

सांख्यित

Knowledge beyond time ...

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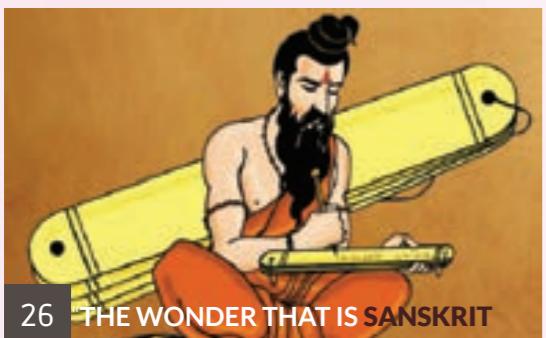
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EDITORIAL

This is a time of great changes.

From this issue onward, SAMVIT will be a bi-annual cultural magazine published by Amrita Darshanam – International Centre for Spiritual Studies at Amrita University, Amritapuri Campus.

There was a time when India was considered the most developed country in the world – the seat of a civilization renowned for its material prosperity, and intellectual and spiritual excellence.

In this issue, we are going to bring to you to a mosaic of articles showcasing India's creativity and greatness in diverse disciplines such as handicraft in "Blue Pottery", architecture in "Jainism and Architecture – Jaisalmer Jain Temples", evaluation of British administration in "Seventy Years Since 1947 ... Is India Truly Independent?", art of illusion in "Indian Magic", martial art in "Kalarippayattu – The Mother of All Martial Arts", healing science in "The Iatrochemical Period in Indian History" and "Eating Twice a Day for Good Health: Ancient Ayurvedic Wisdom Rediscovered", philosophy of Indian arts in "The Philosophical Framework of Indian Arts", dance in "Folk Dances of Manipur", urban planning in "Town Planning in Arthashastra; The Infrastructural Sagacity of Kautilya", and measurement system in "Linear Measurement in Ancient India".

Along with these, we have two new article series – "The Maritime Glory of Early India" and "The Wonder That Is Sanskrit", as well as Amma's message in "Teaching of Mata Amritanandamayi Devi - Bharat Awakens ..." for deeper understanding of the rich legacy of ancient India.

We also explore major social issues of modern India in "The New Indian Rupee", "The Plight of Indian Farmers", and the insightful interview with Renu D Singh, lawyer, social activist and the founding president of the NGO "Samadhan" in "The Phoenix", which bring us the new light on revitalizing and transforming our nation together.

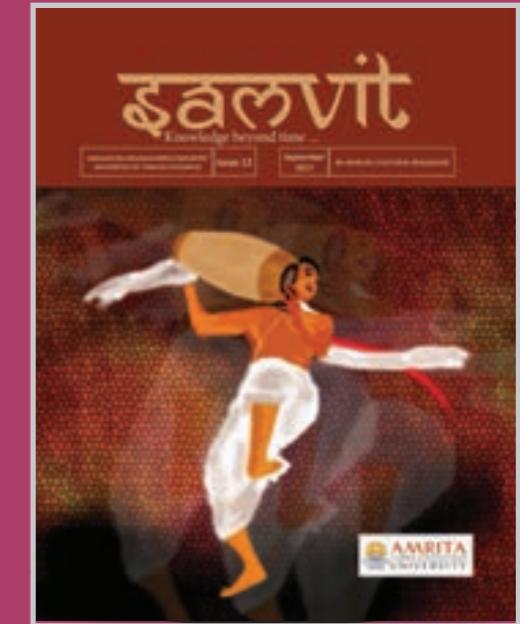
As like a tree needs strong roots to grow high, it is always the past which forms the foundation for the present, and the better future ahead.

By reconnecting with the roots of our Motherland through higher values, traditions, cultures and knowledge, and addressing modern-day issues by applying eternal wisdom garnered down the ages by our sages and ancestors, may we join together to make India shine forth in unity and strength again.

We hope you enjoy reading this issue, as much as we enjoyed producing it for you.

From the Editor's desk

25th August 2017



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TEACHING OF MATA AMRITANANDAMAYI DEVI BHARAT AWAKENS...

Bharat is a land well known for its culture and diversity. It is the holy land of the universal Guru in which the endless and divine vibration of the saints are still alive. This is the sacred land that first gave the world the message of unity through a famous quote. The noble mantras of our culture have always spread from this holy land. She is the inspiration and source of knowledge that can open the eyes of the world. Bharat has a unique consciousness, power and charisma that no other country can have. This soil has been blessed with the sankalpa of the Rishis, who gained universal power

within themselves after intense tapas. When we act with faith, this sankalpa, will cause the entire universe to help us all. In a recent speech delivered by Sri Mata Amritanandamayi Devi, AMMA spoke about the awakening of Bharat -our Motherland.

There was a time when Bharat was considered the most developed country in the world. We know that nowadays parents send their children abroad for higher studies, for the sake of good employment. But they don't know that it is in those foreign countries that their kids tend to lose their cultural bonds

with the Motherland because of the change in lifestyle. However, in the past, scholars from ancient Greece, Egypt and China, came to India to acquire knowledge. All the branches in the field of education that we see now, had their roots here. The brilliance and clarity in thought that our ancestors possessed was due to the spiritual knowledge that Indians had attained through the tapas of our ancient Rishis and sages. Every single atom of our country is filled with pure vibrations. When we try to oppose our culture and the nature of this nation, the response of this action will be immediately seen. It won't allow



us to progress further. What fulfills any action is divine grace. In order to gain that grace, one must have faith in the infinite spiritual power.

In Sanatana Dharma, the Creator and the creation are not two. The creation is the manifest form of the Creator. Just as there is no difference between the ocean and its waves (because of their same medium: water), there is no difference between the Creator, God, and the world. Lord Krishna is the best role model in karma that the world has seen so far. His life and actions were detached, like 'butter in water'. A boat may be in water, but water must never enter the boat. In the battlefield, Lord Krishna advised Arjuna on how to perform actions with this attitude.

Dharma is the universal law that cannot be changed or revised. No matter which country, the laws of the land will only be effective when the citizens obey them. This applies to Dharma also. The Vedas, Upanishads and the Bhagavad Gita, all expect us to lead a glorious and noble life in every way. By honouring dharma, we can awaken the eternal divine consciousness that is ever shining in us. However, if we work in anticipation of a bright future, all obstacles will disappear of their own accord. Bharat will once again regain its glory and shine as brightly as the sun.

The river does not need drainage water, whereas the drain needs river water. Likewise, God needs nothing from us. Those suffering in the world due to lack of facilities need our help. In this regard, most of them are in our villages. We must spend time with them and go down to their level to ease their suffering in whatever ways we can. We should be the ones removing the darkness from their lives and bring about a much needed change in theirs, so that they can lead a peaceful and prosperous life. The villages today are in the same condition that they were 300 years ago. The status of the villages has not changed so far. Because of this, there are people who take advantages

of the poor condition of these villagers. Hence, it is crucial that we find more people to work in villages. With help from those who have the resources, we must lend them a hand and pay them a monthly stipend. By helping the needy, we are not only doing God's work, but increasing the number of good deeds in our book of "Life", which is written by God. But, we may also remember that though the people in the villages lack material comforts they are rich in terms of values. In this regard, we have a lot to learn from them too.

It is said that among gifts, the greatest is that of knowledge. We should be trained enough to give people the knowledge of our spiritual culture. We should be able to guide people in the proper way and instil in them knowledge about our scriptural texts and about spirituality. Only then will the situation change. The places of worship of other religions teach religious texts. They also have schools, colleges and other institutions for this specific purpose. Those who receive training there then go out to propagate the teachings of their religion. In contrast, there is nothing like that in our religion. There are many temples that receive a lot of donations. However, they don't use even the smallest part of their earning to teach or propagate Hindu dharma. We must ensure that a part of the temples' earnings is used for propagating dharma.

With the help of philanthropists, we must create special courses for teaching the Hindu scriptures and imparting spiritual knowledge. We must set up schools and colleges that teach yoga and meditation. Those who are trained in these institutions can then go out to teach others and propagate dharma.

When we talk about Indian culture, what we really mean is eternal and moral values. We must create opportunities for everyone to learn about and understand these values. ♦

Ashni, S3 CSE



On the 8th of November 2016, the above said confidence was destroyed by our Prime Minister. Consequently, there arose a question that prevailed and haunted the minds of billions of Indians. The Prime Minister Narendra Modi had declared more than 85 per cent of the value of money held in the form of notes of Rs.500 and Rs. 1000 - worthless overnight.

THE NEW INDIAN RUPEE

It is always said that "money inspires confidence". On the 8th of November 2016, the above said confidence was destroyed by our Prime Minister. Consequently, there arose a question that prevailed and haunted the minds of billions of Indians. The Prime Minister Narendra Modi had declared more than 85 per cent of the value of money - held in the form of notes of Rs.500 and Rs. 1000 - worthless overnight. Had the Prime Minister shattered the faith and confidence that hundreds of millions of Indians had reposed in the Government of India to protect them and their money? As the venerated former prime minister stated in the assembly, is it a monumental mismanagement of the economy? Or is it a remedy for the accumulated filth as Prime Minister Narendra Modi claims?

The story of Indian economy during the period of the previous NDA government and the UPA can throw a little light to the explanation for the above raised questions. During the NDA rule, (1999-2004), the GDP grew by 27.8 per cent, i.e. annually 5.5 percentage points. Annual money supply that fuels inflation, by 15.3 per cent. Prices by 23 per cent - annually 4.6 per cent. Stocks rose by 32 per cent; gold by 38 per cent, jobs rose phenomenally, by almost 60 million. The NDA also turned in a surplus of \$20 billion in 2002-04 in the external sector, after decades of unending deficits. In the bulls eye view of an economist, this in turn may reflect a moderate performance as compared with that of other governments in terms of GDP. But in a layman's point of view the 60 million jobs created in various sectors especially during a period of hardship faced by jobless youth is something that takes the limelight. Now come to the UPA rule under Dr. Singh, the economist Prime Minister. In the first and best six years

of the UPA (2004-05 to 2009-10), before it was hit by scams, real GDP grew by 50.8 per cent, annually 8.4 percentage points — one-and-a-half times NDA's and India celebrated this GDP as signs of impending growth and prosperity. In terms of this number, GDP growth is an essential factor for nation's prosperity and growth and 8.4 percentage points growth in GDP from 2004 to 2010 has to be cherished but on other hand how many jobs have this same proposed number created in the job market? Believe it or not, according to NSSO data, the UPA achieved one-and-a-half times NDA's GDP growth, but just 5 per cent of its job growth, that is just 27 lakhs against 600 lakhs during NDA's five years.

Why was the UPA's high growth jobless? The simple answer is asset inflation. As per the same NSSO data, the price of land and other property doubled two to three times every year and it's not surprising to know how DLF arose as a real estate giant and how Gurgaon entered into the property map, where land prices rose by 10 to 20 times since 1999. Usually inflations are considered to be the result of a monetary policy but in fact asset inflation was the cause of UPA's "high growth"! Inflated asset prices to the extent realised by sale got accounted as part of income and found its place in the calculation of GDP. Large part of the gains on stock sale got added to GDP. The spurious wealth effect also led to high-end consumption. The annual private consumption growth averaged 18 per cent till six years to 2009-10 — 80 per cent over the NDA average. As per the records of Reserve Bank of India the cash with the public was 9.4 per cent of nominal GDP and it arose to 79 percent by 2010. This uncontrolled level of high denomination notes in the economy in contrast to the developing digital payments platforms in the country was

alarming but in fact the bitter truth was that, the government had failed to monitor the same. As per records, two-thirds of the Rs.1000 notes and one-third of the Rs.500 notes which is over Rs.6 lakh crore now, never returned to banks after they were issued. This have led to a fake wealth effect in the economy and this wealth outside banks began driving up the gold and land prices by black cash and the stock prices through Participatory Notes. Had the High Denomination Notes circulated through the banking system, it would have multiplied through the fractional reserve model, reduced the inflation and interest, and funded the small-and-medium enterprises starved of organised funding.

Any government could either opt to continue the status quo of jobless growth or force temporary decline in growth to reinstate real growth and jobs. Any Prime Minister would be in need of great courage to opt for the later. If the status quo of unmonitored high denomination notes were to last for another five-six years, the size of this would have become so huge that no government may have been able to act against it — inevitably inviting a huge crisis, both internal and external.

Truth is always bitter, in fact all major economic decisions taken in the country have got political dimensions and at the end if it seems good for the people, it's acceptable. Impact of demonetisation on the informal economy was difficult to measure. Greater data availability, especially on labour markets, is needed to better gauge the social impact of such policies in the future. Analysts said that the proposed 6.1 percent of GDP growth compared to that of the 6.9 percent of China reflects a general economic slowdown in the first quarter of January. The move lead to months of acute shortage of cash. It hit the country's manufacturing and construction sector adversely. The cash recall was intended to fasten the country's transition towards a formal economy, so as to close down the

untaxed economy running parallel - which funds terrorist activities, aids corruption and keeps counterfeit notes in circulation. The report said that although the informal economy may account for only 40 per cent of GDP, it employs 90 per cent of India's workers, and the impact of demonetisation on India's informal sector suggests that it would have affected those workers the most.

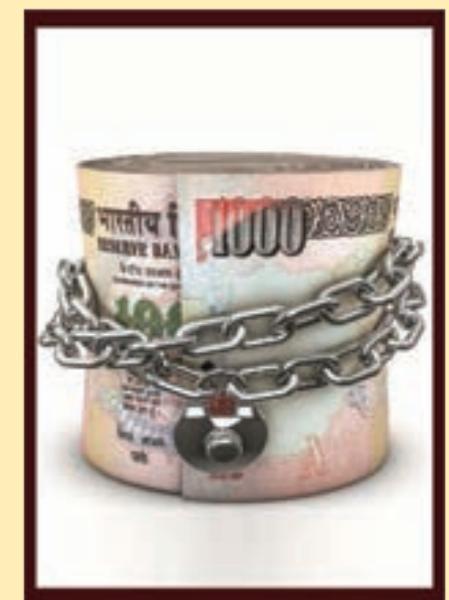
The poor and vulnerable are more likely to work in informal sectors such as farming, small retail and construction and are less equipped to move to cashless payments. One can see long queues in front of ATMs and there is a visible tendency to collect available lower denominations of 100 and lesser.

As per the Reserve Bank records the currency available at the public has shrunk by 1.75 lakh crore and this reduction in money supply means fall in consumer spending, investment spending and thus exports which would in turn reduce the GDP in the immediate term. As a policy measure, demonetisation would have a positive impact, likely to improve the tax compliance on the background of the fact that GST is becoming a reality. The availability of fund will increase the cash reserve available with the government thus making more credit available for the private sector which could also be considered as a very positive effect since start-ups can flourish with the same. The biggest positive certainly seems to be the eradication of stoked money which people have earned through illegitimate means or tax evasions. When 86 percent of the legal tender becomes illegal, it is expected that finding a new level of equilibrium would take time. If the smaller demand side risks and sorrows are addressed carefully, a better future is always promised. ♦

Aswin Babu



Any government could either opt to continue the status quo of jobless growth or force temporary decline in growth to reinstate real growth and jobs.



THE MARITIME GLORY OF EARLY INDIA -

PART 1: INDUS VALLEY

From the discovery of zero, to the decimal number system, to Ayurveda being the earliest school of medicine and the invention of Chess, India has shown pure brilliance in all fields. And these were during the ancient times. One can only hardly fathom what would be the full potential of this country.

Indian Civilisation dates back to more than 5000 years. It has assimilated many cultures, races, warriors and marauders during this short time span. The Vedas, the Puranas, and the Upanishads were written here. In fact, India is known to the world as the spiritual centre. People from all over the world find what they have been looking for, in this holy land. Also known as the 'Golden Bird', India was not only wealthy in terms of money but also values and culture that it propagated to the world.

As early as history dates back, India has always been well ahead of its counter parts, be it culture, technology or commerce. The peninsular region of the Indian subcontinent is bordered by the Indian Ocean from all three sides, giving it a strategic importance in terms of trade and commerce.

