrians, who are debarred indefinitely. Trump had defended his order as necessary to protect the US from Islamist militants. Ironically, while banning nine Muslim countries

for safety from imaginary terrorism, he missed out Pakistan, which more than one American President in the past has considered as the epicentre of global terrorism; its hand was there in the failed WTC attack in 1993, and later in the 9/11 attacks. Trump's Executive Order was challenged in a lower court on the ground that it discriminated the seekers of US visa on the ground of religion. Two days later, a three-judge panel of the San Francisco-based 9th US Circuit Court of appeals upheld the lower court order. Trump has held a threat to move the Supreme Court.

Yet to be tried

There were other promises he made during the campaign one of which was to abrogate NAFTA (North American Free Trade Agreement) between the US, Canada and Mexico. Now, it is reported by Trump himself that the Canadian PM has mooted a proposal to renegotiate it, which he has agreed. He was committed to withdraw the US from the Paris Climate Treaty. Trump blamed China, Russia and India stating that these countries stand to gain everything, without contributing to the promotion of it. But now reports are that within his administration there are pro and anti-treaty groups, and a decision might be taken in the G7 summit on May 26-27. He had also spoken about making Europeans pay for NATO protection.

During the campaign he had come up with a most preposterous proposal of building a border wall between Mexico and the US to prevent illegal immigration from that country; and he said he would make the Mexican government pay the cost. However, studies have revealed that there has been a considerable decline in illegal immigration from Mexico.

Conclusion

However, the question looming large is: Is it ever possible to reverse the

globalised economy into a nationalised economy with American protectionism as a dominant philosophic impulse? President Trump is without any political philosophy; the only philosophy he seems to have is 'maximise profit and minimise losses!', as is evident in his China policy. As *The Economist* pointed out in its special report recently, China used Trump's son-in-law, Jared Kushner with Chinese business links, for Alibaba (an e-commerce giant) to announce China's intention to create one million jobs in the US; the Chinese also cleared long-pending Trump's applications to protect trademarks which were suddenly granted! This has gone a long way to make China a 'friend!'

During the campaign he had come up with a most preposterous proposal of building a border wall between Mexico and the US to prevent illegal immigration from that country; and he said he would make the Mexican government pay the cost. However, studies have revealed that there has been a considerable decline in illegal immigration from Mexico.

During the campaign period he appeared as a small time Chanakya or Machiavelli – small time, because he had not shown a Nixonian geopolitical sense or a global vision. The Trump presidency has been utterly unpredictable so far. He called District judge James Robert of Seattle, as a "so-called judge." He called Hawaii District judge's decision setting aside

his banning Muslims' entry into the US "terrible." Hence, I have conferred the title of 'The Terrible' on Trump. It is not meant in the sense of Ivan the Terrible, the 16th century Russian Tsar who transformed Russia from being a medieval state to an empire. However, Ivan had a complex personality, given to instant rage. He killed in rage his son who was intelligent; thus accidentally making it easier for his incompetent son to succeed him. Trump of course will not resort to killings, but will certainly sack high-placed officials in a hope to protect his reputation as the President of the US. He has already sacked five of them, the fifth and latest being James Comey, the FBI Director who initially helped him to get elected!

So what future does Trump ensure? Having shown to his blue collar and middle class supporters that he has implemented all promises made during the campaign period and later, he will take a big U Turn on most of the policies with the exception of 15 percent tax cut to rich, before the second year begins. His alibi will be that all his international interlocutors, multinational corporations and domestic companies have accepted his policy directions making America numero uno in world politics!

His current public rating is as low as 36. If he can still mesmerise his voters with the help of Russian President he may win a second term or go down in the history text books as another one-term President, like Jimmy Carter or George T. W. Bush! ■

Dr. Kamath was a former Professor of Politics in Mumbai University, where he taught among other subjects, American Government & Politics, and American



Foreign Policy. Currently, he is Chairman and Hon. Director, VPM's Centre for International Studies Regd.), which is affiliated to the Mumbai University.

By the people

*India being a democracy, one has to accept the elected representatives, whatever be their politics, religion and hue. But one can certainly hope that good sense will prevail, and people will vote only for those who will further the secular agenda, says **Rashmi Oberoi**. And not divisive policies, she prays.*

WHILE we all had laughed at the Americans for voting Donald Trump to power and scoffed at the average American for being racist, we may now raise our eyebrows at the election of a 'Yogi' in our very own country as a Chief Minister, no less....! And that too a man, who has had a string of controversies behind him, has gun-toting followers, and has uttered the most bizarre theories in the past.

Blood pressures have naturally risen and people have ranted all over social media with the 'Bhakts' (followers of the ruling BJP or Bharatiya Janata Party,) all defensive and charged up. The jokes are aplenty and there are many who wake up each morning with nothing better to do than go on and on about their love or hatred for particular political parties/politicians, till it sounds like a stuck record!

We are a democratic nation and the people have spoken or rather decided that this is the way forward and this is how it will be for them. After all, you reap what you sow. But that doesn't



Yogi Adityanath's elevation to Uttar Pradesh Chief Minister raised many eyebrows

mean, we, as individuals, now get back to a lethargic mode and leave things in a limbo... No, as good citizens of this great country and responsible ones at that, ask yourself each day what you can do to further improve it, and change things for the better.

For, if things continue at this pace, the unceasing growth of the RSS (Rashtriya Swayamsevak Sangh)

will unleash radicals, awaken fringe elements, and result in actions that may spiral out of control. Maybe this is the moment when the opposition should push itself to rise from its slumber and cast an eye on the horizon. It just might be able to get its act together. We definitely need a strong opposition to counter balance. Prime Minister Modi will of course do his best to let the opposition continue in its blissful sleep.

Not my India

I have no interest in politics per se, nor am I an ardent supporter of any political party but yes, as an ordinary citizen. I definitely do not want a hardliner Hindutva ruling our secular nation. This is not my India. I feel parliamentary democracy in India has



become a farce. For the proper working of parliamentary democracy, many pre-requisites are needed, and till the leaders are responsible and conscious of their duties and responsive to public opinion, democracy itself will not be stable, and we can certainly do without dictators.

The country requires someone who can get the job done with minimal expense. And saffron extremists facing trial on charges of incitement to communal rioting and attempt to murder, are certainly not required to be leaders in our country. Due to hasty decisions like this, communal cauldrons are simmering in so many parts of India, and the fear of them boiling over will be nothing short of catastrophic. Endorsing Hindutva's hard-core hardliners will only result in tearing apart the secular fabric of our country.

