

# Aryan Invasion Theory

-fabrications and fallouts



VIVERANANDA KENDRA PATRITA

# VIVEKANANDA KENDRA PATRIKA

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## ARYAN INVASION THEORY -FABRICATIONS AND FALLOUTS - VOLUME ONE

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## **ARYAN INVASION THEORY**

### **-FABRICATIONS AND FALLOUTS- VOLUME ONE**

#### **Editorial**

**E**very scientific discipline has a methodology. Facts weigh paramount in scientific methodology. When speculations become hypothesis imagination does have a prominent role to play along with observations. But when a hypothesis has to become a theory then it has to be tested empirically in the crucible of facts. Every successful revolution in science, whether it is Darwinian or Einsteinian, has passed this ordeal of fire. Hypotheses are also susceptible to change as facts pour in. It is not uncommon in the field of science to throw away cherished notions when facts falsify those notions. For example, with inputs from genetics and molecular biology, Darwinian ideas of evolution changed. The long held notion of the transmission of acquired characters was abandoned when August Weismann discovered the chasm between germplasm and somatoplasm. The assassination of

a hypothesis by facts is not much mourned in scientific circles and in fact it is even an occasion of joy for that heralds the birth of a new discovery.

The same is not true in politics or organized religion. Here a religious or political dogma is cherished and held to the hearts with umpteen apologist arguments rather than changing it. Swami Vivekananda declared bravely that religion should submit itself to the test of reason and science. And he said that what emerges after such an act of purification shall be the real religion and the rest have been always useless superstition.

If even such a subjective inner phenomenon like religion needs scientific methodology then how much more scientific temper do disciplines like history and archeology need? Unfortunately in India the visions of the past have become hostage to socio-political vested interests. Dogmas dictate history writing. What else can explain the fact that Aryan invasion theory, which does not even merit the word theory, still survives after almost every study in every discipline has proved this 'theory' to be false and baseless. The idea of 'Aryan race' which has no basis in reality has been responsible for the Second World War and holocaust. The variants of the theory, propagated in African colonies by white missionaries and colonists, have resulted in genocides.

Yet the 'theory' lives in academic circles. But it is a strange life that this 'theory' lives. In Europe after the West witnessed the destructive powers of the theory, extraordinary efforts were taken to exorcize the Western psyche of the notions of Aryan race. Today only a fringe ring of rightwing crackpots, believes in ideas such as 'Aryan race'. But in the case of India, speculations based on Aryan race/invasion form the academic framework for understanding every aspect of Indian society. The danger in this is that, such a tendency converts the whole range of inter-community relations that exist in India as racial connections and conflicts. This in turn can result in violent internal conflicts ending in civil wars and genocides.

Our savants have warned us against the non-factual distorted nature of the Aryan race theory. Swami Vivekananda thundered, "There is not one word in our scriptures, not one, to prove that the Aryans ever came from anywhere outside India.... The whole of India is Aryan, nothing else." He further stated very clearly: "Such words as Aryans and Dravidians are only of philological import, the so-called craniological differentiation finding no solid ground to work upon." Any theory worth its salt should provide clarity of vision. But not so the Aryan race concepts. Swami Vivekananda correctly pointed out that they instead provide only "a lot of haze, created by a too adventurous Western philology",

Our savants have warned us against the non-factual distorted nature of the Aryan race theory. Swami Vivekananda thundered, "There is not one word in our

scriptures, not one, to prove that the Aryans ever came from anywhere outside India.... The whole of India is Aryan, nothing else.” He further stated very clearly: “Such words as Aryans and Dravidians are only of philological import, the so-called craniological differentiation finding no solid ground to work upon.” Any theory worth its salt should provide clarity of vision. But not so the Aryan race concepts. Swami Vivekananda correctly pointed out that they instead provide only “a lot of haze, created by a too adventurous Western philology”,

Today the tools of science have changed. Today it is not “craniological differentiation” but nucleotide markers in Y-chromosomes. And still what Swami Vivekananda stated remains true. The nucleotide markers emphatically reject any invasion from outside India. Archeologists again and again state that they fail to trace any movement or invasion into India. They even speak of cultural continuities for more than five thousand years with no invasion based break in that continuity. All these along with the destructive and divisive nature of the race theory should have laid Aryan Invasion theory in the coffin along with geo-centric theory and creationism.