The Indian Ocean is the 3rd largest oceanic division. This mighty water body gets its name from India – for the reason that it covers the Indian Subcontinent. The Indian Ocean, a natural pivot, provides varied opportunities in terms of geography, human migration, religion, business & the much-debated conquest for a claim of supremacy with military might on the giant ocean.

Trade grew at a tremendous rate as the Indian Ocean provided a convenient and profitable route of travel. A fourteenth-century description of an Indian ship credits it with a passenger capacity of over 700 people giving a

fair idea of both ship building skills and the maritime ability of seamen who could successfully man such large vessels. The spice trade in Kerala attracted traders from all over the world to India. Long before Europeans "discovered" the Indian Ocean, traders from Arabia, Gujarat, and other coastal areas used triangle-sailed dhows to harness the seasonal monsoon winds. Domestication of the camel helped bring coastal trade goods - silk, porcelain, spices, slaves, incense and ivory - to inland empires, as well. The Indian Ocean did not only serve as a means to flourish trade but also played a key role in spreading of Buddhism, Hinduism, and Jainism across India to Southeast Asia.

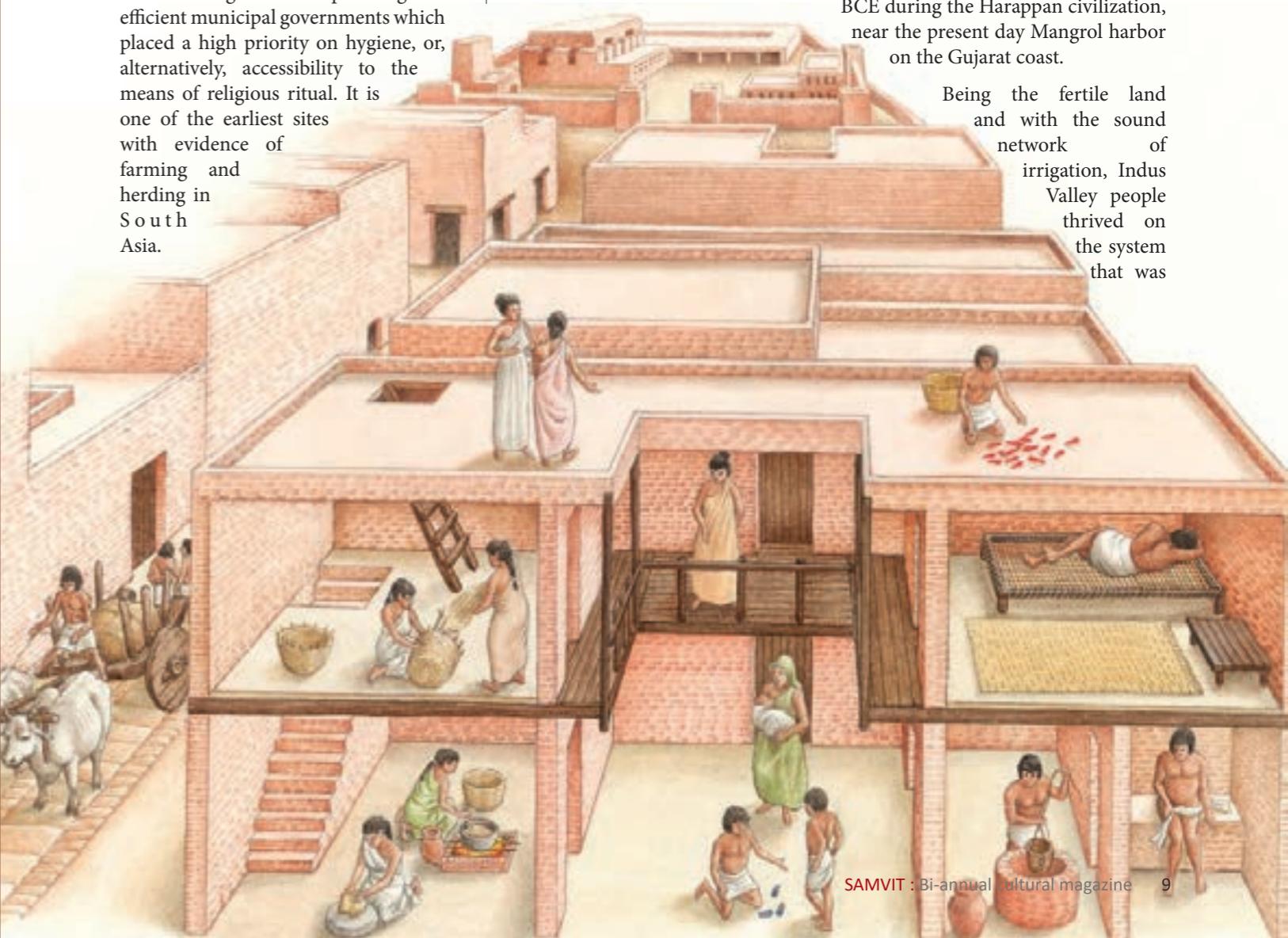
The Indian Ocean and its history of trade is not restricted to the present day. The ancient Vedic texts, such as the Rig Veda, Shatapatha Brahmana and others refer to the undertaking of naval expeditions and travels to distant places by sea-routes that were well-known at the time. For example, the Rig Veda (1.25.7) talks about how Varuna has full knowledge of all the sea routes that were followed by ships. Moreover, we should keep in mind that the Rig Veda is said to go back to around 3000 BCE, which means the sailing capacity for the Vedic civilization of ancient India was well under way by that time. In fact, it dates back to the times of the birth of the great Indus Valley Civilization.

The Indus Valley Civilisation was a Bronze Age civilization (3300–1300 BCE; mature period 2600–1600 BCE) mainly in the north western regions of South Asia, extending from what today is northeast Afghanistan to Pakistan and northwest India. Along with ancient Egypt and Mesopotamia, it was one of three early civilizations of the Old World, and of the three,



the most widespread. It flourished in the basins of the Indus River, which flows through the length of Pakistan, and along a system of perennial, mostly monsoon-fed, rivers that once coursed in the vicinity of the seasonal Ghaggar-Hakra river in northwest India and eastern Pakistan. The Indus Valley Civilisation is also known as the Harappan Civilisation, after Harappa, the first of its sites to be excavated in the 1920s, in what was then the Punjab province of British India, and now is Pakistan.

Mehrgarh of the Indus Valley Civilisation - a sophisticated and technologically advanced urban culture - is evident as being the first urban centres in the region. The quality of municipal town planning suggests the knowledge of urban planning and efficient municipal governments which placed a high priority on hygiene, or, alternatively, accessibility to the means of religious ritual. It is one of the earliest sites with evidence of farming and herding in South Asia.



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As seen in Harappa and Mohenjo-Daro this urban plan included the world's first known urban sanitation systems. Within the city, individual homes or groups of homes obtained water from wells. From a room that appears to have been set aside for bathing, waste water was directed to covered drains, which lined the major streets. The majority of the cities were constructed in a highly uniform and well-planned grid pattern, suggesting they were planned by a central authority; extraordinary uniformity of Harappan artefacts as evident in pottery, seals, weights and bricks; the presence of public facilities and monumental architecture; heterogeneity in the mortuary symbolism and in grave goods. The world's first tidal dock is believed to have been built at Lothal around 2300 BCE during the Harappan civilization, near the present day Mangrol harbor on the Gujarat coast.

Being the fertile land and with the sound network of irrigation, Indus Valley people thrived on the system that was

centralized towards agriculture. They used to cultivate crops like barley, wheat, melon seeds, and oil crops like dates, mustard, and sesame. Research reveals that Indus people also knew the cultivation of cotton.

The Indus Valley Civilisation is believed to have been the first civilization to use wheeled transport. The Indus civilization's economy appears to have depended significantly on trade, which was facilitated by major advances in

transport technology. These advances included bullock carts that are identical to those seen throughout South Asia today, as well as boats. Most of these boats were small, flat-bottomed crafts, perhaps driven by sail, similar to



that one can see on the Indus River today; however, archaeologists have discovered a massive, dredged canal and what they regard as a docking facility at the coastal city of Lothal in western India. In fact, the earliest portrayal of an Indian ship is found on an Indus Valley seal from about 3000 BCE.

It has been found that the city of Harappa had numerous ports along the coast of Kutch, Kathiawar and South Gujarat. Most of these ports are situated at the mouth of the rivers. Todio is a small Harappan port on south western coast of Kutch which afforded shelter to the ships plying between the Indian estuary and the Gulf of Cambay, in the second millennium B.C. Earliest and the most important harbour which the Harappans developed is Lothal. Situated as it is at the head of Gulf of Cambay in the estuary of Sabarmati and Bogawa rivers, it was a rich warehouse of rice, wheat and cotton growing hinterland. Farther south are Megham and Bhagatrv, two other Harappan trading stations. Thus the entire coastline of Kutch, Kathiawar and south Gujarat covering a total of 1400 kilometres was studded with Harappan ports in the second millennium B.C. The largest structure of baked bricks ever constructed by the Harappans is the one laid bare at Lothal on the eastern margin of the township to serve as a dock for berthing ships and handling cargo.

Judging from the dispersal of Indus civilization artefacts, the trade networks, economically, integrated a huge area, including portions of

Afghanistan, the coastal regions of Persia, northern and western India and Mesopotamia. Studies of tooth enamel from individuals buried at Harappa suggest that some residents had migrated to the city from beyond the Indus valley. There is some evidence that trade contacts extended to Crete and possibly to Egypt.

There was an extensive maritime trade network operating between the Harappan and Mesopotamian civilizations as early as the middle Harappan phase. Such long-distance sea trade became feasible with the development of plank-built watercraft, equipped with a single central mast supporting a sail of woven rushes or cloth.

The principal exports of Lothal were ivory, shell inlays and ornaments, beads of gemstones and steatite, and perhaps cotton and cotton goods. Bhal - the alluvial plane - where Lothal is situated has long been famous for its cotton.

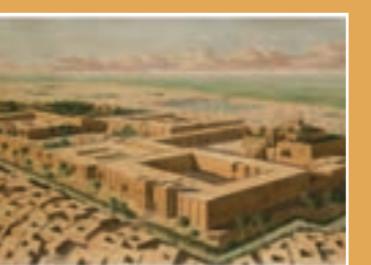
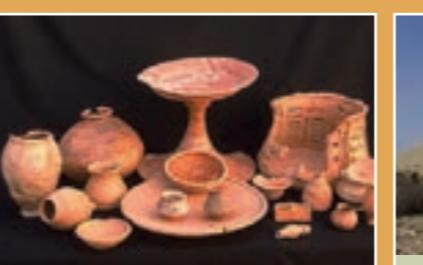
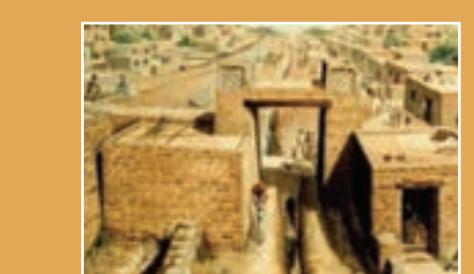
The region around the Indus River began to show a visible increase in both the length and the frequency of maritime voyages by 3000 BCE. Optimum conditions for viable long-distance voyages existed in this region by 2900 BCE. Mesopotamian inscriptions indicate that Indian traders from the Indus valley—carrying copper, hardwoods, ivory, pearls, carnelian, and gold—were active in Mesopotamia during the reign of Sargon of Akkad (c. 2300 BCE), Gosch & Stearns write on the Indus Valley's pre-modern maritime travel. Evidence exists that Harappans were shipping

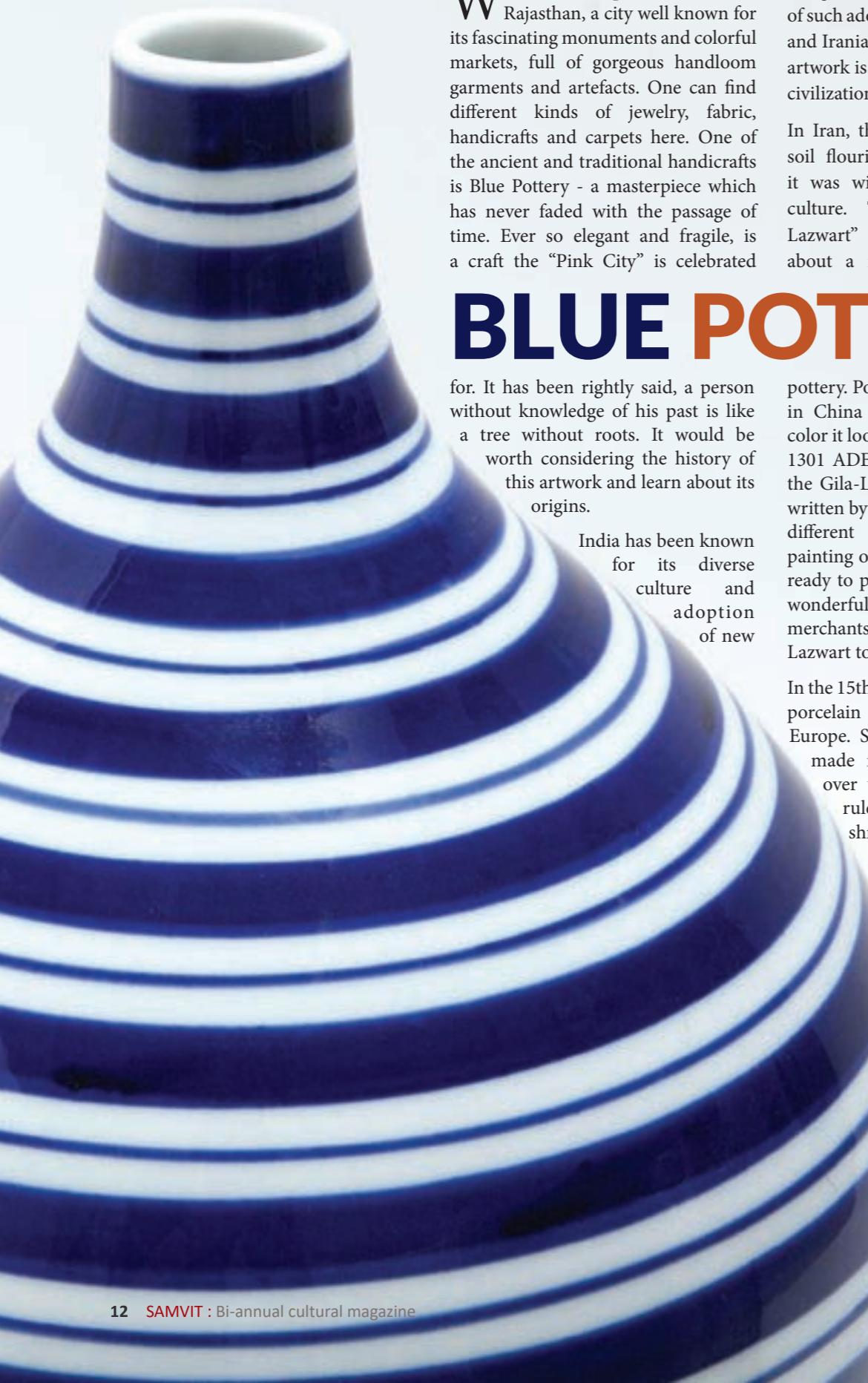
timber and special woods to Sumeria in huge quantities.

Almost all scholars suggest that Meluhha was the Sumerian name for the Indus Valley Civilization. Finnish scholars Asko and Simo Parpola identify Meluhha (earlier variant Me-lah-ha) from earlier Sumerian documents with Dravidian melakam "high abode" or "high country". Many items of trade such as wood, minerals, and gemstones were indeed extracted from the hilly regions near the Indus settlements. Early texts (c. 2200 BC) seem to indicate that Meluhha is to the east, suggesting either the Indus valley or India. There is sufficient archaeological evidence for the trade between Mesopotamia and the Indus Valley. Impressions of clay seals from the Indus Valley city of Harappa were evidently used to seal bundles of merchandise, as clay seal impressions with cord or sack marks on the reverse side testify. A number of these Indus Valley seals have been found at Ur and other Mesopotamian sites.

