



RESTORING VALUES

NEWSLETTER OF THE
FOUNDATION FOR RESTORATION OF NATIONAL VALUES

“Our National values, rightly identified, are all mind-intelligence based, and hence can be independent of religion. They are ever related to the emotions and reason of human. I always say that our values, when properly explained, will instantly evoke a two-fold response from the listener or reader: an irresistible emotional persuasion from the mind and a rational compulsion from the intelligence. It is so because all our values are related to human mind and intelligence.”

Swami Bhoomananda Tirtha



Nalanda University existed from 5th – 12th century CE.
It had over 2,000 teachers and 10,000 students.

“In the preamble of the Constitution, we have not described our land as Motherland. Nor is any reference made to Her cultural grandeur and glory. This grave lack, shall I say neglect, has to be gone into by the right noble people and thinkers. What prevented them from calling our land Motherland? Were the Constitution framers shy? Were they so much anglicized, sold out to Britain, even after the British left, that they felt enslaved not to use the beloved epithet?”

Swami Bhoomananda Tirtha

September-October 2014

Content



Restoring India to her Glory –
PART 1
by Swami Bhoomananda Tirtha

1-4



The Greatness of Ancient India's
Developments
- Excerpts from Advancements of
Ancient India's Vedic Culture") By
Stephen Knapp

4-6



Sanskrit As A Language Of Science
- Excerpts from a lecture delivered at
Indian Institute of Science, Bangalore,
by Sri Markandey Katju

7-12

Pictures Source: Google Images

Restoring India to her Glory

Inextricable bond with predecessors

Any human society becomes enriched, ennobled, elevated and refined only when it has ample consideration and gratitude to its predecessor society. The reflection and display of this twin-emotional bond is what makes any society esteemed and worth emulating.

We are all born in this world. But everyone derives birth from his or her parents. An individual may be great, accomplished in many ways. He may have acquired many creditable things, adored and envied by many. But all this

he was able to, solely because of the good and worthy birth he has had from his parents. A right appreciation and acknowledgement of this basic fact, the debt of gratitude, the essence of allegiance arising out of it, is an inevitable part of every one's life. This should characterize every individual and society at large on this earth.

Thus a society becomes valuable or honourable only when it fosters sufficient regard for the preceding society, meaning all the preceding generations.

Restoring India's Glory

Restoring India's Glory is something every one of you should take up, not merely try to know and understand it yourself, but also discuss it in your family with the children right from the very early phases of their life. You must tell every child: **"Though born to us, you are a citizen of our great country. Equally so, you are a citizen of the globe"**. It is such National fondness, National concern and National commitment, together with global feelings and reflections that distinguish an individual from the rest.

Unfortunately the children born in our families invariably imbibe only a domestic and family identity. They do not get any lesson, value or inspiration to grow to National magnitude or dimension. What is lacking in India is National bond, and faithful commitment to it.

Abysmal Value crisis compels Glory Restoration

We are facing a number of problems – scam after scam of stupefying proportions is reported. Why and how are they committed at all? The people involved are either elected or selected, particularly for running the Country, handling the National income with loyalty and integrity. Every one involved in Administration is selected or elected on behalf of the people to handle the resources of the country in an absolutely beneficial and people friendly manner, ensuring the Nation's welfare, advancement, solidarity and cohesion.

Where is then any place for mis-handling and mis-behaviour, adverse to the Nation's growth and enrichment? Every heart should examine the plight deeply with a sense of alarm and find an answer. We cannot be indifferent saying that the country's politics is bad, the elected and selected are always like this. Let us think further to know wherefrom has

the wrong begun? Is it a sudden emergence in the seats of power alone, or its genesis is far deeper and earlier? Every citizen of India should raise this question and attempt an answer in himself.

Many a great lesson behind us all

It is in this context that India, as a great cultured Nation, has to tell us a great deal, quite relevantly too. **India is not our coinage. It is more a word, which dawned in the British mind, as a proxy or substitute to what really reigned in this great land.**

Nowadays we find so many names being changed, all anglicized versions traced back to their regional, native origins. But 'India', as a word, has not apparently been studied or corrected. I do not imply that we should change it tomorrow. **But our National integrity warrants that we should go into the matter and find out where lay the genesis of the word 'India', what was our true name, which lent itself to this un-National mutation.**

In tune with our hoary culture and ageless Vedic treasure, our ancients have certainly dealt with the great country, its geographical stature and the noble people it has been hosting from times immemorial.

Scientific name for this holy land

Britishers, by naming this country India, perhaps wanted to refer to those who lived on this side of river Sindhu. Sindhu gave rise to Sindhus, which comfortably was mutated to Hindus. India never meant or included only the portions excluding Sindhu and beyond. We were a people who lived from the Himalayan slopes down to Kanyakumari, the extreme south. All our ancient literature is written in Sanskrit. They emerged millions of years ago, at least countless millennia ago. Sanskrit evolved so many years back, in the dateless past, even now remains the same, is available for us to read and

understand in the same manner in which it was written. This is an unparalleled greatness of our country. I would like to say in the whole world we are the longest living society. This is a fact documented in some of the eternal literature we have preserved till date such as the Brahmavaivarta Purana and other ancient scriptural compositions. Starting well from the Himalayas in the North, extending up to Indusarovaram, in the extreme south, the subcontinent created by God is called Hindusthaanam. Here the word Hindu is formed by the first letter of Himalayas and the second letter of Indusarovara. The art of making names with geographical connotations was there even in the ancient minds of this land.

