

Issue  
8

# इवलवित्

Knowledge beyond time ...



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VISHWA VIDYAPEETHAM  
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My dear children, being humble is not a sign of weakness. We should have the greatness to bow down even to grass. If you come to a river and are unwilling to bow down to the water (i.e. go beneath the surface of the water) and wash yourself, your body will remain dirty. By refusing to be humble towards others, we are preventing his or her ignorance from being destroyed.

AMMA



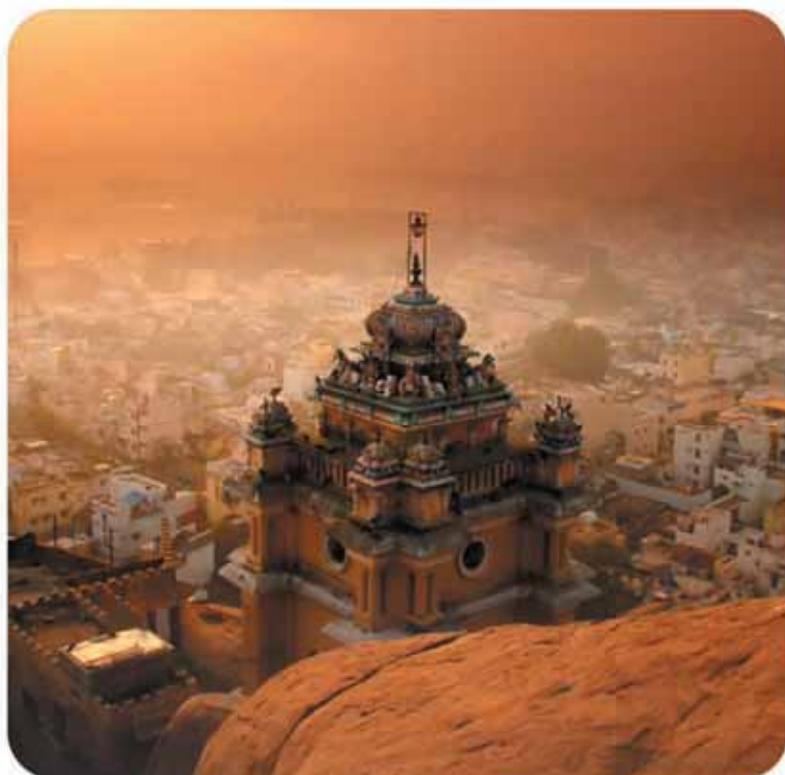
## Editorial

In this edition of Samvit, we take you through a journey across India and its rich and varied heritage. For many of the invaders, it was impossible not to be astonished by India. Nowhere on Earth does humanity present itself in such a dizzying, creative burst of cultures and religions, races and tongues. The amplified description of architecture, astronomy, mathematics and a number of other arts and sciences in our ancient scriptures still remain beyond any comparison. Rani Kivav, in Gujarat, is one of the most important step wells in India. Built between 1022 and 1063 AD and rediscovered in 1950 these step wells were used to provide water, shade and community focus. Chhattisgarh, a state in Central India is one of the richest areas in terms of iron ore deposits. The new forms in the craft reflect the realities of the changing times and a craftsman's response to it. The salient features of Aryabhata's astronomical ideas leave us in quest to search for more!! This edition will also deal with how the armed forces can be developed with time. As with equipment so with men, we face a leadership crisis in the armed forces, with a shortage of qualified officers to lead our men. One alternative as mentioned in the edition here is to use the military's sizable Non Commissioned Officers corps who can rise up to the challenge given the opportunity and the right kind of training. Our agricultural problems are also highlighted and suggestions given by Dr Devender Sharma, a renowned agricultural scientist of international repute. Conversations with Mata Amritanandamayi Devi, also lovingly called, Amma, on love and life will form an important part of the edition. Ayurveda later covered in this edition is a Sanskrit term, made up of the words "ayus" and "veda." "Ayus" means life and "Veda" means knowledge or science. The term "ayurveda" thus means 'the knowledge of life' or 'the science of life'. According to the ancient Ayurvedic scholar Charaka, "ayu" comprises the mind, body, senses and the soul. Bharat's sacrifice in the Ramayana, teaches all of us a great lesson. The single motto of Bharat's life was to follow the example set by Ram's ideal behaviour. He cheerfully carried out whatever task was given to him by Ram. None could match Bharat in his attitude of sacrifice, un-worldliness and devotion. He was as close to Ram as one could be. Hope that this edition will enlighten all of you and also give you an insight into the real India, its rich past, its exciting present and many more!!!!



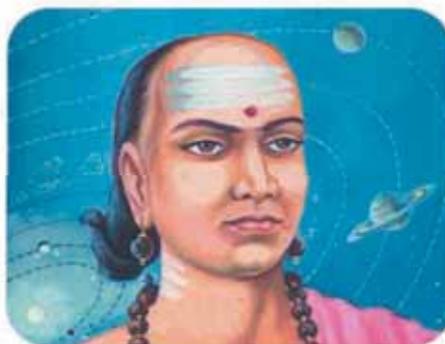
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Cover page : wall panel  
from 'Rani ki vav'

# The Indian Nation



There is a fairly large section of the Indian intelligentsia, that has considerable influence in the English media, academia and politics, who parrot the Britishers' claim that there never was a country called India till the British created it, let alone there having been an Indian Nation. They are what I call Macaulay's children. The nation state of India never existed nor does it exist now – that is their claim. What we have is a federation of states politically united for the first time by the British.

An English authority, Sir John Strachey, had this to say about India:

“... this is the first and most essential thing to learn about India — that there is not and never was an India or even any country of India, possessing according to European ideas, any sort of unity, physical, or political”<sup>1</sup>

The dictionary gives the meaning of ‘Nation’ as “a society united under one government in a single political state” and also as “a major group of people (majority) having common descent, history or language”.

This article aims to prove that Bharat/India was always a name that identified, geographically, the Indian sub-continent, that many large, politically united kingdoms existed in this sub-continent from ancient times and that there always was a historic and cultural continuity and unity among the majority of the population. Bharat/India is the longest surviving Nation-State on this planet.

I once asked a young undergraduate, one of the elite, very modern (Western) brand, that as an Indian, in

what way he considered himself different from an American or a Hotentot.

“My parents are Indian and I was born here, sir”, was his reply.

“A child born in Kochi, to American parents, is entitled to be called an Indian national. He has the rights of an Indian citizen. Can this child be called an Indian?” I asked.

“No, sir. I guess being an Indian has to do with culture, sir.” He answered with a wry smile. I think he understood what I was getting at.

India is a land of diverse regions, racial groups, cultures, languages and religions; but they all have the same cultural roots. There was always an underlying cultural interconnectedness between its various parts. There are differences but no separateness. All Indians, irrespective of their religious or regional affiliation who claim that their ancestors were among the original inhabitants of this land, cannot escape the fact that we all share a common history and are the inheritors of its cultural and civilizational heritage. This is what distinguishes an Indian from an American or a Hotentot. This is our Indian identity – our National identity. This is what makes an Indian different from many foreigners who have Indian citizenship. Without acknowledging this fact, there cannot be an Indian Nation. To substantiate this point of view, we need to answer a few questions that Macaulay's children are likely to ask.

Traditionally, the peninsular land mass south of the Himalayas to the Indian Ocean and from Baluchistan



**Was the great peninsular land mass, South of the mighty Himalayas always known as India? Or was it a name coined by the British? The word 'India' does not appear in the vast literature of the many different languages of the local people.**

in the West to the Eastern end of the Himalayas was historically known as Bharat or Bharatvarsha. It was referred to reverentially, from Vedic times, as Bharat Mata – Mother Bharat, the Motherland of all the indigenous inhabitants of this vast subcontinent. The Vishnupurāna defines Bhārata as the land North of the seas, South of the Himalayas, and where the people are called Bhāratī.

The Arabs and Persians were the foreigners who had established the closest and earliest relationship with Indians. To them Bharata was Al-Hindi. Hindi was the Arabic name for Sanskrit and Al-Hind – The land of Sanskrit. Eventually, for the Europeans, Al-Hindi became India. Another classical explanation for the origin of the term Hindu/India is that the Persians referred to the Sindhu river as 'Hindu', and the letter 'h' was later dropped by the Greeks. The Sindhu river became Indus and Hindi became India.

The Bhāratī peoples were not all alike. The fact that they were distinct people was also not unknown to the authors of the Purānas. That did not deter them from using a blanket term to refer to the peoples of Bhārata, for already, during the Gupta period, this pluralism had become an established feature of life in India and a defining feature of its Indian-ness. Already in the KūrmaPurana, we find the Hindu thinkers articulating the striking fact that the inhabitants of India belonged to different communities, worshipped different gods, and practiced different rites. Who are the Bhāratas? What is the Bhāratī santati (children of Bharat) If asked, the linguist Suniti Kumar Chatterji would probably have answered this question with his quote, written in another context:



Let us take as a definition of India/Bhārata as roughly that land where Sanskrit is spoken. What outsiders called Hind was what the locals considered as Bhārata.

***“Sanskrit looms large behind all Indian languages, Aryan and non Aryan. It is inseparable from Indian history and culture. Sanskrit is India. The progressive Unification of the Indian Peoples into a single Nation can correctly be described as the Sanskritisation of India”***

Sanskrit was the Hindī language, as far as outsiders were concerned. The earliest translations from Sanskrit to Arabic, carried out in the early days of the Baghdad Caliphate, referred to Sanskrit as Hindī.<sup>3</sup> The Persian poet Firdousi Toosi, refers to the language of the Kalilawa Dimna (Panchatantra) as Hindī. Al-Biruni, who wrote about the Islamic kingdom of Sindh and Mansura (Multan), made a distinction between the vernacular Sindhi language and the learned Hindī language (Sanskrit). Earlier, the Chinese pilgrim Huan-Tsang had referred to Sanskrit as the language of India.<sup>4</sup> Thus, observers familiar with the differences in the

colloquial speeches of India, referred to Sanskrit as the 'language of India'. There are many names for the Sanskrit language, but the only name which can be related to any territory or people is the name Bhārati. The Indian tradition preserves no memory of where and when the Sanskrit language originated. Unlike the Latin world, which remembers that the well-springs of the Latin language lie in the Italian peninsula, the Indic world has no such regional territorial word for its classical language. This would suggest that the Indic civilization has developed an organic unity, and if at all it was united by conquest in some remote period in history, that is now long forgotten. Bhārati now belongs to all of Bhārata that was once known as Al-Hindi and became India. Suffice to say that the British myth of "there was no India till the British gave this land the name" can be laid to rest.



**India was never politically united in the past. It consisted of countless warring principalities. How can we call it a single country? It was only the British who gave this region its political identity as India.**

Among the earliest political consolidations, was under the Mauryas from the 6th century BC to the 3rd century BC, when most of India was under their rule. After the Mauryas, there was repeated political consolidation of large parts of India, even when all of it was not under a single ruler. The Kanishkas consolidated the north from the Hindu Kush Mountains to Bihar and south to Gujarat and Central India. The Satavahana Empire, considered to be founded by high officials of the Mauryas, consolidated the south and central parts. The Gupta Empire again politically consolidated the area from Afghanistan to Assam and south to the Narmada, possibly exerting political control even further down south. Samudragupta led an expedition all the way down to Kanchipuram in present Tamil Nadu. While the southern areas were not formally

part of the Empire, they were quite likely de-facto vassal states, paying tribute to the Emperor. The only other major comparable empires in the world of this size at the time were the Chinese and the Roman. In comparison, the creation of the "United Kingdom", that includes Scotland, Wales and Ireland, is only a recent political event. After the Gupta Empire, the Chalukya-Chola dynasty consolidated most of India in the south, leading expeditions even up to the north of the Ganges river.