We grew up with pride knowing that India is 'a sovereign, socialist, secular, democratic republic', and so shouldn't all political parties based on religious ideologies be banned? Secularism implies "right to be free from religious rule", and not "freedom from religious rule". As a result, people are free to choose a religious party as their government, but the resulting government cannot impose a religion.

People naturally fear that religion-based parties would somehow turn the entire population into bigots and promote hatred between majority and minorities. We cannot deny that ultra-religious fringe groups wouldn't exist or be associated with religious political parties. However, again due to the very nature of democracy, their political strength would remain curbed due to their hateful and divisive actions. Most important, the strength of a democracy lies in giving voice to everyone, to even those who we don't like.

From a practical standpoint, Indian version of secularism differs from its



The Amarnath yatra (above) is sponsored by our government, as is the Haj pilgrimage

Western counterparts. The Indian government has never considered religion as an enemy or even a competitor. That is why we see temples being run by government boards, and government sponsoring Haj pilgrimage and Amarnath yatra.

The vested interest of people behind communalism must come to an end for a truly secular India. There should be liberal space and respect for each religion. Great and deep subdivision of religion needs to be addressed urgently. Religion is personal, and must not interfere with politics. To strengthen secularism, whenever there is damage to religious sentiments, the government must deal with the perpetrators strictly, and the guilty must be punished.

It is my conviction that India's survival as a multireligious, multilingual, multiracial, multicultural society will depend on how successful it is in working its secularism. No society can prosper or be at peace with itself if one-fourths of its population feels neglected, deprived and unwanted. It is disconcerting

to see that, in recent times, serious questions are being raised about India's secularism. It is for the first time since Independence that the 'Hindu Rashtra' ideology is being talked about so openly, defiantly and persistently.

For India to rise and shine once again, we need big time reforms to be a Sovereign, Socialist, Secular, Democratic Republic in the real sense and not just on paper. ■

As an army officer's daughter, Rashmi Oberoi was lucky to travel and live all over India, as also a few years in Malaysia and U.S.A. Keenly interested in writing for children, she wrote two story books - *My Friends At Sonnenshine*, which was published in 1999 by Writer's Workshop, Kolkata, India, and *Cherie: The Cocker Spaniel*, which was published in 2009 by the same publishers. For a few years she moved into the corporate world of HR but her love for writing took precedence, and she pursued



her passion by writing articles and middles for newspapers, print and online magazines, including a children's magazine abroad.

The ghost of Ibsen

Ila Arun's drama group 'Antardhvani' staged yet another Ibsen play, Ghosts, at Mumbai's NCPA theatre recently. She must be commended for her splendid efforts, says Prof. Avinash Kolhe, as he reviews this play.

MUMBAI-based senior thespians Ila Arun and K. K. Raina have been bringing Henrik Ibsen's (1828-1906) plays to Indian audiences quite regularly. Now their drama group 'Antardhvani' has brought to stage Ibsen's *Ghosts* in Hindi *Piccha karati parchaiyan* (shadows that chase). This is one of Ibsen's rare plays. Normally, Indian audiences know Ibsen through his plays like *A Doll's House*, *An Enemy of the People* and *The Pillars of Society*. These are the plays that support progressive ideologies like women's empowerment (*A Doll's House*), exposes corruption in the system (*An Enemy of the People*). On the other hand, plays like *Hedda Gabler* and *Ghosts* show the dirty side of human nature and hence, perhaps are rarely staged. 'Antardhvani' must be complimented for bringing a powerful play like *Ghosts* to Indian audiences.

As is her her style, Ila Arun does not blindly translate foreign plays in Hindi. She trans-renders such plays in the Indian context with appropriate use of language and setting. This skill was on display when her group mounted Ibsen's *Peer Gynt* in Hindi as *Peer Gani* against the background of Kashmir Valley. This time Ila Arun has used Rajasthan as the background for *Ghosts* and presented *Piccha karati parchaiyan*. Not only this, she has contemporarised the play, which is why characters in this play use cell phones.

The story

This play is a sad story of a middle-aged woman, Yashodhara, who has



Ibsen's 'Ghosts' in Hindi, *Piccha karati parchaiyan*, was staged by Ila Arun's 'Antardhvani'

recently lost her husband Maharaja Kunwar Bhanu Pratap Singh in mysterious circumstances. Yashodhara has a son who is a Paris-based fashion designer. The play opens when a school dedicated to Bhanu Pratap Singh is to be inaugurated. Everything is ready. Purohit, friend, philosopher and guide of this royal family and Yashodhara, are busy giving final touches to the inaugural function. Slowly, steadily the dark and dirty secrets of the family, hidden carefully all these years, start coming to light.

Yashodhara has been maintaining the façade of a happy marriage for years. But after the death of her husband, things began to unravel. First and foremost, the audience gets to know

that her husband was a womaniser, who would not mind wooing even a housemaid of the palace. In fact, as the story unfolds, it comes to light that he has fathered an illegitimate daughter with a housemaid. As it happens in such situations, the matter was hushed up with money, and the housemaid was forced to marry a carpenter.

Yashodhara confides this secret in Purohit who is a puritan, and a strong believer in values. For example, Yashodhara reminds him how he had turned her away years ago when she had run away from the palace, as she was utterly disgusted with her husband and how Purohit persuaded her to go back to keep the family honour.

(Continued on page 51)

The song of life

The recently released film *Sonata* by Aparna Sen is about three middle-aged women, shot at a single location, and in English to boot. **Shoma A. Chatterji** reviews this film and the filmmaker who has always followed her own instinct, and made films she believes in.

A brief interview with Aparna Sen, asking her to hold forth on her latest film *Sonata* in English, hardly does justice to one of the best directors Indian cinema has produced, and I would hate to add the prefix “woman” to “director”, because gender does not come into the scenario at all. So, here are a few snippets on her and from her, that does zero in on her new film *Sonata*, which presents for the first time, her transposition of a play into a film.

