For 1400 years India and China led the world in Science and Technology
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**Editorial Policy**
Ghadar Jari Hai is a platform for discussing Indian solutions to problems facing India. It is focused on understanding Indian history, philosophy and economic, political and other fields of knowledge, without the jaundiced eye of Eurocentrism.

All serious views, of whatever hue, are welcome as long as the authour substantiates his or her argument and does not indulge in labeling, name-calling and ridicule. We are particularly interested in unraveling pre-British India and the changes brought about through British rule, since the colonial legacy continues to bear great significance for present-day Indian society. We believe that no shade of opinion has a monopoly over the truth and that if we all collaborate in this endeavour, we are quite capable of arriving at insights and solutions to our problems, much as our ancestors did. We seek to publish well-researched articles in various fields, which are communicative at the same time and do not indulge in excessive technical jargon.
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Dear Editor,

The article ‘Fighting an alien war’ in your Jan-June 2015 edition presents an opportunity to re-examine and discuss history from a perspective that is removed from Western subjectivity and bias. However, even before such an idea is acted upon, awareness of historical facts needs to be strengthened. For instance, how many of us are aware that Mahatma Gandhi’s first civil disobedience campaign against British authority in 1919 stemmed from the unrealised hope that India’s contribution to World War I (of approximately 1.6 million men) would be honoured with a transition to self-government?

While the Indian sepoy fought some of the bloodiest and fiercest British wars, it is ironical how colonial medicine in India was ‘enclavist’ in character, in that its main function was to minister to the needs of Europeans and colonial troops. Medical services and measures were restricted to a small sector of the population, primarily to the European civil and military servants and their families. In fact, the Royal Commission of India, which signals the beginning of preventive health measures, was established, in part at least, because of the concern of deaths of British soldiers from diseases during the Sepoy Mutiny. The priority of sanitary work was based on military arguments and designed to protect British soldiers from diseases with total lack of concern for civilian populations.

The article also provokes one to draw parallels with the current state of affairs in terms of defence expenditure. The author writes that the monetary contribution of India during World War I pushed the country deeper into bankruptcy and debt. This year, India will spend 11 per cent of the total government expenditure on defence. The United States spends 4.0 per cent of its GDP on defence, China 2.5 per cent, and Pakistan 3.5 per cent. Evidently, war is a piece of history that refuses to die.

Chandni Nair
(Chandni is a social development participant)

Dear Editor,

The article “The Ghadar of 1915 and its Imprint” in your Vol IX, No.1 & 2, Jan-June 2015 issue, marking the centenary of the revolutionary uprising against the colonial rulers – is indeed a reminder of the deep historical significance of the event and its social, political backdrop. It instilled the spirit of nationalism and united people in opposition to colonial rule, decades before the struggle for Independence took the form of a national movement. As a nation we should salute those who were part of this uprising – peasants, workers, youth and soldiers in the British Indian Army.

However the allusion to the “Indian National Congress as a party by titled Indians with European bourgeoisie values aimed at integrating themselves within the colonial system” – shows scant respect for a party that was in the vanguard of the Independence struggle. Yes there were westernised, highly intellectual leaders who were drawn to it but the party equally attracted scores of other tall leaders, Bal Gangadhar Tilak, Gopal Krishna Gokhale, Khan Abdul Ghaffar Khan and Maulana Azad, not to mention the hundreds and thousands of people in India cutting across class, religion and region who lent strength and credibility to this party.

India at that time and perhaps more now is an amalgamation of cultures, values, philosophies, social and political structures. Class divisions are a reality; so is caste. Social and political transformation can take place with the involvement of people from different backgrounds, capacities, orientation and weave them together for a common cause. Today, while recognising the socio-economic and political realities, we need to be cautious in using labels, of shutting the door to genuine contribution to societal change from any quarter.

Yours sincerely,
Sujata Raghavan
New Delhi
The question, 'Why was modern science not born in Patna or Peking but in Pisa?', was posed by British historian of science Joseph Needham (1900-1995), who highlighted the achievements of science and technology in Ancient and Medieval China in his magnum opus "Science and Civilisation in China" that extended over 27 volumes. That is a question that has bothered several Indians too who are familiar with the brilliant achievements of ancient Indian science but see that India fell behind in the last few centuries. However, on the question of an objective assessment of achievements of Indian science too there are three approaches. One which dismisses it and looks up to Europe as source of reason, rationality and science, and believes in the Eurocentric history of science; the other which believes that most modern achievements in science were known to ancient Indians and bases itself largely on mythology; the third school is the one that rejects both and makes an objective assessment of the subject.

We carry an illuminating interview on Indic science with renowned scientist Roddam Narasimha as our lead story in this issue. He looks at the epistemological foundation of Indic science and compares it with that of the Greek's geometers. He makes a thought provoking conjecture that the algebra that originated in India and was transmitted to Europe through Arab mathematicians was absorbed in Europe and led ultimately to the Newtonian revolution in Physics. It is an accepted view that Isaac Newton's work on mechanics greatly accelerated the development of machines and the Industrial Revolution in Britain and Europe.

We reproduce an article on what we can learn from the traditional wisdom in Indian agriculture by Claude Alvares from a lecture he delivered to Indian agricultural scientists in a conference organised in Goa by Indian Council of Agricultural Research.

In Jewels of India we reproduce an article by Sadia Dehlvi on "Women Sufis of Delhi", a subject not much written about. Sadia Dehlvi a journalist and documentary film maker from Delhi has authoured the book, "Sufism the Heart of Islam"(2010).

We also carry a fascinating travelogue on the current state of Udayagiri and Khandagiri caves near Bhubaneshwar, Odisha.

We carry a poem in our last page by one of the earliest women Sufis, Rabia al Basri (717-801 CE, from Basra, Iraq).

The usual feature, Resonances, reports on some events and news related to the Ghadar of 1857.

News and events related to India's rich heritage are being regularly posted on our website www.ghadar.in. In this way we hope to be in touch with our readers much more frequently than what a quarterly magazine allows us to do.
Bhaskarachrya and Lilavati sculpted Mural at Karnataka University, Dharwad
“For 1400 years India and China led the world in science and technology”

A Conversation with Roddam Narasimha

Prof Roddam Narasimha, FRS, is a distinguished aerospace scientist, and among the first few Indian engineers to be elected to several leading international academies like the Royal Society, the US National Academies of Sciences and Engineering and the American Academy of Arts and Sciences. He has contributed enormously to the development of aeronautical and space sciences in India. He is presently at the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. One of his current areas of research is the study of cloud evolution and dynamics, a subject of great relevance to the Indian monsoons and global climate change. He has written several papers and articles on how ancient Indians ‘thought’ science. These are excerpts of a conversation between Shivanand Kanavi and Roddam Narasimha.

What got you interested in Indian science and what is your approach?