Later on, much of India would be consolidated again under the Mughals, and after that by the British. While the British were the last power, before the current state of India, to administratively consolidate its territory (as well as to divide it up as they left), they were by no means the first ones to do so, however they were the first to rule their 'Indian Empire' from outside the country.

Even when many principalities existed, they were not like the countries of today with all kinds of regulations on movement of goods and people. A continuous exchange of ideas, people, goods and scholarship took place throughout the sub-continent, largely unmindful of the boundaries of kingdoms. Furthermore, the territorial boundaries of India were largely maintained. There was a separateness and integrity to this land, unlike European countries or even Europe as a whole. Therefore, an idea of India emerges that was both separate and yet whole, in spite of frequent political change and shifting boundaries of its many internal kingdoms. The British were certainly not the first to politically consolidate the whole of the sub-continent.

Culture is the way of life of a people that live in a specific geographical area. Prior to the advent of Muslims and Christians, the inhabitants of this land were Hindus. Indian culture, whether the 'secularists' like it or not,



**India today has so many different religions, languages and cultures. How can we say that there is an underlying cultural affinity between its various parts.**

will naturally, have a predominantly Hindu flavour. Culture concerns matters of the heart – the Nations common value systems, that we may call Indian-ness that evolved over centuries and is characteristic of the ethnic people of this land, irrespective of regional diversity. Civilization, which is inclusive of culture, refers to the material well-being, standard of living, technological development, and the political and economic philosophy and activity of society. All social activity, be they political, economic or in arts, literature, social behaviour, customs and traditions, stems from our values. Indian Culture is, therefore, the value system that runs like a common thread through the length and breadth of our country. There are many factors that influence the evolution of a culture. In the case of India, the predominant factor was religion.

The fundamental basis of Sanathana Dharma, the religion of Hindus, if you can call it that, is Dharma. Dharma does not mean religion. The nearest English translation could be ‘inane law’ or ‘as nature intended it to be’. These truths formed the basis of our value systems and permeated into the subconscious of the collective Indian mind. This is what links all Indians, irrespective of region, religion, caste or creed. In its religious, civilizational, cultural and linguistic continuity, it truly stands alone. This continuity was fostered by its unique geography and its resilient religious traditions. Unlike any other country on the planet, it has retained these traditions despite both Islamic and Christian conquest, when most countries lost theirs. Whole of the Middle East – Persia, Mesopotamia, Babylon, Egypt and North Africa were completely converted to Islam within two decades. The whole of Europe were converted to Christianity within fifty years. The mighty Aztecs were vanquished, destroyed and completely Christianized. Yet Bharata stands. It stands in our stories, our languages, our pluralism and our unity. As long as we remember these stories, keep our languages and worship the sacred land of our ancestors, Bharata will stand. It is only if we forget these truths that Bharata will cease to be. That is precisely why the British tried so hard to make us forget them. Surprising enough, even the article in Encarta on nationhood recognizes that:

The Encarta certainly has not been ‘saffronasied’! It is merely stating the obvious.

The civilizational roots of India belong to all Indians, Hindus, Muslims and Christians. Indonesian Muslims

*“India is a nation in which the Hindu religion served as the cohesive traditional element in uniting peoples of various races, religions and languages.”<sup>5</sup>.*

don’t trace their civilizational roots from Arabia, but from the Indonesian culture developed over the centuries. As Saeed Naqvi writes, the Ramayana ballet is performed in Indonesia by “150 namaz-saying Muslims under the shadow of Yog, Jakarta’s magnificent temples for the past 27 years without a break”<sup>6</sup> -- Indonesians can apparently celebrate their civilizational roots without conflict of their being Muslims. There is no reason why Indian Muslim should feel any differently, unless misled by their own community leaders. That there can be no India without what has been called “Hinduism” does not mean that all the people have to “convert to a religion” called Hinduism to be considered as Indians. It also doesn’t imply that those who worship Allah or Christ as a religious idea are inherently lesser citizens or disloyal. Rather, it is simply recognition of the shared history and civilizational heritage that links us together as a nation.

The wide diversity of our civilizational beliefs and quest for knowledge and understanding cannot be confined to a religious dogma or belief system -- it belongs to all Indians. Further more, pluralism is a basic principle of Hindu thought, it leaves plenty of room for other beliefs within the framework of mutual respect — as long as these beliefs are not directed at destroying the roots of the very civilization that holds them together.

Hundreds of Indian Muslim poets have celebrated their civilizational roots — Abdul Rahim Khan-e-khan wrote poems in praise of Rama, in Sanskrit; Justice Ismail of Chennai was the leading authority on Kamban Ramayana; Kazi Nazrul Islam wrote powerful revolutionary poetry in Bengali replete with references to Kali.<sup>7</sup> In recent times, the script for the entire Mahabharata epic was written by Masoom Raza Rahi;

and who can ignore the inspiration that our Gita-reading president Abdul Kalam from Rameswaram is providing to the nation. Similarly, Indian Christians can be both Indian and Christian without denying their cultural roots. Says Fr Michael Rosario, who teaches Indology at St Pius: "As an Indian priest, Indian spirituality is my heritage and culture." Fr Michael Gonsalves goes a step further: "We must substitute the Old Testament of the Bible with Indian history, scriptures and arts. For us, the Holy Land should be India; the sacred river the Ganges; the sacred mountain the Himalayas, the heroes of the past not Moses, or David, but Sri Ram or Krishna."<sup>8</sup>

All these people have had no trouble in reconciling their reverence to Allah or Jesus without denying the civilizational heritage that binds us together. The converse of this is also true — that the way to break us apart is to systematically deny and denigrate our civilizational roots. This is exactly the tactic the British used in the past. Those engaged in converting the tribals in the North East over the last few decades, have been telling the Nagas that they don't really belong with the Indian civilization — despite the fact that the Nagas have a place in our stories as far back as the Mahabharata, when Arjun goes on a pilgrimage to the holy places of the east and marries the Naga princess Uloopi. Manipur, Tripura, Meghalaya, Assam and the other states in the North East are also mentioned in our ancient literature. The situation in Kashmir, spurred on by Pakistan, is also subversive. The argument used by all the movements aimed at breaking India is to deny the religious and cultural unity of the Indian people — whether it be found in movements inspired by colonial scholarship, communism, pan-Islamism or evangelical Christianity.

India always was a recognized geographical entity. The regional diversity of India is nourished by the same value systems. The majority of the population, irrespective of their religion, share a common history. Its present political unity cannot be destroyed. As Indians we have a distinct identity. We were always a Nation; we will always be one – the oldest surviving nation and civilization in human history.

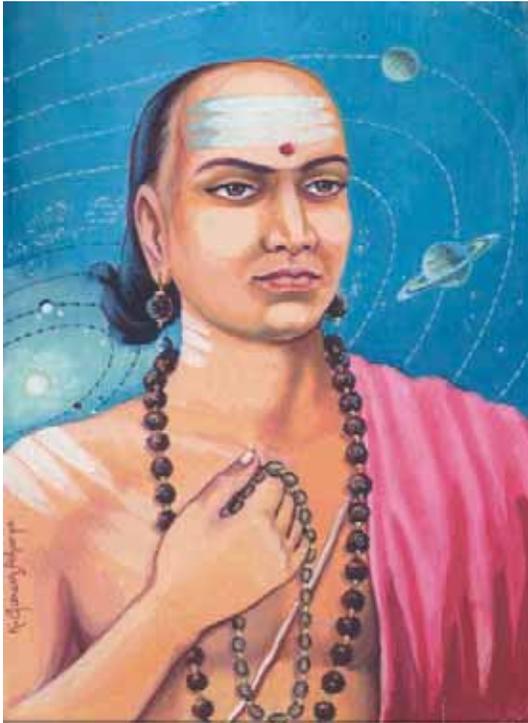
**LT COL K K Nair (Retd)**

30 JULY 2014

## Notes & References

- 1 Quoted in *The Fundamental Unity of India* (From Hindu sources), Radhakumud Mookerji, Longmans, Green and Co. 1914, pp. 5-6.
- 2 Quoted in "India — Nation State and Communalism." India Centre for Regional Affairs. 1989.
- 3 See for instance, Pahlavi, Pârsi, Dari: *Les Langues de l'Irand'après Ibn al-Muqaffa'*, by G. Lazard, in *Iran and Islam*, ed., C.E. Bosworth, Edinburgh University Press, 1971. Lazard points out that Ibn al-Muqaffa', who translated the *KalilawaDimna* (the Panchatantra fables translated from the Sanskrit) into Arabic, refers to Sanskrit as *al-hindiyya*. The same term is employed by Mas'ûdî (d. 956) in the *Murûj al-dhahab* (Meadows of Gold) when listing works translated into Arabic from various foreign languages.
- 3 Quoted in P.G. Bobb, *Muslim Identity and Separatism in India: The Significance of M.A. Ansari*, *Bulletin of the School of Oriental and African Studies*, Volume LIV, Part I, 1991, pp. 116-117.
- 4 For instance, Huan-Tsang notes that the language of the Buddhist scriptures in Kucha was "the language of India." (Thomas Watters, *On Yuan Chwang's Travels In India 629-645 AD*, (Edited by T.W. Rhys Davids, & S.W. Bushell, AMS Press, 1971, New York), p. 60)
- 5 State. Microsoft® Encarta® Reference Library 2002.
- 6 "Islam's Many Children" by Saeed Naqvi, *Indian Express*, June 21, 2002
- 7 Ibid.
- 8 "Indian Christianity: In search of the Christ within" by Suma Varughese. ■

# Aryabhata's Contributions in the Field of Astronomy



This article briefly describes the salient features of Aryabhata's astronomy and also mentions astronomical ideas of other cultures which bear some resemblance to those of Aryabhata.

Aryabhata (476–550 CE) was the first in the line of great mathematician-astronomers from the classical age of Indian mathematics and Indian astronomy. His most famous works are the *Aryabhatiya* (499 CE, when he was 23 years old) and the *Arya-siddhanta*. The *Aryabhatiya* is a great way to understand the greatness of Aryabhata's contributions in the field of astronomy. Aryabhata occupies the first position among the astronomers of not only India but the whole world by proving the Earth is moving around the Sun. This knowledge about the Earth, given by Aryabhata, was much beyond the imagination of scholars even 1000 years after his time. The astronomical system of Aryabhata consists of the following:

1. Recognition of the terrestrial rotation.
2. Optical explanation of the lunar and solar eclipses instead of the demonic *rahu-ketu* mythology.
3. A new *Yuga* system
4. Epicyclic-eccentric model of planetary system.

In *Aryabhatiya*, Aryabhata clearly explains the apparent motion of fixed stars with that of stationary objects and that of observer in a moving boat. In yet another of his verses he gives clearly even the angular velocity of the earth as one minute of arc per prana, i.e. in 4 seconds. It is also worth noticing that Aryabhata did not imply at all the orbital or heliocentric of the earth. This is evident from his other verses according to which the earth is situated in the centre of space, surrounded by the orbits of the planets, his order of celestial bodies being: the asterisms, Saturn, Jupiter, Mars, the Sun, Venus, Mercury, Moon and Earth. It is very interesting to note that such ideas of relative motion are also found in other cultures: In a Chinese text it is said about the orbital motion of the Earth: "The Earth... is always moving and is not still, as a man, who sits within a ship. The ship moves without the knowledge of the man." However his clear concept of relative motion was not accepted by many of the Indian astronomers thereafter.