On the one side we are bound by Himalayas. On the other three sides we are surrounded by the sea. It was a very safe huge land right from the formation of the earth. Even now it is so, but for the political witchcraft that intruded in between. This wonderful place is built by God, *deva-nirmitham desham*. In fact, the entire earth as well as all the celestial bodies are a handiwork of God, the supernatural power. Thus Hindustana, ranging from Himalayas to Indusarovara, is a gift from God. Those who live in this place are Hindus, their place being Hindusthaanam.

A geographical sub-continent bounded by Himalayas and Indusarovara, this is what Bharat is. All the people here are Hindus, because they belong to Hindusthana. If the words Hindu and Hindusthana are explained thus, even a child will have the right sense of identity and the prestige and bond that go with it. Jai Hind then has a far deeper and pervasive meaning. At least to that extent we are good and great.

Constitution framers' Mental and cultural poverty

In 1946, a Constitutional Assembly was formed to frame a Constitution for us. This was made and given to the people of India by themselves in 1950. In the preamble to our constitution, there is no mention of "Motherland", *Matru Bhoomi* at all. How did they miss this soul-ful connection, by ignoring the reference to Motherland?

Every mother gives birth to a child. From her womb, the child is passed on to Mother earth. It is on earth that the mother was living. We are rooted to the earth throughout our life. So we have a *mathrubhoomi*, a Motherland.

In the preamble of the Constitution, we have not described our land as Motherland. Nor is any reference made to Her cultural grandeur and glory. This grave lack, shall I say neglect, has to be gone into by the right noble people and thinkers. What prevented them from calling our land Motherland? Were the Constitution framers shy? Were they so much anglicized, sold out to Britain, even after the British left, that they felt enslaved not to use the beloved epithet?

Motherland was an English word indeed! You can compare other world constitutions, which mostly refer to God, which excels all other words in emotional fervour, regard and bond it conveys. In not having mentioned God, I am not so much hurt. Hinduism, studied in full, does not always mention God. The same spirituo-philosophical thoughts and feelings exist and can be expressed without the religious concept of god. **Ours is Dharma and not religion**

Ours is more a Dharma Shastra than a religion. It verily excels with its glory and grandeur, as a scientific treatise on life, living, its values, goals, and the ways to gain

and fulfil them. This is how the word Culture, like Dharma, reigns and triumphs par supreme.

Oxford Dictionary defines Culture authentically and authoritatively, as "the Art and other manifestations of human intellectual achievement". Mark the words and phrases used here. 'Art and other manifestations of human intellectual achievement regarded collectively - a refined understanding of these'. This is how culture has to be understood and dealt with.

I would like all Indians to think and comprehend culture in such a broad National context. **The moment we speak of culture, suddenly religious and spiritual ideas rush in to subdue us. A culture need not be religious. It has to be something otherwise, to embrace and enfold humans of all kinds, classes, beliefs and disbeliefs alike. A civilized society can be away from God, at least some of its members may prefer to profess so, as you already find in our land now. But any culture cannot be but relating to the human emotional and rational intelligence!**

Our National values, rightly identified, are all mind-intelligence based, and hence can be independent of religion. They are ever related to the emotions and reason of human. I always say that our values, when properly explained, will instantly evoke a two-fold response from the listener or reader: an irresistible emotional persuasion from the mind and a rational compulsion from the intelligence. It is so because all our values are related to human mind and intelligence.

When you understand values in this manner, where is the question of religiosity or Godliness there? You may or may not believe in God, but you cannot be without mind and intelligence. The mind is emotional, whether you agree or not, and the intelligence rational. Our entire culture

being based on the emotional and rational inner personality of ours, there will be nothing in it, which cannot be accepted and ratified by others.

Shastras have to be rational

Listen to this oft-repeated proverbial verse, a *sine qua non* for all our exposition, theory and philosophy:

*Yukti yuktam pragribhniyaat baalaadapi
vichakshanah.*

*Anyachha trinavat tyajyam apyuktam
Padma-yonina*

An intelligent man given to enquiry, ratiocination, has to accept whatever is said with reason even by a child. On the other hand, something is irrationally presented even by Brahma, the Creator, has to be rejected like a blade of grass.

This is the the immemorial dictum for us in approaching any knowledge, to judge its worth and utility. This was the first *raison d'être* for our thinkers, philosophers, social reformers, not to speak of poets and scientists. For the Hindu, nothing irrational is acceptable. And everything in his cultural domain and practice is an intellectual achievement regarded and practiced by people collectively. That is why our culture and its pursuit percolated and permeated throughout the length and breadth of this holy land. Such was the inspiration, persuasion and compulsion it instilled in people, individually and collectively.

Day month year all signify celestial bodies

Our culture is so great, so important that we have named our days after the celestial bodies. Ravivaar, Budhavaar, Somvaar, etc. What do all these signify? They denote the celestial bodies around the earth, whose denizens we are. The earth's revolution and trajectory rest safely upon these celestial luminaries. Seven such bodies have thus become part of our daily only prudence and compulsion.

Then come the 27 stars. The days of the month are named after them. We have 2 fortnights, named after the moon. Everything is with reference to either Mother earth or Sun or Moon or the other celestial bodies, with which we are concerned most. This is something that I would like you to tell your children to make them lovers of Nature and live in an eco-friendly manner.

We believe in Nature, we are living in Nature, we are Nature's products. We have to be in harmony with Nature. We are to harness Nature's resources, not exploit them at all, without causing any damage or depletion.

