

PARADIGM SHIFT

2019-2020 # 3

PART II

History - and Not Science - is the Answer!

(1) - Sense and Nonsense of Ancient Indian Science

Exposing Pseudo Science

Hindu nationalist are regularly targeting educational institutions to introduce ancient learning to students. Centuries old Sanskrit texts are introduced in schools and colleges, as 'just another name' for modern scientific knowledge including new millennium physics, biology, medicine and even engineering. The obsession is to discover modern science in ancient religious scriptures. The name of their game is a plain and simple case of appropriation; appropriating modern science for the glory of Hindu sages-scientists. The attribution of great scientific discoveries to ancient Hindu 'rishi' 'munis' has been an integral part of the indoctrination of the RSS. (4) There are 4 kinds of such appropriations (4) viz.,

- ❖ "Making antecedent claims for ancient India for landmark discoveries in maths and medicine e.g. the Pythagorean theorem;
- ❖ "Erasure of lines of demarcation between myth and historical evidence e.g. Hindu god Ganesh as proof of plastic surgery (see above);
- ❖ "Erasure of line of demarcation between science and certified pseudo-sciences like astrology;
- ❖ "Grafting spiritual concepts like 'pran' (or breath), 'priority' or 'kasha' (the "subtle" material substrate of nature) on to physicists' concepts of "energy" and "ether"; karmic ally determined birth and rebirth on to theories of evolution of species'chakras with actual neural structures, etc., etc.

In April 2019 the president of the Break Through Science Society (BSS) - trying to break the chain of superstition -- S A. Datta expressed concern over the announcement that 'vastushastra' --the traditional Hindu system of architecture -- would be introduced to under graduate and Postgraduate architecture courses at the IIT Kharapur.

Earlier former science minister had introduced Vedic astrology as a science course in universities in 2001. A further concern is the government's push towards research on the benefits of cow products. IIT Delhi has been asked to coordinate research to validate the benefits of a mix of 5 cow products including, dung, urine and milk, called 'pachagavya' A certificate course has been introduced for Std. 1 to 9 on Vedic Maths, in Malad West (Mumbai) for the 2019-20 batches.

Although India's past glory and achievements is known it still raises crucial questions. What is the status of science in today's India? The country has no doubt achieved high profile successes e.g. the Mars mission and its prowess in information technology. Again, with legitimate pride, many Indians today boast of the huge achievements of the once great city of Dholavira (cited above). But even today we cannot change the crop pattern in drought prone areas with all our great technology, satellite survey and communications! Again, ironically, the country lags badly in technological research and development. Forget 7,000 year-old planes: After more than several years of trying, the country has not yet been able to develop an indigenous fighter aircraft - technology which

is widely available globally. A further irony is on the claim that our ancient scientists had conducted nuclear tests! This begs the question as to why do Indian politicians plead with world leaders for nuclear reactors? What happened to their nuclear tests done by the Indian sages? Why did India wait till 1974 AD to conduct the second test in Pokran? Why did the Indian sage not pass on the information and knowledge to his next generation? Why did he not ensure that that the next generation learnt from his experiments? Where did all that knowledge go? If there is need to give the "great sage" the benefit of the doubt, we are left with one assumption - the entire body of information was blown away in the nuclear test itself.

While sages of antiquity may have had ideas compatible with the atomic theory of matter, their "felicitous intuition" was a step removed from the modern scientific method which relies on sophisticated instruments. The question of aviation in ancient India, the former Director of National Aerospace Laboratories (NAL) and recipient of the Padma Vibhushan, Prof. R. Narasimha stated, "There is no credible account of aviation in ancient India" and added, "...there is no authentic account of any achievement in the field of aviation in ancient India. The book, "Vaimanika Prakaranam" or "Vimanika Shastra" with the descriptions given in it are not scientifically correct" (*Khan) Further, the scientists of the Indian Institute of Science (Bangaluru) have stated explicitly that this book was NOT an ancient text and "cannot be dated earlier than 1904"!

The crucial question as to why the Government led by the RSS-BJP combine scuttling science to manipulate mythology. The answers are both simple and complicated. The Government is committed to transform India into a Ram Rajya - to make India Hindu. It is working over-time "... in harnessing and exploiting the majoritarian Hindu population by engendering religious affiliations, incubating future generation with a singular, Hindu-centric world view, propagating a polarizing narrative of hate..., embedding a

persecution complex and overwhelming sense of victimization in the populace, at the hands of what are being dubbed as invaders...with Muslim rulers topping this insidiously crafted infamous list, vowing to "correct" historical wrongs, ensuring the ascendancy of the Hindu populace and relegating others, especially Muslims to the backburners of social, economic and political inconsequence".