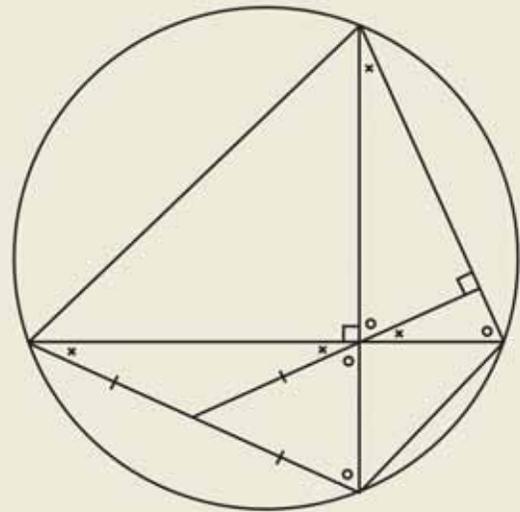
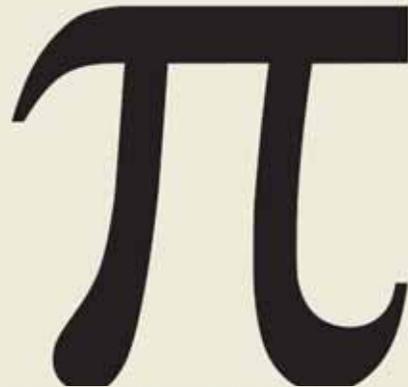
Another important change came about in the theory of the eclipses by Aryabhata. In pre-siddhantic astronomy *rahu-ketu* identified as pseudo planetary nodes of the lunar orbit, were supposed to cause solar and lunar eclipses. Aryabhata replaced this mythological explanation with a scientific one. This is evidently shown in the few verses of the fourth chapter of *Aryabhatiya* he introduces the idea of shadows, cast by and falling on the earth, moon and planets and in yet another verse in the same chapter he mentions that the lunar eclipse is caused by entering of the moon into the earth-shadow. He also gives the formulas for the length and diameter of the eclipses and/or the size of the eclipsed part of sun or moon. This theory was however later improved by other Indian astronomers.

Aryabhata is the first living primary Indian source in which the geometrical model of planetary motion is clearly presented. The prominent feature of this model includes:

- 1 Geocentric circular orbits for the mean planets, the true planets moving on epicycles or eccenters with equal linear velocities.
- 2 Equivalence of the eccentric and Epicyclic motions.
- 3 The sun and the moon is predicted to have only one epicycle(in Ptolemaic astronomy : a circle in which a planet moves and which has a centre that is itself carried around at the same time on the circumference of a larger circle) whereas the planets are said to have two epicycles.
- 4 To get the true longitude of the particular planet the mean longitude is to be corrected for the Epicyclic motions.

Aryabhata treated in particular planetary motion along the ecliptic. The topics include definitions of various units of time, eccentric and Epicyclic models of planetary motion, planetary longitude corrections for different terrestrial locations, and a theory of “lords of the hours and days” (an astrological concept used for determining propitious times for action).

Aryabhata ends with spherical astronomy in Gola, where he applied plane trigonometry to spherical geometry by projecting points and lines on the surface of a sphere onto appropriate planes. Topics include prediction of solar and lunar eclipses and an explicit statement that the apparent westward motion of the stars is due to the spherical Earth’s rotation about its axis. Aryabhata also correctly ascribed the luminosity of the Moon and planets to reflected sunlight.



## Other contributions:

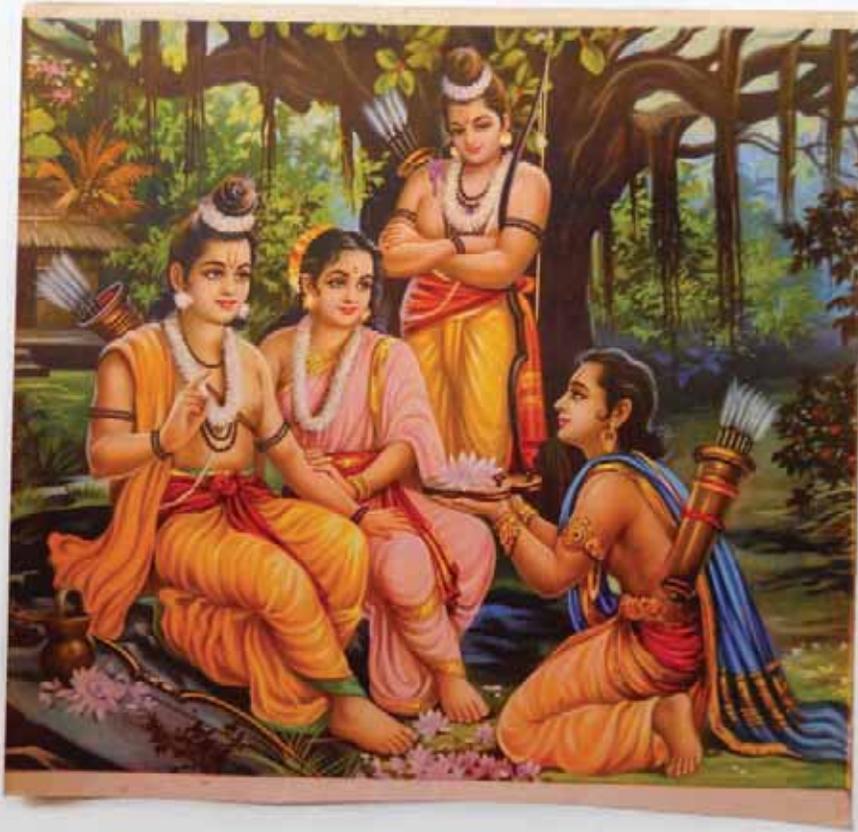
Aryabhata’s contribution to the field of mathematics is extremely significant. He gave a systematic approach to Arithmetic, Algebra and Trigonometry. He was the First mathematician who gave the value of  $\pi$  (pi) correct upto four decimal places.

Aryabhata gave a method to find the cube root of numbers and dealt with arithmetic, geometric and

indeterminate equations in algebra. He dealt with square, cube, triangle, trapezium, circle and sphere. Let us all remember this great scholar for his contributions to the world, thus making this world a better place to live in! ■

**Sudha Nair**  
S5 ECE-B

# Bharata



Generally Ramayana expounds Sri Rama's greatness and humility. But here, I would like to bring your attention to one of the noblest figures in the pages of Ramayana, "Bharata". On analyzing his behavior, he invokes a feeling of respect and admiration from each one of us.

In Ramayana, three great kingdoms, those of Ayodhya, Kishkindha and Lanka are spoken of. Curiously enough, in every case, it is the elder brother who loses the kingdom and the younger one who gets it. In the case of Kishkindha and Lanka, there is a struggle and the elder brother loses his life for the kingdom, the younger brothers' in both cases desiring the death of their elder brothers. But in the case of Ayodhya, not only does Rama, the elder brother, cheerfully give the kingdom up in favour of Bharata, the younger brother, but Bharata in his turn shows the same self-denial and wanted to give it back to Sri Rama. This was extraordinary, that brothers did not want the kingdom and valued each other more than they wanted the kingdom. Bharata had immense love and respect

for his brother Sri Rama. Although Bharata took the kingdom of Ayodhya as a trust on behalf of Sri Rama, he ruled for fourteen years under the mystic guidance of the sandals of Rama. When Sri Rama returned at the end of the exile, Bharata welcomed him and declared that his greatest desires have been fulfilled, that the greatest restoration of Dharma would take place. He himself put the sandals on Sri Rama's feet and said, "I am now returning the trust to you, the whole of it which you delivered to me as a deposit. My birth has now fulfilled its purpose. My desire is accomplished. I tried to make you the king fourteen years ago. But you would not come and take it. Well, this long period has gone and you have come back and I live to see what greater happiness is possible."

Then takes place one of the most wonderful incidents. Sugriva, Vibhishana and all the big monkeys stand about and watch this conversation between the brothers with great concern. This was a sight too strong for them to hear, too strong for them that it evoked strange emotions. They could not imagine it was possible for

any two brothers to love and respect each other so much. They wept to see the most wonderful thing take place.

Of Sugriva, Vibhishana and Bharata, certainly Bharata stands on a pedestal of his own. His utterances are all strong, decided and unequivocal. There is no hesitation about them, nothing tentative. While Lakshmana was just a servant, an instrument for carrying out Rama's purpose, Bharata was quite different. He would begin modestly but he would say what he felt without hesitation. He had individuality, a strong individuality and expressed it in such a manner that it drew great respect.

When Vasishta asked Bharata to take the kingdom after having performed the last rights of his father and be crowned king, Bharata says, "No, I don't want to do it." In the presence of the whole assembly he wept and censured Vasishta. He said, "I am surprised that a wise old man like you should try to persuade me to take the kingdom which belongs to my brother by the traditions of the Ikshvaku family." Now for a young fellow like Bharata to censure the old man in the midst of an assembly takes a deal of courage, a deal of self-confidence.

But, he was a very good man. When he was sent for by Kausalya, the queen naturally imagined that Kaikeyi's intrigue was agreeable to her son. As soon as he came, she burst out. She said that he was anxious to take the kingdom from her son, although this wasn't true. She even threatened to take the Agnihotra away so that the last rights could not be performed properly. Even Dasaratha said a couple of things to Bharata, one of them being, "If really Bharata desires to take advantage of his mother's misconduct and take the kingdom, then I will renounce him! I do not want that after my death he should do anything to gratify my spirit." Bharata was being blamed for a mistake he hadn't made. But he never over-reacted. Instead after Dasaratha's death, he met Sri Rama in the forest and asked him to offer something to their father's soul! He told his elder brother, "Our father has gone away. When you went away, the grief in his heart knew no assuagement and he always remembered you. So what you offer will be much more welcome than what I offered."

Bharata felt really guilty for what his mother had done. Hence, he told Rama, "If somebody in the family must be in the forest, let it be me. You go back. I will take your place. When I live in the forest, instead of

Lakshmana, Satrughana will live with me. Lakshmana will go with Rama and rule Ayodhya." When Guha, Rama's friend hears of Bharata's objective, Guha is completely satisfied and talks high of Bharata. He says, "You're so great that I am afraid I cannot see your equal anywhere." Now, these were instances that reflect the greatness and individuality of Bharata. But it is also seen that though he was very loyal and respectful to his father, he wasn't so with his mother. In front of other people, while he spoke high of Kausalya and Sumitra, he described his own mother as "very fond of herself i.e. extremely selfish". It is said that Bharata tells Kaikeyi that "Through you my father has gone and my brother has been exiled to the forest. Don't talk to me anymore, murderer of your husband. You are not the daughter of Asvapati. You have ruined the good name of your father's family. Why don't you fall into the fire and take yourself away? When I have brought back Rama and given his kingdom to him I shall have fulfilled my duty; that is one way I am going to wipe off the stain that you have put upon me, on my good name". This can be attributed to his high respect and regard for his brother Rama and what his mother had done to Rama. But Rama speaks of Kaikeyi most earnestly and advises Bharata not to hurt her in any way.