It began during my student days in the US, when I was working for a PhD in aeronautical engineering at the Graduate Aeronautical Laboratories, California Institute of Technology (Caltech) in the late 50s. At Caltech one had the opportunity to make friends with students from all over the world – from Europe to Vietnam and Burma, and to meet and get to know an equally diverse but distinguished international faculty. (I worked with one of them, Prof. Hans W. Liepmann.)

There were great cultural differences among both faculty and students, but as far as intelligence was concerned I did not see any great differences. Intelligence seemed fairly uniformly distributed across the world. So if intelligence was not the problem why were so many countries in the world (including India in particular) rather backward economically and technologically? After meeting many distinguished American scientists, including some Nobel Prize winners, for example, I saw that they had indeed made extraordinary contributions, and some of them (like Richard Feynman) were one-in-a-million kind of truly exceptional people, but they did not seem superhuman. And the science I had learnt in Bangalore, while not as advanced as in California, and was not dissimilar in kind; its heroes were the same, and had come almost entirely from what one may call the Euro West.

So the question arose: hadn’t there been any science or any scientific geniuses in India, and if there had been what were they like?

I started reading about ancient Indic science. This was not easy because not many books were available on the subject then at Caltech, but I did come across a few very interesting ones. The first was Al Biruni, (Persian encyclopedic, 973-1052 CE, among many other books author of Taqīq mā li-l-kind min maqūlah maqūlah ft alaq̲̲ al mardhūlah: “Verifying All That the Indians Recount, the Reasonable and the Unreasonable”—Ed), who had come to India about a thousand years ago with Mohammed of Ghazni as a kind of scholar-in-residence in his moving court. Several chapters of Al Biruni’s book are on Indian astronomy, and they were fascinating to read. He complains that the Hindus think there is no science like theirs, no art like theirs, and no religion like theirs and so on. He said, there were pearls in their science, but they were mixed with dung (mostly puranic stories)!
He comments that some Indians believe in the wildest superstitions: how could the reasoning and logic of somebody like Aryabhata (476–550 CE) be reconciled with such superstitions? He is especially harsh on Brahmagupta (598–670 CE), who compromised his science by upholding the mythologists, e.g. Rahu-Ketu myth on eclipses.

However another scholar in the same century, the Spanish-Arab Said al-Andalusi, (1029-1070 CE, mathematician, astronomer, wrote "history of science": Al-tarif bi-tabaqat al-umam (Exposition of the Generations of Nations) seems to have found mostly pearls in Indic science: in his history of world science he surveyed the contributions of several peoples – Greek, Egyptian, Arab, Hindu (i.e. Indian) etc., but among them the Hindus were the premier nation. They were intelligent, innovative and creative, and a nation favoured by God, he said.

One must remember that at that time the Arab world was a great centre of international scholarship. I found later that the Arabs were usually generous in acknowledging what they learnt from other civilisations (including the Indian and the Greek). There was an internationally known Hall of Wisdom in Baghdad, and the books of Aryabhata, Brahmagupta, Charaka and Susruta had all been translated into Arabic, and some into Persian and Chinese.

It looked as if India had been a major player in science at that time, raising the question when and why things changed. So when I returned home from the US I started trying to read Indic science in the original Sanskrit. It was not easy, but slowly it got to be absorbing.

Can you give an example of Aryabhata's thinking?

Aryabhata was rational, and there is hardly anything that you can call superstitious in his writing. He knew that a solar eclipse occurred when the moon’s shadow falls on the earth, and a lunar eclipse when the moon enters the earth’s shadow. From the shape of the shadow on the moon he inferred that the earth must be round. This may now be common knowledge, but at that time it was heresy. He went on to propose that night and day were caused by earth’s rotation around its axis.

Does he say whether the system was geocentric or heliocentric?

He does not make an explicit statement about it because for him relative motion was what mattered. Actually he used a version of what is today called the Galilean principle of relativity, and gives the example of how, as a boat sails down the river, the trees on land appear to move in the opposite direction to the occupants of the boat. What is stationary and what is moving? To him it does not make a difference (to the dynamics).

Did you study Sanskrit?

Sanskrit was my second language at school but I did not learn enough, so at my father’s prodding I attended early morning classes at a temple in Gandhi Bazar. At college I continued my contacts with Sanskrit by attending the late Shri D V Gundappa’s remarkably multi-lingual, multidisciplinary Sunday classes at the Gokhale Institute of Public Affairs in Basavanagudi.

Aryabhata rejected the story of a daanava named Raahu swallowing the sun or his tail Ketu covering the moon during eclipses. Eclipses occurred due to shadows, he said, and he did not see any shadow of a tail!
I started picking it up again towards the end of my stay in the US, and began a rather desultory programme of reading books in the original when I came back.

It slowly became clear to me that Aryabhata, Bhaskara (Known as Bhaskarachrya or Bhaskara II, 1114–1185 CE, mathematician, astronomer) were very smart people indeed, and would be comparable to the best I had seen anywhere. At the same time their style of reasoning, their philosophy, and the way they ‘thought’– all of these seemed very different. Thus the question became: why and how was it that science in India was so strong in what the West calls its Dark Ages, but had in more recent times stagnated and lagged behind?

Can we go back to the dispute between Aryabhata and Brahmagupta?

Aryabhata rejected the story of a daanava named Raahu swallowing the sun or his tail Ketu covering the moon during eclipses. Eclipses occurred due to shadows, he said, and he did not see any shadow of a tail! Brahmagupta, who came more than a century later, was a great mathematician himself, but did not agree with Aryabhata about rejecting the Rahu-Ketu myth and criticised him and his followers scathingly.

However, one of these, Varahamihira (505-587 CE), dismissed Brahmagupta’s arguments as ‘absurdities’, as Brahmagupta’s predictions of eclipses were also based on the shadow theory! (This inconsistency in Brahmagupta was Al Biruni’s main target.) One thing I learnt from all this was that the debate between mythology and ‘rational’ science in India is at least as old as Aryabhata and Brahmagupta, and to this day has not been resolved in Indian popular thinking on science.

I think there is a wonderful play waiting to be written, a play involving Aryabhata and Brahmagupta, Plato, Newton, Ramanujan, Neelakantha and so on, arguing across the ages!

In spite of the dispute, Brahmagupta and Aryabhata continued to be treated with respect by later Indic mathematicians like Bhaskara and Neelakantha. Unlike in Europe Aryabhata did not suffer an inquisition or punishment.

I remember wondering as a kid what the Ontikoppal panchanga (published in Mysore, brought home every Ugadi by my father), meant when it claimed it was made ‘Aryabhatiyareetya’ (following Aryabhata’s text the Aryabhateeya), mentioned ‘drg. ganita’ (syllables that sounded strange and fascinating to my childish ears), and so on. Clearly Aryabhata was the father of an Indic approach to astronomy that remained foundational for nearly 1500 years.