Yet strangely we see the Aryan Invasion theory being used axiomatic in the establishments of social studies, particularly where it concerns India. It is as if helio-centric worldview is accepted for the rest of the world while geo-centrism continues to be taught in India. Any attempt to change this baseless irony played on the Indian mind is resisted by powerful vested interests.

So in this Kendra Patrika, we have compiled various articles, research papers etc. by experts in different fields, on the topic of Aryan invasion theory. These facts which exist in the world of academicians should enter into the public psyche of Indian people. Then the farce of Aryan-Dravidian divide can be done away with. We conclude with the words of Swami Vivekananda:

*As for us Vedântins and Sannyâsins, ore are proud of our Sanskrit-speaking ancestors of the Vedas; proud of our Tamil-speaking ancestors whose civilization is the oldest yet known; we are proud of our Kolarian ancestors older than either of the above — who lived and hunted in forests; we are proud of our ancestors with flint implements — the first of the human race; and if evolution is true, we are proud of our animal ancestors, for they antedated man himself. We are proud that we are descendants of the whole universe, sentient or insentient. Proud that we are born, and work, and suffer — prouder still that we die when the task is finished and enter forever the realm where there is no more delusion.*

**-Editorial Team**

# ARYAN INVASION THEORY

## -FABRICATIONS AND FALLOUTS - VOLUME ONE

### Acknowledgements

#### **Prof. Shivaji Singh**

Prof. Shivaji Singh was the former Head of the Department of Ancient History, Archaeology and Culture, University of Gorakhpur.

Presently, he is the National President, ABISY (Akhila Bharatiya Itihas Sankalan Yojana). After completing his M.A. in Ancient Indian History, Culture and Archaeology from Banaras Hindu University in 1956, he did his Ph.D. in 1965 under Professor C. D. Chatterjee, the doyen of Buddhist scholarship and Asokan studies. With a teaching experience spanning nearly 4 decades and supervising research work for over 30 years, he has published several original books and a large number of research papers including "Harappan and Rigvedic

Ethno-Geographic Configurations" in March 2002 as a Senior Fellow in the Indian Council of Historical Research (ICHR).

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#### **George Franklyn Dales Jr.**

George Franklyn Dales Jr. (August 13, 1927 – April 25, 1992), was an archaeology professor at the University of Pennsylvania, and later the University of California, Berkeley, where he chaired the South and Southeast Asian Studies department. He spent 30 seasons of archeological excavations, starting at Nippur in 1957. With a extensive experience in archeological excavations in Iran and a number of the Indus Valley Civilization sites, he also served as a lecturer for some years at a time at different universities in the US and Canada. In 1986, he became one of the co-directors of the Harappa Archeological Research Project, involving a number of universities and institutions. He died in 1992 at Berkeley.

Dales published more than 80 articles and monographs. His works include Excavations at Mohenjodaro, Pakistan: The Pottery (1986), co-authored with his student, Jonathan Mark Kenoyer. This work was published by the University of Pennsylvania. The definitive account of his 1960 survey on the Makran coast of Pakistan, written in the form of an illustrated journal was the last manuscript to be completed by him before his death. This latter work was published by the Archaeological Research Facility of the University of California, Berkeley, in 1992, entitled, Explorations on the Makran coast, Pakistan: A search for paradise.

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**Michel Danino**

Born in 1956 at Honfleur (France) into a Jewish family recently emigrated from Morocco, from the age of fifteen Michel Danino was drawn to India, some of her great yogis, and soon to Sri Aurobindo and Mother and their view of evolution which gives a new meaning to our existence on this earth. In 1977, dissatisfied after four years of higher scientific studies, he left France for India, where he has since been living.

Michel Danino participated in the English translation and publication of Mother's Agenda (13 volumes, Mother's record of her yoga in the depths of the body consciousness) and several books by Satprem (Mother's confidant and recipient of Mother's Agenda). Michel Danino also edited, among other titles, India's Rebirth (a selection from Sri Aurobindo's works about India, available online ; first published in 1993, now in its 3rd edition, translated into nine Indian languages) and India the Mother (a selection from Mother's words, 1998).

Studying India's culture and ancient history in the light of both Sri Aurobindo's pioneering work and archaeological research, in 1996 Michel Danino authored The Invasion That Never Was, a brief study of the Aryan invasion theory. Intended primarily for the educated non-specialist Indian public, the book has also been well received in scholarly circles. A second, extensively revised and enlarged edition was brought out in 2000; a third is scheduled for late 2003.