Thus Bharata is one of the most moral and principled characters in the Ramayana. We all should imbibe his good qualities and try to be better citizens of society! ■

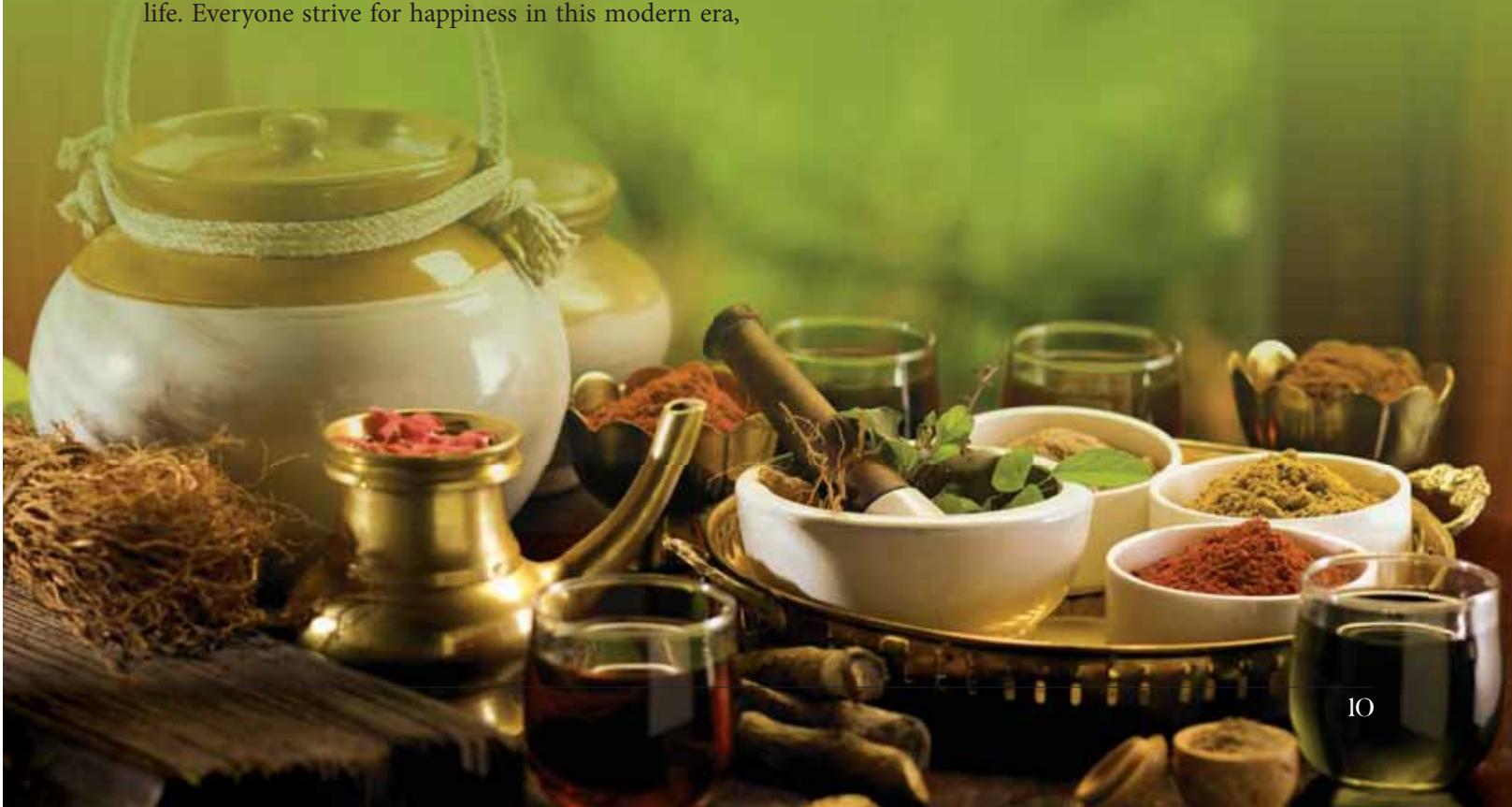
**Aparna R. S**  
S5 ECE

# Swasthavritta – A Lifestyle to Stay Healthy

Ayurveda is a science of life which originated and is practiced in India for more than 5000 years. It is as fresh and useful to the human body as it was in ancient times; in fact more relevant and applicable in these modern times. Ayurveda is not only a medical science but also a way of healthy living. Apart from prescribing treatment to various chronic and complex diseases, Ayurveda also emphasizes on an ideal method of healthy living. A special section of Ayurveda, Swasthavritta, deals with the science of health and the code for a healthy conduct.

The word Ayurveda is a Sanskrit word that evolves from the combination of two words, “Ayu” meaning life and “veda” meaning knowledge, i.e. Ayurveda provides knowledge to have a healthy and prosperous life. Everyone strive for happiness in this modern era,

no one likes to be unhappy. To have happiness one has to advocate the Purusharthas (life goals) in a proper way. In the beginning of his text Acharya Vagbada has clearly mentioned that health is the foundation (mulam) to achieve the four goals in life: Dharma (code of conducts, guidelines, purpose), Artha (money, prosperity), Kama (activities, actions, enjoyment), Moksha (liberation, nonattachment). To practice and fulfill these basic goals of life one needs good health. The body is the vehicle on which one rides to their destination. If the body is weak or sick, one cannot function properly and cannot achieve the goals of life. Therefore, for longevity, good health is very important. So one who seeks longevity has to follow the Ayurvedic lifestyle in a respectful and organized manner.





The prime motto of Ayurveda as per classics is the 'swasthasya swasthya rakshanam and athurasya vikaraprashamanam' i.e. preserving and maintaining the health of a healthy person and curing the disease of a diseased person. Ayurveda gives more stress on the importance of prevention of diseases. Swasthavrtha is the section which expounds on the necessary observance for preserving a healthy life. Since we are today facing with the problem of meeting with so many new diseases, the necessity of awakening the people to be conscious of their own way of life is more. Hence the guideline of Ayurveda as presented in the form of instructions in Swasthavrtha is very useful and more relevant to the times. The word swastha means calm or unperturbed by diseases or emotions. Vrtha means observation of rules. So Swasthavrtha is observation of the rules for a healthy life.

The world health organization (WHO) has recently modified and defined health as:

**'Health is a State of complete physical, mental and social wellbeing not merely an absence of disease or infirmity'.**

Ayurvedic classics which have written 5000 years ago have clearly defined swastha or healthy persons in a broader sense than above definition.

Susrutacharya has defined swastha as:

**'sama doshaha sama agnischa sama dhatu malakriyaha  
Prasanna aatma indriya manah swastha iti abhidhiyate'**

Word by word meaning

Sama dosha - The 3 body humors namely Vata, pitta & Kapha in equilibrium state

Sama agni - Normal digestive power (neither over nor less)

Sama Dhatu - The 7 supporters of body namely Rasa (The essence of food that we eat ), Rakta

(Blood), Mamsa (All type of Muscles, Fascia & Tendon), Medas (adipose tissue), Asthi

(Bones and Ligaments), Majja (Bone marrow and brain) and Shukla (Reproductive fluid - sperm and Ova) in normal state.

Mala kriya - Normal passage of 3 excretory products of metabolism namely Vit (faeces), Mootra (urine) and Sweda (sweat). All these features represents a healthy state of body. Prasanna Atma , Prasanna Indriya (



Pleasant 10 organs - 5 sense and 5 work organs) and Prasanna Mana (Pleasant mind) , clarity of intellect and contented senses is said to be established in oneself (svastha). Prasannata denotes happiness and equipoise. The second line mentions the healthy state of mind. Even the arrangement of words in sloka is important. That is balanced Dosha results in Normal Agni. Normal Agni results in formation of normal Dhatu. Normal dhatu formation results in normal excretion. Health or swasthya is therefore defined by Ayurveda is a state of equilibrium of normal anatomical, biological, physiological, mental and spiritual well being. Hence

Sama(balanced) state of dhatu, dosha, Agni, and mala is the reflection of Homeostasis in Ayurveda.

Ayurveda emphasizes that maintenance of health of mind and body is possible only if we realize that it is primarily dependant on our way of life. Daytime and night can be distinguished as of three periods. Day has dawn, noon time and evening as three periods. Night also has dusk, mid night, and termination period of night. These diurnal changes influence our body and mind. Similarly the stages of age as childhood, youth, and old age, also create differences in the nature of our responses. When we take food the reactions inside the body, at the beginning stage of digestion, at its middle stage and end stage are different. When the season changes there are corresponding changes in the body responses also. Our internal conditions and function also undergo changes when we are affected with emotions of happiness, sorrow, anger etc. all these changes alter the equilibrium of doshas and are capable of manifesting disease, so in order to tackle this Ayurveda have mentioned very judiciously the daily regimen as DINACHARYA - activities to curb the effect of disturbances of doshas occurring daily like Brahmamuhurta-jagarana (Wake-up just before sun-rise) ,Usha jalapanam(drink a glass of water),Malotsarga (Defecation and urination) ,Dantadhavana (Tooth-brushing), Jihva-nirlekhana (Tongue-cleaning) ,Mukha-netra prakshalana (Washing of face and eyes) ,Anjana (Application of collyrium) ,Nasya (Oily nasal drops) ,Sneha gandusha-dharana (Retaining oil in mouth) ,Dhumapana (Inhalation of medicated smoke) ,Vyayama (Physical exercise),Abhayanga (Body massage with oil) ,Sharir-parimarjana (Body cleansing) .Snana (Bathing). RITUCHARYA (diet and regimen to neutralize the seasonal changes) and SADVRTTA (advices to keep social and moral values. ■

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# Conversations with Mata Amritanandamayi Devi



**1 Question: Amma, what is the greatest lesson that one needs to learn in life?**

Amma: Be attached to the world with a detached attitude.

**2 Question: Amma, how can attachment and detachment go together?**

Amma: Attach and detach as you wish-Act, then let go and move forward; act again, then let go and

move forward. Extra luggage will make your journey uncomfortable, right? Likewise, the extra luggage of indiscriminate dreams, desires and attachments will make your life's journey extremely miserable.

Even for great emperors, dictators and rulers suffer horribly at end of their lives due to carrying such extra luggage in life. Nothing but the art of detachment will help you to be in a restful state of mind at that time.

Alexander was a great warrior who had conquered nearly one-third of the world. In his greed to conquer the entire world, he was defeated in a war and fell sick with a tremendous illness. A few days before his death, Alexander told his ministers that he wanted openings made on both sides of the coffin, through which his arms should be kept hanging out with the palms turned up. He wanted this to be done as everyone would come to know that the great Alexander who has strived his entire life to conquer and rule the world, has left it totally empty-handed. He has not even taken his own body with him.

After all, Children, we cannot take anything with us, not even our own body. So what is the use of feeling overly attached?

**3 Question: Amma, how does one learn to have pure, innocent love, as you say?**

Amma: Only something that is alien to you can be learned. But love is true to nature. Within you, there is a wellspring of love. Tap that source in the right way and the shakthi (energy) of divine love will fill your heart, expanding endlessly within you. You cannot make it happen; you can only create the right attitude within yourself for it to happen.

**4 Question: What is wrong with this world? Things don't look very good. Can we do something about it?**

Amma: There is no problem with the world. The problem is with the human mind-the ego. It is uncontrolled ego that makes the world problematic. A little more understanding and a little more compassion can create a lot of change.