What was drg.ganita?

It signified an important concept in the Indian philosophy of astronomical science. The major objective was to achieve agreement between drik (seeing, observation) and ganita (calculation).

In today’s language drg.ganita’s outlook was that the computed prediction must agree with observation.

This may not seem surprising, but Greek thinking needed a conceptual model (sometimes very elaborate, with assumptions many of which we now know to have been wrong) before one got down to calculations (which they had largely learnt from the Babylonians). Of course they also wanted agreement between prediction and observation. On the other hand according to Plato a smart ‘geometer’ should be able to figure it all out by pure thinking.

Indic philosophy emphasised calculation without insisting on the elaborate models of the Greeks—a philosophy that I like to think of as ‘computational positivism’. This philosophy served us well till about a century after Newton – Indian ganita predictions were as good as or better than the best elsewhere.

However in the 19th century the power of the Newtonian revolution coupled with the use of algebra and computation changed the character of astronomy (and other physical sciences). And progress in Europe was so rapid and spectacular that the level of accuracy achieved there surpassed that of Indic methods by large margins early in the 19th century.

So was all Indic science rational?

No, we have already talked about Brahmagupta, for example.
However, I gradually came to the conclusion that classical Indic science was indeed generally rational, but it was rationality of a different kind; and it did have conflicts with mythology.

We must however remember that, although Newton is generally seen as rational about his science, he did not consider it as important as what he secretly wrote about theology. Not many know or remember that. Around that time and later in Europe the possible existence of great ancient civilisations in Asia and Africa became a serious issue, as estimates of their age were approaching the Biblical date of Creation.

If you compared the views expressed in Europe during the so called Dark Ages there (before the Renaissance), Indian science was perhaps more rational than European science of the time.

Nobody tried or convicted Aryabhata just because he said Rahu-Ketu is nonsense. At the same time Brahmagupta’s criticism did not affect his reputation as a brilliant scientist. Both of them, I believe, were computational positivists, so their other views seem to have been seen as secondary, lost in the indifference of traditional Indic tolerance of different views.

**So how long did this classical science last, and when and why did it end?**

Some twenty years ago I came across Joseph Needham, a distinguished British scientist who had studied Chinese science and technology in great depth and also wrote a bit on the sides about Indic science. He concluded that as the West got to know more about Eastern science, the question that demanded an answer was why neither China nor India gave birth to modern science, despite the fact that they were ahead of the West in science and technology for 1400 years (say 200 CE to 1600 CE).

*Why was modern science born in Pisa and not in Patna or Peking? – Needham asked.*

It was the first time that I had seen a distinguished western scholar acknowledge so readily that India and China had earlier been ahead for 1400 years. This question is not much discussed in India. Some Indians take the extreme view that everything was known to our ancients, but some others go to the opposite extreme and consider everything Indian was superstition and rubbish (an imperial British view typified by Macaulay’s comment about how one shelf of good European books was worth the whole literature of India and Arabia). It slowly became clear to me that both sides were wrong: the history of science is not linear – it is chequered.

The European dark ages were anything but dark in India; our dark ages have been the last several centuries.

A study of European opinion in the 15th-16th century leads to the conclusion that Europe was becoming aware at that time that the East had been ahead of them.

If you read Francis Bacon you will see that he recognised the power of new inventions like the printing press, the nautical compass, and gun powder (all from China, as we now know) – inventions that had changed the world more than any empire, sect or star, he said); and then there was sugar, which came from India. He was dazzled by them, just as I was dazzled by all
the things that the West had done when I first went to the US. Bacon blamed the Greeks for the sad state of European knowledge. He called them a set of quacks and charlatans; his criticisms of Plato and Aristotle were scathing. Europe had taken the wrong path, and had to change. It is almost like what some Indians began to say in the 19th and 20th centuries as our classical epistemology collapsed: ‘all that we have learnt is worthless’.

As one begins to analyse classical Indic and European texts, it becomes clear that, deep down, at a fundamental level, it is all really about how one acquires reliable new knowledge, i.e. about epistemology. In the 17th century Newton almost implemented what Bacon had said. What changed at that time? The standard western answer is mathematicisation of science, but that characterisation is misleading. It depends on what you mean by mathematicisation. Surely one cannot say that ancient Greeks and Indians were not mathematical?

Actually what happened in the 16th-17th century was that the meaning of mathematics changed. Till then it was geometry and Euclid in Europe (borrowed back, incidentally, from the Arabs and their Arabic translations from the Greek a few centuries earlier).

After the 16th century it began to include numbers and algebra, both of which had come from India. Algebra or beeja-ganita had developed into a ‘new maths’, and was transmitted to Europe through creative Arabs and Persians; and the trajectory of that diffusion can now be traced fairly well.

The word algebra started getting used in Europe in the 15th-16th centuries, and slowly grew in usage, even as the use of the word geometry declined. Indeed the new mathematics even affected geometry, leading to what we now call analytical geometry.

Thus what really happened in Europe then was the algebraisation of mathematics and (a little later) of the exact sciences like physics. As the renowned mathematical physicist Hermann Weyl said, Europe moved away from Greek ideas to follow a path that had originated in India, where the concept of number had been considered logically prior to the concept of geometry. I believe this was a strong factor in the revival of science in Europe.

Bacon’s formula of knowledge = power (in contrast to the Indic equation knowledge = salvation) translated to growing power over the East. The European languages did not have a word for algebra at the time so they took over the Arabic word al jabr, just as we too have taken over IV, radio, etc. from English.

Descartes once referred to algebra as ‘barbarous’: it was clearly not a direct Greek or European legacy. Francis Bacon realised that much new knowledge had come from outside the European culture area – presumably the East.

What is the concept of beeja and ganita, which you have spoken of recently as Indic concepts that changed the world?

Ganita is literally reckoning, counting and manipulating numbers; gan is ‘to count’ in Sanskrit. In the west a mathematician was, and was called, a ‘geometer’ for long; and in India a mathematician was a gan aka, a numerist.

Bacon blamed the Greeks for the sad state of European knowledge. He called them a set of quacks and charlatans; his criticisms of Plato and Aristotle were scathing.

India was number-centric. Bhaskara said beeja-ganita (algebra) is avyakta-ganita, i.e. ganita with unmanifest (i.e. unknown) quantities, which need to be found out from the data available and so made to become vyakta, ‘known’. That unknown, the hidden, is beeja. Thus computing with the unknown so that it becomes known is beeja ganita, which went as algebra to Europe through the Arabs (who made their own creative contributions). It appears as if the modern scientific revolution in Europe was a response to the inventions, both mathematical and technological, that went from the east through the Arabs. These inventions dazzled the Europeans, just as their inventions in turn dazzled us two or three hundred years later.

So what was the difference between Europe and India in the way science was done?