The Indian Ocean has not only provided a path for trade and transport in the olden times but it continues to do so in the present day as well. The port cities included places such as Nagapattinam, Arikamedu (near Pondicherry), Udupi, Kollam, Tuticorin, Mamallapuram, Mangalore, Kannur, Thane, and others, which facilitated trade with many foreign areas such as Indonesia, China, Arabia, Rome and countries in Africa. Many other inland towns and cities contributed to this trade, such as Madurai, Thanjavur, Tiruchirapalli, Ellora, Melkote, Nasik and so on, which became large centres of trade. Silk, cotton, sandalwood, woodwork and various types of produce were the main items of trade. The Andaman and Nicobar Islands then served as an important midway for trade between the Indian peninsula and other countries of importance. ♦

Aruna Maurya, S3 CSE B





Welcome to Jaipur- the heart of Rajasthan, a city well known for its fascinating monuments and colorful markets, full of gorgeous handloom garments and artefacts. One can find different kinds of jewelry, fabric, handicrafts and carpets here. One of the ancient and traditional handicrafts is Blue Pottery - a masterpiece which has never faded with the passage of time. Ever so elegant and fragile, is a craft the "Pink City" is celebrated

for. It has been rightly said, a person without knowledge of his past is like a tree without roots. It would be worth considering the history of this artwork and learn about its origins.

India has been known for its diverse culture and adoption of new

things. Blue Pottery is also an example of such adoption from Persian, Chinese and Iranian potters. The history of this artwork is as old as the history of these civilizations.

In Iran, the utensils made of shining soil flourished. Being blue in color, it was widely acceptable to Islamic culture. The discovery of "Gila-Lazwart" (Cobalt Oxide) brought about a revolution in the field of

BLUE POTTERY

pottery. Pottery successfully flourished in China too. But without the blue color it looked lifeless and dull. During 1301 ADE, Chinese learned all about the Gila-Lazwart, thanks to the book written by Abdul Quasin Qasani about different color compositions and painting on pottery. The Chinese were ready to pay the price of gold for this wonderful element. Much later, Arab merchants started exporting Gila-Lazwart to China from India.

In the 15th and 16th centuries, Chinese porcelain was in great demand in Europe. Ships loaded with porcelain made rounds from China to all over world. Seeing this, Iranian ruler Shah Abbas thought of a shrewd scheme. He invited 300 artisans from China. They found that the Iranian soil is unsuitable for producing porcelain. Then along with Iranian counterparts they found an alternative and thus was born the "Blue Pottery".

Emergence in Jaipur

The name Blue pottery comes from the eye-catching blue dye that is used to color the motifs.



strings with the same blue-green glass, and dried. Then, the desired design is made on the dried vessel and coloring is done further with the help of cobalt oxide and gum. What gives the final touch is a coating of glaze, done on the products by mixing powdered glass, borax zinc and boric acid. This mixture is melted and cooled to form small pebbles, which are reduced to powdered form and coated on vessel. Finally, the prepared products are heated in closed kiln fuelled with charcoal and high temperature.

Making

This is an art form that stands out from all other forms of pottery due to the usage of special dough in which quartz dominates the composition followed by powdered glass, Multani Mitti, gum and water. It is the only pottery in the world which doesn't use clay. The process involved in Blue Pottery is tedious and time-consuming. The dough is taken, rolled and flattened to form a 4-5 mm thick "chapatti", which is then put into moulds containing mixture of small stones and ash. The mould is now turned upside down and removed, then the dough is left to dry.

The pottery item, cleaned & shaped is rubbed with "Regmall" to polish its surface. It is then dipped in the

solution of quartz and powdered glass, and dried. Then, the desired design is made on the dried vessel and coloring is done further with the help of cobalt oxide and gum. What gives the final touch is a coating of glaze, done on the products by mixing powdered glass, borax zinc and boric acid. This mixture is melted and cooled to form small pebbles, which are reduced to powdered form and coated on vessel. Finally, the prepared products are heated in closed kiln fuelled with charcoal and high temperature.

This beautiful craft continues to be the outcome of creative expressions and skills of craft persons. Today, Blue Pottery generates employment for more than 3 lakhs people in Jaipur. The traditional designs have been adopted and now apart from the usual jars, urns, pots and vases, you can find tea sets, cups, saucers, and jugs in Jaipur markets. ♦

Mohit Hooda, S3 CSE

JAINISM AND ARCHITECTURE

JAISALMER JAIN TEMPLES

Jainism - known popularly as Jaina Dharma - is a truly ascetic religion which places heavy emphasis upon ethical conduct and personal purity for the liberation of the individual souls. Jainism was founded by 24 perfect beings, known as Tirthankaras, who appeared upon the earth in the past and laid the foundation for this doctrine. Mahavira was the last and the most popular among the Tirthankaras. Jainism has influenced and contributed to many artistic spheres in India, such as painting, sculpture and architecture. Western India manifests many Jain monuments built in the medieval era, earliest of them being the monuments of Udayagiri and Khandagiri Caves in Orissa carved out as residential blocks for the Jain monks during the reign of Kharavela of Kalinga (193-170 BCE), Dilwara temple complex consisting of five ornately

carved marble temples, built under the Chalukya rule in Rajasthan between the 11th and 13th centuries CE.

JAIN TEMPLES IN JAISALMER

Elephantine hill-fort (Jaisalmer fort) embraces the Jain temples of Jaisalmer, dedicated to Jain Tirthankaras dated back to 12th and 15th century. The holy shrine etched in yellow sandstone is stunning by nightfall. The monuments reflect the glorious and majestic life of which the fort was once a part of. This profound antiquity is also a showcase of the rich cultural bequest of India. The Jain temples of Jaisalmer are devoted to Rikhabdev

Ji and Shambhavdev Ji. The temple complex stands on a ridge of yellowish sandstone, crowned by the fort which contains within it the palace and several ornate temples. The entire citadel attains a tawny iron colour during the day, turning to a magical honey-gold as the sun sets. This picturesque landscape is complementary to the Thar Desert in the backdrop. The temple seems to be crafted in the famous 'Dilwara' design found in Mount Abu. The temple complex in Jaisalmer is known for its art and architecture that was predominant in the medieval era and the temples have intricate engravings

on sandstone. Temples are based originally on the Hindu temple plan, the difference lying in the deities placed inside. Jainism prefers to position the images of Tirthankaras within the precincts of the temple. These pantheons are noted for its rich materials (often marble) as well as the profusion of ornamentation that decorates the structure.

It is constructed on a square plan with openings in four cardinal directions each of which could lead to the image of a Tirthankara. The interior has a singularly large number of columns from which a false arch/bracket springs about two thirds of the way up. The pillars are richly carved as is the roof towards which they spring. The roof becomes quite elaborate with marble deities and concentric rings of carving. They have a very distinctive skyline of multiple dome points reaching towards the sky, which marks the dexterity of the traditional artisans. ◆

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SEVENTY YEARS SINCE 1947...

IS INDIA TRULY INDEPENDENT ... ???

The British rule in India is a time period in our history that has defined how we emerged from the medieval era to the modern. It was a time when our country saw a huge change from being ruled by princely states - or being under the command and subject to the atrocities of the Mughals - to almost 200 years of the British rule before becoming a democratic republic. However, one factor that we often doubt is whether the British ever brought any prosperity with them. There are several arguments supporting the theory that British rule was perhaps the greatest thing to happen to India at a time of turmoil in late eighteenth century. What we must excavate and learn from history is

The first claim made is that the British united us under one single banner. That the Mughal emperors were too weak to hold the country together and the Mughal Empire would have disintegrated into many small princely states had they not been united by the British conquest. This is the 'legitimate' claim of the British. Well, the fact is that whenever India saw a decline in a central power, the period was followed by a struggle between the most prominent powers - and the victor claimed the subcontinent. This had been the case with the Mauryas, then the Guptas, and then the Mughals. Had the British not come, perhaps the Marathas who had started conquering huge lands under the mask of Mughal



whether these claims are true - if not - what is the true extent of the damage they did to us? What was the India they found, and what was the India they left behind?

It is often claimed that British rule was, in fact, the prime reason why India ever transitioned into a democracy - that the 'civility' of foreign rulers affected us such that we evolved from several fighting city states to a single (well, 3 actually) functioning democracy. We shall discuss this British claim in this article.

rule would eventually have overthrown the Mughals. History is full of would-have-beens, and we cannot say if the empire thus would have been better or worse than that under British - but we can categorically say that it would have been an Indian empire - ruled by Indians who understood their subjects.

The fractures that the British left in our system have been, in fact, much deeper than we think we know. At the Battle of Plassey and the consequent treatment of Bengal, the East India Company set a standard that would haunt our

country for centuries to come. Robert Clive bought the loyalty of Mir Jafar - the military general of the Nawab of Bengal at the Battle of Plassey. He was then installed as the governor of Bengal and removed and reinstated two more times while Bengal saw two other governors - all because the 'governors' could pay the Company middlemen more. Thus began a tradition of bribery in our country which signified that the rulers could be bought and sold. This also meant another thing. The Indian political system of the time failed under the Company schemes. Britain acquired power from the Mughal emperor and then abused the Indian political system to suit its needs and profits. This slowly - and surely - took away the trust that the Indian masses once placed in their governments. Under such a government, whom could they trust and look up to? They started seeing servants of the British in their rulers - men who would do anything to retain their titles. This destroyed the trust in our own political system. These are some bruises that we are still enduring and hence the masses fail to have complete trust and respect for the ruling parties.

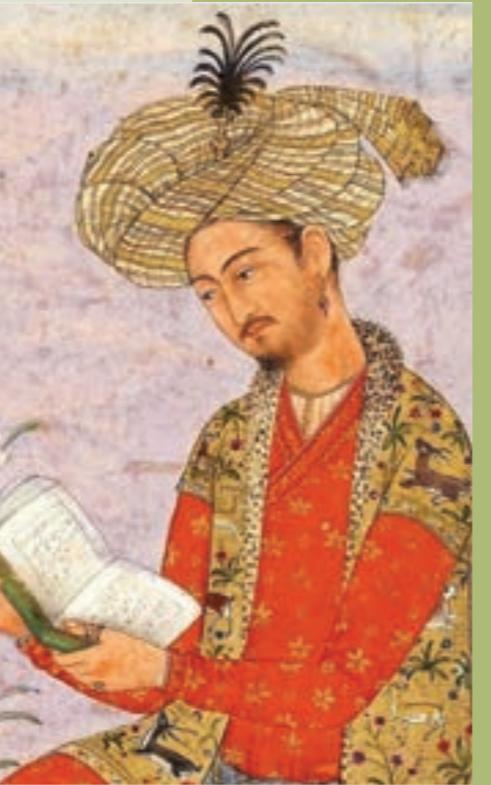
A second factor to be considered is that before the British extended their dominion over India, we had a flourishing system of village administration. This was a system of distributed administrative rights - where each village had the right to function as an independent unit. These were formed as the economic and administrative units of the empire throughout the country. This was the reason why India had been the golden bird - because, through the perfect functioning of the smallest units, the entire nation was involved in a vast, complicated network of trade which produced prosperity and employment for all.

When the British saw this system, they did not know what to make of it. Villages in England were based on the oppressions of feudal lords and

that was the only administration they knew to be true. So they destroyed the existing system by taking away the power of decision making from the villages. Instead decision making power was given to central authorities of a province - the "feudal lords". This was an erroneous step as the lords never knew what was right individually for each village, neither was it in their interest. And so, the village administration, the heart of our country's governance declined at the hands of the British.

There was yet more exploitation of the system. What the British wanted was, after all, profit and to this end they drove India's masses from a complex group of traders, farmers and warriors to landless peasants with nowhere to live other than for rent at their landlord's houses and work for insignificant wages. This tactic invariably served the British purpose, but it destroyed what little was left of India - the rulers had already been defeated, now the British finally defeated the ruled as well.

These practices were not something limited



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to the period of the advent of the East India Company alone. They continued into the period after India had been declared the property of the English empire. In fact, the events that took place after this acquisition actually abused us further. The queen had talked at length about the uplifting of the Indian subjects after the Revolt of 1857. After the Revolt, the landscape of the country changed. The crown never took direct control of the land, instead, it kept the Nawabs installed at places in each province - a simple name to the person who actually represented the British in the province. The British pulled the strings behind the princes and Nawabs who were reduced to men squandering for titles and lands after the turmoil of the Revolt.

Another "reform" that happened in India was the establishment of the monarchical structure. Earlier, the system had been one where the Nawabs had full rights to rule over their lands. Now, the term king was taken away from the nobles. They became ruling families from royal families. The titles and the respect of the kings were stripped - making us handicapped as subjects and rulers. But this was not enough. The new subjects must be civilised and for that the princes of India were sent to the reputed universities of England to study and become proper 'English gentlemen', an act that did not help them when they returned to their country. They were strangers in their own land - civilised, proper Englishmen completely isolated from their subjects. This was what happened to some of the last remaining representatives of the old rulers of India.

The last point that should be discussed is the Indian Civil Service. Jawaharlal Nehru once said that 'the Indian Civil Service was neither Indian nor civil nor service'. The examinations to the civil services were open only to white Britons during the major part of the British rule and the most well-read Indians could find jobs in clerical

positions only. Indians weren't given a say in how they were to be governed. And the Englishmen who did come to rule us were always those who thought of India and Indians as an uncivilised country who must be governed in order to make good of themselves. The civil service never really reached the masses and was always restricted to the officer collecting taxes from the subjects. And so, the civil service was never really a service. The compensation that the officers received due to the 'harsh conditions' of India was huge. In fact, a high post in the Indian civil service was the most sought after job in the world at the time of the Company rule. The main reason for this was that the higher officials always ruled as they wanted to over their territories without anyone to question them. The English government never disturbed them and the Company was concerned only about its profit.

This is but a small glimpse into the history of what the British actually did to India's political system. It is by no means complete and is only a reminder of how we were once a great civilisation, foremost in the world in all respects. We had a history of unparalleled knowledge and expertise in all fields, capable kings, brave soldiers and a righteous society. What the British did was to ruthlessly plunder and pillage a flourishing country, leaving it ragged, divided and fighting for life. The purpose of this article was to highlight how the British rule destroyed the political unity of India - from which, sadly, we still have not recovered - and how we should remember our history and realize that we were once a great civilisation and that we still can be, if we have the courage to learn from the past.. ◆

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INDIAN MAGIC

Making the impossible possible, or witnessing wonders at an arm's distance is always a human heart's craving. And it is this irresistible urge that paves way to make magic, the huge success it has always been. Famous poet Coleridge called it, the "willing suspension of disbelief", or in other words, we often let our senses be deceived for entertainment's sake. But performing magic, is always a supreme art which requires utmost skill and talent. The Latin word Magi, used to refer to the Zoroastrians gave birth to the term "magic". India has been the abode of inventions, ranging from the basic zero to innumerable discoveries in various disciplines. Magic also had deep Indian impressions with trademark tricks like the Rope Trick, Flying Carpet, and so on. It was not an art adapted from other nations, but an indigenous one, with all its glory and creativity.

"When asleep I breathe Magic; when awake I work Magic," asserted the Father of Modern Indian Magic, Pratul Chandra Sorcar (P.C Sorcar Sr.). The marvelous feats of Indian Magic like the Rope Trick, the X-Ray Eyes, and the Magic Carpet were brought to life by none other than P.C Sorcar. He left the audiences gaping wide with his beguiling skills and showcased the impossible in front of their naked eyes. The Indian Rope trick, proudly termed as the "World's Greatest Illusion", is of three types. Its greatness lies in its

simplicity, where only a long rope and the magician is involved, at times, accompanied by a basket and an assistant. In the simplest version, the rope is kept either in a basket or on an open field, and upon the magician's orders, the rope levitates independently, on which, the assistant climbs as if on a pole, and descends back. In the more elaborate version, the assistant disappears from the top of the rope, and re-emerges from the crowd. In the most stupefying, "classic" version, the top end of the rope is no more visible, and the assistant too disappears. The master calls for him a couple of times, and infuriated, climbs up the rope with a knife or a sword, and he too vanishes. Soon, with a loud sound and clamour, limbs and body parts (of the assistant) falls down, as if cut and thrown by the master. After tossing all the parts, the master climbs down, puts the parts together in a basket, covers them with a cape, utters some spells and the boy



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Vazhakunnam
Neelakandam Namboothiri

Kerala too, has preciously contributed to the arena of magic. Vazhakunnam Neelakandam Namboothiri, more aptly, the Grand Father of Magic in Kerala played an important role in bringing magic as an art. In spite of his extreme simplicity, and devoid of any elaborate stage costume, he held the crowd enthralled and spellbound. He once had a chance to watch "Cheppadividya" [tricks using Cheppu (cups) and Panthu (balls)] performed by Pallatheri Nambyathan Namboodiri, an expert and scholar, and this kindled in him, the interest for learning magic. Thus, he started learning Jaalavidya under Pallatheri. Vaazhakunnam later became famous for Kayyothukkam, although occasionally he performed also "Cheppum Panthum" (cups and balls) to small family gatherings. Gradually he mastered other modern magic tricks also. He learned "bullet" tricks from the renowned magician Bekkar of Alappuzha and taught him

Cheppum Panthum in return - as Guru Dakshina. He was famous for his disappearing act (Mooti Vidya). There were many instances where, after performing a trick, he would even show how it is done, saying that with practice, anyone could do it; such was his humility.