Ego rules the world. People are helpless victims of their egos. Sensitive people endowed with compassionate hearts are hard to find. Find your own inner harmony, the beautiful song of life and love within. Go out and serve the suffering. Learn to place others in front of yourself. But in the name of loving and serving others, don't fall in love with your own ego. Keep your ego, but be a master of your own mind and ego. Consider everyone, because that is the doorway to God and your own self.

**5 Question: How does the Guru help the disciple to transcend the ego?**

Amma: By creating the necessary situations. In fact, it is the SATGURU'S (True Master's) compassion that helps the disciple.

**6 Question: Amma, what exactly helps the disciple? The situation or the Guru's compassion?**

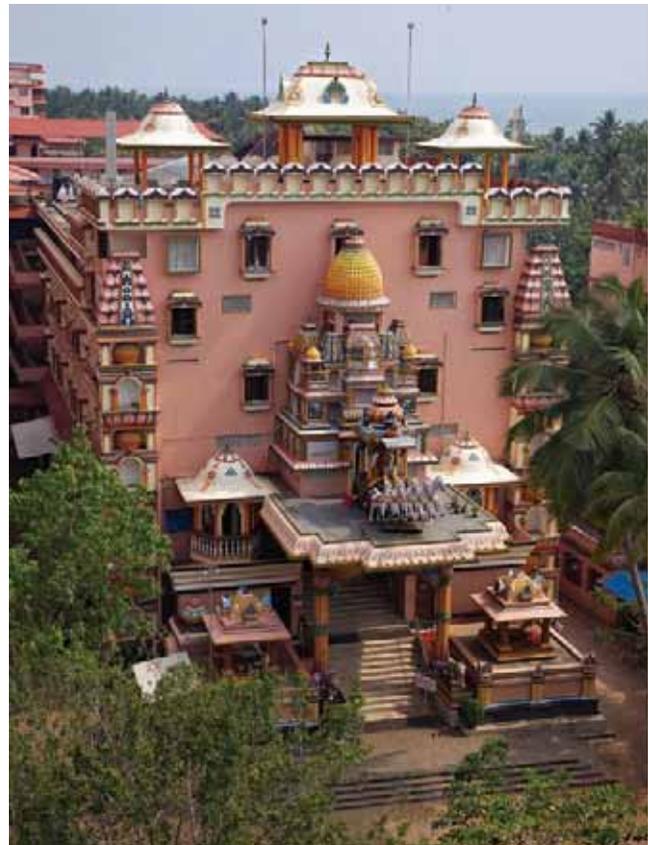
Amma: The situations emerge as a result of Guru's infinite Compassion.

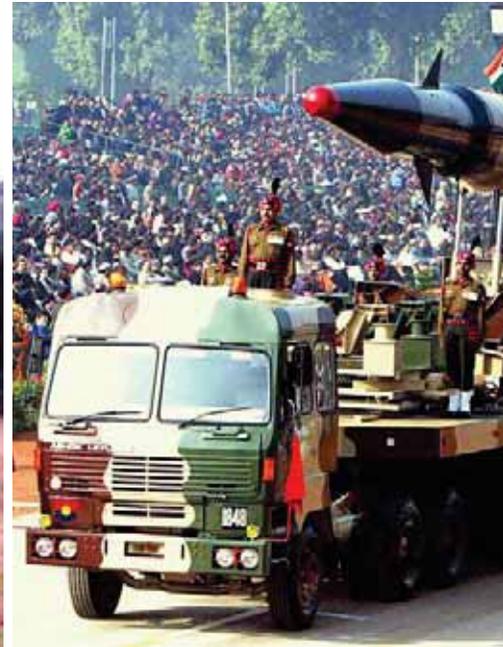
**7 Question: Are these situations normal or are they special?**

Amma: They will be normal situations. However, they are also special because they are another form of Satguru's blessing for the spiritual uplift of the disciple

**8 Question: Is there a conflict between Guru and disciple during the process of removing the ego?**

Amma: The mind will struggle and protest, because it wants to remain asleep and to continue dreaming. It doesn't want to be disturbed. However, a true master is the disturber of the disciple's sleep the Satguru's one and only aim is to awaken the disciple. So, there is a seeming contradiction. However a true disciple endowed with shraddha (loving faith) will use discriminations to overcome such inner conflicts. ■





## Rethinking Indian Military Strategies & Policies for the 21<sup>st</sup> Century

The 18th century German strategist Carl von Clausewitz prophetically declared that “War is a mere continuation of politics”. After a break of many centuries, India is ready to re-assume its rightful role as a global superpower and India’s military will play a crucial role in projecting and protecting India’s political and economic ambitions across the world. India is also situated in one of the most volatile regions in the world, surrounded by belligerent nuclear neighbors who do not hesitate to impose war on us. These wars are both overt and covert in nature and in spite of a myopic and uninspiring national leadership till the recent past; our armed forces have consistently and successfully showed their mettle in meeting these challenges head on. We owe it to them to imagine ways of making their services more effective. Of interest in this regard are the ongoing military modernization programs, analyzing examples from the past and present and imagining ways of making our armed forces a true 21st century fighting force.

### Lessons from the past

Ancient & medieval India shows us many examples of a mature understanding of politics, economics and

military power that many Indian kings had. We see striking examples like the Chola Empire using naval diplomacy to pacify much of South East Asia, the highly successful use of guerilla warfare by Chhatrapati Shivaji Maharaj & Maharana Pratap in their wars against the Mughal invaders and Chandragupta Maurya in consolidating India in the face of Greek invasions<sup>1</sup>. But India lost this vision and followed self-destructive policies like that of joining the Non-Aligned Movement and made strategic blunders when dealing with both Pakistan and China. These policies almost always put India on the back foot, only to be saved at the last moment by the tremendous sacrifices of the military, time and again. Now that we are finally free from the shackles of Nehruvian policies, both the political and military leadership need to re-assess the role of our military in protecting and promoting India’s interests across the globe.

### Effecting much needed changes.

The first and the most obvious issues to be tackled are the long overdue ones. Phlegmatic posturing of the defense ministry bureaucracy and past political leadership ensured that we were always one step



behind our adversaries. But the recent changes in New Delhi is kick starting long overdue policy changes and acquisitions, especially for the Army which lagged behind all the three services in modernization. Now the Army is rapidly making up for lost time on acquiring much needed ammunition for its armored units, upgrading of air defence systems, replacing its obsolete Army Aviation Corps helicopters, providing high quality gear to its soldiers, raising a new Mountain Strike Corps for dealing with the Chinese among others. The IAF is rapidly modernizing its fighter jet fleet with acquisitions of the HAL Tejas and the French Rafale jets and is also expanding its fleet of robotic drones. The Indian Navy is also finally close to realizing its long cherished dream of transforming into a blue water navy<sup>2</sup> with the upcoming induction of nuclear powered ballistic missile submarines and aircraft carriers into its fleet. Among all these developments, the Navy's expansion has the most impact on India's strategic situation and will be crucial in securing our energy lanes, in countering China and other unforeseen threats in the coming years.

As with equipment so with men, we face a leadership crisis in the armed forces, with a shortage of qualified officers to lead our men, in spite of the pay commission reforms<sup>3</sup>. One alternative is to use the military's sizable Non Commissioned Officers corps who can rise up to the challenge given the opportunity and the training. We may also need to consider raising a reserve corps of officers who can be called into duty for training and in

times of crisis. This may attract talented youngsters working in the private industry.

#### **Learning from our friends ...and enemies**

For the observant student, the whole world is a university. In modern warfare we find several success stories in military strategy like that of the highly mobile ISIS destroying a conventional Iraqi military, the Pakistani ISI targeting India and its other 'enemies' indirectly using proxy groups like the LeT, a highly adaptable Taliban/Mujahideen with its guerilla tactics effectively defeating both the Soviet Union (in the 80s) and United States militaries, and in the most important lesson for us, that of the technologically sophisticated and innovative Israeli Defense Forces' ability to defeat and dominate the larger militaries of all Arab nations surrounding it. One consistent theme that one finds across all of these examples is that one does not need a large standing army to defeat a powerful enemy. And the other is that India may soon face a future where its military may have to deal with non-state actors like the Taliban. In this light, our military may need to consider investing more effort in fourth generation warfare<sup>4</sup> efforts and in highly mobile commando units rather than in conventional (and slow) armored and infantry unit and formation.

#### **Investment in R&D**

One area that the military severely lacks in is investment in cutting edge technologies. Government

defense research agencies like the DRDO mostly play 'catch up' to innovations and inventions from the west. This may have got us (barely) through past wars, but it may not help us in technologically sophisticated future battlefields. Taking a cue from ongoing military modernization debates in the US<sup>5</sup>, there seems to be a huge scope for development in the areas of ground, aerial and undersea robotics, defensive and offensive cyber warfare capabilities, advanced material technologies, human augmentation, and our military needs to start putting big money into advanced research at various universities, private companies and government labs. The Naresh Chandra task force on defence reforms suggested the creation of an Advanced Projects Agency in the lines of the US's DARPA in this regard<sup>6</sup>.

### **Integration of the three services**

The separation of the armed services is a product of 20th century thinking and does not reflect the realities of 21st century warfare. We need to holistically re-organize the armed forces making the Army, the Navy and the Air Forces, feeder organizations for several task and region specific combined military commands. The Naresh Chandra report recommends that to begin with such structural changes, there needs to be a Combined Chief of Staff (rotated between the different service chiefs)

to head the entire military. Also, the current method of inter services co-operation of having the occasional military exercise is not enough and would be ineffective in future battlefields. This would also eliminate redundancies as in the cases of the Army and the Air Force having similar attack helicopter wings, the Navy and Coast Guard's overlapping responsibilities etc. One practical first step would be to combine all the rapid response special force wings of the three services into one Special Operations command. The same would be applicable for the tri-services regional commands, as in the Southern Command would have under it all Army, Navy and Air Force assets in the Southern Indian area of operations. Our cyber warfare efforts also needs to be consolidated into a single Cyber warfare command.

### Anticipating the future

If recent events are any indication, our part of the world will only grow more unstable over time. It is highly imperative that India's military equip itself for the wars of tomorrow and make structural changes that would make it adaptable to future battlefields.

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**Unni**

Ammachi Labs



# An Inheritance in Stone - Badami, Aihole & Pattadakal



The architecture of India is rooted in its history, rich cultural heritage and religion. The diverse and splendid Indian temple architecture brings to us the old-world charm of the emperors. The Chalukyan dynasty contributed a major share to Indian temple architecture. In this period, a new style of architecture was developed, which is known as “Chalukyan Architecture”. Chalukya dynasty was established by Pulakesi-I in 543 AD and Badami was a capital of Chalukya dynasty from 6th to 8th centuries. Chalukyas are the pioneers of the history of south India. Pulakesi I is the kind of ruler that we, today, would have called

a dude! Back then, in the 6th century AD, he built over a hundred temples across his kingdom, stopping briefly from time to time only to conquer and annex further kingdoms to add to his own. At the height of his reign, he ruled a vast swathe of south India, extending all the way to what is now Maharashtra in the west and Orissa in the east, and the architecture in these temples reflect the influences from diverse parts of his empire.