With nothing much to showcase in the form of major achievements in the two millennia gone by, the ruling regime has been left with no choice but to hark back to the so-called Golden Age of the Vedic Civilization. Aspects of the modern world view and its most crucial components are rejected in favor blind faith in Santana Dharma and the revival of the Vedic past.

This perspective is of paramount importance in that Vedic/ancient India is seen as a highly evolved socio-politico-economy-military proposition with no precedent in human history; and that such a way of life with superlative advances in science and technology is far superior to anything showcased by the current western influenced model of culture. Additionally, the unconditional accent on reverence for the ancient past is promoted as an integral complement of the faith-based militant Hindu identity. The outright espousal of ancient wisdom as being transcendental across time and space continuums viewed as the bedrock of this highly unipolar world vision.

In line with this agenda, it is a 'de rigueur' for science and scientific temper to be subsumed with religion and religion-based identity with its attendant political ramifications in tow. What the RSS and its affiliates aims for is a cloned uniformity. Hence, it becomes imperative to make science and the spirit of enquiry with its collateral of dissent, as an appendage to its world vision and constrain it to dare and challenge enforced conformity of thought, word, deed and action.

Ludicrous claims as these are inconsistent with the tradition of the scientific, verifiable methods and primacy of empirical evidence

on which the ISC was founded. Instead of investing in a misguided sense of nationalistic pride, there is an urgent priority in applying the available science to eradicate mass poverty and misery of the people by guaranteeing a high quality of life and a decent standard of living for the people of India.+

Myth: Science is Neutral, objective and unbiased, untouched by social differences

FACT: The scientific process has never been neutral. Human values guide one's research intentions. One's research output is interpreted in line with one's own values. This is the is-ought (empirical-normative) problem that has troubled the discipline since long.

When it presents itself as morally neutral, science sells itself far short. Most scientists nonetheless think of sciences as neutral because it does not match the profile of a moral enterprise as understood today.

Scientists cannot claim to be neutral about their discoveries. There is no pursuit of

knowledge that does not seek to affect the world. Science is made by people with interests, intentions and ambitions.

Scientists cannot claim neutrality. What if the scientist Jonas Salk had decided to work for a drug company? Consider relevant question: if a vaccine for malaria or AIDs is discovered, should it be IP protected to allow monopoly pricing maximizing revenue but not health outcomes? More generally: can scientist really justify the predictable outcomes of the projects they are involved in?

Myth: Indians were the first to invent airplanes

FACT: In Indian mythology there are stories that mention a spaceship (pushpakaviman') which celestial nymphs use for their air travel. As a fascinating idea which also finds mentions in other mythologies (outside India), though with variations. So here, even the concept cannot be claimed to be a purely Indian origin. So, this claim is plain pseudoscience

Distinguishing Features between Science and Non-Science

An acronym called "NOTTUS" has been established to help determine what is and is not science. Nottus has 6 characteristic features viz., Natural, Observable, Testable, Tentative, Uncertain and Social.

Natural refers to the fact that science seeks to explain the things found in the universe. Sometimes science uses chemicals or resources to create human-made products. This is especially true in engineering e.g. creating and use of plastics and polymers;

Observable, that is, science must also be observable through human senses or through tools that helps in observing what cannot be observed with our senses along e.g. tools such as radar, telescope, microscope, or cameras and sensors on satellites;

Testable, that is these natural and observable phenomena must also be testable. Predictions can be made on how they will behave, change, or react and then test these predictions using science methods. Tests in science must be repeatable and predictable;

Tentative and Temporary, that is, scientific findings are tentative and temporary. Over time corrections, additional evidence, or notary evidence may change what is known. When science findings have been tested repeatedly over a period of time, then that knowledge becomes scientific theory. (However, theories in science remain tentative, although they are less likely to be proven wrong);

Uncertain. Science is also uncertain. As evidence grows over time science becomes more certain but it attains 100 per cent certainty. Being 99 percent is still 1 percent uncertain e.g. weather forecasts. Weather forecasts are reliable but the forecasts are nearly always uncertain to a greater or lesser extent. The forecast may call for 90percent chance of rain, but there is still a 10 percent chance it won't;

Social. Science needs collaboration with other scientists, communication of results with one's peers, and presenting findings in journals, presentation, and scientific conferences. It may at times require solitary work but finally it must be a social in nature and involve sharing the science with the scientific community;

If it is Not Science, What is it?