If Aparna Sen appears to be a rebel of sorts in personal life and also in terms of the films she makes, it would not be wrong to say that the rebellion is in her genes. Her jet-paced lifestyle and her oeuvre of films – each one dramatically different from the next – are enough to stand testimony to the radical spirit that lies hidden behind that charismatic persona, mellowing beautifully. With two marriages behind her and the third a very successful one, two daughters,



A light moment from the film *Sonata*; (from left) Lilette Dubey, Aparna Sen and Shabana Azmi

and three lovable grandchildren later, Aparna Sen is one woman you would love to envy. Yet, a few meetings down the line and you end up an ardent fan, wondering how on earth she manages to wear so many hats at the same time, without letting a single one slip off.

discovers some hidden message in them, well then, it is purely the audience's take on it, and not mine. In the beginning, I wrote my own scripts based on my own stories. But since *Japanese Wife*, I have sometimes begun to rely on stories written by others. The *Japanese Wife* is from a novel by Kunal Basu before the book came out in the market. *Goynar Baksho (The Jewel Box)* is adapted from a novelette by Sirsendu Mukhopadhyay. *Aarsinagar* was written jointly by Srijato, a noted Bengali poet, and myself. Now, I have taken Mahesh Elkunchwar's play *Sonata* (2000), originally written in English, for my film."

She is proud of the fact that her parents brought up the three sisters quite liberally. "Our parents vested us with the entire responsibility of the choices we made. 'You have an opinion of your own, never mind how small or



Aparna Sen in *Sonata*

Her background

"Story has always been the backbone of my films" says Sen, adding, "I do not believe in delivering messages through any of my directorial films. If the audience



The film *Mr and Mrs. Iyer* where Aparna Sen directed her daughter Konkona (above)

big you might be,' they would tell us. Our parents never shooed us away when guests came visiting. There would be sessions of poetry reading with lots of classical music thrown in. We were allowed to sit around and listen. I was brought up with the feeling that if I really wanted to do something, nothing, but nothing, would come my way. My father once told me, 'your life is yours to do what you want with it.' This has stood me in good stead all my life. Neither parent nagged us for going along when we told them we were done with the homework. If I could finish a two-hour project in one, that was my responsibility. 'Responsibility' was the operating word since early childhood."

Aparna has been so very versatile in her choice of subjects, her storylines, her approach and her style while retaining her signature individuality, one really cannot place any expectations about what her next film is going to be and *Sonata* which seems to have been her biggest commercial flop, proves this.

Direction and acting are two dimensions of this multi-dimensional woman. She edited the largest selling

women's glossy in West Bengal called *Sananda* for two long decades. She was no ghost-editor who delegated her editorials to competent juniors. She conducted editorial meetings herself, and set out the editorial content of each issue. Her editorials were reflective of current events around her. Over the years, she managed to earn the undisputed loyalty of her hardworking staff. All of who pitched in, trying to elbow in when their editor sat on her directorial chair. One of them, Saborni Das who looked after fashion and style, is now a much-in-demand costume designer for films and television, and has also won the National Award for her costume designing and styling in *Jaatiswar*, a period drama by Srijit Mukherjee.

Debut as an actress

Aparna's debut into direction has been a sort of logical extension of her work as an actress. She made her debut as leading lady in the mainstream and somehow, almost all the films were big hits and she became the *numero uno* of commercial Bengali cinema after Suchitra Sen. Among her better films,



Jennifer Kapoor in *36, Chowringhee Lane*, Aparna Sen's debut film as director

Aparna chooses all the films of Satyajit Ray and Mrinal Sen that she has worked in. Among the rest, she cherishes having worked in Tapan Sinha's *Ekhoni*, Inder Sen's *Ashamay*, Ajoy Kar's *Nauka Dubi* and Bishu Briksha, Hrishikesh Mukherjee's *Kotwaal Saab*, Prabhat Roy's *Swet Patharer Thala*, Biresh Chatterjee's *Kori Diye Kinlam* and Partho Pratim Choudhury's *Jadu Bangsha*. She enjoyed acting under the direction of Salil Dutta and the late Dilip Mukherjee. "If I were to tick off five of my favourite roles to date I'd mention these films - 1) *Paromitar Ek Din*, 2) *Samapti*, 3) *Ashamay*, 4) *Jadu Bangsha*, and 5) *Raater Rajanigandha*. I have directed myself in *Paromitar Ek Din*. In *Ashamay*, I play a woman of 36, full of inhibitions. In *Raater Rajanigandha*, for most of the film, I am a ghost, a very unusual role. I strongly believe that as an actress, my performance has improved largely after I turned director."

Aparna Sen was born into a family of film-lovers. Her father, noted film critic and scholar Chidananda Dasgupta, was founder member of the Calcutta Film Society alongwith Satyajit Ray. Aparna made her debut in films as an actress in 1961 while she was still in school, in Satyajit Ray's *Two Daughters*. She has since acted in films of several noted film directors including Mrinal Sen, James Ivory and Satyajit Ray. She received the Best Actress Award for her performance in Mrinal Sen's

film *Mahaprithibi* at the Moscow Film Festival. She made her debut as director with 36, *Chowringhee Lane*, based on her own story and script, in 1981. The film won the Grand Prix at the Manila International film Festival in 1982, and the National Awards for Best Direction and Best Cinematography in India. The Munich International Film Festival held a retrospective of her works as actress and as director in 2002. The Calcutta International Film Festival held a retrospective of her films in 2002. *Mr. & Mrs. Iyer* fetched her The Best Director Award at the National Awards in 2003, while daughter Konkona Sen Sharma complemented her with the Best Actress Award. She made more films as time moved on and among them are – *Iti Mrinalini*, *6*, *Park Avenue*, *The Japanese Wife*, *Goynar Baksho* and *Aarshinagar*.

The sonata

What made her choose *Sonata*, a chamber drama enacted on a single set with three middle-aged women as protagonists and friends for her new film? “My friend Sohag Sen who collaborates with me in every film, is a noted theatre personality, who has her own group and stages plays with them. She had directed *Sonata* for the Kolkata stage some years ago and it appealed to me to turn into a film. I decided to make the film in English because the original play was written in English though Elkunchwar is noted more for his Marathi writings. A film in English would automatically widen the parameters of the audience and give the film an international market – hopefully.”

“I began as an actress in Bengali films, but when I decided to turn director, I clearly knew what kind of films I would

make. I did not want to direct the same type of films I had acted in. I wanted to do meaningful films as a director. Films, I believed in, and not dictated by terms and conditions. It's my choice. This is what makes me happy, this is what I am comfortable doing. Or I would have continued to act in commercial films. I direct in English and Bengali as these are the languages I am comfortable in,” she sums up. ■

Shoma A. Chatterji is a freelance journalist, film scholar and author. She has authored 17 published titles and won the National Award for



Best Writing on Cinema, twice. She won the UNFPA-Laadli Media Award, 2010 for 'commitment to addressing and analysing gender issues' among many awards.