Our commemorations, if at all, are always of Nature and Her celestial entities and manifestation. We never commemorate other things. We began to speak about Rama and Krishna in a different manner, only much later. Rama and Krishna, as they are presented by the Sage authors, were exemplary humans, who embodied the cultural might, magnificence and majesty, in what they thought, said, did and ratified.

...to be continued

The Greatness of Ancient India's Developments

(Excerpt from "Advancements of Ancient India's Vedic Culture") By Stephen Knapp

Often times we see that students, even in India's academic system, have not studied or encountered the contributions that were made by early civilization in the area of ancient India. Not only are they not aware of such developments that had been given from India, but there is often a lack of such knowledge to be studied... to show how this area of the world, indeed, had a most **advanced civilization, but was also where many of society's advancements originated.**

It can be found that what became the area of India and its Vedic culture was way **ahead of its time.** This can be noticed in such things as industry, metallurgy, science, textiles, medicine, surgery, mathematics, and, of course, philosophy and spirituality. In fact, we can see the roots of these sciences and metaphysics in many areas of the world that can be traced back to its Indian or Vedic origins.

Furthermore, we often do not know of all the progress that had been made during the ancient times of India, which used to be called Bharatvarsha or Aryavrata. Nor do most people know all that ancient India gave to the world. So let us take a serious look at this.

From the Preface of Indian Tradition of Chemistry and Chemical Technology, the authors relate most accurately: **"Hindus are a race who have dwelled on the most fundamental questions about life (& death), about nature and its origins. The bold questioning by Hindus gave birth to theories, axioms, principles and a unique approach to and a way of life. The approach to life and the way of life led to the evolution of one of the most ancient and grand cultures on the**

face of the earth.

"For historical reasons, the achievements of ancient Hindus in various fields of science and technology are not popularly known to Indians... the colonial invaders and the rulers had a vested interest in distorting and destroying the information regarding all positive aspects of Hindu culture.

The conventional understanding today is that Hindus were more concerned about rituals, about spirituality, and the world above or the world after death.

That Hindus were an equally materialistic people, that India was the industrial workshop of the world till the end of 18th century. That ancient Hindus had highly evolved technologies in textile engineering, ceramics, printing, weaponry, climatology and meteorology, architecture, medicine and surgery, metallurgy, agriculture and agricultural engineering, civil engineering, town planning, and similar other fields is known only to a few scholars even today.

There are about 44 known ancient and medieval Sanskrit texts on a technical subject such as chemistry alone.

The information about the science and technological heritage of India is embedded in the scriptures, the epics and in several of the technical texts. The information needs to be taken out of these and presented.

There is a need to make the knowledge of science heritage of India known to one and all. Further, there is need for studying scriptures, epics, and other ancient literature (in Sanskrit as well as other regional languages) to unearth the wealth of knowledge of our ancestors.

Reports of such studies also need to be published continuously.

The advanced nature of ancient Indian sciences

“The first nation to have cultivated science is India... India is known for the wisdom of its people. Over many centuries, all the kings of the past have recognized the ability of the Indians in all the branches of knowledge. The kings of China have stated that the kings of the world are five in number and all the people of the world are their subjects. They mentioned the king of China, the king of India, the king of the Turks, the king of the Persians, and the king of the Romans. ...they referred to the king of India as the **'king of wisdom' because of the Indians' careful treatment of 'ulum [sciences] and all the branches of knowledge.**” - Arab scholar Sa'id ibn Ahmad al-Andalusi (1029–1070) wrote in his history on science, called *Tabaqat-al'umam*.

In his article, *Indic Mathematics: India and the Scientific Revolution*, Dr. David Grey lists some of the most important developments in the history of mathematics that took place in India, summarizing the contributions of luminaries such as Aryabhata, Brahmagupta, Mahavira, Bhaskara, and Madhava. He concludes by asserting, **“the role played by India in the development (of the scientific revolution in Europe) is no mere footnote, easily and inconsequentially swept under the rug of Eurocentric bias. To do so is to distort history, and to deny India one of its greatest contributions to world civilizations.”**

Lin Yutang, Chinese scholar and author, also wrote that: “India was China's teacher in trigonometry, quadratic equations, grammar, phonetics...” and so forth. Francois

Voltaire also stated: “... everything has come down to us from the banks of the Ganges.”

The Syrian astronomer / monk Severus Sebokhy (writing CE 662), as expressed by A. L. Basham in his book **The Wonder That Was India** (p. 6), explained, “I shall now speak of the knowledge of the Hindus... Of their subtle discoveries in the science of astronomy – discoveries even more ingenious than those of the Greeks and Babylonians – of their rational system of mathematics, or of their method of calculation which no words can praise strongly enough – I mean the system using nine symbols. If these things were known by the people who think that they alone have mastered the sciences because they speak Greek, they would perhaps be convinced, though a little late in the day, that other folk, not only Greeks, but men of a different tongue, know something as well as they.”

Sunderland went on to say, “India was a far greater industrial and manufacturing nation than any in Europe or than any other in Asia. **Her textile goods—the fine products of her loom, in cotton, wool, linen, and silk—were famous over the civilized world; so were her exquisite jewelry and her precious stones, cut in every lovely form; so were her pottery, porcelains, ceramics of every kind, quality, color and beautiful shape; so were her fine works in metal iron, steel, silver, and gold. She had great architecture—equal in beauty to any in the world. She had great engineering works...** Not only was she the greatest ship-building nation, but she had great commerce and trade by land and sea which extended to all known civilized countries.”