Neelakantha, a 15th-16th century mathematician-philosopher
Neelakantha actually talks about epistemology, i.e. the science of knowledge-making, and describes what methods lead to the generation of valid, reliable and belief-worthy knowledge from Kerala, explicitly tells us how to do science. I had been trying to infer from Aryabhata and Bhaskara what their attitude towards science and mathematics might have been, and then I came to know about the Kerala School and Neelakantha’s *Jyotirmimamsa* (which unfortunately has not yet been translated into English).

He actually talks about epistemology, i.e. the science of knowledge-making, and describes what methods lead to the generation of valid, reliable and belief-worthy knowledge. Neelakantha’s views throw light on where Indians and westerners differed in their epistemology.

Indic methodology was primarily based on observation, experience (*pratyaksha, anubhava*) and inference, skill (*anumana, yukti*). The Greek conception was based on deductive two-valued (i.e. yes or no type) Aristotelian logic, often following from stated axioms considered ‘true’ or self-evident (typified by Euclid).

In the 15th-16th century a fusion seems to have started taking place between the two in Europe. Though Indians were in touch with the Greeks, at least since the times of Alexander, they only borrowed some tools from them but did not accept their philosophy or ideology.

After having rubbished Greek philosophy, Francis Bacon went on to invent a kind of hybrid that combined experience, observation (in particular through experimentation) with inference of axioms. Axioms thus ceased to be self-evident truths, and became instead tentative inferences.

This method began to be used with Newton, and led to what has spectacularly become the global enterprise of ‘modern’ science. In his great work *Principia Mathematica Philosophiae Naturalis* (The Mathematical Principles of Natural Philosophy) – perhaps the biggest ever game-changer in the world of science – Newton starts like Euclid in the first book, stating and discussing three ‘axioms’ (i.e. his three laws of motion); the rest is full of theorems, lemmas, QED etc.

In the third book he changes gear, introduces numbers from observations, and inferences from them in the light of the axioms and results of Books I and II.

Book III (of Principia-Ed) seems to me, partly Indic in style, because of the use of inference: QIE (~‘what may be inferred’) often replaces the Euclidean QED (~‘what had to be demonstrated’).

Newton presumably realised that the third book is not in the Greek spirit, so he inserts a short prefatory note on ‘The Rules of Philosophical Reasoning’ before embarking on Book III, where he justifies his new procedure. He sets out and explains four (new) rules,

![Newton's work - Principia Mathematica Philosophiae Naturalis (Coutesy: http://www.loc.gov/)](http://www.loc.gov/)

which have very little to do with the Greeks. But there are also curious commonalities between India and Europe.

Calculus was thought to be a purely European invention (as we are taught at school even now), associated with the names of Newton and Leibnitz, but it was not. Many important parts of it, at least, were known in Indian ganita centuries earlier. This included infinite series, for example, of the Taylor-Mclaurin type, second-order difference schemes, and the idea of limits – and so on.

Correspondingly, it cannot be said that Archimedes (or some other Greek) started science (compare Bacon); nor did it all start in India, for some little science must have been there even at very early times.

There were different contributions from different cultures. Ideas did travel (both ways), but not all of them were accepted along their way by local cultures. For example Indians borrowed the idea of epicycles from the Greeks, but used it very differently: the smaller circle moving along the circumference of the bigger one could keep changing its diameter. This would have shocked the Greeks because for them it would spoil the symmetry and beauty of a model based on just circles. To the Indians, however, the resulting kinky ellipse-like curve was computationally simpler and more efficient. It was the sort of thing that Bhaskara said would bring aananda to the ganakas!

Indians never really took to Euclid till it came out of Macaulay’s bookshelf into the educational system he prescribed for India in the 19th century. In the Indic Nyaya system of knowledge creation (although it makes no reference to the Greeks), the method of hypothesis to conclusion based on (deductive) logic is frowned upon, because the basis for taking the hypothesis as a given truth could not be justified. You have to compare it with or base it on observation. This is where Bacon made his leap, coupling hypothesis and inference.

Pratyaksha (observation, including experiment) was the number one pramaana (i.e. source of valid knowledge) in all schools of Indian philosophy; it was universally accepted. This must have been one of the few things that all of them agreed on! The second was anumaana (inference), accepted by every school except the Lokaayatas. As Neelakantha says, knowledge arises pratyakshena anumaanena – from observation and from inference.

What about the aagamic pramaana?

In Nireeshwara Saamkhya they say there is no evidence (pramaana-abhaava) for God. Of course they don’t say that there is no God, but only that there is no evidence for it.

Aagama can also be taken as existing accumulated knowledge rather than scriptural, an important if not decisive source of knowledge.

The aagamas were indeed accepted as a third pramaana in some Indic philosophical systems. What you mention is close to what the Saamkhya philosophers call aupta vacana (the word of the trustworthy), which they accept as the third pramaana after pratyaksha and anumaana, but they make it clear that Vedic knowledge is not privileged, because it is also essentially human in origin, so potentially fallible like any human work. In Nireeshwara Saamkhya they say there is no evidence (pramaana-abhaava) for God. Of course they don’t say that there is no God, but only that there is no evidence for it.

Classical Indic scientists rarely appealed to scriptural knowledge in their science; however many of them, including Neelakantha, were also very accomplished Vedic scholars. In general, the great scientists (e.g. Charaka, Bhaaskara) had respect for Saamkhya thinking. How can you say all this was not rational?

The history of ideas, it seems to me, is chequered, and that makes it fascinating – more fascinating than that of kings and battles.
One of my favourite verses of the Quran is Surah Al Azhab which makes it clear that spiritual blessings are intended for both righteous men and women who are equal in the eyes of God. The woman “auliya” meaning friend of God appeared in the early history of Islam and the dignity of sainthood was conferred on women as much as men. The doctrine of Sufism which seeks Union with God through love and devotion does not leave space for the distinction of sex. Islam has no order of priesthood and nothing prevents a woman from achieving great mystical heights. Sufis themselves have chosen the famed mystic woman Rabia al Basri (717-801 CE from Basra, Iraq) as the representative of the first development of mysticism in Islam.

Rabia was consumed by love and desire for God and a famous anecdote explains the Sufi attitude. Rabia was found running while carrying a fire torch in one hand and a pail of water in the other. When people asked the meaning of her actions, the Sufi replied, “I am going to burn paradise with the fire and dampen the fires of Hell with this water so that people love God for the sake of God and not for want of paradise or the fear of Hell”.

Among the other early women mystics are Umm Haram (who brought up Prophet Muhammad) whose tomb is in Cyprus, Rabia bint Ismail of Syria, Muadhah al Adaiyya of Syria, Nafisa of Mecca, Zainab and Ishi Nili of Persia. These women made major contributions to the vitality and development of Islamic thought. For Sufis, it is the inner purpose of heart that matters and not outward forms. Some amongst Delhi Sufi women are recognised the world over.