Indian folklores, myths and legends were entrenched with the idea of "maya" or "indrajaal". Apart from any other form, Indian magic can boldly claim that it is the purest form, unadulterated by any trapdoors, lights, smoke, mirrors, or even a stage. And yet, it flaunts astounding illusions involving decapitations, snakes, thorns, levitations, disappearances and sudden appearances. In the words of Mr. Rakesh Kumar, (banker turned magician), "Magic cannot heal the broken bones, but it can repair the soul". ♦

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KALARIPPAYATTU - THE MOTHER OF ALL MARTIAL ARTS

It is believed that one of the earliest arts forms to be practiced by man was the art of self-defense and, therefore, the origin of martial arts anywhere in the world can ultimately be traced back to time immemorial. The matchless and magnificent martial art form, kalarippayattu, is so old that its origins are traditionally attributed to Lord Shiva. The term kalaripayattu is formed from the words Kalari in Malayalam which means school or gymnasium and payattu which is derived from payattuka meaning to "fight/exercise" or "to put hard work into".

It is considered to be the mother of all martial arts in the world. Ancient Buddhist monks who travelled from India to China to spread Buddhism are said to have taught these martial arts to the Chinese which in turn gave birth to martial art forms such as kung-fu and karate. The Shaolin temple itself was founded by an Indian Dhyana master, Buddhabhadra. On one of the walls of the Shaolin temple a fresco can be seen, showing south Indian dark-skinned monks, teaching the light-skinned Chinese the art of bare-handed fighting.



This holistic form of art that not only knows how to hurt the other but also knows how to heal has been preserved for many centuries following the tradition of guru-shishya parampara. This martial training aims at the overall development of an individual beginning from physical strength, mental balance and progressing to spiritual upliftment. It forms, as it were, a path guided by the tradition to lead a complete life.

MYTHOLOGY AND HISTORY

Parashurama, a warrior sage and one among Lord Vishnu's Dasavatharas, is presumed to have reclaimed the land of Kerala and parts of Konkan from the Arabian Sea as a new settlement for sixty-four Brahmin families. Out of them, thirty-two families were settled in Kerala. Parashurama, who had mastered the art of armed combat and archery under Lord Shiva, taught these arts to twenty-one disciples in the new land that he had reclaimed. He and his disciples are believed to have established 108 Kalaris in different parts of Kerala. Archeologists, historians and sociologists may probe deeper and come up with more views and theories about the century and place

where Kalaripayattu as a martial art evolved and how it grew. However, for the present, the origin of payattu remains in the realms of mythology and mystery.

Kalari was an integral part of the socio-political system of medieval Kerala. Often the fighters were invited for settling disputes between ordinary people. This practice of using fighters for judicial purposes resulted in the emergence of a peculiar institution of ankam - single combat. The Kalari will be kept like a temple and the space has to be respected. There are no restrictions to religion, caste or sex. The class will open with the lighting of the lamp - Bhadradeepam (The Holy Lamp) and the blowing of the divine conch.

DIFFERENT TYPES

According to the tradition, there existed three styles of Kalari based on the region such as Northern, Central and Southern, of which the northern and southern styles are very popular.

While the northern style is believed to have originated from Parasurama, the Southern style is traced back to Sage Agastya. The northern style is



characterized by very high jumping and kicking techniques, long strides, low stances and blows and locks delivered by arms and hands that are almost fully extended. The Southern style contains more circular movements and lacks the grace and depth of the northern movements. Strikes and blows are usually delivered with the palm of the hands open and the arms bent and there are hardly any high kicks or jumps. However it must be mentioned that this style has a more solid stance and can deliver a powerful force by using the arms, shoulders and torso.

KALARIPPAYATTU TRAINING SYSTEM

The intensive training includes the following: Poothara - The seven sacred steps in the southwest corner (Kannimoola) of the Kalari are called poothara. Poothara pranamam is an important and foremost feature in Kalari. Kalaripayattu contains a set of physical exercises through which the student can learn to control the use of his body. Katcha is a kind of abdomen guard consisting 18 muzham (a measure) long cotton cloth, tightly

wound around the abdomen increases stamina and ability of the trainee. It then involves maithari (physical exercises), kolthari (the use of wooden weapons) and ankathari (metal weapons). Kai-Thallu and Verumkai prayogam (unarmed combat): "Kai" means hands and "Thallu" means hitting; students will face each other in pairs and basically exercise arm-muscles by beating and blocking. Leg kicks and elbow thrusts however are also included in this chapter. Verumkai prayogam (unarmed combat) or empty hand fighting system is the fourth stage

of Kalari training. The opponent's body is the peculiarity of this system. By this method, one can disable the enemy completely. Usually, the knowledge of this method is passed only to those students with a disciplined life who will not misuse this knowledge. A vast set of locking techniques (piduthangal), throws, flying moves and marma prayoga (the hitting of vital spots), counter locks and escape-techniques are involved in this technique.

THE MARMAM-SYSTEM

The word 'Marma' stems from the Sankrit-words 'mrung' or 'marane'. 'Marane' means death" and "Mrung" means near death. 107 vital spots on the human body can be injured or hurt in a way that provokes immediate death or death within days. The contact with these vital spots will happen in a way that the breath will be blocked and a person will die that way. Marma's are central points of life.

The Marmam-system has been found mainly by four rishi's (or sages) named Susruthan, Vagbada Acharyan, Ashtanga - hridayakarakan and Agasthyar. The student that passed the four categories of Kalaripayatt- (body control-exercise, wooden weapons, metal weapons and unarmed combat) will be further examined by the Gurukkal on the level of discipline, trust in his Gurukkal, control of mind and "Ekagratha" (oneness), before he is initiated in the knowledge of

the marma system. In total there are six types of Marma's Asthimarmam (bones) , Mamsa-marmam (flesh), Snayu-marmam (tendons), Siraa-marmam (arteries), Dhamani-marmam (veins), Sandhi-marmam (joints).

KALARI MARMA CHIKILTS

Marma Chikiltsa is the treatment of the vulnerable parts of the human body. It originated as a method to treat the injuries during fights or practices, later it developed into a healing system for



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all kinds of injuries. Massages are a very common way of treating an injury. The important element in Kalaripayattu training is the whole body foot massage or Chavutti Uzhichil. For Marma Chikilsa, the ancient Indian

massage system unites the patient and the healer. Ulsathana (foot massages) and Samvahanam (hand massage) treatments are purely based on Susrutha and Vaghbhada Acharya's method mentioned in the Ayurvedic Granthas (palm leaf-inscriptions that contain the recorded knowledge of the ancestors of the Kalaris). Kizhi chikitsa is another special method of healing. Roots, herbs, or leaves will be put in a cloth called Kizhi which is covered with heated oil after which the specific spot will be treated. Swellings, blood clotting or rheumatic diseases are treated by this technique.

KALARIPAYATTU AS A HEALING ART

The health benefits of practicing Kalari are tremendous, as it increases the stamina levels substantially. The

benefits of this ancient practice go beyond mere weight loss. It improves your strength physically and mentally. Kalaripayattu performers show higher lung functioning achieved by training and practice. Different postures and stances in Kalaripayattu together with involvement of breathing exercises like yoga in the exercise protocol result in the higher lung volumes and flow rates. Kalaripayattu exercises can serve as a way to lose weight, stay fit, and act as a solace to frazzled nerves and a stressful lifestyle. It also helps keep up your energy and prevent the risk of suffering from injuries later in life. Kalarichikitsa can be applied to help a wider range of people achieve good health. Specializing in neuro-muscular (sciatica, spondylosis, etc.), and skeletal disorders (sprains, fractures, dislocations etc.) treatments

also help one to reach beyond one's psycho-physical limitations. It is a holistic approach in making you look and feel healthy from inside. It's about the mind and body synergizing together.

The martial art of Kalaripayattu also sustains the various dance forms of Kerala such as Theyyam which call for extreme physical stamina. Kalari training enables one to attain 'A sound mind in a sound body'. Kalaripayattu thus is a martial art that strengthens the orthopedic system, includes massage regimen, Ayurvedic treatment and a cultural and spiritual experience – all roled in one. It inculcates traditional values, discipline and respect for the elders and teachers, inculcates firm faith in the existence and power of God. Kalari makes the practitioner not just a warrior but a self-healer, who can also help others with his healing powers. ♦

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THE IATROCHEMICAL PERIOD IN INDIAN HISTORY

Iatrochemistry is not an unexplored area in our Indian history. Metals found use in the daily lives of common people. Gold was rubbed against the tongue of a new born to enhance its immunity. Food was cooked in iron or brass utensils taking care of the essential mineral requirements of our body. This article intends to highlight that much of the modern day knowledge that we have of science was actually in practice in the ancient Indian society.

During the tantric period there was a significant advancement in knowledge about metals for the purpose of treating certain ailments. It was followed by iatrocchemical period during which metals like Copper, iron, mercury etc were used in combination with herbal formulas prescribed in charaka samhitas and sushrutha samhitas. The development during this era is reflected in the sequel of leading treatises. Some of the important treatises are:



Rasasara: dealing with 18 operations on mercury and various other chemical processes.

Rasaratnasamuchchya: deals with medicinal chemistry

Sarangadhara-samgraha: based upon both Ayurveda and tantric chemical treatises.

Rasendrasarasamgraha: deals with therapeutic efficacy of mineral preparations.

Rasanakshatramalika: deals with mineral preparations involving opium, mercury, iron, tin etc

Dhataratnamala: describes short processes of killing of the metals and minerals

Rasapradipa: describes distillation process for the preparation of mineral acids which could dissolve metals.

Other important treatises included arkaprakasha, bhavaprakasha, Dhatukriya etc.

Along with other foreign drugs, opium was also accepted as an official drug in the Materia medica between 1500-1600 CE.

CHEMISTRY IN RASARATNASAMUCHCHYA

Rasaratnasamuchchya can be considered as one of the important treatises in the medicinal chemistry. It was compiled by Vaghbata and it includes intricate details about metals and minerals, series of processes like extraction, purification, liquefaction, description about the instruments. The properties of the rasas, uparasas and metal discussed in rasaratnasamuchchya are highlighted below:

The Rasa: Abhra, Adrija, Vaikrantha, Vimala are the different kinds of rasas discussed.

Abhra (Mica): Pinakam, Nagamanukam, and vajram are the three kinds of micas used in four different colours-black, yellow red and white. Killed mica is used in the treatment of various ailments.

Adrija (bitumen): different kind of bitumen are Chapala, Rasaka and Sasyaka. Sasyaka, a blue coloured emetic is an antidote to poisons and a killer of the whiteness of the skin.

Vaikranta: It was observed in various colours like blue, white, yellow, green etc or even multi-coloured with eight faces and six angles. Vaikranta was considered as a royal medicine.

Vimala: The three different kind include gold, silver and brass.

The Uparasas or inferior rasas:Sulphur, Gairika(red ochre), Kasisa(sulphate of iron), Manassila, were the four kinds of uparasas. Kasisa is acidic, astringent and beneficial to the eye.

The Anjanas: Anjanas are used as cosmetics for eye.

The Gems: Gems and jewels are an inevitable part of Indian civilisation. A part in garudapurana deals with detailed descriptions of gems. The gems used for fixation or coagulation of mercury are garudodgara (emerald), Chandrakanta (moonstone), hirakam (diamond), mauktikam (pearls),

rajavarta (lapiz-lazuli), suryakanta (sun stone) etc.

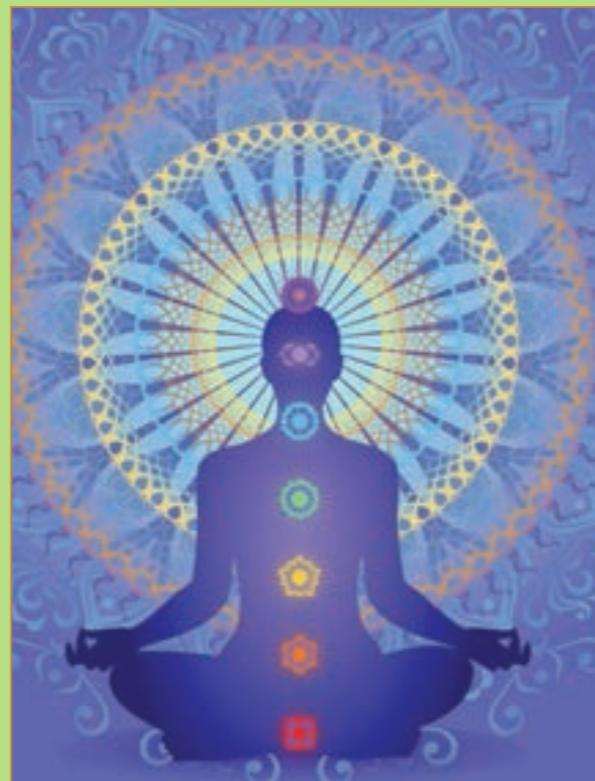
Gems were widely used in ayurvedic medical system reducing them in to ashes or fine powders.

Laboratory setup during iatrochemical period:

The setting up of ancient laboratories is highly interesting and so were the criteria to choose a chemist or a herbalist. The laboratory used to be erected in a region, which abounds in medicinal herbs and wells and furnished with various apparatuses. The phallus of mercury is to be placed in the east, furnaces to be arranged in the south-east, instruments southwest; washing operations in the west; drying in the north-west. The koshti apparatus for the extraction of essences, the water vessels, a pair of bellows and various other instruments are also to be collected; as also thrashing and pounding mortars, the pestles, sieves of various degrees of fineness, earth for the crucibles, dried cow dung cake, retorts made of glass, earth, iron and conch shells iron pans etc. Only those who were truthful, free from temptations, given to worship of devas and brahmins, were highly knowledgeable, self-controlled and used to live on proper diets and regimen were chosen as chemists.

The Yantras (apparatuses):
Numerous common apparatuses used in iatrochemical period were documented. A few of them are: Patana yantram (apparatus for sublimation), Vidhyadhara yantram (fumigating apparatus), Dheki yantram (apparatus for distillation).◆

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THE PHILOSOPHICAL FRAMEWORK OF INDIAN ARTS

In India, unlike the other cultures of the world, philosophy and classical arts are closely linked. They are both centered around the idea of finding Joy. Whereas, the Vedanta is a means of realizing eternal Joy, that is untainted by the material world, classical arts have their roots in the material world, but give a glimpse into the eternal Joy that Vedānta seeks.

Everyone in the world wishes to be happy and there is no one who consciously wishes to be unhappy. All our endeavours are in one way or the other directed towards maximizing our duration of happiness. We, however, are usually under the impression that fulfilment of worldly desires will make us happy, but it is in our experience that such joy is only temporary. Once the object we secure out of fulfilment of desires is lost, our joy is also lost and we try to pursue another desire. We get stuck in this infinite loop and running after worldly objects. Indian philosophy and arts, however, point a way of getting out of this loop and finding a means to realise eternal Joy.