In *India in Bondage*, Sunderland also quotes **Lord Curzon, the**

British statesman who was viceroy in India from 1899 to 1905, as saying in his address delivered at the great Delhi Durbar in 1901: **“Powerful empires existed and flourished here [in India] while Englishmen were still wandering, painted in the woods, while the English colonies were a wilderness and a jungle. India has left a deeper mark upon the history, the philosophy, and the religion of mankind, than any other terrestrial unit in the universe.”**

Lord Curzon had also stated: **“While we [the British] hold onto India, we are a first rate power. If we lose India, we will decline to a third rate power. This is the value of India.”**

The point is that all science of the Vedic tradition was developed with or in continuation of the ancient Vedic or spiritual knowledge that was a central point in understanding life. It was part of the Absolute Truth, or Sanatana-dharma, by which we could understand how to function in this world, and what is the purpose of both this world and our life in it. From this point, so many other developments took place, not as a means to control the environment, but as a means to know how to work holistically with nature for our material and spiritual progress and growth.

Dick Teresi also acknowledges how much of the knowledge we understand today did not necessarily come from the Greek civilization, but actually existed much earlier in the Vedic traditions of India. He again writes in *Ancient Roots of Modern Science*: “Two thousand years before Pythagorus, philosophers in northern India had understood that gravitation held the solar system together, and that therefore the sun, the most massive object, had to be at its center.

Our Western mathematical heritage and pride are critically dependent on the triumphs of ancient Greece. These accomplishments have been so greatly exaggerated that it often becomes difficult to sort out how much of modern math is derived from Greece and how much from ...the Indians and so on. Our modern numerals 0 through 9 were developed in India. Mathematics existed long before the Greeks constructed their first right angle."

CONCLUSION

THE GREATNESS OF INDIA AND VEDIC CULTURE

History certainly proves that India was also one of the wealthiest countries on the planet in its earlier days. Not only did she have vast treasures of knowledge and developments, but ancient India also had great wealth, such as sapphires, rubies, emeralds, pearls, and other gems, along with sunny climate, great fertility, and much more that was exported to various parts of the world, but the deep levels of knowledge and development was another of her greatest assets. For this reason, the ambition of all conquerors was to possess the area of India.

The pearl presented by Julius Caesar to Servilia, the mother of Brutus, as well as the famous pearl ear-ring of Cleopatra, were obtained from India. The Koh-i-noor diamond, weighing at 106.5 carats, one of the most fabled of diamonds, was taken to England from India. In fact, when Alexander left Persia, he told his troops that they were now going to "Golden India" where there was endless wealth, which made the beauty and riches of Persia look puny.

When the Sultan Mahmud of Ghazni destroyed the famous

Somnath temple, he found astonishing wealth in diamonds and jewels. He also sacked Mathura and gathered numerous Deities in gold and silver. Thereafter he went to Kanauj which astonished the tyrant and his followers to such a degree in its wealth and beauty at the time that they declared that Kanauj was only rivaled in magnificence by heaven itself.

The people of India were actually not so barbaric as the invaders that forced their way into the country, but rather some of the most civilized in the world, primarily because of their sophisticated level of consciousness and gentleness towards one another caused by their training in the principles of the Vedic spiritual culture.

The character of the Hindus of the day had been described by some of those Europeans who had traveled there back in the 19th century, such as Max Muller, wherein he said: **"Warren Hastings thus speaks of the Hindus in general: 'They are gentle and benevolent, more susceptible of gratitude for kindness shown them, and less prompted to vengeance for wrongs inflicted than any people on the face of the earth; faithful, affectionate, submissive to legal authority.'"**

Bishop Heber said: "The Hindus are brave, courteous, intelligent, most eager for knowledge and improvement; sober, industrious, dutiful parents, affectionate to their children, uniformly gentle and patient, and more easily affected by kindness and attention to their wants and feelings than any people I ever met with."

Sir Thomas Munro bears even stronger testimony. He writes: 'If a good system of agriculture, unrivaled manufacturing skill, a capacity to produce whatever can contribute to either convenience or

luxury, schools established in every village for teaching reading, writing, and arithmetic, the general practice of hospitality and charity amongst each other, **and above all, a treatment of the female sex full of confidence, respect, and delicacy, are among the signs which denote a civilized people—then the Hindus are not inferior to the nations of Europe, and if civilization is to become an article of trade between England and India, I am convinced that England will gain by the import cargo.'**

Finally, in what could be a conclusive statement made by a European who had spent many years living and studying the Vedic culture and Sanskrit literature of early India, Max Muller said,

"If I were to look over the whole world to find out the country most richly endowed with all the wealth, power and beauty that nature can bestow—in some parts a very paradise on earth—I should point to India.

If I were asked under what sky the human mind has most fully developed some of its choicest gifts, has most deeply pondered on the greatest problems of life, and has found solutions of some of them which well deserve the attention even of those who have studied Plato and Kant—I should point to India.

And if I were to ask myself from what literature we, here in Europe, we who have been nurtured almost exclusively on the thoughts of Greeks and Romans, and of one Semitic race, the Jewish, may draw that corrective which is most wanted in order to make our inner life more perfect, more comprehensive, more universal, in fact more truly human, a life not for this life only, but a transfigured and eternal life—again I should point to India."