The ghost of Ibsen

(Continued from page 48)

She knows that secretly Purohit loves her, but when she confessed this, he turned away as it would amount to betraying his friend's trust.

The illegitimate daughter is a young girl and now works for Yashodhara, who knows what her actual status is. This young girl is quite competent and ambitious. She tries to seduce the young Paris-based prince so that she could go abroad. The Prince too falls for her charm and announces his intention to take her to Paris. Yashodhara is aghast as she realises that this amounts to incest, and decides to stop this sin by hook or by crook.

As if this was not enough, she gets to know that her son, whom she tried to keep away from his father and his evil influences, is suffering from syphilis, a sexually transmitted disease. Her world comes crumbling down. The mother in her comes to surface, and tries hard to

console her son. In other words, ghosts of your sins come visiting generation after generation. Ibsen had utter disregard for the morality of the society he lived in, and used his pen very powerfully to expose the hypocrisies of that society which in a way are no different from the modern society.

The cast

Ila Arun plays the part of Yashodhara with remarkable ease. Her persona is eminently suitable to play the role of a woman from a royal family. She has used the Rajasthani dialect of Hindi in this play, which the entire cast is very comfortable with. Then there is K. K. Raina who plays Purohit's character. He maintains the tension in the play by forcefully arguing in favour of different values, and as an establishment man, knows how to control the situation.

The play was staged at the Experimental Theatre of NCPA, an ideal place to mount such plays. The effect of the play was simply terrific as the entire cast is competent with support from other dramatic elements like lights and costumes. Since this is a period play of sorts, costumes communicate the royal family and the sets, the royal ambience. But the focus always remains on Ila Arun and K.K. Raina, who brought their years of experience on stage to communicate the pathos, the inner turmoil of their characters. Theirs was a spellbinding performance. Do visit this Ibsen's masterpiece to understand how things never change, and how families all over the world, through all times, try to keep such secrets under the carpet. In fact, the more things change, the more

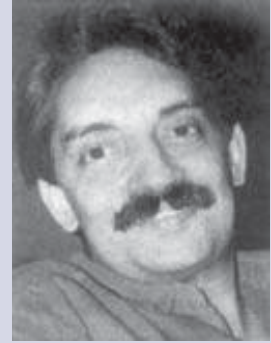


they remain the same. ■

Prof. Avinash Kolhe is Asst. Professor in Political Science at D.G. Ruparel College, Mumbai.

Target the young

Children are not just the future of our country, but they hold the key to the survival of our environment and planet. Get them involved in wildlife and nature, today!



Bittu Sahgal
Editor, Sanctuary magazine

HOW do small insects defend themselves in such a huge jungle?" a five-year old asked in amazement as I escorted 30 young children a quarter way up the Yewoor Trail in the rain-drenched forests of Borivli, Mumbai. "Won't these ants drown?" asked a tiny girl, wearing gumboots almost as large as her. "I heard that ants can talk to each other and warn each other of danger in advance," responded a sage 13-year-old veteran of many such walks, by way of explanation, before I could open my mouth.

I am not a zoologist, botanist or entomologist, but years of associating with experts in the field has taught me enough to get by with a combination of answers involving chemistry, biology and philosophy. And, when I am well and truly stumped, I say so in so many words and promise my young wards that I will soon get back to them with answers after consulting more knowledgeable experts.

One of the greatest pleasures in life is to watch a curious child's expression change from frowningly quizzical to elated discovery on uncovering a plain truth; "the eye spots on the butterfly wing help to scare away bigger creatures." Another pleasure is sitting for hours at home in search of answers to questions from kids that have stumped me in the field: "If the rain washes away the scent of flowers, then how do insects find flowers when it rains?"

I love children. I enjoy interacting with them. They are my reward for having to do battle with the army of dismal ones that I must interact with on a daily basis, who "know the cost of everything and the value of nothing." Like the scientist in charge of a key department in the Ministry of Environment (so much power, so little wisdom or caring) who said that a thermal plant spewing out 40 tonnes of sulphur per day was doing India a service because: "Indian soils are deficient in sulphur and money should not therefore be wasted on a

desulphurisation plant."

I make it a point to talk with eight or ten thousand children each year by way of large and small meetings, slide shows, assemblies in schools and other such programmes organised by good people around the country. Filled with hope and positive energy, children recharge my depleted batteries. In fact, when parents express their gratitude for invitations to public functions *Sanctuary* regularly organises, I respond by saying: "I should be thanking you! I feel a sense of possession over your children. I am hungry to influence their minds in favour of nature, and I refuel my own purpose and resolve by tapping shamelessly into their optimism."

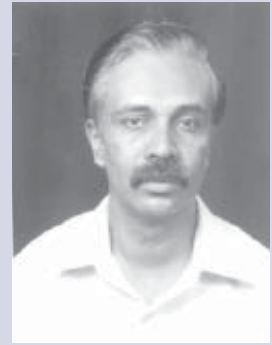
There is, of course, another wonderful byproduct of investing time in young persons – like ducklings that grow up to be swans, they quickly grow up to take charge of things! There are some very bright young journalists who said to me that they first got involved with nature through *Sanctuary Cub*, a magazine for young naturalists that has been around for over 30 years. That sort of makes all the trials and tribulations worth it!

Anyone who works with them will confirm that children respond instinctively to nature and are capable of assimilating even very complicated concepts provided you dispense with jargon and convoluted arguments. It is more than enough to say: "Pollution kills dolphins" or "plastic bags kill turtles". They understand this and believe this because they can smell the truth.

Nature conservation is nothing other than good long-term economics. This was a fact well known to our elders. But who is to teach such lessons to the upstart politicians who mismanage India today? Alongside the desire to save our wilderness areas, this is possibly the most ambitious quest that wildlifers and conservationists will have to embark on today. ■

Déjà vu?

Is it a sense of déjà vu one feels on hearing about allegations of the Delhi CM Arvind Kejriwal taking a bribe? For all our sakes, let's hope it isn't true.



C. V. Aravind

is a Bangalore-based freelance journalist.

NDIA Against Corruption (IAC) was a landmark movement spearheaded by the noted Gandhian and anti-corruption crusader, Anna Hazare, and it aimed to fight the scourge of corruption in politics in a big way. The most trusted lieutenant of Anna during those heady days was an Indian Revenue Service officer named Arvind Kejriwal, who was not just the eyes and ears of the leader, but also a leading light of the entire movement.