All us would have remarked after watching a movie, or while listening to music, 'I forgot myself', 'I did not know where I was', 'I did not realise that so much of time elapsed' and 'I thoroughly enjoyed the movie/ music'. In such experiences, there is joy, though we were neither aware of our own individual selves, i.e., the body and the mind nor were we aware of the time and space. We transcend all those parameters and were in a state of absolute Joy. Time and space constitute the world and body and mind make up our individual selves. Thus, we were in a state of joy, in spite of the world and our own selves. For the duration for which the movie or the music was going on, none of our physical or mental pains, anxieties or

fears bothered us. This shows that even when we are unaware of our own selves and the world, we can be happy and this happiness is something internal to us. Art Experience is termed as rasānanda by the Indian aestheticians and it is called the younger brother of brahmānanda, the realization of which is ultimate aim of Vedānta. A conscious realisation of Joy, that transcends the world and the individual self and is eternal is the state brahmānanda. Rasānanda gives us a glimpse of this infinite bliss and stands as an empirical proof for the same.

The first chapter of Bharata's Natyashastra, a treatise on performing arts tells us the reason with which Art came into existence and shows the close connection of Arts and philosophy. At a time when there was unrest in the world, the humans and deities wanted peace and went to the creator, Brahma and requested him to create something that will entertain them. Brahma, by



then, had already created the world and the four Vedas and he had nothing new to create. He thus decided to extract different components from each of the four Vedas and created a new system of knowledge called the Natyaveda. He picked up the literary component from the rg-veda, music from the sama-veda, gesture language from the yajur-veda and aesthetic experience, i.e., Rasa from the atharva-veda. A combination of all the three – literature, music, gesture language (dance) and aesthetics make up theatre art and the purpose of such an art form is to entertain the masses. Thus, all Indian art forms have their roots in the Vedas, that have laid the foundation for Indian philosophy. ◆

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THE WONDER THAT IS SANSKRIT



The first information regarding the existence of Sanskrit and the literature of the Upanishads was carried to the West by the Latin translation, by Anquetil Duperron, of the fifty Upanishads from the Persian translation of Dara Shiko. There was a time when it was openly doubted in Europe whether there was any genuine Sanskrit language. But the indefatigable work of Sir William Jones, Colebrooke and others made Sanskrit known to the Western World.



When the entire universe is under the spell of the English language, an iota of knowledge on the History of Sanskrit Literature would definitely set any reader offbeat into the sphere of India's glorious ethnic culture and heritage. This article, encompassing the origin of the Sanskrit language and its gradual expansion into the massive world of literature, would doubtlessly provide a flavorsome feast for the reader.

The first information regarding the existence of Sanskrit and the literature of the Upanishads was carried to the West by the Latin translation, by Anquetil Duperron, of the fifty Upanishads from the Persian translation of Dara Shiko. There was a time when it was openly doubted in Europe whether there was any genuine Sanskrit language. But the indefatigable work of Sir William Jones, Colebrooke and others made Sanskrit known to the Western World. Sanskrit, as is universally established, is the eldest daughter of the old mother-tongue of the Aryan people and probably the only surviving daughter. The oldest preservation of Sanskrit speeches can be observed in the Rigveda. In the language of the Rigveda, one can trace a gradual and steady development of the language of the classical Sanskrit through the later Samhitas, the Brahmanas and the Upanishads.

The Sanskrit grammarians tried as far as possible to avoid further distortions in the essentially undiluted form of the language. The conservative tendency of Indian literary culture is remarkably manifested also in the permanent form that has been given to the Sanskrit language. The word Samskrtam means purified and well-ordered. By 150 B.C., by the joint works of three grammarians, Panini, Katyayana and Patanjali, the language attained a stereotyped form which remained the same throughout the centuries. Variations from this may occasionally be observed in the Ramayana, the Mahabharata and some of the other

Puranas and Patanjali also noticed it when he said "chandovat kavayah kurvanti". An early poet Kalidasa also sometimes indulged in such poetical licenses. Lesser known poets who wrote inscriptions often showed their inability to follow Panini's grammar. Except for these, the language has successfully prevented mutations in the course of ages.

Winternitz, in Volume III of his 'History of Indian Literature', German Edition, speaks of "the Sutas" as the representatives of the old heroic poetry. Tracing back to the germinal state of Sanskrit Kavya, one cannot find reasons to disagree to this notion completely. Sutas were people who lived in the court of the earlier princes and sang to extol them. They also went forth to battle so as to be able to sing of the heroic deeds of the warriors from their own observation. These court bards are said to have been the yield of wedlock between a Kshatriya male and a Brahmin female. However, the court atmosphere did not favour the indigenous ebb and flow of poetic brilliance and preferred a skill in the display of learning and stringent manipulation of words which led to artificiality among poets from the sixth century onwards. As a result, the natural spontaneity of the poet was at discount. Amidst the manufactured poetry were Bana and Kalidasa, two poets who took the idea of artificiality into negation. Sanskrit rhetorician Bhamaha also holds a different view regarding Kavya. He says that Kavya should be written in such a manner that it is intelligible to all.

The majesty and grandeur of the Sanskrit language, the sonorous words, music, the rise and fall of the rhythm of rolling in waves, the elasticity of meaning and the conventional atmosphere that appear in it have always made it charming to those for whom it was written. The unreality and conventionality appear only to a modern mind looking at it with modern perspectives. The wealth of imagery,

the vividness of description of natural scenes, the underlying suggestiveness of higher ideals and the introduction of imposing personalities often lend great charm to Sanskrit poetry.

The atmosphere of artistic creation of Sanskrit play as distinguished from the world of ordinary reality has been well described by Abhinavagupta in his commentary on Bharata's Natya-Sutra. Thus, Abhinavagupta says that the constitutive words of a Kavya produce in the mind of the proper reader something novel, something that is over and above the meaning of the poem. After the actual meaning of words is comprehended there is a wave of imagination that sweeps fast through the minds of the readers creating a state of universalisation between reality and imagination.

The Sanskrit poets also took it as a rule to clearly avoid any visuals of violence, shock, gross demonstrations of passion or anything revolting. They had a sense of perfect decorum and decency so that the total intended effect of the drama does not get disturbed. Consonant with this attitude and with the general optimism of Indian thought and philosophy that the world process ultimately tends to beatitude and happiness whatsoever pains and sufferings there may be in the way- that Indian Drama as a rule does not end tragically; and to complete the effect we have often a benedictory verse to start with or a verse of adoration, and a general benediction for all in the end so that the present effect of the drama may leave a lasting impression on the mind.

Throughout the description of natural scenes and objects as depicted by Kalidasa, we find that the whole nature is a replica of the human world- the same feelings and emotions, the same passions and sorrows, the same feelings of tenderness, love, affection and friendship that are found to reign in the human mind, are also revealed in the same manner for Kalidasa in and through the objects of nature. Nature

may be dumb but yet she understands the sorrows of men and is friendly to them. The seasons appeared to Kalidasa almost as living beings. They are not merely the friends of man but throughout nature the life and personality of the seasons are realized in joy and love, and in Kalidasa's description this aspect of nature becomes extremely vivid. But when Valmiki looks at nature, his general emphasis is on the realistic aspect of nature. The aspect of its utility to man is thin and shadowy. But as we proceed onwards we find that gradually nature begins to rise to the human level and often its practical utility to man is emphasized, e.g., in the 'Ritusamhara' of Kalidasa. Anyhow, different poets in India had approached nature from diverse points of view, some realistic, some pragmatic and some idealistic.

The study of Sanskrit Kavyas and their appreciation have their own difficulties. Excepting in the case of a few writers of elegance like Kalidasa, Bhasa or Sudraka, most of the Sanskrit works in poetry are not easily accessible to those who have no proficiency in the language and even for the proficient it is not always an easy reading and at times one cannot make much of them without commentaries. The study of Sanskrit Kavyas, therefore cannot be an easy pastime and cannot always be enjoyed as recreation in leisure hours. Under the circumstances, though the Kavya literature contains within it some of the great masterpieces of poetical works, it cannot hope to become popular with those who had a mere lisping knowledge of Sanskrit or who are unwilling to take the trouble of undertaking a difficult journey through the intricacies of the language. To the trained ear the music of the poetry is so enthrallingly bewitching that the mere recitation of the verses in the proper manner produces a sense of exhilaration. The sonorous rhythm and untranslatable charm of Sanskrit poetry are the two major difficulties in understanding it.

Was Sanskrit a spoken language at any time? Panini distinguishes from Vedic and the Paninian language, as Vaidika and Bhasa (spoken language). Patanjali in his 'Bhasya' says that the object of grammar is to supply rules of control for current speech. But why should there be any such control? The answer is: one, for the preservation of the integrity of the Vedas; two, for making proper transformations of suffixes from the forms given in the Samhitas for practical sacrificial use; three, in pursuance of the general duty for all Brahmins to study the Vedas of which the chief accessory is grammar; four, grammar is the shortest route for the study of correct words; and five, for laying proper accents on words. A wrong word or a wrong accent fails to denote the proper meaning. So, to safeguard oneself from wrong usage one should study grammar.

Even in the time of Patanjali, the Paninian language was used in current speech though many mispronounced and foreign words had crept into the current speech. The current speech was thus not exactly what we call Paninian Sanskrit but Sanskrit in which there is a very large admixture of corrupt words. We also find that by Patanjali's time, the tradition was that the Asuras had accepted Brahminic forms of sacrifice but they could not attain the fruits of them as they could not properly pronounce Sanskrit words. The rules of accent prescribed for greeting persons also show that Sanskrit as mixed up with corrupt words was in se among the people. Those, however, who achieved the discipline of a grammatical study used the words recognized as chaste by the grammatical tradition. The mixed language was used by the common folk was not unintelligible to the learned nor the speech of the learned unintelligible to the common people.

Thus, in spite of criticisms that may be leveled against Sankrit poetry, to a learned Sankrit scholar who is acquainted with the trailing history of the allusive words and its penumbra, the double meanings and the associated myths, Sanskrit poetry with its luxurious images, cadence of rhyme, jingling alliteration of word-sounds, creates a wonderland of magic and joy that transports the reader to a new world of beauty. The delicate and passionate flickering of love with which Sanskrit love poetry is surcharged are as much exciting to our primal tendencies as appealing to our cultured tastes. Though much of Sanskrit poetry has been lost through the ravages of time, yet what remains is worthy of the pride and satisfaction of any great nation. There is no compeer in the world of the Mahabharata and the Ramayana taken together, and Kalidasa stands supreme before our eyes as a magic creator of beauty and enchantment, and Bhavabuti as the creator of the somber and the sublime.

The reader can stay extremely inquisitive hereafter, for the enduring journey into the deep roots of Sanskrit Literature shall not culminate here and shall reach your eyes soon with even more alluring facts! ♦

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FOLK DANCES OF MANIPUR

India is a land of varied culture and traditions. Diversities in all spheres make the Indian culture quite unique. Indian folk and tribal dances are the product of different socio-economic set up and traditions. Indian folk and tribal dances are simple and are performed to express joy from within. In India, we have festivals and celebrations virtually every day. This has added to the richness of Indian culture. Since every festival is accompanied by celebration, folk dances have become an integral part of our social milieu. The folk dances are extremely simple with minimal steps or movement. Indian folk dances are full of energy, vitality and has a specific rhythm. The costumes are also unique to each folk dance, most of them being colourful with extensive jewels and designs. Every part of this country has its own flavour of art and culture. This article focuses on the various flavours of Manipuri folk dances. Manipur is a place which finds mention in the Hindu mythology and therefore it has art forms which are greatly inspired by mythological influences. Manipuri dance essentially revolves about the theme of Radha & Krishna.

RASA LEELA

In the rasa dance of manipur lies the richness of both nritta and abhinaya of the Manipuri style. These are the compositions of a literary order set to classical music and performed to a given metrical cycle. The rasa leela is the famous dance of Manipuri culture invoking deep feelings in the viewers. The dance illustrates the eternal love of Radha and Krishna and has also been described in the Hindu scriptures & Puranas. It also reveals the sublime love of Lord Krishna and Radha including the devotion of Gopis towards the lord. The Manipuri Rasa leela specially depicts the connection of the individual soul with the spirit of the supreme

being, if true faith is developed. The gopikas represent the individual souls confined to mundane responsibilities. The God-head represented by Lord Krishna is projected through the call of his enchanting flute. In the actual dance performance, the eye catching stylish movements and graceful gestures can be seen. During the performance, these movements are well gesticulated, that it acquires a touch of spiritual force.

The performance of Rasa leela is carried out in an enclosure in front of the temple called as Nat mandapa and the performance lasts for the whole night. Viewers see it with a deep sense of devotion. Rasa performances are seasonal and varied. The costumes of Rasa leela of Manipur are vibrant and quiet captivating to look at. As far as the dancers are concerned, both the male and female dancers are part of this splendid act. The richness of the costumes, the poise, the moving music and the devotion with which Rasa leela is performed is sure to strike an emotional chord. Manipuri dancers evoke a permeating mood of devotion, deep yearning and karuna. It symbolises the pangs of separation from the Lord and reunion with divinity. Finally all humans are Gopis ever seeking, ever desiring, ever yearning for the God who gives the illusion of being personal to each human being and is yet above all of them. Manipuri dance has a delicate grace and beauty which is full of the intricate complexities of sinuous curves. It is the embodiment of Bhakti as far as its theme and spirit are concerned. The delicate movements, the crescendo of the music and the grace of the dancers renders the dance form its beauty and charm.

PUNG CHOLOM

Pung cholom dance form has only male performers in it and uses drums and mridanga as its performance

accessories. The turban makes for an important part of pung cholom. This dance is also otherwise called dhumal, mridanga kirtan and drum dance. Pung cholom may be represented independently or as a part of the Nata sankirtan. When it is performed as an independent dance nearly 14 performers will participate in the dance but if it is presented as part of the Nata Sankirtan there will be only two performers. The dance is ritualistic in flavour and stylish in terms of steps and movements. The dance starts with small movements which soon give way to more vigorous and momentous steps. Amazing rhythmic intricacies and interplays are a beauty in this dance form where the body movements are synchronized with the sound modulations.

KHAMBA THAIBI

This is a beautiful ceremonial dance of Manipur where there are both male and female performers performing as a duo. There may be a single duo or many such duos in a particular dance performance and the male dancers are given all liberty to choose their female thaibi. The boy, who is poor, defies and defeats all challenges coming in the way of his love. Thaibi, a rich princess, too stays steadfast in love despite all the attempts to draw them apart. To protect their love they perform a duet dance before moirang's sylvan deity, Thangjing. Later, they are considered



as incarnations of Lord Shiva and Goddess Parvati. Khamba thaibi dance is also differently termed as leima jagoi and priestess dance.

NUPA DANCE

Nupa dance or Nupa pala is also known as Kartal Cholom or cymbal Dance. This dance represents the characteristic of the Manipuri style of dance and music. They use cymbals as their performance accessory and their gentle and delicate movements gradually pick up vigor and thunderous speed as the dance proceeds. It is a group performance of male dancers only. Generally the Nupa pala acts as a prologue or introductory dance to the Rasa leela dances. Besides being an independent performance, it is also performed in connection with religious rites. The performers wear white pheijom which is a type of dhoti and white turbans around their heads. They dance and sing to the rhythm of the mridanga. Nupi pala is a term that is a counterpart to Nupa dance –it is a kind of kirtan performed by a female in sitting position with a mandira, that is, small cymbals, in hand.

MAIBI DANCE

This dance is performed during the annual ritual festival of the meitei Manipuris and is called Lai Haraoba. The principal performers are referred to as maibis and maibas who are considered an embodiment of purity and are said to be chosen by the Gods themselves. The story unfolds from the beginning of creation and is of the form of ritualistic dances. Without many facial gestures this dance uses body movements and stylised hand gestures. The dance relates the story of creation and that of the lifestyle of the Meitis. In other words, life is re-lived through the Maibi dance. Invocation of God through some ritualistic procedures heralds the beginning of the dance in which you will find the dancers wearing the sacred Langthrei leaves in between their fingers. ♦

Sagariga, S3 EEE



Manipuri. Performed still in temples and religious occasions, inextricably woven into the lives of the people of Manipur, Manipuri Dance this dance form is a very much living tradition. A genuine Manipuri dance performance offers a glimpse of a rare and ancient civilization still extant. This style is multifaceted, ranging from the softest feminine to the obviously vigorous masculine.