Sanskrit As A Language Of Science

by Sri Markandey Katju from a lecture delivered at Indian Institute of Science, Bangalore (Excerpts)

You are scientists, and hence would naturally like to know about your scientific heritage problems, and, in my opinion, these can only be solved by science. We have to spread the scientific outlook to every nook and corner of our country, if we are to progress. And by science I mean not just physics, chemistry and biology but the entire scientific outlook. **We must develop the rational and questioning attitude in our people, abolish superstitions and empty rituals and foster the great scientific achievements of our ancestors.**

The foundation of India culture is based on the Sanskrit language. There is a misconception about the Sanskrit language viz. that it is only a language for chanting mantras in temples or religious ceremonies. However, that is less than 5% of the Sanskrit literature. More than 95% of the Sanskrit literature has nothing to do with religion, and instead it deals with philosophy, law, science, literature, grammar, phonetics, interpretation etc.

In fact, **Sanskrit was the language of free thinkers, who questioned everything, and expressed the widest spectrum of thoughts on various subjects.** In particular, Sanskrit was the language of our scientists in ancient India. Today, no doubt, we are behind the Western countries in science, but there was a time when India was leading the whole world in science. **Knowledge of the great scientific achievements of our ancestors and our scientific heritage will give us the encouragement and moral strength to once again take India to the forefront of science in the modern world.** The word 'Sanskrit' means

"prepared, pure, refined or perfect". It was not for nothing that it was called the 'devavani' (language of the Gods). It has an outstanding place in our culture and indeed was recognized as a language of rare sublimity by the whole world. Sanskrit was the language of our philosophers, our scientists, our mathematicians, our poets and playwrights, our grammarians, our jurists, etc.

In grammar, Panini and Patanjali (authors of *Ashtadhyayi* and the *Mahabhasya*) have no equals in the world; in astronomy and mathematics the works of Aryabhatta, Brahmagupta and Bhaskar opened up new frontiers for mankind, as did the works of Charak and Sushrut in medicine.

In philosophy Gautam (founder of the Nyaya system), Ashvaghosha (author of *Buddha Charita*), Kapila (founder of the Sankhya system), Shankaracharya, Brihaspati, etc., present the widest range of philosophical systems the world has ever seen, from deeply religious to strongly atheistic. Jaimini's *Mimansa Sutras* laid the foundation of a whole system of rational interpretation of texts which was used not only in religion but also in law, philosophy, grammar, etc. In literature, the contribution of Sanskrit is of the foremost order. The works of Kalidas (*Shakuntala*, *Meghdoot*, *Malvikagnimitra*, etc.), Bhavabhuti (*MaltiMadhav*, *Uttar Ramcharit*, etc.) and the epics of Valmiki, Vyas, etc.

are known all over the world. These and countless other Sanskrit works kept the light of learning ablaze in our country upto modern times. Before dealing with the specific achievements of our ancestors in the fields of Mathematics,

Astronomy, Medicine, Engineering, etc. it is necessary to mention that the Sanskrit language made two great contributions to the development and progress of science in ancient India. :-

1. A language was created by the great grammarian Panini, namely Classical Sanskrit, which enabled scientific ideas to be expressed with great precision, logic and elegance. Science requires precision. Also, science requires a written language in which ideas can be written with great precision and logic.

No doubt the first language of people everywhere in the world is the spoken language, but further development of thinking cannot take place unless there is a written language in which ideas can be expressed with precision. A scientist may think out new ideas in his mind, but these will remain rambling, diffused and disorganized ideas unless they are set down in writing. By writing we give our ideas greater clarity and make them coherent and in a logical sequence, somewhat like in a mathematical theorem where each step logically follows from the previous step. Hence for progress in science a written language is absolutely essential in which scientific ideas can be expressed with great precision and logic.

2. A philosophy is required for the progress of science to give support and encouragement to science and scientific development.

As regards the first point mentioned above I will have to make another digression and go a little deeper and must tell you a little about the development of the Sanskrit language. In fact Sanskrit is

not just one language, there are several Sanskrits. What we call Sanskrit today is really Panini's Sanskrit, also known as Classical Sanskrit or Laukik Sanskrit, and this is what is taught in our schools and universities today, and it is in this language that all our scientists wrote their great works. However, there were earlier Sanskrits too which were somewhat different from Classical Sanskrit.

The earliest Sanskrit work is the Rig Veda, which was probably composed around 2000 B.C. However, it was subsequently continued from generation to generation by oral tradition, and had to be memorized orally in the Gurukul by the young boys by repeating the verses chanted by their Guru. The Rig Veda is the most sacred of Hindu literature, and it consists of 1028 hymns (richas) to various nature gods e.g. Indra, agni, surya, soma, varuna etc.

Similarly, the Sanskrit language kept changing from around 2000 B.C. when the Rig Veda was composed to about 500 B.C. i.e. for about 1500 years. In the 5th Century B.C. the great scholar Panini, who was perhaps the greatest grammarian the world has ever seen, wrote his great book 'Ashtadhyayi' (book of eight chapters). In this book Panini fixed the rules of Sanskrit, and thereafter no further changes in Sanskrit were permitted except slight changes made by two other great grammarians, namely, Katyayana who wrote his book called 'Vartika', and Patanjali who wrote his commentary on the Ashtadhyayi called the 'MahaBhashya'. Except for the slight changes by these two subsequent grammarians, Sanskrit as it exists today is really Panini's Sanskrit or Classical Sanskrit.

What Panini did was that he studied carefully the existing Sanskrit language in his time and then

refined, purified and systematized it so as to make it a language of great logic, precision and elegance. Thus Panini made Sanskrit a highly developed and powerful vehicle of expression in which scientific ideas could be expressed with great precision and clarity. This language was made uniform all over India, so that scholars from North, South East and West could understand each other.