The protégé, discarding the advice of his mentor to steer clear of mainstream politics, floated his own party, the Aam Aadmi Party (AAP), capitalising on the platform provided by IAC. The party received a shot in the arm when it swept the Delhi assembly elections, securing an overwhelming mandate winning as many as 67 of the 70 seats, humbling national parties like the Congress and the BJP. Since then, however, things have not been hunky dory for the party, and a number of its ministers and MLAs landed in trouble for one reason or the other, and a few also had to relinquish their posts.

Kejriwal, the Chief Minister (CM), however, has now directly come under the line of fire with one of his closest aides and a minister in his cabinet, Kapil Mishra, who was sacked by Kejriwal, accusing him of receiving a bribe of ₹ 2 crore from one of his ministers Satyendra Jain, and buttressing his argument by claiming that he was an eyewitness to the transaction.

The million dollar question now is whether the man who rode the anti-corruption plank to victory in the elections, is himself guilty on that score. Has politics claimed another victim, and does Kejriwal too have feet of clay? While the CM has not been forthcoming on the issue, his party obviously has decided to brazen it out and have been maintaining that the whistleblower is shooting in the dark, and that it is the

opposition BJP (Bharatiya Janata Party) that is engineering the whole affair.

This brings us to the question whether it is impossible for a politician or a party to remain untainted, and that the only difference between politicians of different hues is in the degree and scale of corruption. It is an acknowledged fact that electoral politics is a high stakes game, and no elections can be won on an empty purse. Every party collects donations from everywhere and hardly bothers about the sources. Many of these donations also come with strings attached, and those who cough in huge amounts generally demand a quid pro quo, which means that they expect to be compensated in one way or the other by the recipients of the largesse. This breeds corruption and sets off a chain of events wherein a party that comes to power remains obligated and ministers and others further enrich themselves by bestowing favours on undeserving donors in the form of contracts, permits etc. The concept of state funding of elections could have a salutary effect especially in the case of new parties like AAP for that would obviate the necessity of collecting humungous amounts of money for fighting elections.

Whether Kejriwal is guilty or innocent is for the courts to decide, but the fact that politics does exert a corrupting influence has been proved time and again.

Fortunately, whistleblowers at great risk to life and limb have been exposing these charlatans and the country's judiciary has dealt with the corruption cases that have come up before them very firmly and decisively and even the big fish have found themselves trapped and sentenced to long prison terms. But as long as Indian politicians are only too willing to succumb to the lure of the lucre and blindly fall into the traps set for them, our nation's efforts to eradicate corruption in public life might not meet with any success. ■



SPOTLIGHT

One With Nature

World Environment Day is celebrated on June 5.

When was the World Environment Day first celebrated?

The United Nations began celebrating this day in 1973 to commemorate the formation of the United Nations Conference on the Human Environment. The event is held every year in a different city with a different theme.

What is the purpose of the celebration?

The aim of celebrating this day is to create worldwide awareness of the environment and encourage governments to take action to protect the environment in their country. Governments, NGOs and the public participate in various programmes to make World Environment Day a success.

What are the main environmental issues the world is facing today?

Deforestation, pollution, global warming, climate change and wastage of food are some of the major environmental concerns.

What is the theme for 2017?

The theme for this year is 'connecting people to Nature'.

Which country is hosting the main event?

The event is being hosted by Canada this year.

Has India ever hosted the event?

Yes, in 2011 in New Delhi. The theme for that year was 'Forests - Nature At Your Service'.



Did You Know?

Greenpeace, the world's largest environmental group, works to save earth's natural environment. It opposes the dumping of toxic wastes in rivers by sewage treatment plants and industries; the testing of nuclear bombs; the hunting of endangered animal species; the drilling of oil offshore and large dam projects.

Greenpeace was founded in Canada in 1971. It has 2.8 million supporters worldwide.

ART BEAT

The Green Canvas

Increasing awareness about nature and the necessity to preserve it has given rise to a new form of art called environmental art. Green art or crop art, made using plant materials, is one of the most popular forms of environmental art.

Leaf carving is a new art form in which intricate designs are carved on a leaf. The artist scrapes off the outer surface of the dried leaf, leaving behind a gossamer-thin transparent layer. Skilled artisans then painstakingly create their masterpieces on the veined surface.

Artists prefer to use the leaves of the chinara tree to depict scenes of nature, famous monuments and religious figures. The art form, which originated in China, is fast gaining popularity all over the world.

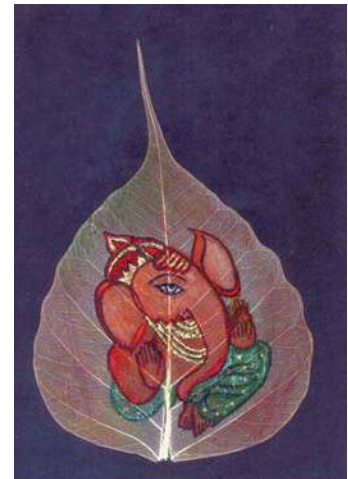
Leaf painting involves painting on dry leaves. This ancient art, which has been practised in many parts of South East Asia for centuries, is now witnessing a revival.

Palm leaf painting has been a popular folk art in Orissa

and Tamil Nadu. Artisans use an iron pen to draw on the dried leaves. Ink or a mixture of burnt coconut shells, mustard oil and turmeric is then rubbed over the sketch to highlight the etching. The leaves are then sewn or strung together to form a mat. Scenes from the

Ramayana and Mahabharata, figures of gods and goddesses, scenes depicting the beauty of nature and episodes from local legends and folklore are some common themes.

In Kerala, peepal leaf painting is also popular. Mature leaves are soaked in water to remove the green layer. The artist then paints on the leaf skeleton and the delicate masterpiece is mounted on a thick black paper.



The Ghost Town



About 20km from Rameshwaram on the tip of Pamban Island, bordered by the Indian Ocean on one side and the Bay of Bengal on the other, lies the abandoned town of Dhanushkodi in Tamil Nadu. Except for the 500-odd fishermen who have chosen to stay there in hutments spread over the area, the town is desolate.

Dhanushkodi was once a flourishing town and a major point of entry to India. A steamer ferried travellers and traders to Thalaimannar in Ceylon (now Sri Lanka). It had a railway station, hospital, school and post office. There were hotels, shops and rest houses for pilgrims who visited Rameshwaram, a major pilgrim centre.