THE PLIGHT OF INDIAN FARMERS

In recent years, thousands of farmers, throughout the country, have committed suicide due to acute financial distress. 69 years after independence, the plight of our farmers is not much better than what it was when the British left. What are the reasons for this? Nothing but step-motherly treatment by successive governments.

If acute financial distress is the primary cause for farmer suicides, how can we resolve the farmers' financial problems? In almost every state, agriculture is no longer an economically viable activity. Large tracts of agricultural land are lying fallow, as the land owners and farm labour have migrated to some nearby cities in search of work and a steady income. How do we reverse this trend?

The Green Revolution of the 60's came as a result of the use of improved seeds, more irrigation and the use of chemical fertilizers and pesticides. Most farmers were able to obtain two crops in place of the earlier one. Over the years, however, extensive use of chemical fertilizers

and pesticides and preservatives have reduced soil fertility and has increased the toxicity of all types of agricultural produce beyond acceptable limits. Farmers are now using far more chemical fertilizers than necessary to ensure a reasonable yield. Today the call is for going organic; however for this changeover to succeed, soil fertility has to be restored. This will take time.

In earlier days, during periods when there was little agricultural activity, farmers were occupied in their traditional crafts and could augment their income. Potters, weavers, cobblers, blacksmiths, carpenters and so on plied their trade. This kind of economic activity in the villages is almost nonexistent today. This has had an adverse impact on the earning ability of the farmer. The sociological evolution of the farming community, pan India, has not kept pace with the rest of the Indian society. At the time of independence, the agricultural lands of a village were generally owned by the village Zamindar or landlord. The

farmers who tilled the land were his serfs or tenants who grew the crops for him. They existed entirely on his generosity or lack of it. The Zamindar was their 'mai-baap'. When Zamindari was abolished and land ceiling introduced, much of the village lands was taken over by the states and distributed to the farmers who tilled the land. However there was not enough land for distribution. This gave rise to the Great Vinobha Bhave's Bhodaan movement – Land for the Landless. Small land holdings, constantly fragmented by every generation, escalating costs of farm inputs and farm labour and dependence on the monsoons resulted in poor productivity and did not provide sufficient income.

The trend now is for small farmers to lease out their land to rich farmers and move to urban areas in search of work. These rich farmers take on lease as much land as they can and resort to mechanized farming and are able to sustain agricultural activity due to economy of scale. The small farmer has another problem; they need to borrow



money to invest in farm inputs. It is difficult for them to get loans from the banks so they are forced to go to local moneylenders who charge exorbitant rates of interest. In some cases, such loans are used for other purposes such as a daughter's wedding! The problem is compounded if the crop is damaged by some natural calamity like droughts or floods. As it stands today, the plight of small and medium farmers are pathetic. The poor farmer has remained poor.

We now need to create a situation where, for the small and medium farmer, agricultural activity becomes economically attractive by increasing

productivity, quality and profitability. Agriculture's profitability depends on productivity (yield per acre per year), which in turn depends on the cost of inputs, good rural infrastructure including irrigation, power, storage and cold storage facilities, value addition and above all viable land holdings. The state should also institute suitable crop security schemes and easy bank credit, and disseminate and adopt modern technology. This is a long shopping list and a very expensive one at that. Agricultural policies have so far provided only first aid.

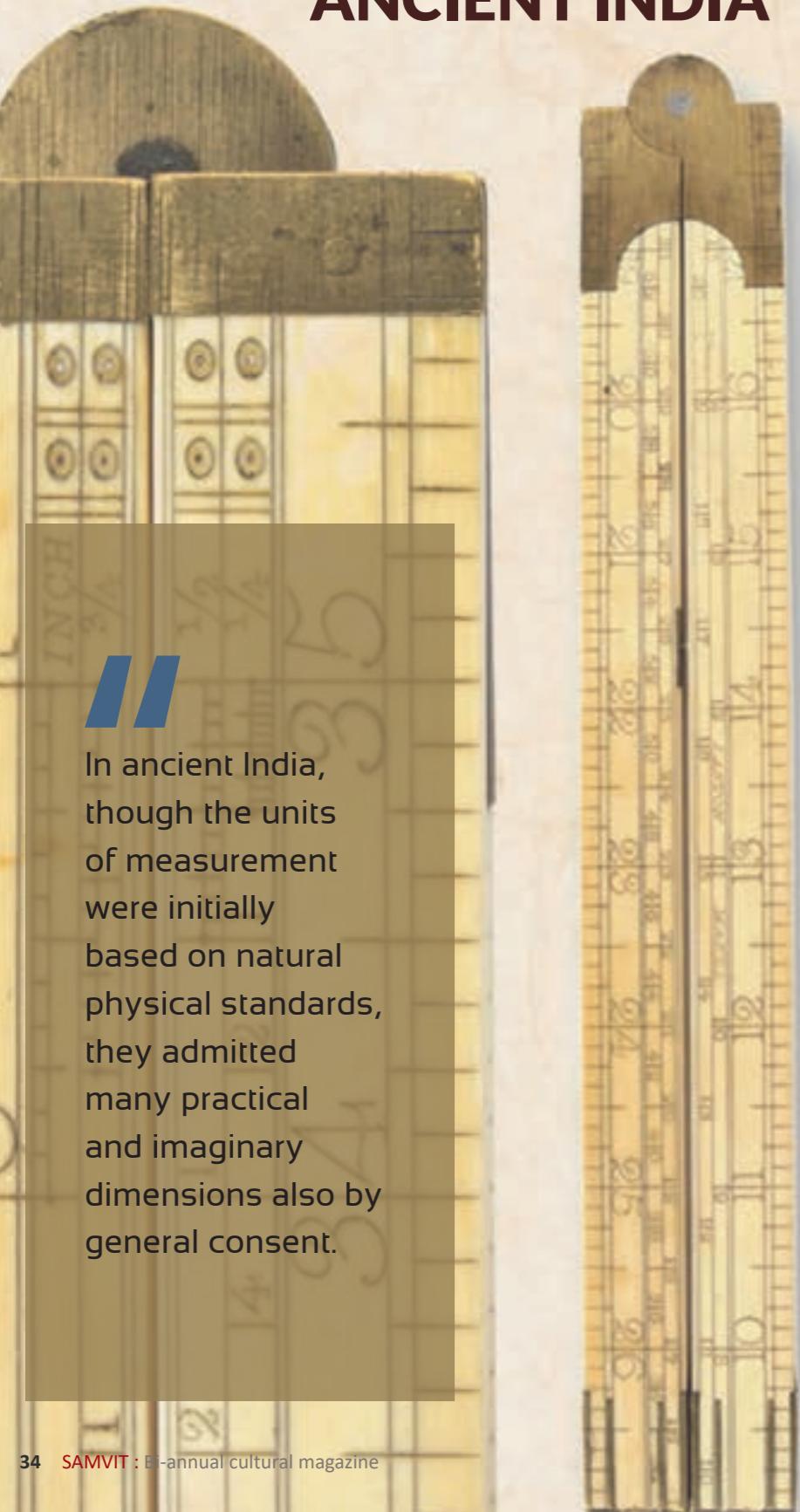
It is time for a very comprehensive, holistic and nationally acceptable policy

to be formulated and implemented vigorously. We need to ensure a viable food security scheme for the nation and for this, making agriculture an economically attractive activity needs to be factored in. Enough farmers have committed suicide for the Government to wake up and take up the farmer's cause on a war footing.

Amma's SERVE project of developing 101 model villages throughout the country is as a result of Her divine vision and a step in the right direction and should provide our parliamentarians a model to pursue. u

Lt Col K K Nair (Retd)

LINEAR MEASUREMENT IN ANCIENT INDIA



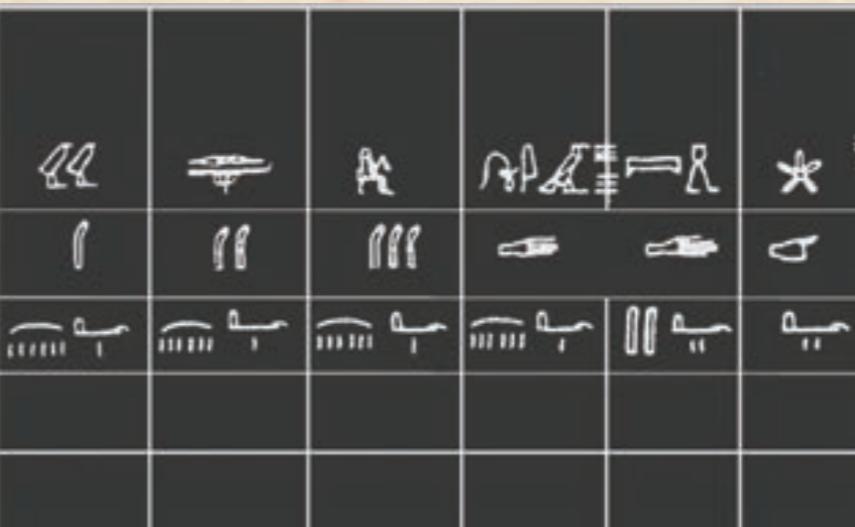
In ancient India, though the units of measurement were initially based on natural physical standards, they admitted many practical and imaginary dimensions also by general consent.

Length is the most necessary measurement in everyday life. Humanity's first elementary methods are also reflected by the way how the units of length were developed. As the civilizations prospered, the need of standard measurements increased - for the complex measuring problems of civilization like surveying land to register property rights, or selling a commodity by length - a more precise unit was required.

The use of standardised measuring rods, scales, and reeds has been in vogue in India from very ancient period. The oldest reference to the use of measuring rod for measuring and surveying a field in ancient India is seen in the Rigveda. The finding of a slip of measuring scale made of shell from Mohenjodaro, an ivory scale from Lothal, a fragmented rod at Harappa, assert the use of measuring scales in India.

In ancient India, though the units of measurement were initially based on natural physical standards, they admitted many practical and imaginary dimensions also by general consent. The smallest unit of linear measure was considered to be a paramanu (atom). Of the other measures, trasarenu, valagra, liksa, yuka and yava, each succeeding in eight times the previous one are also known. Except yava, all the other measures seem to be of very minute analysis.

Angula (finger-breadth or digit, about 1.9 cms) can be considered as the smallest practical linear-measure in ancient India. This is the basic unit and all other linear-measure units depend on this. Medieval texts on architecture like Bhoja's Samaranganasutradhara and Bhuvanadeva's Aparajitoprabchha mention three other types of angulas, namely jyestha measuring 8 yavas, madhyama measuring 7 yavas



and kanistha measuring 6 yavas. Jyestha was used in measuring cities, villages, lakes, etc., madhyama for measuring temples, palaces, houses, etc., and kanistha for measuring furniture, carriages implements, etc. Matrangula referred to in Viswakarma Vastusastra and Mayamatam was the length of the middle parva or mark of the middle finger or the thumb of the owner or sthapati. Dehalabdangula is calculated on the basis of the statue of the principal deity.

Pada is another important part of the body used for linear measure. A foot usually means the length of the sole, from the heel to the first digit of the toe. Baudhayana mentions a pada of 15 angulas and a ksudrapada of 10 angulas. Katyayana refers to a pada of 12 angulas. Kautilya refers to a pada of 14 angulas which was accepted by Bhoja also. Sama, sala and pariraya were the other names for pada according to Kautilya. The term sala occurs in Atharvaveda also. Pada also means a quarter. In astrology, the stars and the houses are divided into four padas. A quadrant of a circle is termed pada. Hence this term pada can also be interpreted as one-fourth of a bigger unit. They consider 6 angulas as a pada. The term pada appears to have been used for the square measure also. Avarta means enclosed or surrounded. Hence padavarta mentioned in the Maitraka inscriptions refers to an area

or square land measured by so many padas on adjacent sides. Gokarna was another linear measure of 11 angulas according to the Samarangana sutradhara. Etymologically it means cow's ear and is equated to the distance between the tip of the anamika(ring finger) and the thumb, both being stretched out according to Al-beruni.

Hasta, the popular hand measure, is the cubit of 24 angulas. Architectural works, in addition to the hasta of 24 angulas refer to three other types of hastas also. In some inscriptions, it is stated that the hasta of the king was used for measuring land - like the term Darvikarma hasta (the forearm of king Darvikarma) - occurs in the inscriptions from Bengal.

Aratni which is equal to 24 angulas appear to be synonymous with hasta and cubit, since it is also the portion of the hand from the elbow to the tip of the middle finger. This length of 24 angulas is accepted by Sulva sutras, Arthashastra, Brahatsamihita, Buddhist and Jaina literature. Thus majority of the literature confirm the fact of aratni to be a cubit.

Gaz was also a type of measuring standard. Abul Fazl records seven types of gaz. Gaz-i-sauda consisted of 24 digits plus 2/3 of a digit. This measure, according to him was the length of the hand of an Abyssinian slave of Harun-

Al-Rashid and was equal to the cubit of the Nilometer. He also has referred to different types of gaz, having 24, 25, 28, 29, 31 and 70 digits. The last one was used for measuring rivers and plains.

Prakrama of the Baudhayana Sulvasutra and the Satapatha Brahmana was equal to two or three padas.

Kisku or kamsa was two vitasti plus one dhanurmusthi or 32 angulas according to Kautilya. It was a measure employed for measuring forts and palaces.

Bahu apparently meaning an arm was 36 angulas according to Baudhayana.

Purusa or man's length was 120 angulas according to Baudhayana and Apastamba. They probably use the term purusa as synonymous with vyayama. Kautilya mentions a purusa measure of 107 angulas, which was used in building sacrificial altars and also mentions another purusa measuring equal to a danda of 96 angulas. The longest measure mentioned in the Sulva texts and Brahmana literature was purusa.

Yojana is the most controversial linear measure, with the least unanimity among the scholars. There appears to be two different types of yojana according to the ancient Indian literature. One measuring 4000 dandas while the other measuring 8000 dandas.

In conclusion, the measure smaller than the angula namely anu, trasarenu, ratharenu, vdldgra, liksa, yuka, and yava follow octonari system. The bigger units pada (6 angulas), vitasti (12 angulas), aratni or hasta (24 angulas), vyayama (84 angulas) and danda (96 angulas) seem to follow duodecimal system. If yojana is considered as 4 krosas, then it can even be stated as being quaternary in relation to the bigger units also. ♦

Spriha Mandal, S3 CSE

RESOURCE: Mensuration in Ancient India by Saradha Srinivasan.

THE PHOENIX

"Often it's the deepest pain which empowers you to grow into your highest self"

-Karen Salmansohn



Question: Can you brief us about your childhood?

Renu Singh: I had a very happy childhood. We were a big joint family of thirty five members including cousins, great grandparents, grandparents and parents. It was a traditional Hindu joint family and a feudal Rajput family of Rajasthan. You can say my childhood was both traditional and at the same time progressive. The specialty of my childhood was that I was very naughty, the naughtiest among all my brothers and sisters. So it was a very happy and normal childhood and I did all naughty things that every child would like to do.

Question: Whom did you consider as your role model? Or who do u look up to?

Renu Singh: I have many role models. Amma is my guru, of course, and she is everything for me. From the time I met Amma, which was 3-4 decades ago, I have always admired and thought to myself - yes, this is how a woman should be. I am also inspired by Suu Kyi who, at present, is working for the democracy in Myanmar. I admire her a lot. Oprah Winfrey also occupies a special place in my heart because she has something special about her - the way she survived all odds to become a very successful person. She is always polite and a down-to-earth person and never took success on top of her head. And as of today, all the girls who are living with me are my role models. I admire each and every one of them because they have survived violence

and they have come out of all the odds in their life. The way they are shaping their future must be appreciated. My universal role model will always be Amma but I also consider the qualities of many different people.

Question: For what you are today, how did your past mould you into what you have become?

Renu Singh: The past always plays a big role in the present because it is always the past which forms the foundation for the present. The significant period of my past is the mid 70's when the emergency situation was in the entire country. The whole country was facing trouble. I was only a teenager and I would ask my grandmother, who was an activist herself, why all

this was happening and why innocent people were being sent to jail. I was very disturbed that time and certain incidents took place in my life which became the turning point in my life. I stopped being careless, naughty and the happy child I used to be. I decided that there was no time to look back, that I had to work for my country. I decided to become a social activist working for uplifting suppressed women. I felt the need to work for inclusive democracy. I promised myself that I would work as an activist who would never go after power. That is what my present is.