I am not going into the details about the Ashtadhyayi but I will give one small illustration in this connection.

In the English language the alphabets from A to Z are not arranged in any logical or rational manner. There is no reason why F is followed by G or why P is followed by Q, etc. The alphabets in English are all arranged haphazardly and at random. On the other hand, Panini in his first fourteen Sutras arranged alphabets in the Sanskrit language in a very scientific and logical manner, after close observation of the sounds in human speech.

Thus, for example the vowels, a, aa, i, ee, u, oo, ae, ai, o, ou are arranged according to the shape of the mouth when these sounds are emitted, a and aa, are pronounced from the throat, i and ee from the palate, o and oo from the lips, etc. In the same way the consonants have been arranged in a sequence on a scientific pattern. The (ka) varga (i.e. ka, kha, ga, gha, nga) are emitted from the throat, the (cha) varga from the palate, the (ta) varga from the roof of the mouth, the (ta) varga from the teeth, and the (pa) varga from the lips.

I venture to say that no language in the world has its alphabets arranged in such a rational and systematic manner. And when we see how deeply our ancestors went in the

seemingly simple matter of arranging the alphabets we can realize how deeply they went in more advanced matters.

Panini's Sanskrit is called Classical Sanskrit, as I have already stated above, and it is in contrast with the earlier Vedic Sanskrit that is the language (or languages) in which the Vedas were written.

The Vedic literature is only about 1% of the entire Sanskrit literature. About 99% of Sanskrit literature is non vedic Sanskrit literature. For instance, the Ramayana, the Mahabharata, the Puranas, the works of Kalidas, etc. are no doubt highly respected but they are not part of the Vedic literature and hence they are now almost all existing in accordance with Panini's grammar.

Thus the Vedic literature is not in accordance with the Panini's grammar. However, the non-Vedic Sanskrit literature (which is 99% of the entire Sanskrit literature) is almost all in accordance with Panini's grammar, including all the great scientific works. This provided for uniformity and it systematized the language so that scholars could easily express and communicate their ideas with great precision. This was a necessary requirement for the development of science.

The spoken language no doubt is very useful, but the spoken dialects change every 50 or 100 kilometers, and hence there is no uniformity in them. A written language like Classical Sanskrit in which scholars could express and communicate ideas to other scholars living far away with great precision and clarity was thus absolutely necessary for the development of science, and this is the great achievement of Panini.

MATHEMATICS

The decimal system was perhaps the most revolutionary and greatest scientific achievement in the ancient world in mathematics. The numbers in the decimal system were called Arabic numerals by the Europeans, but surprisingly the Arab scholars called them Hindu numerals. Were they really Arabic or Hindu? In this connection it may be mentioned that the languages Urdu, Persian and Arabic are written from right to left but if you ask any speaker of these languages to write any number e.g. 257 he will write the number from left to right. This shows that these numbers were taken from a language which was written from left to right and not from right to left. It is accepted now that these numbers came from India and they were copied by the Arabs from us.

I would like to illustrate the revolutionary significance of the decimal system. As we all know, ancient Rome was a great civilization, the civilization of Caesar and Augustus, but if one would have asked an ancient Roman to write the number one million he would have almost gone crazy because to write one million he would have to write the letter M which stands for millennium (or one thousand) one thousand times. In the Roman numerals there is no single number greater than M, which stands for one thousand. To write 2000 we have to write MM, to write 3000 we have to write MMM, and to write one million one has to write M one thousand times.

On the other hand, under our system to express one million we have just to write the number one followed by six zeros.

In the Roman numerals there is no zero. Zero was an invention of ancient India and progress was not possible without this invention.

I am not going into details about the great contributions of our great mathematicians like Aryabhata, Brahmagupta, Bhaskar, Varahamihira etc. and you can read about them by using Google. However, I may just give two simple illustrations in this connection.

The number 1,00,000 is called a lakh in the Indian numeral system. 100 lacs is called one crore, 100 crores is called one arab, 100 arabs is called one kharab, 100 kharabs is called one neel, 100 neels is called one padma, 100 padmas is called one shankh, 100 shankh is called one mahashankh, etc. Thus one mahashankh will be the number 1 followed by 19 zeros (for further details you may see V.S. Apte's Sanskrit English Dictionary on the internet by using Google). On the other hand the ancient Romans could not express any number larger than one thousand except by repeating M and the other numerals again and again.

Take another illustration. According to the *Agni Purana*, the Kaliyuga in which we are living consists of 4, 32, 000 years. The preceding Yuga is known as the Dwapar Yuga and is twice as long as the Kaliyuga. Preceding the Dwapar Yuga, is the Treta Yuga which is thrice the duration of the Kaliyuga. The Yuga preceding Treta Yuga is the Satyuga which was said to be four times longer than the Kaliyuga. One Kaliyuga, one Dwapar Yuga, one Treta Yuga and one Satyuga are collectively known as one Chaturyugi (or 43 lacs 20 thousand years). Fifty Six Chaturyugis are known as one Manvantar. Fourteen Manvantars is known as one Kalpa. Twelve Kalpas make one day of Brahma. Brahma is believed to have lived for billions or trillions of years.