Bibi Fatima Sam’s shrine is in Kaka Nagar facing the Oberoi Hotel in Delhi and the tombstone recognises her title as the Rabia of Delhi. The mystic woman is frequently mentioned in the published discourses of Hazrat Nizamuddin Auliya (1238-1325 CE), who met her when she was alive and continued to visit her shrine for meditation. Commenting on Bibi Fatima’s spiritual status, the Sufi master said “When the lion has come out of the forest, nobody asks if it is male or female.” She was the adopted sister of my master Baba Farid Ganj e Shaker. Bibi Fatima Sam once told me “The saints will cast away both worldly and religious blessings to give a piece of bread or a drink of water to someone in need. This is a spiritual state one cannot obtain by one hundred thousand fasts and prayers. You may seek love and you may seek soul. "Seek them both, but it won't be easy".

It is believed that after her death she appeared in a fellow Sufis dream and said “One day by appointment I went to the revered Lord and passed some angels who asked, ‘Who are you and why should you be proceeding so carelessly?’ I replied, 'I have sworn an oath that I shall not move till God himself summons me'; the wife and the daughter of Prophet Muhammad came and I fell at their feet. They said 'Fatima Sam, who is there like you today? God has sent us in search of you'. I said, 'I am your slave; but I have sworn an oath'. Then the decree came from God: ‘Fatima Sam speaks rightly. You both must depart and leave her alone.’ Then I heard God call, 'Come to Me, to Me.' I moved and spoke to the lord.”

Bibi Zulekha known as Mai Sahiba is the mother of Hazrat Nizamuddin Auliya.

Widowed early, she brought up her son and daughter Bibi Jannat under great hardship earning a living by weaving cloth. When there was nothing to eat in the house, Mai Sahiba would say,"Nizamuddin. Today we are the guests of God". She explained to the children that God sent down spiritual nourishment which was different than the taste of worldly food.

Mai Sahiba was a pious woman completely devoted to God. One new moon she said, "Nizam! At whose feet shall you put your head next month"? The Shaikh with tears
in his eyes said, "At whose care shall you entrust me?. "I will tell you tomorrow" Mai Sahiba replied and directed him to go and sleep in the neighbouring house of Shaikh Najeeb ud din Mutawakkil, Baba Farids brother and disciple. In the early hours of the morning the maid servant rushed to call Mai Sahiba's son who hurried to the house. She held his right hand and said, "O God. I entrust him to Thee" Having said this, Mai Sahiba breathed her last.

Mai Sahiba's shrine is on Sri Aurobindo Marg earlier known as the Adhchini village. The shrine is visited by hundreds of devotees, specially women. It is believed that Mai Sahiba cannot bear the sorrow of a woman and bestows her blessings on them immediately. Whenever in acute distress Hazrat Nizamuddin Auliya used to go and pray at his mothers shrine and said his prayers were always answered.

Jahanara (1614-1681) daughter of the Emperor Shahjahan, like her brother Dara Shikoh was a Sufi and like him an the authour of biographical works on contemporary and historical Sufi saints. Jahanara wrote a biography of her Sufi mentor Mulla Shah as well as a literary biographical account of the famous Sufi of Ajmer, Moin al-Din Chishty (d. 1236). In "The Confidant of Spirits" the Princess uses the word faqira the feminine form of faqir to signify her own spiritual vocation as a Sufi woman.

Jahanara spent many weeks along with her father Shahjehan at Ajmer seeking the blessings of Khwaja Gharib Nawaz. The princess details her spiritual activities at the shrine and her mystical experiences. “Praise be to God as I attained the happiness of pilgrimage to the illuminated and perfumed tomb of the revered saving master. I went to the holy sanctuary and rubbed my pale face on the dust of the threshold. From the door-way to the blessed tomb I went barefoot, kissing the ground. Having entered the dome, I went around the light-filled tomb of my master seven times, sweeping it with my eyelashes, and making the sweet-smelling dust of that place the mascara of my eyes. Of Khwaja she wrote,

Our Moin ud-Din is annihilated in God,
And after that he subsists in the absolute essence.

The Sufi princess is buried in a small white marble tomb, open to the elements and devoid of any dome opposite her beloved Sufi Hazrat Nizamuddin Auliya in Delhi. The inscription on her shrine reads as follows:

He is the Living, the Sustaining.
Let no one cover my grave except with greenery,
For this very grass suffices as a tomb cover for the poor.
The annihilated faqira Lady Jahanara,
Disciple of the Lords of Chisht,
Daughter of Shahjahan the Warrior
(May God illuminate his proof)."

Sadia Dehlvi is a journalist and documentary maker and has authoured, "Sufism the Heart of Islam" (2010) and "The Sufi Courtyard: Dargahs of Delhi"(2012)
The undoubted and perhaps unintended – or unforeseen – ill-effects associated with the conventional green revolution package of practices has compelled both farmers and governments to look more favourably at organic farming, which appears unassociated with any of these deadly impacts.

Similarly, critical evaluation of aspects of “modern” agriculture – particularly its costs and its in-built unsustainability associated with non-renewable resources like fertilisers based on imported petrochemicals – are leading to a felt need to take a re-look at the varied practices associated with indigenous or traditional agriculture which cost little or nothing at all. It is also a fact that prior to 1966, the use of deadly pesticides to deal with problem of insects simply did not exist.

In fact, some features of indigenous agriculture have been taken over by modern agriculture. For instance, no-till farming, which is a practice associated with swidden or kumeri agriculture is now provided a new label as “conservation agriculture technology” or CAT. In this so-called new avatar, supported not by adivasis but by multinational corporations, toxic chemical weedicides are used to kill off weed cover, thus providing a substantial mulch (another feature of organic farming) over the soil. The intention is to not disturb soil structure, which if often profusely damaged by conventional ploughing operations or increase soil density, which is inevitable when one uses tractors.

Masanobu Fukuoka was not the first farmer to introduce no-till agriculture which he reported in his remarkable book, One Straw Revolution. That is a claim only indigenous agriculture can truly make.

For thousands of years, this country has indeed done amazing agriculture. How we so readily and easily forgot a good deal of it is beyond understanding. The inevitable proof of the success of good agriculture is that it enables a significant population to survive. In this place called India, we know the technology was adequate simply because society survived. But survival (restricted only to the business of eating) is not everything. Indigenous agriculture also permitted and maintained many other creative things, including a classical culture that remains very much alive even in our times. It also enabled an alternate industrial mode of production exploiting energy at ambient temperature which supplied the entire world with textiles till the colonial rulers, desperate to find a market for their mill-made cloth, chopped off fingers of weavers of cloth.