The prefix "pseudo" means "false". Pseudoscience. Pseudoscience is false science that is positioned as science e.g. astrology, many weight loss pills, and unscientific means for determining the age of the Earth.

Myth: Indians are indigenous to India and ancient Indians were vegetarians.

FACT: The journalist, Tony Joseph, in his book "The Story of Our Ancestors and Where we Came from" covers the finding that Indian civilization is the result of multiple ancient migrations. It describes how new research using ancient DNA is rewriting the prehistory of India. He referred to the study led by geneticist David Reich titled "The Genomic Formation of South and Central Asia" which reveals that the Aryans were not the first inhabitants of India and that the Harappa civilization existed long before their arrival. That is, in short, the Aryans and their Vedic culture were not the singular fountainhead of Indian Civilization and that their earliest sources lay elsewhere. There is also the additional issue of the migration theory placing the Aryans on the same footing as latter-day Muslim conquerors of India. At the recent Jaipur Literature Festival, the British poet Ruth Padel, recited poems. One of her poems, "The First Cell on Earth" conveyed a message that might well curb the growing insanity:

"Born in a deep-sea vent, synthesized
By lightning in a reducing atmosphere
Or carried here by meteorite, we're all
From somewhere else...".

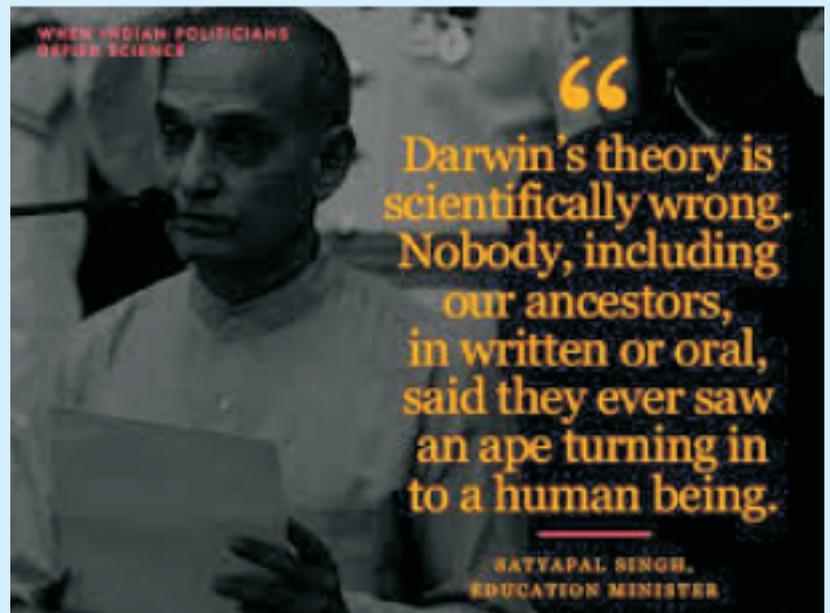
On the question of ancient Indian diet, a report in the Indian Express of 25th February 2020 noted that Indians in bygone years were also non-vegetarians. An in-depth investigation on the excavation report of 1931 had identified a number of domesticated and wild animals and that gharials and turtles formed part of the food of the locals. It is well-known that while the ancient Harappans used cattle for their farm purposes and as draught animals their meat also served as their diet with mutton as part of the menu. Ancient Punjabis in Harappa consumed marine catfish and in some areas of Gujarat wild ass was hunted for food. In his book "Mega Mammals in Ancient India" the author Shibani Bose reveals the presence of the rhinoceros whose flesh was also consumed. Although some scriptures e.g. the Satapatha Brahmana opposed consumption of meat, the ancients generally not only consumed non-veg food but relished it.