When our people do the sankalp, which is to be done everyday by orthodox people, they have to mention the exact day, month and year of the Kaliyuga as well as the Chaturyugi, Manvantar and kalpa in which we are living. It is said that we are living today in the 28th Chaturyugi in our present Manvantar, that is to say half the Manvantar of our Kalpa is over, but the remaining Manvantar is yet to be completed. We are living presently in the Vaivasvata Manvantar.

One may or may not believe the above system, but one can only marvel at the flight of imagination of our ancestors who could conceive of billions or trillions of years in history.

Aryabhata in his famous book called the *Aryabhatiya* wrote about algebra, arithmetic, trigonometry, quadratic equations and the sine table. He calculated the value of Pi at 3.1416, which is close to the actual value which is about 3.14159. Aryabhata's works were later adopted by the Greeks and then the Arabs.

I am not going into the contribution of the other mathematicians e.g. Brahmagupta, Bhaskar, Varahamihira etc. as that will take too much time.

ASTRONOMY

In ancient India, Aryabhata in his book *Aryabhatiya* presented a mathematical system that postulated that the earth rotated on its axis. He also considered the motion of the planets with respect to the sun (in other words there was a hint in Aryabhat's system of the heliocentric theory of Copernicus, though there is a debate about it). The other famous astronomers of that time were Brahma Gupta who headed the astronomical observatory at Ujjain

and wrote a famous text on astronomy, and Bhaskara, who also was a head of the astronomical observatory at Ujjain. Varahamihira presented a theory of gravitation which suggested that there is a force due to which bodies stuck to the earth, and also kept the heavenly bodies in their determined places.

I am not going into detail into these theories of these great astronomers, but I would certainly like to say that it is remarkable that even today predictions can be made about the time and date of solar and lunar eclipses on the basis of calculations made by the ancient astronomers thousands of years ago, and that too at a time when there were no modern instruments like telescopes etc. and observations had to be made with the naked eye.

MEDICINE

The names of Sushruta and Charaka are the most famous in ancient Indian medicine. Sushruta is regarded as the father of Indian surgery and he invented cataract surgery, plastic surgery etc. many centuries before it was invented by the westerners. In his book *Susbruta Sambita* he has mentioned in great detail about the medicines and surgeries, including dozens of instruments used in surgeries. Sushruta said that to be a good surgeon one has to have a good knowledge of anatomy. *Charaka Sambita* is an ancient Indian Ayurvedic text on internal medicine written by Charaka and it is central to the modern day practice of Ayurvedic medicine. Both *Susbruta Sambita* and *Charak Sambita* were written in Sanskrit, details of which also can be seen in the internet in Google. In this connection it may be mentioned that in the London Science Museum in one floor relating to medicine, there is

mention of the various achievements in medicine in ancient India including the surgical instruments used by Sushruta.

It is thus evident that India was far ahead of all countries in medicine in ancient times.

ENGINEERING

In Engineering, too, we had made great progress as is evident from the great South Indian temples in Tanjore, Trichy, Madurai, etc. as also the temples in Khajuraho, Orissa, etc. It is said that there was an institute in Aihole in Karnatka in the 6th Century A.D. which developed structural mechanics. The principles developed by this institute e.g. sloped roofs were applied to structures built in Kerala, eastern Andhra Pradesh and TamilNadu.

I may now make another digression, but that too will be relevant to the topic under discussion: The attitude of the British Rulers towards Indian Culture.

The attitude of the British rulers towards Indian culture passed through three historical phases.

The **first phase was from about 1600 AD** when the British came to India and established their settlements in Bombay, Madras and Calcutta as traders upto 1757 when the Battle of Plassey was fought. During that period the attitude of the British was totally indifferent towards Indian culture because they had come here as merchants to make money and they were not interested in Indian culture at all.

The **second phase was from 1757 to 1857 AD** i.e. upto the Sepoy mutiny. In 1757 the Battle of Plassey was fought after which the Diwani of Bengal was granted to the British by the Mughal emperor. This transformed the Britishers from merchants to rulers, after

which the entire province of Bengal (which included Bihar and Orissa) came under their rule. A ruler has to know about his subjects in order to properly administer their territory. Hence, from 1757 to 1857, the Britishers carefully studied Indian culture and made some important contributions, particularly with respect to spread of knowledge of Indian culture to the West.

The third phase begins with the Indian mutiny of 1857 and its suppression by the British rulers.

After 1857, the British were determined that there should not be any such outbreak against their rule. For this purpose they did two things: (a) they increased their army in India and particularly the number of Europeans in the Indian Army, and also placed the artillery completely in the hands of Europeans artillery and (b) **they started a policy of deliberately demoralizing the India people by spreading the propaganda that Indians were only a race of fools and savages before the British came into India and there was nothing worthwhile in Indian culture as it was the culture of fools and savages.**

This was deliberately done so that the Indian people may themselves start believing that they were an inferior race and should gladly accept the Britishers as their masters. It is because of the third phase that we had forgotten the great achievements of our ancestors, including their achievements in science.

It is the second phase mentioned above which is of particular interest, because it is in this period that the British carefully studied Indian culture.

Among such Britishers, the foremost was Sir William Jones who came to India in 1783 as a

Judge of the Supreme Court of Calcutta. Sir William Jones was born in 1746 and he was a child prodigy who had mastered several languages such as Greek, Latin, Persian, Arabic, Hebrew etc. at a very young age. He had studied at Oxford University and had also passed his Bar examination to qualify as a lawyer. When he came to India he was told that there was an ancient Indian language called 'Sanskrit' and this aroused his curiosity and he became determined to study it. Consequently, he enquired and found a good teacher called Ram Lochan Kavi Bhushan – a poor Bengali Brahman who lived in a dark and dingy room in a crowded locality in Calcutta. Sir William Jones started going to this person to learn Sanskrit. He has written in his memoirs that when the daily lesson was completed he would glance behind and saw the "Bengalee Brahmin" washing the floor where Sir William Jones sat to learn his lessons as he was regarded as a Mleccha. However, Sir William Jones was not insulted by this as he was a scholar and hence thought that one should accept the customs of the teacher.