All that changed when in 1964 a ghastly cyclone devastated the entire town. Train No. 353, Pamban-Dhanushkodi passenger with its 110 travellers and five railway employees was washed away into history. All that remains are the ruins of the railway track on which the ill-fated train ran its last journey. The Pamban bridge that connected the mainland to the island was also destroyed leaving 3000 people stranded. The news coverage of the storm and its aftermath continued thanks to four daring radio operators who chose to remain in

Dhanushkodi. They clung to the remains of the bridge a full 12 hours after the storm to tell the tale.

Dhanushkodi which was declared a ghost town by the government after the storm, has the only land border between India and Sri Lanka, one of the smallest in the world. It has a beach which stretches 15 km. Curious travellers travel by trucks or jeeps along the sea shore to reach the town.



Coronation Bridge

The Coronation Bridge aka the Sevoke Bridge is in Darjeeling, the hill station famed for tea estates. The bridge sprints across the Teesta river. National Highway 31 which connects Darjeeling with the Jalpaiguri district extends through the bridge. The bridge was named in honour of the coronation of King George VI in 1937. The foundation stone of the bridge was laid by John Anderson, the then Governor of Bengal.

Made of reinforced concrete, the bridge is also known as Baghpool or 'lion bridge' and Lohapul or 'iron bridge'. One of the entrances of the steel bridge has two lion statues greeting the visitors. The bridge is a perfect example of British craftsmanship in India.



QUIZ

Safe Havens

Write the names of the states in which these wildlife sanctuaries are located:

- Wayanad Wildlife Sanctuary
- Sanjay Gandhi National Park
- Keoladeo Ghana National Park
- Manas Sanctuary
- Mudumalai National Park



Answers: _____

1. Kerala
2. Maharashtra
3. Rajasthan
4. Assam
5. Tamil Nadu

CHATUR LAL

A brilliant but short-lived flame (1926-1965)

BORN on 16 April 1926 in Udaipur, Rajasthan, a young Chatur Lal, who later became a world-renowned *tabla* virtuoso, vigorously practiced the table night after night, his drum beating becoming a source of nuisance to his neighbours. One day, a policeman on night beat lost his patience and burst upon him, "You should be in bed by this time. You have no business to keep the locality awake". A little frightened but undaunted, the little boy went on playing the *tabla* every night, except when it was time for the policeman to pass their house.

A year after Chatur Lal joined All India Radio in Delhi, in 1948, he started his musical journey on a bigger perspective, regularly participating in programmes and conferences all over India and abroad, with masters like Baba Allaudin Khan, Pandit Omkarnath Thakur, Pt. Ravi Shankar, Pandit Ustad Ali Akbar Khan, Ustad Vilayat Khan, Pt. Nikhil Banerjee and many others. He was among the first Indian musicians to introduce Indian classical music to the West and other countries in the mid 1950s.

Chatur Lal developed a style of his own, a light, rhythmic pattern and intimate understanding of the mood of the artiste he accompanied. Playing with great skills and finesse and weaving his percussion sonorities into every conceivable caprice of form of rhythm, he gave proof of his supreme command of the instrument. With perfect coordination, he played with much energy, passing at times into a mood of rhythmical abandon. It was an awe-inspiring recital – forceful, fluent and very earthy in its rhythmic appeal.

He had many firsts to his credit like being the first Indian percussionist introducing *tabla* to the West; the first Indian percussionist to be nominated for the Music Category in Oscars with Pandit Ravi Shankar in 1957 for Canadian Venture *A Chairy Tale* which also won a 'Special Bafta Award'; the first Indian percussionist to introduce the concept of *taalvadyakacheri*, etc.



The *Drums of India* and *Drums on Fire* are some of the important solo recordings of Pandit Chatur Lal. He also composed and gave music for the short animated Canadian film *A Chairy Tale*, *A Certain View*, *Now what my Little Man*. French Television also made a short documentary film on him called *Rythmes d'aillenres*.

The Times of India described him thus: 'He did not merely accompany, he did not dominate, he supplemented and deepened.' Lothar Lutze of Max Muller Bhavan said, 'he always showed an uncanny adroitness and skill in his

accompaniment, while his solo was notable for case, clarity, diversity and grace where that were all his own'. Lord Yehudi Menuhin said, 'He stole the hearts of his audiences wherever he went with his art and enchanting personality'. Dr. Heimo Rau, called him 'the incarnation of the god of music' who opened to the listener a fourth dimension of experience beyond time and space.

When Chatur Lal was admitted to the Irwin Hospital in Delhi for blood in his urine, he had little money for his treatment, but had a lot of friends and admirers. He was a gentle soul, always submitting to tests, X-rays and operations without a complaint. For several months there after, he was in and out of hospitals, which ended on 14 October 1965, when he passed away at just 40 years of age.

The famous German Newspaper, Frankfurter Rundschau, opined, "Our little drums are stuck with sticks. However virtuoso they may be, yet compared to the art of the Indian *tabla* player, Chatur Lal, they sound barbarian. His playing sometimes sound like rhythmically arranged drops of rain, sometimes the finger flew over the membranes like a family of salamanders." His legacy is maintained by the Pandit Chatur Lal Memorial Society, and his family. ■

– A. Radhakrishnan is a Pune based freelance writer, short story writer and poet who wants the world to be happy always.

P. SHIV SHANKAR

A seasoned politician(1929-2017)

PINJALA Shiv Shankar, the former Union Minister who held charge of several portfolios in the central government during the prime ministerships of Indira Gandhi and Rajiv Gandhi, passed away on 27 February 2017 at the age of 88. He was a grassroots leader who rose from the ranks, and endeared himself for his yeoman service to the cause of the marginalised sections.

Shiv Shankar, who was born on 10 August 1929 in Madanapalli in Andhra Pradesh, was one of nine children of a *paan* leaf seller. He graduated from the Hindu College in Amritsar, took his degree in Law from the Osmania University, and set up practice as an advocate specialising in taking on cases involving the weaker classes, before he assumed charge as a judge of the Andhra Pradesh High Court. He took the plunge into mainstream politics as a member of the Indian National Congress, and entered the Lok Sabha in 1979 after winning the elections from the Secunderabad constituency in Andhra Pradesh, and was re-elected for a second term in 1980.

He was appointed as the Minister for Law and Justice in the Indira Gandhi government due to his expertise in legal matters, but his tenure was rather controversial as he introduced several changes in the transfer of judges across the country, which led to his crossing swords with the judiciary.