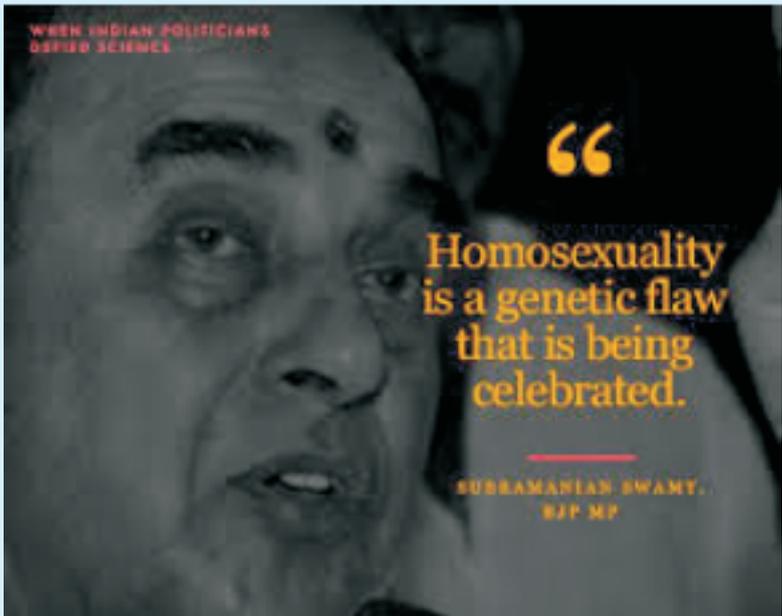
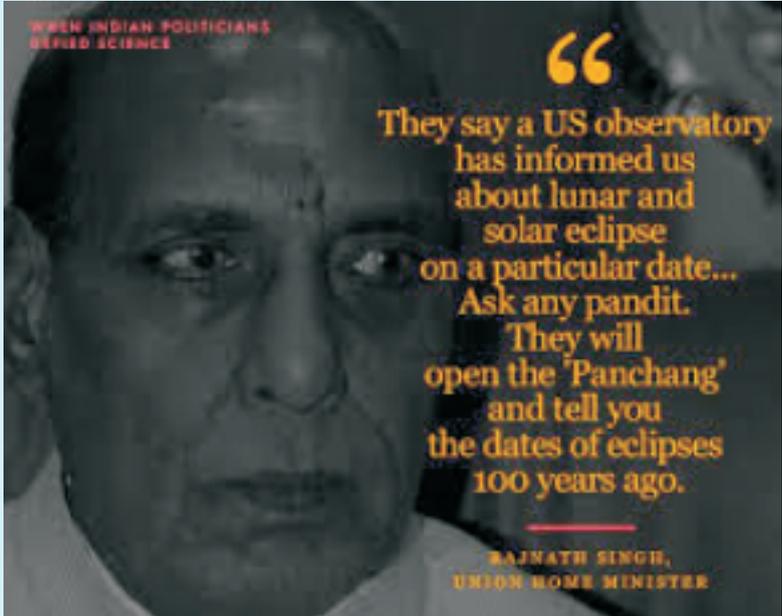
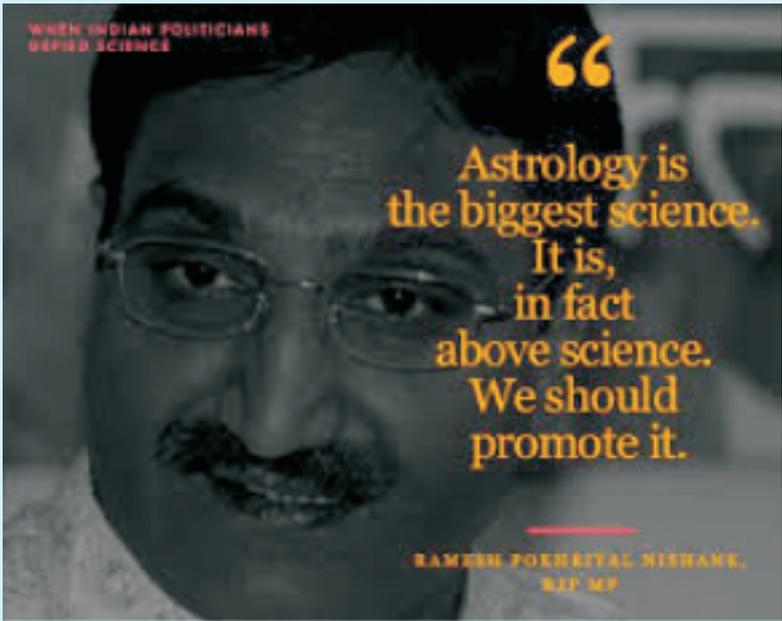
Next issue: Citizenship Bill

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UNBELIEVABLY 'SCIENTIFIC' COMMENTS BY POLITICIANS







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