The Chalukya temples comprise three main groups: those in Aihole, Badami and Pattadakal. For centuries, these temples have remained in the shadow of their more famous cousins in Hampi, built much later and

just over 100 km away. And it remains so even now, even though Pattadakal was declared a UNESCO World Heritage Site in 1987 and the other two are now in the running. Chalukyan temples can be classified into rock cut halls and structural temples. The temples had flat or slightly sloping roofs and were surmounted by small Shikharas. A pillared assembly hall or mandapa was added to these structures, indicating a further evolution of temple architecture. The outside verandas of the cave temples are rather plain, but the inner hall contains rich cultural symbolism. Badami architecture style is known as Vesara style and Chalukyan style. The Chalukya style mainly originated in Aihole and Badami and was perfected in Pattadakal and Ahakuta.

The temples at Aihole, Badami and Pattadakal in north Karnataka are known to be some of the earliest and finest examples of Dravidian temple architecture. Just an overnight train journey from Bengaluru, these temple groups remain off the beaten track for most travelers who turn back from Hampi without venturing further into what was once the territory of the Chalukya dynasty. Between 6th and 8th centuries, Chalukyas ruled most of the Deccan and a major part of south India which is now Karnataka, Andhra, Maharashtra and some part of Tamil Nadu. Badami: Formerly known as Vatapi, was the capital of early Chalukyas who are known in the history as “Badami Chalukyas”.

It is believed that Badami gets its name from Vatapi, a demon of the region who, in the manner of all self-respecting demons, terrorized the locals. Why that should be so in a country with enough gods to name all towns and villages, and still have some left over, is of course a mystery. The more likely explanation for the name reveals from the surroundings: the sandstone hills around the region reflect the colour of almonds—‘badam’ in most Indian languages. Badami has four cave temples, each with a beautiful mélange of statues that are primarily of Vishnu and Shiva. The ceilings are covered with frescoes painted with glorious natural dyes, which even the passage of time has not managed to fade. There are various beautiful carvings in these cave temples, depicting Lord Shiva as Nataraja, the Lord of dance, with 81 classical dance poses carved in a single statue, of Ardhanariswara - the half man left woman God signifying the primal and equal partnership between Shiva and his consort Parvati.

While Aihole is traditionally considered the ‘laboratory of Indian architecture, the city of Pattadakal, is clearly



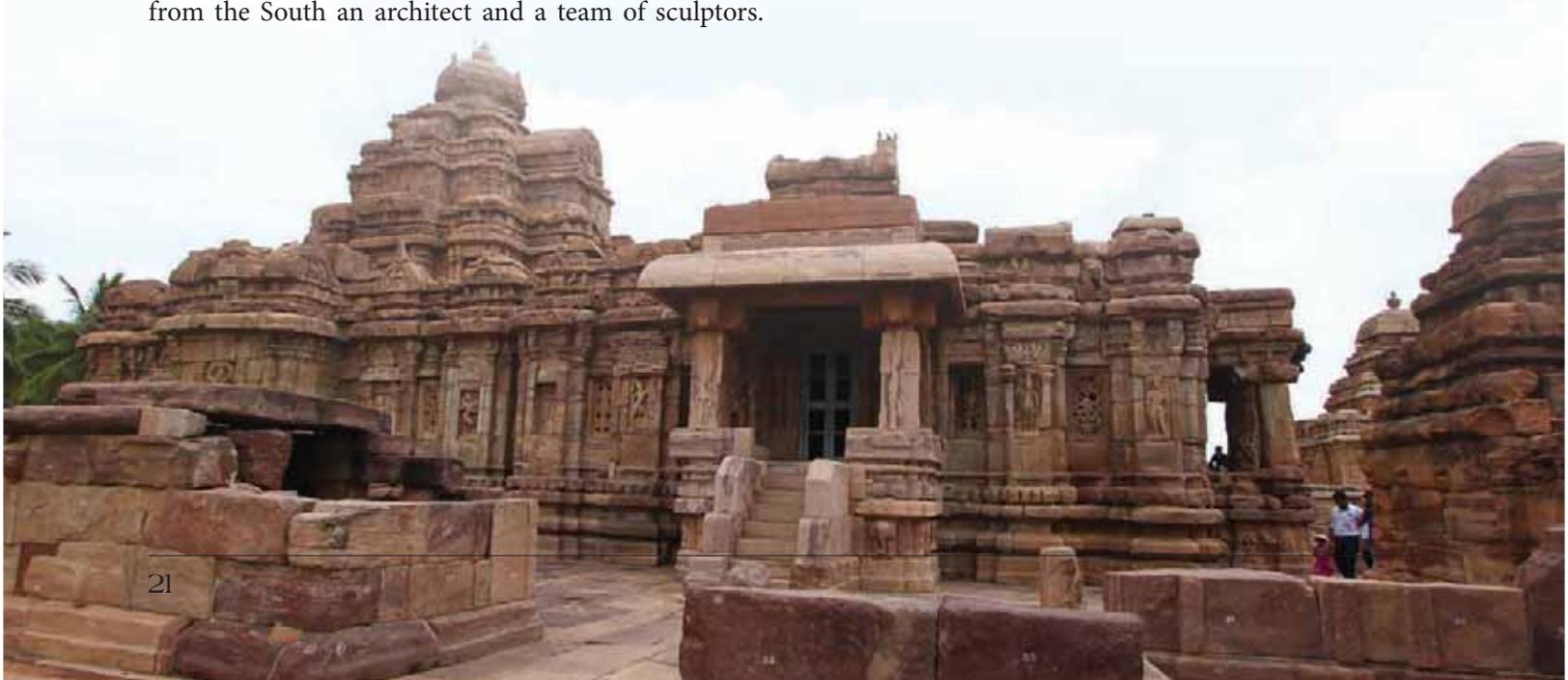
higher up on the architectural learning curve given the sophistication of the structures here. Situated between the Malaprabha River to the north, and a miniscule village to the south, Pattadakal served as the Chalukyan capital for some time, though historians say that it was used mainly during special occasions such as festivals and coronations. Indeed, the name itself—pattada kallu—translates into ‘coronation stone’. Somewhat off to the side, towards the village, is the ninth Sivaite sanctuary, the Temple of Papanatha, as well as a Jain temple.

Pattadakal possesses a sort of holy city image comprised of an impressive series of eight Hindu temples dedicated to Shiva. In the monument complex of the central zone are structures whose design was strongly influenced by the architecture of northern India: the temples of Galaganatha and of Kashi Vishveshvara, which are noteworthy for their square shaped shikharas with curved edges. They stand along with other temples of a pure Dravidian style -Sangameshvara, built between 696 and 733,AD and Mallikarjuna, built consecutively from 733-744,AD. Cornices decorate the walls of these temples and the roofs are the complex, multi storied type found in southern architecture. The well renowned and the almost-perfect Virupaksha temple is situated here. It is considered as a masterpiece of the Chalukyan dynasty. This Sivaite sanctuary was erected in the 8th century, by the Queen Lokamahadevi, to commemorate the victory of her husband, the king Vikramaditya II, over the Pallava and other sovereigns of southern India. The king’s admiration for the art of his conquered enemies is emphasized in two inscriptions that offer proof that he brought in from the South an architect and a team of sculptors.

Prominently jutting out from the cruciform temple are three porches, a typical Chalukyan feature. They blend perfectly with the majestic three-storey tower and the walls with their overhanging cornices punctuated by narrow pilasters that separate niches filled with marvelous statuary. An overall concept dictated the choice of statues which illustrate the great themes of Siva theology and mythology. In the axis of the courtyard, in front of the temple, is a beautiful pavilion containing a colossal black stone statue of Siva’s sacred bull, Nandi. Enhanced by its relative isolation south of the principal zone, the temple of Papanatha illustrates once again the aesthetic achievement resulting from the incorporation of two different styles. Papanatha has two rooms where the faithful can worship. In the west is the principal sanctuary, over which is a magnificent tower. To the east is a more modest room, whose roof is crowned with miniature reproductions of buildings in the purest Dravidian style. The unity of this great monument, however, comes from the remarkable sculptured decoration illustrating the popular epic of the Ramayana, dedicated to prince Rama, incarnation of lord Vishnu.

The temples of Badami, Aihole and Pattadakal reflect the grandeur of ancient India. Their well planned architecture, beautiful sculptures, carvings and paintings are a feast to the eyes and the minds, and, being just an overnight journey away from Bengaluru, are definitely worth a visit! ■

**Aashritha L.S.**  
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# Bastar Iron Craft

Ancient India was well-known for her metallurgical prowess. One of the most notable trades is the Bastar iron craft of Chhattisgarh. The métier uses wrought iron which literally translates to worked iron. This is a commercially pure iron with a very small carbon content not exceeding 0.15%. It is very soft in nature but becomes hard and brittle when cold. Handicrafts made include candle stands, flower vases, lampshades, etc.

Chhattisgarh preserves all natural resources and holds traditional crafts. Locally called LohaShilpa or Lohary, iron is abundantly found here; discovered accidentally by the tribal people. The story of its discovery is quite amusing. Once, a tribal was on his way for a walk in the woods when he saw a mouse and started chasing it for fun. It crawled into a hole under an anthill. He closed the opening with a rock and set the anthill on fire. The rock surprisingly caught fire and melted. He found it shiny, solidified and harder than rock the next day.

The extraction of the metal is done in indigenously built furnaces called Ghana operated by foot and uses coal derived from wood of Sal trees. Metal extracted while red-hot is repeatedly beaten to give required shape and thickness. Initially used for making arrows and weaponry, this skill was later honed to make products like idols, LamanDiya, etc which were inspired by their surroundings. The production of craft on a large scale and growth into full-fledged craftsmanship started only 200 years ago. Now, craftsmen make utility products of export quality.

The main raw material, Ghana pakka stones are collected from the forests and melted in the Ghana. The stone's flesh fracture shows a clear bluish colour with high silky luster and fibrous appearance. It is soft, easy to weld, malleable, moderately elastic and resists corrosion. The Sal-wood charcoal used has superior burning capabilities and produces a lot of heat. Red soil is used to join pieces. A paste of red soil is applied on the joints and heated in the furnace till sparks come. This process is called fusing. The joints are not only strong but also indistinguishable.

Craftsmen hammer and cut the iron manually into workable blocks or sheets and then heat it to about 200°C to facilitate molding it into a desired shape. Finishing involves two steps- dry finish (hammering and polishing) and wet finish (vegetable oil is applied on the product; it is covered with dry leaves and burnt). Finishing ensures that the product is corrosion-resistant.

The uniqueness of the craft is its traditionalism. All raw materials are locally available in plenty and of exceptional quality. The craft does not involve riveting or welding of joints, preparation of dye mold or paper design and measurements. This craft is a true reflection of Indian grandeur and talent. ■

**Mahita Madhusudan**  
S5 ECE-A

# The Queens Well (Rani-Ki-Vav)

When we go through the golden pages of history of our great nation, quite often we come across ideas, techniques, scientific methods and infrastructure that even today, in this age of extremely advanced science and technology, seldom find competition.