He was also a member of the Upper House, the Rajya Sabha, for two terms from 1985-1993 representing Gujarat, and during this time he was entrusted with the vital portfolio of External Affairs, which he discharged with distinction. An influential member in both Indira and Rajiv's cabinets, he was also Minister for Petroleum and Human Resources Development and enjoyed the confidence of both the Prime Ministers. Rajiv was known to utilise his services in sorting out ticklish issues involving the neighbouring countries, apart from serving as a troubleshooter back home as well.

He played a significant role in the signing of the Punjab

Accord between the government and Sant Longowal. Shiv Shankar was subsequently made Deputy Chairman of the Planning Commission in the year 1987, and served the commission till 1988 and also served in several Parliamentary Committees. He was the leader of the opposition in Parliament from 1989-1991 after being elected to the Lok Sabha from the Tenali constituency in Andhra Pradesh in 1989. Shiv Shankar also had a gubernatorial stint when he was appointed the Governor of Sikkim in 1994 for a year, and thereafter as Governor of Kerala from 1995-96. His comeback to the political scene in 1998 was not very eventful as he had by then fallen out of favour with the party top brass.

The veteran Congressman quit the party in 2004 after differences with the high command over the distribution of party tickets which he felt were being sold to the highest bidder. After a hiatus from politics, he re-emerged on the political horizon after joining the Praja Rajyam Party floated by matinee idol on the Telugu screen, Chiranjeevi. The party later folded up and merged with the Congress but by that time Shiv Shankar had withdrawn from active politics. He groomed a number of young politicians and also shared an excellent rapport with the party cadres.

In a tribute to him after his passing, President Pranab Mukherjee, a long time associate and cabinet colleague hailed his contribution to Indian politics and opined that the nation had lost an eminent public figure, who will always be remembered for his selfless service to the people. The late politician was a self-effacing leader who was also media shy and never sought the limelight unlike many of his cabinet colleagues. In his four decade long political career, Shiv Shankar contributed much to the political discourse, and also to the cause of the nation and the people. ■

— C. V. Aravind is a Bangalore-based freelance journalist.



AIR COMMODORE PETE MAYNARD WILSON, PVSM, Vr C, VM

Brilliant and brave officer (1927-2015)

PETE Maynard Wilson was born on 29 November 1927, and underwent training in the then Royal Indian Air Force (RIAF) training establishment at Jodhpur. He was the outstanding cadet of the batch, and was awarded trophies in flying as well as in ground subjects. The trophies were presented by the Maharaja of Jodhpur. He then went to the Advanced Flying School, RIAF, Ambala. He was awarded the Sword of Honour and prizes for gunnery and other subjects. He was commissioned into the Indian Air Force (IAF) on 1 July 1949. In 1962, Squadron Leader Wilson was posted to No. 5 Squadron in Leopoldville (now Kinshasa), the capital of Congo. The previous contingent had provided effective support to UN (United Nations) operations, faced hostile fire, and had earned well deserved awards.

He took over command of No. 16 Squadron at Kalaikonda in January 1964. At the outbreak of war, part of the squadron was moved to Gorakhpur, which is beyond the range of Pakistan Air Force (PAF). On 7 September 1965, Wilson led two Canberras in a raid on Chittagong airfield. They approached the target from the sea in order to avoid possible interception by PAF. Wilson dropped the bombs after making three runs, but the bombs did not explode. The second aircraft made a run and dropped the bombs, which did explode. The strike was a disappointment and Wilson called it a 'fiasco'. PAF carried out two retaliatory attacks at Kalaikonda, and four Canberras were destroyed on ground.

The next mission of No. 16 Squadron was led by Wilson from Bareilly to bomb Sargodha. He arrived at the target at a height of 500 feet and could not spot the runways till the anti-aircraft guns opened up. He dropped the target indication bombs and the accompanying four planes dropped the bombs. The last mission of the war was to destroy Pakistan's radar unit at Badin in Kutch area. The radar station was heavily defended by anti-aircraft (AA) weapons. The target required accurate bombing. In spite of radar cover and heavy

anti-aircraft defences, Wilson led six planes in daylight, flying at a low level. The raid was a tactical surprise for the PAF who were not expecting it. The radar unit went out of action as the radar tower had been knocked down. Wilson acted with courage and determination in the best traditions of the IAF, and was awarded Vr C.

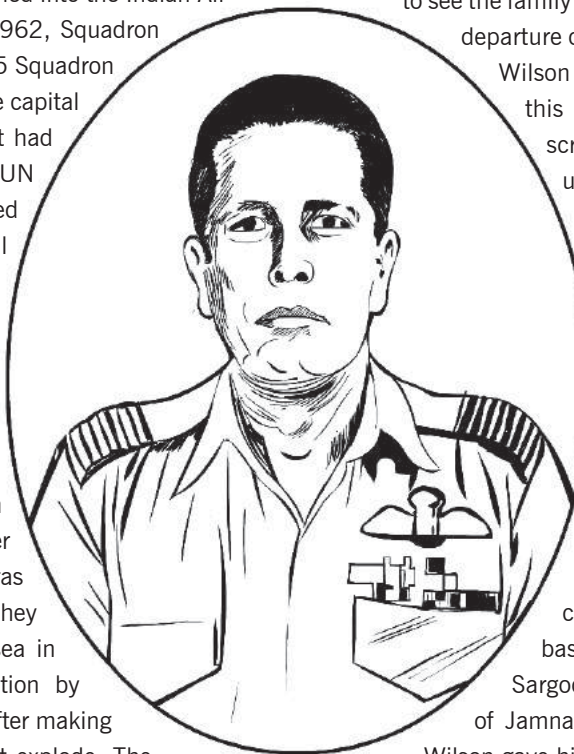
In 1966, on Wilsons' departure from No. 16 Squadron, many of the squadron personnel came to the railway station to see the family off. They left the station before the departure of the train, making some excuses.