The other interesting feature of this older agriculture – still with us in many parts of the country – was its phenomenal diversity, which led in turn to an elaborate and diverse cuisine unrivalled by any other part of the globe, with the possible exception of China. In fact, when one compares the diversity of food and the diversity of recipes for cooking that food, both India and China are without any doubt “developed” nations. Conventionally seen as “developed”, countries like the United Kingdom or the USA with their poor food traditions including more recent, positively unhealthy relatives labelled appropriately as “junk food,” are at the bottom of the ladder of civilisation. The sooner we accept this, the better for all concerned.

It is this diversity and abundance of food that has enabled this country and its society to evolve a food sharing tradition that again
finds no parallel in other parts of the world. Even today, gurudwaras and mandirs routinely feed thousands of people who visit these shrines. This generosity could only germinate in the presence of ample quantities of food. Several edicts and norms required the mandatory sharing of “annadana.” In contrast, try getting a European to feed even his neighbour, let alone a stranger!

Now an abundance of food can only come with an intimate knowledge of the soil and of plants. Take plants first. I often give the example of our rice varieties to make a point. India produced – hold your breath – 300,000 varieties! This is well documented and not some charming fiction created by the RSS! The Cuttack Rice Research Institute has 60,000 varieties in its germplasm bank. MP Rice Research Institute, founded by Dr R.H. Richharia, grew 19,000 varieties in situ. When I visited IRRI in the Philippines, I found 72,000 varieties in its gene bank, most of which were taken under the garb of “scientific research” from India, but eventually ended up in the US. This is a phenomenal figure of seed diversity and does indicate a very high level of understanding of seed selection and breeding techniques.

Since we are in Goa, let me tell you I traced the historical existence of sixty varieties of rice: highland, wetland and coastal (salt). Each seed, being a cultivar, is a piece of valid indigenous knowledge. Each seed had different qualities in terms of taste, photo-sensitivity, dormancy, even colour (purple varieties). Bred to different environments, soils and tastes, each seed contained unique knowledge. Please try and see if you can ever compare the vast knowledge encapsulated in 300,000 varieties of rice with the modern knowledge of the few rice varieties that dominates scientific institutions. In fact, the International Rice Research Institute has produced after 50 years of research only two major successes, IR8 and IR36. Modern scientific knowledge thus pales in comparison. By losing the indigenous varieties, we lose pieces of knowledge contributed by this civilisation to the agricultural basket.

The art of breeding rice varieties is a dynamic process. Dr. Richharia – himself a leading rice breeder – found he had to revise his opinion about adivasis’ knowledge of science when he tried out certain seeds which he got from these farmers but which he was able to grow but unable to breed. He discovered later that these were male sterile lines. He had no idea of how the adivasis of MP had come to know about the existence of these varieties (which modern breeders are still struggling with) but they knew how to identify such varieties, what they were meant for and how they ought to be used in their rice fields to create new varieties. None of the so-called “saline” varieties of rice were created by modern science; they were bred by farmers in coastal belts.

Most, if not all, plant varieties used by Indian agricultural universities – particularly the vegetables – are actually farmer-bred selections. They are merely provided a new name and then passed off as a result of scientific research. This is so clear in the case of brinjal, of which this country boasts 2,500 varieties, none of which originated with any modern scientific establishment. It is a dozen of these varieties (including a brinjal variety bred by the farmers of Agassaim, Goa) that were appropriated by agricultural scientists at Hebbal and Coimbatore before being given so-called scientific names, and later handed over to Mahyco for use in the manufacture of Bt brinjal. Now they face a suit for biopiracy filed against them by the National Biodiversity Board.

It is this complex and extremely rich seed tradition which was assaulted by a development paradigm which one finds difficult to understand. The drastic change was heralded in rice and wheat by announcing a label: High Yielding Varieties (HYV). So even though

Each seed, being a cultivar, is a piece of valid indigenous knowledge. Each seed had different qualities in terms of taste, photo-sensitivity, dormancy, even colour (purple varieties). Bred to different environments, soils and tastes, each seed contained unique knowledge.
the traditional varieties were equally productive, and better suited to their environments, they were simply ignored in favour of the varieties that were given the name “high yielding”. This piece of information I got through discussion with agricultural officers.

This competence in agriculture was not just found exhibited in the form of seed diversity or the design of ploughs. Agricultural knowledge was also available in texts, many of which have since been lovingly translated and published by the Asian Agri-History Foundation under the pioneering leadership of Dr Y.L. Nene. Parashara’s *Krishi-Parashara* is to be found in several languages, including Kannada. Other groups like the Centre for Indian Knowledge Systems (CIKS) have also created a new library of these earlier texts dealing with agricultural practice, including the *Vrikshayurveda*. I have no doubt that some of these practices laid out in these and several other texts which include the *Krishi Gita*, the *Mriga Pakshi Shastra*, and the *Vishuvaavallabha* will return with a vengeance, when farmers side-step conventional modern green revolution package of practices due to the intractable problems associated with it.

My colleague Prof. C.K. Raju has written a few books in which he shows that the extraordinary focus on agriculture in India engineered the capacity building of predictive skills involved in the elaborate study of the monsoon, crucial to Indian agriculture. This led to the invention of the calculus and a strong mathematical and astronomical tradition.

There are several reports of agricultural specialists sent from England to study India’s agriculture and how to improve it in the period from 1750 to the 1950s. After their study tours and reports, these specialists spurned the very idea of any improvements. Their unanimous conclusion was there was not much to teach, much less anything to improve, since the farmers obviously knew their stuff. The Alexander Walker Report on agriculture in eighteenth century India is available in Dharampal’s *Collected Writings*.

Substantially the same message, in greater detail, can be found in the Report on the Improvement of Indian Agriculture written by Dr John Augustus Voelcker, the consulting chemist to the Royal Agricultural Society of England. He toured the country extensively from 1889 to 1891. Forty years later, Albert Howard arrived. He frankly confessed that though he had come to teach the Indian peasant, he had ended up learning many things instead. It is Howard’s work that led to the formation of the Soil Association of Great Britain and is today consider as the progenitor of organic farming as we know it today.

The historian Dharampal’s Chinglepet data, carefully assembled from British records and reports, indicates that output of field crops in that region was higher than that associated with the best of the so-called green revolution package of practices used today.

Large-scale, meticulously planned irrigation systems were erected to sustain agricultural production. These not only enabled people to transport and store water in very large quantities (examples:

Rajasthan, Pune) but the system of tank irrigation (for example, in Karnataka) was so well designed that when engineers proposed to increase the number of tanks, they discovered there were no more locations available since the existing ones had adequate arrangements to collect all the rainfall that fell on the ground in the areas. Indian water harvesting systems were designed to deal with the monsoon, that is, to collect rain where it fell, precisely like the Mumbai housewife who finds she must collect as much water from her tap within an hour every morning when the public water supply starts and then shuts. Modern irrigation systems, in contrast, are built on the technology
of radical intervention, like large dams. For this reason, they are never sustainable, since they dam the runoff instead of harvesting it. In fact, the forests that harvest and store the water and then help release it gradually are slaughtered and drowned in the dam reservoirs. Since catchment areas are denuded, the life of the dam is considerably reduced, due to sedimentation. In the tank system, the silt accumulated in tanks was removed and used to fertilise agricultural lands as a normal practice.