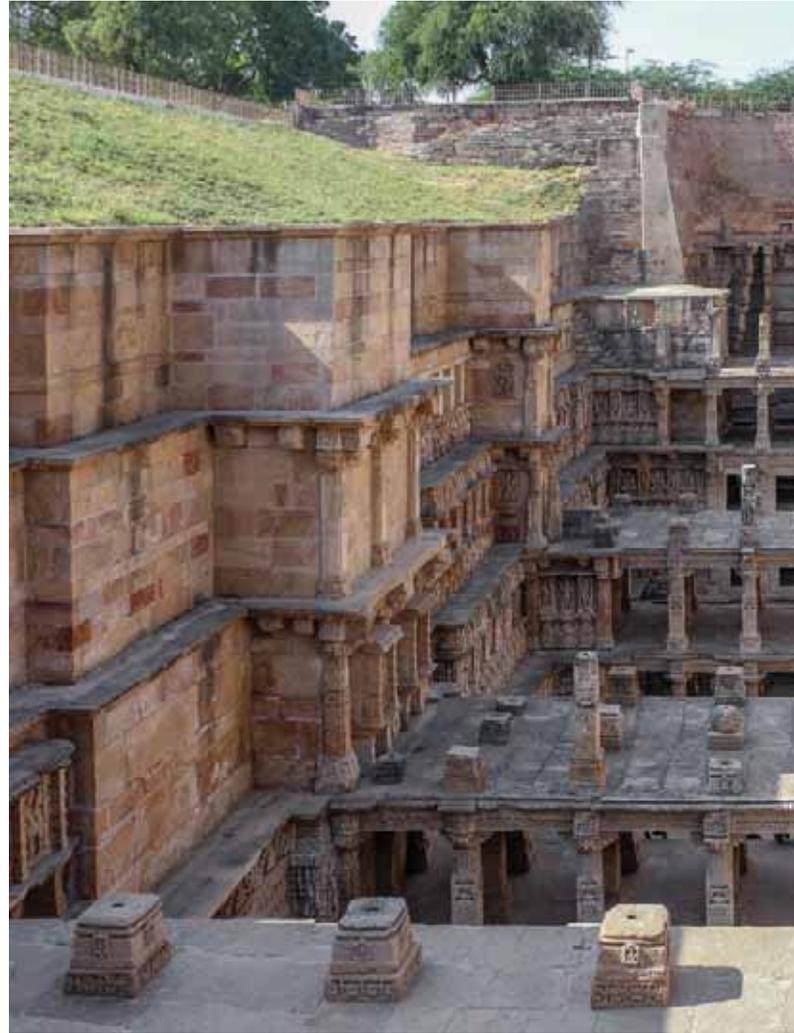
The detailed description of medicine, architecture, astronomy, mathematics, metallurgy and a number of other arts and sciences in our ancient scriptures still remain unparalleled. Speaking of the infrastructural marvels of India, The Taj Mahal, the Sun temple of Konark, the Gol Gumbaz and a few other such monuments have risen to international fame and are very popular around the world.

However in the ancient city of Patan in Gujarat lies a mysterious and magnificent structure that when looked closely upon, speaks volumes about the mighty engineering minds that our ancestors possessed. Rani-ki-Vav (the queen's well) located on the banks of the lost river Saraswati marks the zenith of the architectural prowess and engineering capacity of India of the 11th century CE. In the medieval era, traditional communities in the arid and semi arid regions of the northwest frontier of India devised a very unique technique of protecting ground water by constructing step wells. A stepwell basically divides the total volume of a subterranean dug-out into framed spaces and water is stored in each of these spaces as per the availability.

Thus the people drawing water can enter the structure up to varying levels. This kind of architectural strategy made the step wells not only a method to protect underground water, but also a place for the inhabitants of the region to seek refuge from the harsh climate when the water levels in the wells were low.

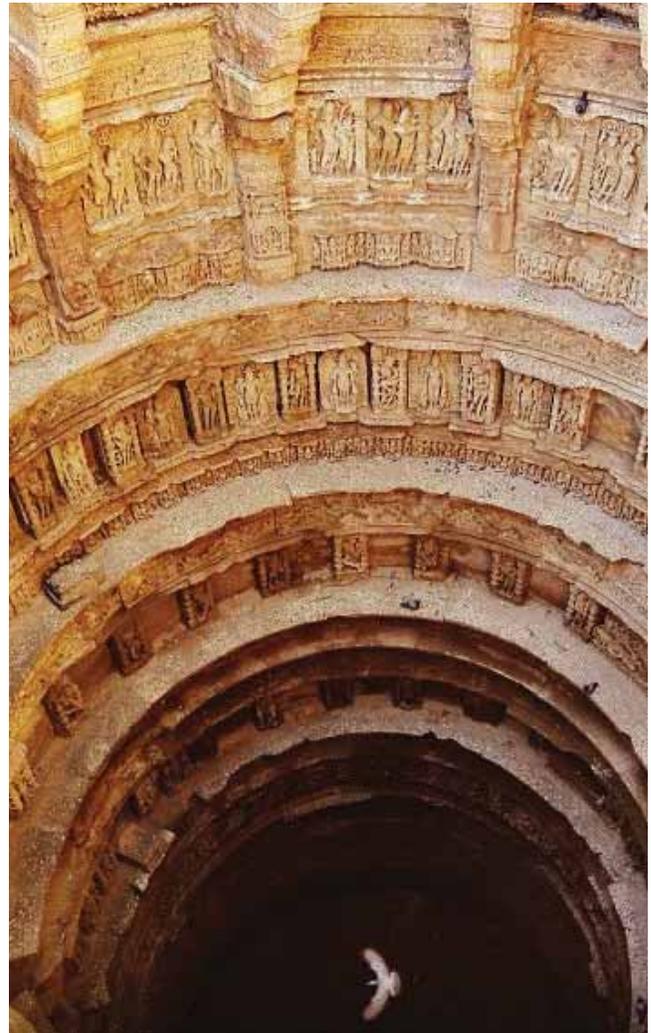
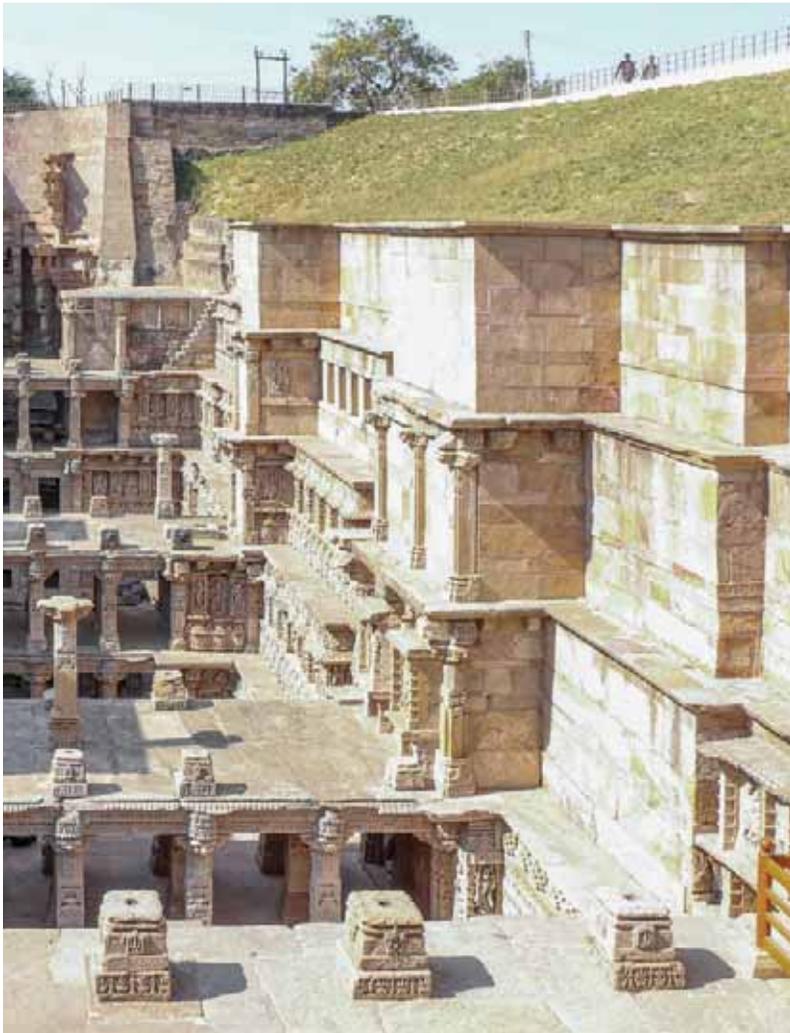
Of all the stepwells big and small, seen in the region, Rani-ki-Vav is by far the most profusely

ornate and the only step well with a representation of strong cultural tradition through carvings of Brahminical deities. Constructed by queen Udayamati as a memorial for the Solanki king Bhimadeva, son of the founder of the Solanki dynasty, the Vav was commissioned in the year 1063 CE and was famous



for the medicinal property of its water because of the presence of ayurvedic plants in the surrounding areas. Rani ki Vav holds great spiritual significance. The ornate carvings and idols are mostly Vaishnava style and largely consist of depictions of Lord Vishnu and his dashavatars (the ten forms of incarnation on planet earth). There are also sculptures depicting Nagkanya, Yoginis and of the Apsaras in 16 different styles of make-up to look more attractive called Solah-shringar.

Vavs (step wells) are of different types. There are wells with three, five, seven and even nine levels. The steps begin at ground level and lead down through the



refreshing air through several pillared pavilions to the deep well below.

The Rani-ki-Vav has been approved for inscription on the World Heritage list recently. The lowermost level is 37 inches with rudimentary images of Ganesha in the center.

For many years, the awe-inspiring structure was flooded by the Saraswati River and was covered by the silt brought by it. The process of conservation of the sculptures and preservation of the detailed inscriptions have begun since the excavation of the site in 1964

by the Archaeological Survey of India. The site being recognized as a monument of national pride and a place of great historical significance has been protected by delineating a substantial buffer area around it.

Preservation of The Queen's well today is a not only a public responsibility but a national challenge as it is a monument which depicts the extent to which our forefathers were capable of successfully joining the ideas of art, technology and spirituality. ■

**Sucheth Sunil**  
S5 ECE-B

# Kuchipudi, The Classical Dance Form

Kuchipudi is a small village in the state of Andhra Pradesh in South India. The main deity of Kuchipudi is Goddess Bala Tripura Sundari and every Kuchipudi recital begins with paying obeisance to her. The revival of Hinduism through the spread of Vaishnavism must have started during the Bhakti Movement between the 11th and 13th century. Saint Siddhendra Yogi was a scholar and an artist of the 14th century AD who is considered the father of the art form of Kuchipudi. As a result of the spread of Vaishnavism during his period, the classical dance form that evolved there was centred on the legends of Lord Krishna.

Bhagavatham is a term attributed to the theatrical presentation of Andhra based on the legends of Lord Krishna. The tradition of Kuchipudi can be traced back to the Bhagavatha Mela dance drama tradition, which was dominated by male dancers who were well versed in all the Sastras and Vedas. Saint Siddendra yogi ordained that every Brahmin boy should dedicate himself to the art of dance and drama according to the principles of Bharata's Natya Sastra.

This group of Brahmin Bhagavatulus travelled from village to village presenting their art form. They improvised the situations according to the village they were in. They used the medium of theatre to bring out the political, economical and social condition of the particular village they were performing in. The group was widely accepted and appreciated throughout Andhra. Abdul Hassan, the ruler of Golkonda, impressed by their performances, granted some land to them, in Krishna district, as 'innam'. These Brahmin Bhagavatulu families established a village there and named it as Kuchipudi. Thus the mela performed by them came to be known as Kuchipudi Bhagavatha Mela Natakam.

In olden days Kuchipudi was dominated by male dancers, so even the female roles were also played by men. They led an intense religious and austere life. The art form was passed on from one generation to another, from father to son. Dance, drama and music was not a just a performance but their way of life itself.