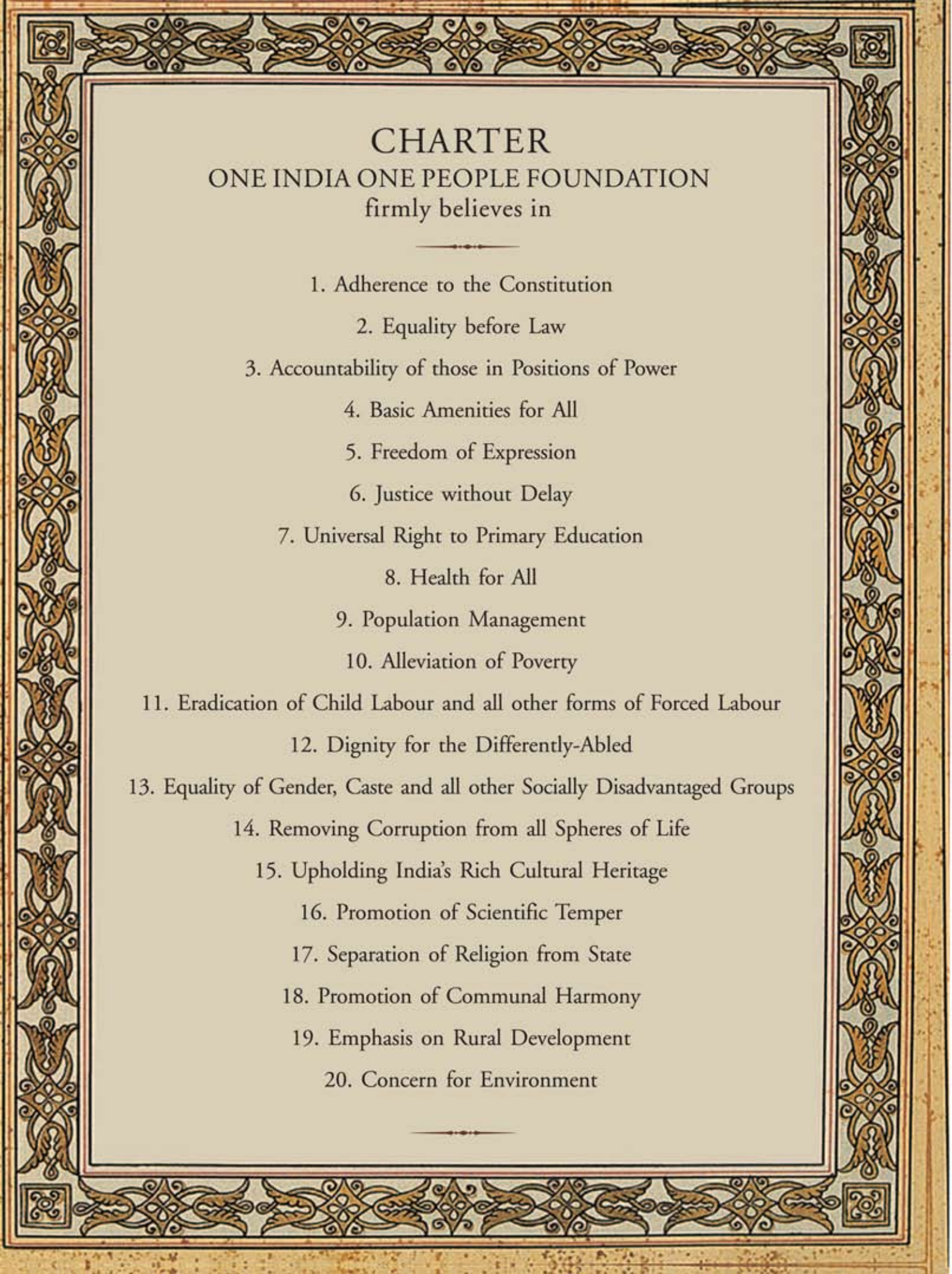
Wilson and the family were smarting at this discourtesy, when six Canberras screamed at a low level to pay an unforgettable tribute to a highly-regarded commanding officer. On promotion to the rank of Group Captain, he commanded the Armament Training Wing at Jamnagar from April 1968 to February 1972. At the start of the war, he had the AA guns to aim above the intersection of runways. He gave instructions to hold fire unless sure of having been compromised. This direction was based on his experience of attack on Sargodha in the 1965 war. Jam Saheb of Jamnagar was keen to play a role and Wilson gave him charge of one gun and its crew.

Jam Saheb brought food and drinks for the crew every day, who prayed for the war to last for five years! The plane of Wing Commander Mervyn Middle coat of PAF was shot down during the attack on Jamnagar. Years later, Wilson chanced to meet a Pakistani in a supermarket in London. He mentioned to Wilson that Mervyn's family had not been given a clear information of the death of Mervyn. Wilson gave him the details of the accident and these were passed on to the family in Australia. Wilson received thanks through the same channel. He was awarded the PVSM after the 1971 war. He passed away in UK on 28 December 2015. ■

— Brigadier Suresh Chandra Sharma (retd)

(Sketches of Great Indians by C.D. Rane)





CHARTER

ONE INDIA ONE PEOPLE FOUNDATION

firmly believes in

1. Adherence to the Constitution
 2. Equality before Law
 3. Accountability of those in Positions of Power
 4. Basic Amenities for All
 5. Freedom of Expression
 6. Justice without Delay
 7. Universal Right to Primary Education
 8. Health for All
 9. Population Management
 10. Alleviation of Poverty
 11. Eradication of Child Labour and all other forms of Forced Labour
 12. Dignity for the Differently-Abled
 13. Equality of Gender, Caste and all other Socially Disadvantaged Groups
 14. Removing Corruption from all Spheres of Life
 15. Upholding India's Rich Cultural Heritage
 16. Promotion of Scientific Temper
 17. Separation of Religion from State
 18. Promotion of Communal Harmony
 19. Emphasis on Rural Development
 20. Concern for Environment
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WHO AM I?

- Am I a Hindu first or an Indian first?*
Am I a Muslim first or an Indian first?
Am I a Christian first or an Indian first?
Am I a Buddhist first or an Indian first?
Am I a Brahmin first or an Indian first?
Am I a Dalit first or an Indian first?
Am I a South Indian first or an Indian first?
Am I a North Indian first or an Indian first?
Am I the President of India first or an Indian first?
Am I the Prime Minister of India first or an Indian first?
Am I the Commander-in-Chief first or an Indian first?
Am I a supporter of any 'ism' first or an Indian first?
Am I a white-collar/blue collar worker first or an Indian first?
Am I a youth/senior citizen first or an Indian first?

*In all cases you are Indian First, Last and Always.
Be a Proud Indian. Make this country Great, Strong and United.*



Sadanand A. Shetty, Founder Editor

(October 9th, 1930 – February 23rd, 2007)

ONE INDIA ONE PEOPLE