There are many other indicators which I will not discuss in too much detail but those working in botany and plants know that Garcia de Orta faithfully recorded local knowledge of a huge variety of plants that were being used in India for medicinal purposes and which was thereafter transmitted by him to Europe. The knowledge he collected was circulated in the form of the Colóquios dos simples e drogas he cousas medicinais da India (“Conversations on the simples, drugs and medicinal substances of India”), published at Goa in 1563. His understanding and systematic collection of this vast indigenous knowledge of plants is sometimes misunderstood to suggest or even claim that it was he who discovered the various medical uses of these plants himself!

The amazing thing is we simply dumped all this valid and priceless knowledge on the grounds that it was out of date, to be replaced for the better by Western science which we felt at that time was superior, some sort of new toy which we felt would replace our own toys. We were told that by subscribing to imported agricultural technology, we would be adopting entirely new knowledge and production levels which would give us better yields and therefore we were invited to discard our indigenous knowledge as no longer required, like some old typewriter.

However, we know now that the introduction of new varieties which did not have the benefit of close adaptation to the environment and were also grown as monocultures, required the use of pesticides, and eventually led to the contamination of food. No one would ever claim that foods grown by the older methods contained poisons! That is a claim, however, it is difficult to refute with the crops raised by modern agriculture, especially the latest gadgets we call GMOs.

Worse, the effects of unloading salts like urea on a massive scale in the soil led to soil sterility, as the conditions for the survival of soil microbes, earthworms and other soil fauna became impossible. In the older system, the soil had been replenished with infusions of microbial matter from composts. In the systems organic farmers follow today, there is much reliance on precisely the same method, basically through the use of panchgavya and jeevamrut. These liquids contain consortia of beneficial microbes which restore the soil’s inherent fertility. Scientific studies have confirmed the availability of soil microbes through the use of such traditional media.

I am confident that if we consider the green revolution period of Indian agriculture as a period of transition, giving us grace time so to speak, to move into a sustainable agriculture phase, that would be the best possible interpretation we could place on it. We need to return to an agriculture that is completely devoid of the use of poisons and poisonous and poisoned plants, which is something we did for thousands of years. We must move into an agriculture that does not destroy the soil. We must return to an agriculture in which we do not unnecessarily replace the inherent potentialities of nature herself, provided in the power of the soil fauna and biodiversity.

There are two ways to retrieve knowledge we have all but forgotten. One is by studying the texts of Indian agriculture of the past. An equally helpful way is to closely study the experience of the organic farming community. Many of these have worked now for more than thirty years. People like Dr Anil Gupta from IIM, Ahmedabad, have been documenting the indigenous innovations of our farmers now for several years. That capacity to innovate has not died. In fact, it is flourishing, as I have tried to show in the pages of the Organic Farming Sourcebook.

So we have a good base to work out from. I consider the holding of this conference an important step in that direction.

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He blogs at: http://www.typewriterguerilla.com/
Rock cut caves and sculptures have always fascinated me. This time, during my trip to Bhubaneswar, I made it a point to keep some time apart for a visit to the famed Udayagiri caves. While the main motivation for the visit was to appreciate the history and architecture of the cave, I also wanted to compare these rock cut caves with the cave temples of Mahabalipuram. True, it was unfair to compare these two great monolithic marvels built centuries apart – the former about 2200 years back and the latter about 1300 years back. But antiquity has its own charm and oddities.

However, I was thoroughly disappointed with the gross neglect of the caves. But the way these caves were being used as living quarters by sadhus and mendicants just appalled me. In the soothing shade inside one of the caves, a young couple were in intimate discussion — definitely not about the inscriptions. In another cave, a sadhu was enjoying his chillum in a contented reclining pose. The caves had graffiti all over them, mostly the handiwork of lovers who wanted their names to be counted in history. These caves which had survived the onslaught of weather and time over 22 centuries, are now on the verge of being turned into ruins this century.

If and once you get over the shock of this gross neglect and misuse, you slowly tend to get engulfed by the intriguing history and the layout of the caves.

The Udayagiri and Khandagiri caves, which stare at each other from opposite hillocks, are believed to be partly natural and partly artificial caves. They are of archaeological, historical and religious importance. They are a set of finely and ornately carved caves. It is said that most of these caves were carved out as residential blocks for Jain monks during the reign of King Kharavela. Udayagiri means "Sunrise Hill" and has 18 caves while Khandagiri meaning "Broken Hill" has 15 caves. The most outstanding of this group of caves is Ranigumpha in Udayagiri which is a double storeyed monastery.

Even today, at close range, an observant visitor can notice patches of spectacular carvings among others which have weathered over time. These patches give a glimpse of how imposing these caves and temples must have been at the time of their construction.

These once spectacular caves also have an intriguing history. They were built during the tumultuous days of the resurgence of the Kalingan empire and the withering away of the Mauryan empire, their former subjugator.
Very early in Kalingan history, the Kalingas acquired a reputation for being a fiercely independent people. Ashoka’s military campaign against Kalingawas turned out to be one of the bloodiest in Mauryan history due to the fearless and heroic resistance offered by the Kalingas to the huge armies of the expanding Mauryan empire. It is believed that on account of their exceptional bravery, emperor Ashoka was compelled to issue two edicts specifically calling for a just and benign administration in Kalinga.

Mauryan rule over Kalinga did not last long. By the first century before the common era, Kalinga’s ruler Kharavela had control over much of the sub-continent and Mauryan Magadha had become a province of the Kalingan empire. It is during Kharavela’s reign that the magnificent caves of Udayagiri and Khandagiri were built. Surviving inscriptions in the caves in Prakrit mention that Prince Kharavela was trained not only in the military arts, but also in literature, mathematics, and the social sciences. He was also reputed to be a great patron of the arts and was credited with encouraging dance and theatre in his capital. These records reveal that Kharavela, on the premature death of his father, took up the administration first as a Yuvaraja and then on completion of 24 years of age ascended to the throne as Maharaja. The Mahameghavahana dynasty continued to rule over Kalinga and Mahishaka up to the 1st century CE.

Historical records point out that the Kalingan state had a formidable maritime reach with trade routes linking it to the then-Simhala (Sri Lanka), Burma (Myanmar), Siam (Thailand), Vietnam, Kamboja (Cambodia), Malaysia, Borneo, Bali, Samudra (Sumatra) and Jabadwipa (Java).