Saint Siddendra Yogi's pioneer work was Parijataapaharana, currently known as Bhama Kalapam. Every Kuchipudi Bhagavatulu had to undergo strict training to enact the role of Satyabhama. The play centres on Lord Krishna, his wife Sathyabhama and her friend Madhavi. The drama portrays the pangs

of Satyabhama who is separated from her beloved husband Lord Krishna. Parijataapaharana is the story of the intense love of Satyabhama for Lord Krishna. This is said to be the oldest known Kuchipudi dance drama. It is said that the present Kuchipudi dance style originated from the dance drama tradition established by Saint Siddenra Yogi, which is now known as Bhagavata Mela Natakam .

Kuchipudi that we see today, is a definite departure from the original. Kuchipudi was modified into a solo dance form, like other classical dance forms of India. The essence of Kuchipudi was drama and that was taken away from the form. The root of Kuchipudi leads to Bhagavatha Melam which is a form of dance drama that explores all aspects of dance, drama and music. It details a storyline using a combination of dance, music and dialogue (vachika Abhinaya) It is rich with literature that eulogize the principle of Bhakti, graceful yet histrionic Abhinaya patterns, wonderful choreographies and compositions. What we see today is nothing related to its original form. All its essential characters were removed and it is reduced into solo dance recital. The form that we see today is hardly 100 years old.

Sri Pasumarthy Rattaiah Sarmagaru hails from the traditional Kuchipudi family who ardently safe guard

the tradition and pass it on to the next generation. He is in his 70's and the only Guru who knows and practices Kuchipudi Bhagavatha Mela Natakam. Even when the living conditions are pathetic he strictly adheres to the tradition. The author of the article is a fortunate disciple of this great Man.

Today when you enter Kuchipudi village an array of fruit shops and stationary shops welcomes you. There is a temple just 50 metres away with shops that selling flowers adding colors to the village. Muddy roads, men clad in dhoti and women in saree. Each vehicle that passes by lifts up a whirl of dust that covers our' vision... Each house owns one or more buffaloes and they wander around freely. Brahmin men of the village and the buffaloes take a dip in the same temple pond; men enjoy their daily ablutions with special prayers whereas buffaloes happily soak themselves in the water. All we can see here is small village which had the glory of nurturing the great art form, Kuchipudi. History and Divinity come together at this village. It is here where Kuchipudi flourished; it's here where the Kuchipudi traditional family exists; Kuchipudi Village- It is here where my Guru resides. ■

**Sreelakshmi Govardhan**  
Professional Artist





## Time to usher in “Acche din...” for the Indian farmers

Indian agriculture is faced with a terrible agrarian crisis. It is a crisis primarily of sustainability and economic viability. The severity of the crisis can be gauged from the spate of farmers suicides. In the past 17 years, close to 3 lakh farmers reeling under mounting debts have preferred to commit suicide. Another 42 per cent want to quit agriculture if given a choice. The spate of farmer suicide and the willingness of farmers to quit agriculture is a stark reminder of the grim crisis.

Even at a time when the country was in the midst of elections, there was a spurt in farm suicides. In the past few weeks, on an average five farmers ended their lives in Vidharbha every day, another five in Telengana, three in Bundelkhand. In Marathawada in Maharashtra, news report say 101 farmers have taken their own lives

in March-April. In progressive Punjab, 14 farmers have ended their lives in past two months.

When Prime Minister Narendra Modi blames UPA for the plight of jawan and kisan during the past 10 years, he raises a lot of hope for the beleaguered farming community. During election campaigning, he had specifically talked of farmer suicides, farm prices, crisis in agricultural marketing and also touched on local agricultural issues in different parts of the country. After all, kisan ke bhi to aache din aane chahiye ...

What should therefore be the agriculture agenda for the new government? What should be the strategies and approaches that Narendra Modi has to follow to pull farmers out of the deep morass? Knowing very well that India cannot compromise with its food self-sufficiency,

there has to be a number of short-term as well as long-term measures. I am being asked this question time and again. Here is my 11-point agenda:

- 1 Providing a guaranteed assured monthly income to farmers. According to the Arjun Sengupta Committee report the average monthly income of a farm family is Rs 2,115. This includes Rs 900 from non-farm activities. About 60 per cent farmers are dependent on MNREGA activities to survive, and an estimated 55 per cent farmers go to bed hungry. But these farmers produce economic wealth for the country in the form of agricultural, horticultural and dairy produce. It is high time they are adequately compensated for generating that massive economic wealth in the form of food. My suggestion is that the new government should set up a National Farmers Income Commission which should have the mandate to compute the monthly income of a farm family depending upon his production and the geographical location of the farm.
- 2 The time for price policy is now over. Every time the Minimum Support Price (MSP) is raised questions are asked about its impact on food inflation. Moreover, the Bali Ministerial of WTO has questioned India's subsidies that it provides to farmers by way of MSP. It is therefore an appropriate time to move from Price policy to Income policy. The income that a farmer earns should be de-linked from the price that his crops fetch in the market. That is why I have been asking for a guaranteed monthly income for farmers. Let us not forget, if inflation is rising it is also rising for the farmers. While the Govt employees get DA instalments every 6 months to compensate for inflation, and get a pay commission every few year, farmers get only MSP and that too is un-remunerative. In an interesting study from Kerala, it was computed that if paddy price rise was to match the salary rise of govt officials, paddy price in 2005 should have been Rs 2669/qntl. It's Rs 1,310 today. In other words what paddy farmers are getting in 2014 as paddy price is 50 per cent of what they should have earned 9 years ago.  
  
The burden of providing cheap food therefore to 1.25 billion people should not be only on the shoulders of farmers. The society too must share the burden.
- 3 There is an immediate need to strengthen the network of mandis (market yards) across the country which provides farmers with a platform to



sell their produce. Leaving it to markets will result in distress sale. To illustrate, let me take the example of rice farmers in Punjab and Bihar. In Punjab, which has a huge network of mandis linked with roads, farmers bring the produce to these mandis. Last harvest, Punjab farmers got an MSP of Rs 1,310 per quintal for paddy. In Bihar, where APMC Act does not operate, farmers resorted to distress sale with prices not exceeding Rs 900 per quintal. The Commission for Costs and Prices (CACP) is now pressurising Punjab Govt to dismantle the mandis and let markets operate. Which means, Punjab farmers will soon go the Bihar way.

- 4 For a country which was able to build up an excellent marketing network for one of the most perishable commodities -- milk -- I see no reason why a similar approach cannot be adopted in providing a viable marketing network for fruits and vegetables. If the National Dairy Development Programme could ensure that milk is procured from each and every village, and then through a cooperative chain it is finally delivered to the consumers in the cities, I see no reason why India cannot carve out a marketing chain for fruits, vegetables and other farm commodities.
- 5 Cooperate farming needs to be encouraged. Appropriate laws must be framed to make cooperatives more independent and effective. Drawing from the experience of the Amul cooperative in dairy farming, a similar system needs to be adopted for vegetables/fruit farming. I know of small cooperatives of organic farmers which have done wonders. Why can't it be replicated to rest of the crops?
- 6 Aim at making villages self-reliant in agriculture and food security. Feeding the population has to be linked with farming. Chattisgarh has given an excellent model of self-reliance in agriculture and food security. It has shifted the focus to local production, local procurement and local distribution. This is exactly what needs to be done throughout the country for which the National Food Security Act needs an amendment. Instead of providing 5 kg of wheat/rice/millet every month, the focus should be on making the villages take care of their own food security needs. This will help reduce the huge subsidy bill on food security that is required every year and thereby reduce fiscal deficit.



Such a programme will also help in removing hunger in the long term.

- 7 Green Revolution areas of the country are facing a crisis in sustainability. With soil fertility devastated, water table plummeting and environment contaminated with chemical pesticides and fertiliser, the resulting impact on the entire food chain and human health is being increasingly felt. The new Government should launch a nation-



wide campaign to shift farming to non-pesticides management techniques. In Andhra Pradesh, no chemical pesticides are used in 35 lakh acres. Farmers have even stopped using chemical fertiliser in some 20 lakh hectares. Production has gone up, pesticides pollution has come down, insects attack has also come down, and more importantly farm incomes have gone up by 45 per cent because of reduced health expenses. There has been no farm suicides in these areas. The same system now needs

to be extrapolated to the entire country with local modifications/adaptation.

- 8 Agriculture, dairy and forestry should be integrated. Agricultural growth should not only be measured in terms of increase in food grain production but should be seen in the context of the village ecosystem as a whole. This will also shift the focus to low external input sustainable agriculture (LEISA) practices. At the same time such an approach will limit the ecological footprint.

- 9 Importing food is importing unemployment. Recently, apple growers in Himachal Pradesh have been protesting against the low import tariffs for imported apples as a result of which the local produce goes a begging. There are no buyers for Himachal apples, and the prices have plummeted. Similarly for other crops. The Govt must raise the import duties on agriculture, horticulture and dairy products and refuse to buckle under the pressures being exerted through the Free Trade Agreements. It should not accept the European Union's demand for opening up for dairy products and fruits/vegetables by reducing the import duties. Studies have now shown that indiscriminate signing of FTAs and bilateral agreements has been disadvantageous to the country. Time to revisit the trade treaties and protect domestic agriculture thereby millions of livelihoods.
- 10 Climate change is certainly going to affect agriculture. But instead of looking at strategies only aimed at lessening the impact on agriculture and making farmers cope with the changing weather patterns, the focus should also be to limit greenhouse gas emissions from agriculture. Considering that agriculture share in greenhouse gas emissions is about 25 per cent, the thrust must shift to reducing the application of chemical fertiliser/pesticides in farming. Following the AP model of non-pesticides management being the right approach, the cropping pattern too needs a revision. In the dry land regions of the country, for instance, at present hybrid crops which required almost twice the amount of water than normal crop varieties, are grown. Common sense tells us that in rain fed regions, which occupy 65 per cent of the cultivable area, crops requiring less water should be grown. But it is just the opposite in reality thereby accentuating the water crisis at times of rainfall delay.
- I see no reason why Rajasthan, a semi-arid region, should be cultivating water guzzling sugarcane, cotton and rice crops. Similarly I see no reason why Bundelkhand should be cultivating mentha crops, which requires 1.25 lakh litres of water to produce 1 kg of mentha oil. Why can't the cropping pattern in Rajasthan and Madhya Pradesh shift to pulses, oilseeds (like mustard) and millets? Why can't the Govt provide special incentives by way of a higher price for these crops so that farmers can willingly shift to more sustainable cropping patterns?
- 11 Lack of storage for foodgrains is appalling. It was in 1979 that under the Save Food Campaign, the Govt had promised to set up grain silos at 50 places in the country. This should be the top agenda for the new government. Not even a single grain should be allowed to go waste. ■

#### **Dr.Devinder Sharma**

(Devinder Sharma is an Indian journalist, writer, thinker. He is well-known and respected for his views on food and trade policy.)

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The first issue of Samvit was published in April 2012. Since then eight issues have been published – all aimed at enriching the knowledge about our cultural heritage and awakening our consciousness to the immense nation building tasks we have ahead. The treasure trove of wisdom our ancestors have left us is by no means out of date. Many of our ancient technologies, suitably modified, are still valid. In forthcoming editions we will try and bring out more articles highlighting the needs of the future. We request all our readers to participate wholeheartedly and contribute articles that would fulfill the aims of SAMVIT.