Question: What was your major turning point in life?

Renu Singh: The turning point in my life was the incident when I couldn't save the life of a little girl. She was a rape victim, raped by her own biological father, who made her pregnant when she was only 10-12 years old. I saved her, brought her to my house and called the police. This happened forty years ago and there were no laws as we have today. Her parents, being the natural guardians, were given the right to take her back with them. So when the police came they forced me to give back their child and her mother took her to the village. Since she was made pregnant by her own father and was only 12 years old she was asked to marry a 48 year old man.

I got the news that the mother would take care of the child. But, after a week or so I could not stop myself and I took my bike to the little girl's village. After searching a lot I found her mother. She showed no interest to talk to me. She asked me to go away several times and she never wanted to tell me the whereabouts of the girl. After forcing her a lot she pointed to a big pond and told me that the girl was there. I was confused and asked her - how? And then it struck me - her daughter was found dead in the pond after three days of her marriage.

I knew that she would have been raped again in the name of marriage. I was

disappointed that I could not save her. I came home and went into depression for several days. My grandmother was my mentor. She told me that it was up to me to take a decision. The pain that I was experiencing about the death of that child could either destroy me by going into depression which would never bring that child back. Or else I could convert this grief into positive energy of the same intensity with which I could prevent any girl or woman from dying of rape. That would be the biggest tribute to that girl. And that was my turning point. My grandmother told me this when I was only 14 and she told me to grow up and learn about the laws that could save these girls. That day I decided that I would learn the law - not to become a lawyer and earn, but to become an advocate to do the advocacy for such people.

Question: What are your upcoming projects and plans?

Renu Singh: I can't say about any upcoming plans as such because I live in the present but I have a vision for the future, not to grow materially. We are the only helpline in the north of India. It's a tele-helpline and also a physical helpline. Our tele-helpline is open 24/7 to which any woman can call and seek information, advices, legal rights and laws about women's rights. If a person is in distress, she can ask ways to get out of the distress. It's also a rape crisis centre. If any woman is raped and she has nowhere to go she can always come to our centre just by writing a request letter to us. We keep her for 5 years and groom her as a lawyer. She would be sent to study law and become a lawyer by qualification and we then help to register her with the bar council. Then she is free to practice law anywhere she wants and if she wants to join us as a volunteer she can join us too. You will be surprised to know that in our organization SAMADHAN, we have more than 7000 women now. Almost 80 women are working on a daily basis and we have place for only 50 women.

But you will hardly spot the difference between an inmate and the staff. There are many volunteers from Amrita University too - at least 50 volunteers are from Amrita University. They are my eyes and ears. If anyone is founded sexually exploited, they report to me.

Question: What are you most proud of?

Renu Singh: Honestly speaking, I am very proud of being Amma's child. It is the best thing in my life. Secondly I am very proud of being myself and not wearing any 'mask'.

Question: There was a controversial case regarding a few politicians that lead to the death of your father. Can you tell us about it?

Renu Singh: Yes, That incident took place in 2008. A little girl was raped by 5 men and after being raped she was constantly molested for the next 60 days by the same people and some others too. Later she was rescued by us.

By the time we rescued her, her kidneys were already damaged. In addition to this, she had multiple infections, a collapsed anus and a severe infection in her uterus. Her weight was only 28kg. She was in a very bad state. Her family was not willing to accept her. She was therefore with us but there was tremendous pressure from the state government to release her. We were not just threatened, we were physically tortured. My husband was abducted and tortured too but we never gave up because I was very clear about my decision that I would not give away the girl.

We were constantly forced by the government to disown the girl but we kept motivating and helping the girl instead. We started giving her medical treatment and she came out to be a beautiful person. Now she is a lawyer, an activist and also a mother of a child. She is living a very good and productive life.

When you defend somebody, the makers of violence feel offended and take brutal revenge. I lost my father to one such incident. I usually try to keep away from the negativities of the unpleasant memories I lived.



Rape is an accident which can even happen to a man too. But when men are raped he won't be questioned or troubled by anyone and when a girl gets raped the whole world starts asking questions "why?" We are living in a world where women are supposed to be special.

At one point of time, they never considered the case in the court of law and it came to a point where I had to choose between a peaceful life or the pressure that I was facing due to my decisions. As a protest to the house arrest that I was put in, I consumed more than 200 pills of sedatives and after consuming them I was in coma for 78 hours. This is not to give out a wrong message. I did this only because I was kept in house arrest and was not allowed to meet anyone. It was a miracle that I survived because there were no activities inside my brain and still Amma kept me alive. After this incident, the case came into proceedings and everything started to go in the right direction. And it was only Amma who I could trust that time and my trust was always kept by her.

There is a saying that "time always heals". That bad times won't last forever. The case turned in our favor. It was a moment for us to rejoice. Even now so many girl victims meet this girl and look up to her. They believe that if she can survive such a bad incident then everyone can.

Amma had once told us that anything may harm our body but nothing can damage what is inside us – our mind. This strength is what we need to imbibe.

Question: Being the founder of one of the prestigious and well known NGOs "Samadhan", what are the threats that you face?

Renu Singh: Almost all over the world, no human rights defenders are liked by the offenders. So, "Samadhan", being an organization protecting women who are victims of abuse, has had to face its share of bad treatment. Sometimes we are treated worse than rapists even – that is the height. Isn't it? We are fighting against women abuse and we are treated worse. An irony indeed.

The society started changing their view on us only after the Nirbhaya case prior to which we were called names. They called our girls prostitutes. They

would ask me why I kept these victims of bad character. They would say that I shouldn't be moving around with them and so on. Even today, conservative people ask me why I chose to go in this path after becoming a good lawyer, that I could have joined in the high court or Supreme Court and practice like the other lawyers do. I cannot change their minds but I am very sure that time can. I have seen change over the past 40 years. There was a time when students and their mothers and teachers used to tell - don't talk to these people because they work for rape victims and they are bad people. But today I am sitting here talking to you and we have received so many prestigious awards. That is all Amma's grace. It is good that people are understanding now that it is not a woman's fault if she is raped.

Rape is an accident which can even happen to a man too. But when men are raped he won't be questioned or troubled by anyone and when a girl gets raped the whole world starts asking questions "why?" We are living in a world where women are supposed to be special. However, in our society, a girl is always taught to be silent. This culture of silence is a shame that is forced on Indian women. It has to be cast off because this culture won't take us anywhere. Neither will it help us cope with the changing times nor will it help us build a happy nation.

So I always say, break the silence and stop violence.

Question: At your NGO, you give training to students, how is the training given?

Renu Singh: We have to sustain ourselves. NGO doesn't mean that it works by itself; we also need to sustain it financially. It is a challenge to work against powerful people and their dirty ways and crimes. It is very clear that if we go for government grants, people won't let us live so if we depend on just government grants, we will be in trouble all the time. We would have to go for compromises in many places and

we wouldn't be able to sue the powerful people. In view of this, right from the beginning, we give many training sessions like self defense training, inclusive democracy and women empowerment - about 12 different training areas in the "Samadhan" NGO. The specialty of the programs is that a person who has never gone to school or a woman who has never ever seen a school can join any of our programs such as in graduate level, diploma level or post graduate level. They don't have to be formally educated in a school, all they need to know is little bit of Hindi and little bit of English. Some people can't write but can speak and that is enough. Some programs are kept totally free of cost which we provide for women who are in distress. There are certain programs through which we train the other organizations. This money helps us meet our expenses to a large extent. There are other programs too: I write for the columns of newspapers and I write books and the money from there is also utilized for the expenses. From the last 40 years we have come out as very powerful trainers. So we create master trainers who create other trainers, that is how we work.

Question: Do you offer internship for students?

Renu Singh: Yes, we have internship in various streams. In the law category, there is an internship called Arjuna where we take internship for MBA, BTech and MTech streams. There is an internship for clinical psychology where we have got lots of people from more than 39 universities all over India. We also have an internship in mass communication which has attracted students from that area as well. We train people to be good reporters thus leading them to be good media persons, which is actually the need of the hour. We also have the human rights and development internship. There are 4 prominent programs, the biggest program being held from May to July annually. Every year, we promise to

Amma that we would give away more than 101 very good Abhimanyus who will play Krishna in future.

Amma gives us her blessings and all our internship programs are excellent.

Question: So we have come to the last question. What would be your message to the our students?

Renu Singh: I would say that the youth of India have to be included in the democracy, the inclusive democracy that I mentioned earlier, and not just restrict themselves to voting. Inclusion means total participation into the criminal and social justice system. If all the youth get together, there are so many things which they can change. They have to stand against the violence being perpetrated in our society. If the youth stand firmly against violence I am very sure that no one can say no to them because they have the power.

For the next 50 years they have the power to do and they should break the silence where ever they see violence. That is more than enough. They don't need money for this, they don't need any special power for this. Just say "NO" to violence. The youth should have the guts to react. That will make a lot of difference.

All my interns, on returning after their experience with "SAMADHAN" go back and start their own NGOs. They have established their own NGOs in their villages and are doing extremely well. So, based on their request, 10 years ago, I started another project that is doing very well. These youth can come back for 7 days and can do the NGO management training program with us, we train them in law and account keeping, on how to raise funds and how to maintain it. They come to for training and go back equipped with more skills. I am proud to say that more than 500 NGOs have come out very strong in this way and these are all run by youth in the age group 20-22 years.

At SAMADHAN, we have a humble setup where we can accommodate

50 people. We are not always full to the capacity, since girls keep coming and going. They come in groups and we train them. We have groups from Karnataka, Kerala, Jammu and Kashmir etc. We have one Muslim university sending us a large number of students who are Muslims to learn about democracy. I sincerely hope that the students become a positive minded group who wish to see the betterment of India. You won't believe - they even do Soorya Namaskar with us. They also wear rudraksh after knowing the scientific reason behind wearing it. There are 78 women right now, the oldest one being 80 years of age. She comes from a slum community where many women never saw the open sky or never got the smell of fresh air as they were always forced to stay in the house. So she is the oldest women who appeared for the exams for 8th standard and it was a celebration when she passed the exams. After that, all the women who were in that particular slum started coming and attending classes here and now they are studying the main stream subjects. If we train the women and the society properly, the threats posed by terrorism can be avoided to a large extent. I really don't plan for the future because the future is very unpredictable. But atleast I hope we make India a violence free nation one day. It's not just rape which is the problem; it's the post rape distress. The victims are forced to face dirty remarks, run from one lawyer to another lawyer. A girl in Uttar Pradesh fought her case for 27 years and she died on the day the verdict came. She fought for 27 years to get her rapist punished and her rapist was sentenced to only 2 years imprisonment and she died in the court. This kind of justice system has to be changed. It shouldn't be so painfully slow. So I feel sending these victims to study law is a blessing because it will also help them to fight their own case and help others too. ♦

Aishwarya Satish,
S9 Integrated MA English

EATING TWICE A DAY FOR GOOD HEALTH: ANCIENT AYURVEDIC WISDOM REDISCOVERED



In Ayurveda, it has been mentioned that heavy food should be taken in the morning and light food in the evening.

There are interesting research studies, albeit exploratory in nature that lend support to the insights of our ancient masters in prescribing a healthy diet. We will discuss the results of some of these studies in the light of the prescriptions given in the classical Ayurvedic texts.

सायं प्रातरमनुष्याणां भोजनं शुतुचिदतिम्। नान्तराभोजनं कुरुयात्.....

Our texts recommend eating only twice a day with no food in between.

The usual practice is to have the first meal a little late in the morning and the second meal before sunset. Many studies have demonstrated that restricting the time window within which one eats, and extending the amount of time of fasting has definite health advantages. A few years ago Prof Satchidananda Panda, from the world-famous Salk Institute in California,

subjected hundreds of mice to different lengths of daily fasts, ranging from 12 to 15 hours. Again they found that the mice that went for at least 12 hours without eating remained healthier and slimmer than those who ate the same number of calories, but spread out.

These findings corroborate with the Ayurvedic dictum that eating before the previous meal is digested is the cause for obesity and other diseases.

Until recently, such studies were not carried out on humans. Sixteen volunteers were recruited for a 10-week study run by Dr Jonathan Johnston at the University of Surrey.



The blues, who were the control group, were asked to carry on as normal. The reds were asked to stick to their normal diet but move their breakfast 90 minutes later, and their dinner time 90 minutes earlier. This meant that for three extra hours each day they went without food (fasting). Everyone kept a food and sleep diary to ensure that they were eating the same amount as normal. What we found is that the group who had eaten breakfast later and dinner earlier had, on average, lost more body fat and seen bigger falls in blood sugar levels and cholesterol than the control group. The first randomised trial carried out in humans assessing

the impact of time of eating and the gap between meals point in favour of avoidance of snacking in between meals.

Even more interesting is the correlation between observations of outcomes based on specific meal timings. The recommendation from modern researchers that "If you must have that fry-up, have it for breakfast" resonates with the ancient observation that even if there is some indigestion of the food taken in the morning, it will not affect the meal taken in the evening - प्रातराशे तवजीरणेऽपसायमाशो न दुष्यतां।

Modern researchers opine that our bodies really don't like having to have

to deal with lots of food late at night. A midnight snack will have a worse impact on your body than the same food eaten earlier in the day. This statement faithfully echoes Vagbhata's words - If the food taken in the night does not get digested, then it will definitely affect the digestion of the food taken the next day - अजीरणे सायमाशे तु प्रातराशो हद्विष्यतां।

Blood tests have shown that after the morning meal the blood sugar level returned to normal pretty quickly, while the levels of fat in the blood began to drop after about three hours. In the evening, however, after exactly the same meal, the blood sugar levels

stayed high for much longer and the fat levels in blood were still rising four hours after eating.

In the Aanangasangraha, Vagbhata gives a detailed explanation, which is actually a summary of what has been elaborated in Carakasachita -

दवि परबुधयतेऽर्केण हृदयं पुण्डरीकवत्।
तसमनि विद्युदधे स्रोतांसि स्फुटतवं यान्तं
सर्वशः॥

वयायामाच्च वचाराच्च वक्षिष्पित्वाच्च
चैतसः। न कलेदमुपगच्छन्ति दिवे तेनास्य
धातवः। अक्लनिनेष्वन्नमासकित्मत्यन्
तेन न दुष्यती अवदिग्धेषविपयस्वन्यत्
संमिश्राते पयः॥

In the daytime, the heart becomes awakened just like the lotus at sunrise. When the heart is wakeful, the channels of circulation become efficient also due to activity of the body, thoughts and the active state of the mind. Therefore, the elements of the body remain fresh during day time. The food that is consumed during day does not become stale in the body just like fresh milk poured into uncooked milk.

रात्रौ तु हृदये मलाने संवृतेषु यनेषु च।
यान्ता कोष्ठे परक्लेद संवृते देहधातवः॥
कलनिनेष्वन्नदपक्वेषु तेष्वासकित्म
परदुष्यती वदिग्धेषु पयस्वन्यत्
पयस्तपेष्वविरप्तिम्॥

नैशे तस्मादजीरणेऽनने नान्यदभुज्जीत
भोजनम्॥

In the night, the heart becomes dull and the circulation is sluggish. The elements of the body become stale and the channels are clogged with secretions. When food is consumed in such a condition, it becomes stale just like fresh milk added to milk that has already been cooked. Therefore, one should not eat if the food taken at night has not been properly digested.

The modern studies quoted above echoes the statements from the classical Ayurvedic texts.

The Mahābhārata poses the question "How does one become a person who is fasting perpetually?" - कथं सदोपवासी स्यात्।

The answer given is that by not eating in between the morning and evening meals and between the evening and morning meals, one becomes a person who is fasting perpetually (sadopavāsi). अन्तरा प्रातराशं च सायमाशं तथैव च। सदोपवासी च भवेद् यो न भुड्कते कथञ्चन॥

In the treatment of fever, evening is recommended as the ideal time for taking food because by evening, kapha will decrease and the digestive fire will become strong - सज्वरं जुवरमुक्तं वा दनिन्ते भोजयेल्लघु। शलैष्मक्षयविद्धोषमा



बलवानलस्तदा॥ This means that a patient afflicted with fever should wait till evening when the digestive fire becomes strong to eat food. However, the text also gives exceptions. If the individual gets hunger, then food can be taken also at other times. The influence of the geographical location and the habits of the individual should also be taken into consideration when deciding the time to feed the patient -

यथोचतिऽथवा काले देशसात्मयानुरोधतः॥ Thus, the principle is that food should be taken only when the hunger is well developed. So what can be done if the patient does not develop hunger?