Having mastered the Sanskrit language, Sir William Jones established the Asiatic Society in Calcutta and also translated many of the great Sanskrit works e.g. *AbhigyanShakuntalam* into English. This work was brought to the notice of the great German scholar Goethe who greatly praised it. Sir William proved that Sanskrit was very close to Greek and Latin. In fact, it was closer to Greek than to Latin because Sanskrit has three numbers – singular, dual and plural as is the case with Greek, whereas Latin has only two numbers – singular and plural, like in English, Hindi and many other languages.

Thus, Sir William Jones established that Sanskrit, Greek and Latin were all descended from a common

ancestor and he was the creator of modern comparative philology.

There were several other British scholars who did research in Indian culture, particularly during the second historical phase mentioned above, but it is not necessary to go into detail about it as it will take too much time.

Suffice it to say that these scholars were wonderstruck about the great achievements of Indian scholars whose works were all written in the Sanskrit language.

Condition of Science in Modern India

I have stated above, at one time India was leading the world in science. Scholars from Arabia and China would come to India to learn from us in our great universities at Taxila, Nalanda, Ujjain etc. as our disciples. However, it must be regrettably stated that today we are lagging far behind the West in modern science. We have no doubt produced great scientists & mathematicians like CV Raman, Chandrasekhar, Ramanujan, S.N. Bose, J.C. Bose, Meghnad Saha etc., but these belong to the past.

However, that is not because of any inherent defect in us, but because of certain historical reasons. In fact, much of Silicon Valley in California is today manned by the Indian scientists, particularly in information technology. In most of the science and mathematical faculties in American Universities there are a large number of Indian professors. Hence, it is not due to any inherent inferiority that India has not progressed as much as Westerners in science in modern times, but due to certain other reasons. **We have a powerful scientific heritage and knowledge of it would give us the moral courage and strength once again to come in the forefront of science in the modern world.**

A question which arises is why did we later fall behind the West in science when we were earlier far ahead. This is also known as Needhams's question. Professor Needham of England was a brilliant bio-chemist who later studied Chinese culture and wrote books on the history of science in China in several volumes. In one of these volumes he has raised the question why China which was at one time ahead of the West in science, having made great discoveries like gun-powder, printing, paper etc., later fell behind and did not have an industrial revolution. The same question is to be raised for India too.

To my mind the answer to this question is that necessity is the mother of invention. We had reached a certain level of scientific development, but after that, it was not necessary for survival for us to develop further. On the other hand, the geographical factor in Europe compelled the Europeans for sheer survival to move ahead in science. The Europeans who were at one time lagging behind India (which was ahead in the fundamental sciences) and China (which was ahead in the applied sciences) learnt these sciences and then for survival had to make further progress.

In India we have a relatively temperate climate and there is not only a summer crop (called Kharif) there is also winter crop (called Rabi). On the other hand, Europe has a cold and harsh climate with the land covered by snow for 4 or 5 months in the year in which there can be no winter crop. Hence for sheer survival the Europeans were compelled to progress further in Science as their population had increased. Perhaps that is the reason why they moved ahead, while we remained behind. This, however, is only my tentative view, and I welcome the views of others.

To solve our massive problems today we must quickly catch up with the West in science. Only with the help of science can we abolish poverty, unemployment etc. which are our major social problems today.

Status of PILs by FRNV in the Supreme Court

1. Writ Petition (C) no. 302/12 FRNV v. Union of India & others

This PIL relates to wasteful advertisements by the Central & State Governments, which is an unnecessary and unjustified burden on the public exchequer, and the need to stop/regulate this practice.

The petition was last listed on 3.7.2014 in the Hon'ble Supreme Court. After a brief hearing, the Hon'ble Court noticed that several States/Union Territories had not filed their affidavits in reply to the writ petition, despite earlier opportunity. As such, the petitioner (FRNV) was permitted to serve notice of the petition on the Standing Counsels for the States/Union Territories, in order that responses may be filed and the matter be heard.

2. Writ Petition (C) no. 823/13 FRNV v. Union of India & others

This PIL was filed by FRNV in the aftermath of the tragedy at Uttarakhand in June 2013. The writ petition relates to the lack of disaster preparedness in India, and severe shortcomings in disaster management techniques, and the structure under the National Disaster Management Act, including the poor functioning of the National and States Disaster Management Authorities.

The writ petition was last listed on 7.7.2014, when the Hon'ble Supreme Court directed that pleadings be completed (replies etc. be filed), before the matter is listed for hearing on 12.8.2014.

EVENTS AND PROCEEDINGS

We are happy to inform you that FRNV is launching a unique platform for Value-Based Discussion and Implementable ideas by the luminaries of India this September. Watch this space for more news on [Living Values – Transformative Ideas For Change](#)

© FRNV

M75, Greater Kailash 1
New Delhi, 110048

Write to us at Frnv@outlook.com
www.valuefoundation.in

Publisher: Foundation for Restoration
of National Values

Editor-in-Chief: Dr. Gopal Ganesh