While Kharavela patronised Jainism, evidence shows that all religions were respected in his rule. To this day the Buddhist rock edicts of Ashoka at Dhauli, about 10 kms away, face the Udayagiri caves showing that Buddhism also thrived under his regime.

Coming back to the caves, they were constructed for the residence of Jaina ascetics with frugal amenities. Most of the caves consist of a row of cells, or dormitories, open either directly to the verandah or to the open space in front. Each cell has a crude rock bed with a sloping rise of the floor to serve as a pillow. The doorways of the cells have pilasters on either side with crowning animal figures and arches over them are decorated with flowers, creepers and animal motifs. These artistic panels depict popular legends, historical episodes, religious observances and dancing performances.

Ranigumpha and Swargapur-Manchapuri caves are the largest and double storied. Ranigumpha, or the queen’s palace, stands out architecturally from the rest. In contrast, Hathigumpha stands out for its historical importance -- housing the famous inscription of King Kharavela engraved on its brow. The developed state of early medieval Indian art is visible in the depiction of 24 Tirthankaras along with Sasanaidevis in the Barabhuji cave, Surya Gajalaksmi and Jaina symbols in the Ananta Gumpha of Khandagiri.

The pride of place of Udayagiri and Khandagiri caves in ancient Indian architecture is undeniable. But they are on the verge of irretrievably getting turned into ruins.

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Aligarh experimented with self-government in 1857

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Aligarh: The 1857 revolt began in Meerut, but gained strength as it spread. There is a popular adage about the 1857 revolt: "Meerut se jab hawa chali, Aligarh aatey andhi ban gayi." (The winds that blew from Meerut became a storm by the time they blew over Aligarh). The revolt in this region also saw a brief, 20-day experiment with local self-government, soon after British troops were repulsed.

Abdul Jaleel, Principal of the Madrasa Islamia Arabia of Jama Masjid in Aligarh gave a call to revolt, and Hindus and Muslims joined forces in attacking the British. By May 20, 1857, Aligarh and nearby areas were in the eye of the storm of revolt. There were repeated attacks against troops of the colonial army at Khair, Tappal, Madrak and Hathras.

On June 1, British soldiers conquered Khair and killed Rao Bhupal Singh, who was leading the local revolt, and his associates. While moving towards Aligarh, the British army found itself engaging repeatedly in skirmishes with the Jats of Tappal. Soon afterwards, this battalion of British soldiers was called to Agra, leaving just a few men behind in Aligarh.

After a big part of the contingent returned to Agra, a few soldiers led by an officer who in local records is referred to as Watson, took shelter at Madrak, but was faced with an attack by revolutionaries of Koil (Aligarh).

After the British were repulsed from Aligarh, a publication brought
out by the information department of the government explains, a new form of government was experimented with here - a local self-government. As Meerut, Awadh and Delhi were fighting against foreign rule, Aligarh witnessed a brief period of governance by a panchayat.

The experiment, however, was short-lived; in just 20 days, there were differences in the local leadership.

However, for those 20 days, the Muslim Naseem Ullah served as collector and the Hindu Daya Shanker as his deputy.

M.S Shewan, an Urdu journalist who has researched this era, said, "Aligarh demonstrated communal harmony and Hindus and Muslims came together to establish a local government, even as adjoining areas were fuming in protest against British rule."

AMU PRO Rahat Abrar, who has worked on Urdu manuscripts from the era of the revolt, said, "The revolt in Aligarh shows how a Muslim issued a fatwa for fighting against the British, and the Hindus joined Muslims to do so."

'Government not doing enough to identify relatives of freedom fighters of 1857 struggle'

Originally published in The Times of India (Chandigarh), March 11, 2015.


Amritsar: The woman who spearheaded the drive to locate and exhume the mortal remains of over 100 brave Indian soldiers buried in Kalianwala Khu for over 150 years in Ajnala near Amritsar, is dismayed over the lackadaisical attitude of Punjab government in conducting forensic examination of their bones, which were the only mean to trace their relatives.

"It's been over 10 months since the state department of cultural affairs, archaeology and museums took the mortal remains to be examined by forensic sciences department of Panjab University, Chandigarh. But the department has not even begun work," historian Surinder Kochhar alleged while talking to TOI on Tuesday.

She said that the DNA and other forensic tests were the only means through which relatives of the soldiers could be located. In March 2014, Kochhar had carried out three-day excavation of the well, earlier known as Kalianwala Khu, with the help of local volunteers and management committee of Gurdwara Shaheed Ganj had and discovered 90 human skulls, 170 jaws, around 5,000 teeth, 70 coins of rupee 1 denomination of the East India Company, two Royal Victorian medals, a gold amulet and rings.

"I am left with no choice but to write to Prime Minister Narendra Modi to attract his attention," she said, alleging that the forensic examination was not being conducted due to paucity of funds. "This is an emotional issue, but the government seems to have turned a blind eye towards it," she alleged.

However, Navjot Pal Singh Randhawa, Director of Cultural Affairs, Archaeology and Museums department rubbed the allegations. "The relics are with PU and experts are doing their job very well," he said. Randhawa clarified that there was no fund crunch, but every procedure takes time.

According to historians, as the news of the first war of independence in Meerut and Delhi spread, the 26th Native Infantry Regiment posted at Mian Mir near Lahore was disarmed on May 13, 1857 and placed under surveillance. On July 30, under the leadership of Prakash Pandey, soldiers of the regiment killed a British Major and a Sergeant Major and headed towards Ajnala.

They say that soldiers bravely crossed the nearby flooded Ravi river and reached the adjoining Ajnala town. However, acting on a tip-off, Fredric Cooper, the then deputy commissioner of Amritsar, ordered that all of them be put into a cage-like room of the Old Tehsil where about 200 soldiers died of asphyxiation. The rest of them were shot the next morning and their bodies were dragged and thrown in a well which later came to be known as Kalianwala Khu.

Kochhar alleged that the state government had forgotten the death anniversary of Princess Bamba Sutherland, daughter of Maharaja Duleep Singh and granddaughter of Maharaja Ranjit Singh, who had died in Lahore on March 10, 1957. "The state government could have at least organised a symbolic homage ceremony in her memory," she said.
In My Soul

In
my soul
there is a temple, a shrine, a mosque, a church
where I kneel.

Prayer should bring us to an altar where no walls or names exist.
Is there not a region of love where the sovereignty is
illumined nothing,
where ecstasy gets poured into itself
and becomes
lost,
where the wing is fully alive
but has no mind or
body?

In
my soul
there is a temple, a shrine, a mosque,
a church
that dissolve, that
dissolve in
God.

Rabia al Basri (717-801 CE) was a woman Sufi mystic who is seen as
one of the most renowned representatives of the first development of
mysticism in Islam by the Sufis. As her fame grew she had
many disciples.