Should he fast indefinitely? Definitely not. In such a case, to preserve the strength of the body, the patient can be fed in the morning. Even a person with a weak digestive fire will not suffer from indigestion if food is taken in the morning - प्रागलपवहनरिभुज्जानो न ह्यजीरणे पीड्यते॥

We can see from this discussion how deep and insightful the Ayurvedic concept of balanced nutrition is. The ancient seers understood the effect of food taken during different times of the day as well as the importance of fasting between meals. Not the least, the importance of having a heavy breakfast and a light dinner. These are facts that are being rediscovered by modern scientific research today. Ayurveda advocates a comprehensive approach to treatment that incorporates not just medicine, but also diet and lifestyle. At one point in its evolution, the Ayurvedic texts also postulated the doctrine that there is no use of medicine if diet is well regulated and what is the use of medicine if diet is not well regulated - पथ्ये सति गदारतस्य कमीषधनषिवणैः। पथ्येऽसति गदारतस्य कमीषधनषिवणैः॥

Ayurveda is a treasure trove of insights into dietetics that is under explored and needs to be revisited with an open mind.

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TOWN PLANNING IN ARTHASAstra THE INFRASTRUCTURAL SAGACITY OF KAUTILYA

The Purusarthas or the four supreme aims of human life as dictated by the Hindu scriptures viz. Dharma, Artha, Kama and Moksha encode the

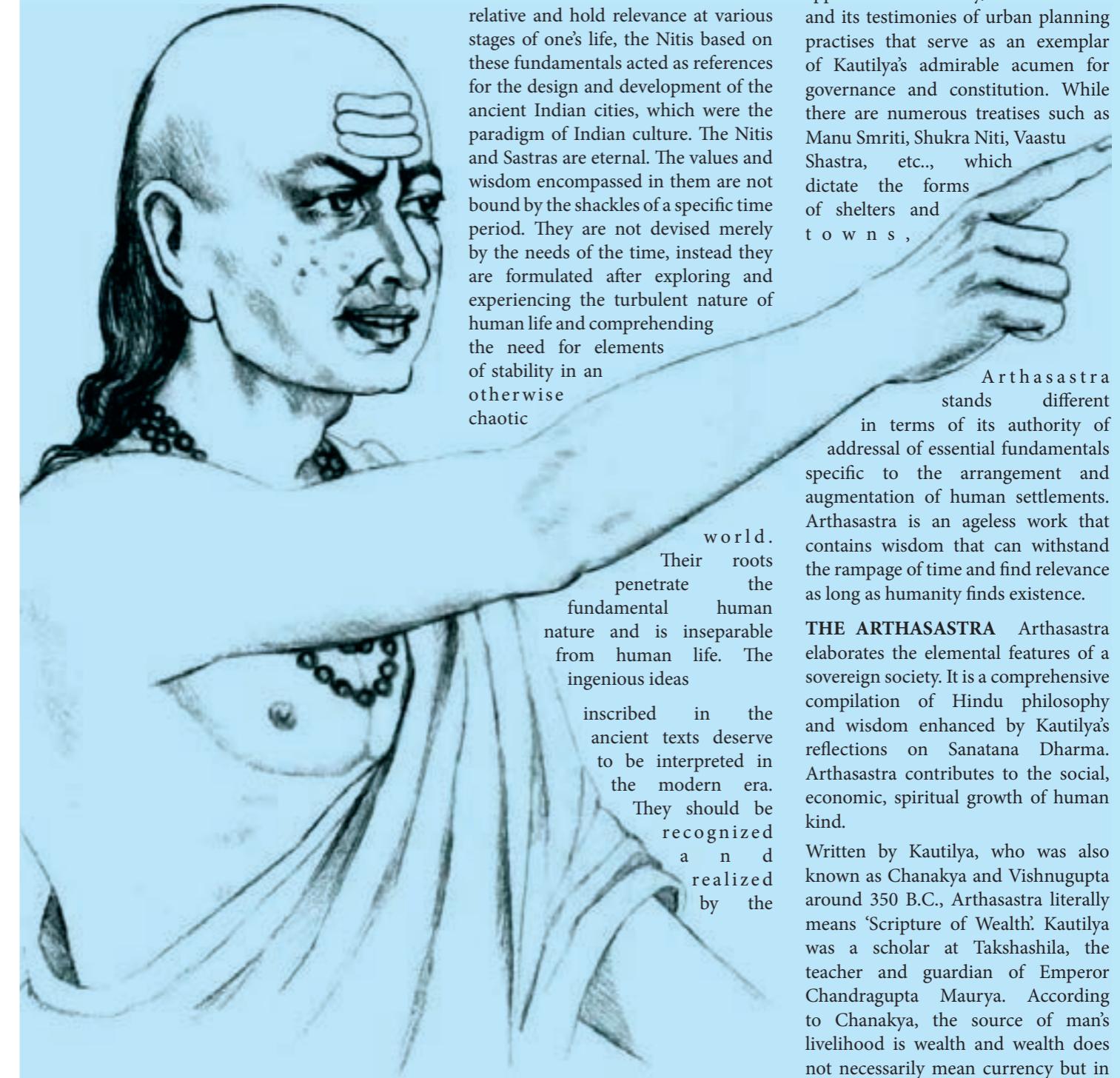
essence of moral constitution, material achievements, gratification of worldly pleasures and attaining salvation. While all these fundamentals are relative and hold relevance at various stages of one's life, the Nitis based on these fundamentals acted as references for the design and development of the ancient Indian cities, which were the paradigm of Indian culture. The Nitis and Sastras are eternal. The values and wisdom encompassed in them are not bound by the shackles of a specific time period. They are not devised merely by the needs of the time, instead they are formulated after exploring and experiencing the turbulent nature of human life and comprehending the need for elements of stability in an otherwise chaotic

modern society to establish order in today's society of disarrangement and discord. This article is an attempt to appraise a master treaty, The Arthashastra and its testimonies of urban planning practises that serve as an exemplar of Kautilya's admirable acumen for governance and constitution. While there are numerous treatises such as Manu Smriti, Shukra Niti, Vaastu Shastra, etc., which dictate the forms of shelters and towns ,

Arthashastra stands different in terms of its authority of addressal of essential fundamentals specific to the arrangement and augmentation of human settlements. Arthashastra is an ageless work that contains wisdom that can withstand the rampage of time and find relevance as long as humanity finds existence.

THE ARTHASAstra Arthashastra elaborates the elemental features of a sovereign society. It is a comprehensive compilation of Hindu philosophy and wisdom enhanced by Kautilya's reflections on Sanatana Dharma. Arthashastra contributes to the social, economic, spiritual growth of human kind.

Written by Kautilya, who was also known as Chanakya and Vishnugupta around 350 B.C., Arthashastra literally means 'Scripture of Wealth'. Kautilya was a scholar at Takshashila, the teacher and guardian of Emperor Chandragupta Maurya. According to Chanakya, the source of man's livelihood is wealth and wealth does not necessarily mean currency but in



fact, it refers to the diverse activities performed by the citizens in order to sustain themselves and their families. It places a great emphasis on the welfare of the people and delegates the ethics and morality of urban living. Kautilya's magnum opus covers a wide range of topics such as statecraft, politics, military warfare, law, accounting systems, taxation, fiscal policies, civil rules, internal and foreign trade, etc. Subjects including medicine, gemology, metallurgy, measures of length, tables of weight and divisions of time etc. are discussed in detail. The document also illuminates the path of evolution of urban studies in ancient India. It provides an insight into assessing and enhancing the capacities of the states in shaping the lifestyle of the society through its policies and measures.

THE KAUTILYAN COUNTRY

To completely imbibe the economic policies and social structure advocated by Kautilya, it is significant to surmise the attributes of the country he envisaged. He was a revolutionary thinker who did not conceive mere kingdoms but instead a complete nation in all its glory and grandeur. This makes it critical to visualize the Kautilyan country. He attributed natural features like mountains, valleys, plains, deserts, forests, lakes and rivers as the frontier regions, thereby boosting the defence

of the nation. The diplomatic and the foreign relations policies mentioned in the Arthashastra provides enough evidence to concur that the state visualized by Kautilya could be as extensive as present day India. The country thus defined was divided into four provinces with a town acting as the headquarters of each province. The main city was fortified and located in the central part of the country with a perennial source of water. Forests for recreation and economic benefits were grown adjoining to the countryside. The frontier regions in the Kautilyan country were marked with elephant forests and untamed jungles. The jungles were inhabited by the tribes who

possessed the knowledge of regional geography and its use in warfare. These tribes were given certain special rights and were not completely under the control of the king. Yet another salient feature of Kautilya's governance system that puts modern day systems to shame is the impinging regulation prescribed for environmental and animal welfare. It is also possible that the tribes could have been given the rights over the natural resources in areas they inhabited. Thus we can observe emanations of his genius all throughout his masterpiece that proves that he was a gem of a scholar who was able to look into the future and tackle the problems of tomorrow, today.

ON URBANIZATION AND URBAN MANAGEMENT

The conceptualization of urbanization should be grasped with great attention to practically implement the multifarious aspects of urban planning discussed in the Arthashastra. Kautilya outlines a well-defined hierarchy of the urban centres and the administrative divisions. These divisions are shaped by the size of the population and the resources available in the region and the opportunities for economic development. The smallest structural unit was a village consisting of not less than a hundred families and not more than five hundred families of the members of the agrarian community.

He also envisioned a certain standard of life for the inhabitants by specifying population density and a variety of buildings in various parts of the town. Kautilya encourages migration to the countryside in order to prevent overcrowding into the cities. This ensured a control over population as well as hazard risks in city centres. The aim was to redistribute the population across the nation ensuring equality. By making sure that the population did not remain concentrated in particular cities or national capitals, Kautilya provides an impetus for the integrated and comprehensive growth of the regions. Such outward regions were known for their well-developed

agrarian economy. He also advocated the formation of thickly populated places either on new sites or on old ruins thus building up a human capital and advancing economic generation through trade. He took steps towards building foreign policies with the immigration of foreigners into the country for developing human resources and knowledge sharing. However, the arrangement of various settlements within a region was essentially based on the resource profile of that region and their strategic positions for defence. The order of the settlements was also guided by the criticality of their position with respect to the defence policy of the ruler. A cluster of around eight hundred villages was to be centered by a *sthāniya* (a fortress of that name), four hundred villages by a *drōnamukha*, two hundred villages by a *khārvatika* and *sangrahana* in the midst of a collection of ten villages. These centers acted as town halls or probably like the hierarchical local governing authorities supporting the administrative Functioning of the state.

LAND DIVISION On the aspect of land division, Kautilya regarded land with rich environmental resources such as forests, soils for agriculture, minerals etc; as very valuable commodities. Depending upon the productivity of the soil, he demarcated suitable uses for such lands. The pasture grounds were to be provided only on the lands unfit for cultivation. He classified land according to the amount of rainfall it receives. Kautilya's intelligence knows no boundaries; he even suggests crop patterns to follow on each of such categorized lands. In order to truly amplify the productivity of the land, Kautilya notes the importance of human exertion more than the actual quality of the land. Kautilya says that, 'the value of land is what a man makes out of it.'

Boundaries of settlements were to be denoted either by a river, a mountain, forests, caves, artificial buildings or by trees. The units for manufacturing

goods based on forest products were set up in the proximity of forests usually on the outskirts of the settlements. But the forests with elephants were to be protected and were to be separated from wild tracts as well as the timber forests, specifically designated for exploiting timber resources and procuring all kinds of forest produce. Kautilya had devised policies to ensure the protection of wildlife and forest resources giving a paradigm of sustainable state planning.

While anticipating the social as well as safety concerns arising from rise in population, Kautilya prescribed a set of regulations for settlement layout and building byelaws. Adhering to some extent to the ancient treatises and traditional knowledge systems, he promoted the principles of *Vastushastra* pertaining to the form and layout of settlements. Although Kautilya mocks the belief in planetary positions as means of leading a prosperous life and gaining wealth, he recommends the traditional settlement layout based on *Vastushastra* to exploit social beliefs and gullible people. Of all descriptions on building construction methods, the one on defense structures is well elaborated. Buildings of residential use were specified to be built of wood. Since the region Magadha was prone to earthquakes, wood must have been specified mainly to minimize the risk of casualties during earthquake.

DISASTER MANAGEMENT According to Kautilya, a variety of calamities can afflict the population of a state as most people lived in the countryside outside the fortified town. Town or the fort was usually well planned compared to the outer settlements. Calamities by men are numerous and include depredations of armies, internal strife, and decadence, harassment by queen, mistresses, princes, important ministers, rebellious guilds or chiefs, dangers from forests especially from one with elephants. Calamities due to acts of god are fire, floods, diseases and epidemics and feminine. Other calamities could

include 'divine origins' like rats, wild animals, snakes and evil spirits. Corresponding deities have to be worshipped in order to ward off such dangers. This philosophy is rooted in the Hindu religious philosophy on environment conservation and the five elements or the 'Pancha Mahabootas.'

Deliberating on the relative seriousness of the calamities, scholars opine that fire is more dangerous as destruction by fire is irremediable and that one can escape floods by wooden planks or swimming and damages can be

reduced. But Chanakya considers floods more serious than fire as floods may destroy hundreds of villages whereas fire destroys only one village or a part of it. He further mentions that during the rainy seasons the villagers living near the river banks shall move to higher grounds and shall keep a collection of wooden planks, bamboo and boats. Making a note on the civic responsibility he points out that persons carried away by floods shall be rescued using gourds, skin bags, tree trunks, canoes, boats and thick ropes. Owners of canoes shall be punished if they do not try to save someone in danger.

Responsibilities of the municipal administration and the citizens for preventing the fire outbreaks in more crowded cities are given in detail and the verses even mention subsequent punishments in cases of failing to follow the respective responsibilities. A sense of prevention and early warning system is enforced through these responsibilities applicable to all. It also stresses the importance of structurally sound houses and states that no one shall cause injury to others by the collapse of a rickety dwelling or an unsupported pillar or beam. With a view to warding off the evil consequences of rain, the top of the roof shall be covered with a broad mat, not to be blown by the wind. Neither shall the roof be such as it easily bends or breaks. Violation of this rule shall be punished Kautilya suggests that no land prone to famine conditions be taken over for any development. However,

the king may encourage any person trying to improve the conditions through various means such as developing forests or by not imposing any tax over such measures. During famine, the king shall show favor to his people by providing them with seeds and provision (*bijabhaktopagrāham*). He may either do such works as are usually resorted to in calamities. He may show favors by distributing either his own collection of provisions or the hoarded income of the rich among the people or by seeking help from his friends among kings. Or the king with his subjects may emigrate to another kingdom with abundant harvest or seashores or to the banks of rivers or lakes. He may cause his subjects to grow grains, vegetables, roots, and fruits wherever water is available. He may, by hunting and fishing on a large scale, provide the people with wild beasts, birds, elephants tigers or fish.

Arthashastra is a marvelous manifestation of the highest order of human intellect, materialized by Kautilya. His views on state governance and constitution have eternal influence for his rules are not shaped by the call of the times, but instead by the call of the mind. His astute understanding of the minds of men enables him to script instructions that can ensure the holistic development of human beings. But the absolute greatness of Kautilya can only be understood by studying his life up close. A man married to knowledge, his intellectual evolution enabled him to be a man of simple tastes, adhering to a strong and simple personal constitution. He lived the life of a hermit, finding serenity in calamity. His teachings, writings and life teach us the lesson that simplicity is the ultimate luxury. ♦

Arjun Anil Bhaskar
S5 Integrated M.A English

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"This is the ancient land, where wisdom made its home before it went into any other country... Here is the same India whose soil has been trodden by the feet of the greatest sages that ever lived... Look back, therefore, as far as you can, drink deep of the eternal fountains that are behind, and after that look forward, march forward, and make India brighter, greater, much higher, than she ever was."

- Swami Vivekananda