Over the last few years, Michel Danino has given lectures at various official, academic and cultural forums on issues confronting Indian culture and civilization in today's world ; some of them have been published under the titles Sri Aurobindo and Indian Civilization (1999), The Indian Mind Then and Now (2000), Is Indian Culture Obsolete ? (2000), and Kali Yuga or the Age of Confusion (2001). Delving into the roots of Indian civilization, Michel Danino has argued that its essential values remain indispensable in today's India — and in fact for all humanity in this critical phase of global deculturization and dehumanization. Many of those lectures and a few new ones are available on this homepage.

Michel Danino's other fields of activity include Nature conservation; his action for the preservation of an important pocket of native tropical rainforest in the Nilgiris led to the creation of Tamil Nadu's first "watchdog" committee in which concerned citizens actively collaborated with both the Forest Department and local villagers in conservation work, also involving local teachers and hundreds of students.

In 2001, Michel Danino convened the International Forum for India's Heritage (IFIH) with over 160 eminent founder members, whose mission is to promote the essential values of India's heritage in every field of life.

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**Rajiv Malhotra**

Rajiv Malhotra is the founder and president of Infinity Foundation. An Indian-American entrepreneur, philanthropist and community leader, he has devoted himself, for the last ten years, to clarifying the many misperceptions about Indic traditions in America and amongst Indians.



He is an active writer, columnist, and speaker on a variety of topics, including the traditions and cultures of India, the Indian Diaspora, globalization, and East-West relations. Rajiv has been appointed to the Asian-American Commission for the State of New Jersey, where he serves as the Chairman for the Education Committee, which was created to start an Asian Studies program in schools. He also serves on the Advisory Board of the New Jersey Chapter of the American Red Cross and has volunteered in local hospice and AIDS counseling.

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### **B.B. Lal**

Braj Basi Lal (born in Jhansi, India in 1921), popularly known as B. B. Lal, is an renowned expert in Indian archaeology. He was the Director General of the Archaeological Survey of India from 1968 to 1972, and has served as President of the World Archaeological Congress. He also worked in for UNESCO committees. He received the Padma Bhushan by the Government of India in 2000.

He has done excavations in the Indus Valley Civilization with Mortimer Wheeler and other archaeologists. He has had an archaeological career spanning more than half-a-century. He was trained in excavation by the veteran archaeologist, Wheeler at Taxila, Harappa and other famous sites in the forties of the last century. Out of his many pupils Wheeler chose Lal to entrust the excavation of the Early Historic site of Sisupalgarh in Orissa before relinquishing the charge of the Director-General of Archaeology in India in 1947.

The British archaeologists, Stuart Piggott and D.H. Gordon, in their reviews of B. B. Lal's classic article on the Copper Hoards of the Gangetic basin (Piggott 1954), and his Hastinapura excavation report (Gordon 1957), both published in *Ancient India*, the annual journal of the Archaeological Survey of India, hailed them as models of research and excavation reporting. Some of his famed works include *The Earliest Civilization of South Asia* (1997), *India 1947-1997: New Light on the Indus Civilization* (1998), *Frontiers of the Indus Civilization* (1984), *The Homeland of the Aryans. Evidence of Rigvedic Flora and Fauna & Archaeology* (2005), *The Saraswati Flows on: the Continuity of Indian Culture* (2002)

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### **Subhash C Kak**

A multi-faceted personality, Subhash Kak is Regents Professor and Head of Computer Science Department at Oklahoma State University in Stillwater. He completed his Ph.D. in Electrical Engineering from IIT, Delhi, and then joined it as a professor. During 1979-2007, he was with Louisiana State University, Baton Rouge as Professor Emeritus where he served most recently as Donald C. and Elaine T. Delaune Distinguished Professor of Electrical and Computer Engineering.

He was the first to look for information metric for a quantum state over thirty years ago. His work on quantum information includes the only all-quantum protocol for public-key cryptography. He has written on the limitations on the capabilities of quantum computers and proposed a new measure of

information for quantum systems. This work as well as his proposed resolution of the twin paradox of relativity theory have received considerable attention in the popular press.

Kak is also well noted for his contribution to Indological studies, providing the much needed objective angle to the field which for long has been dominated by biased interpretations of data. His works include “The Asvamedha: The Rite and Its Logic” (2002) which provides a symbolic interpretation of the Vedic Ashvamedha (horse sacrifice) rite, “The Astronomical Code of the Rgveda” (1994) and “In Search of the Cradle of Civilization” (1995) which he co-authored with Georg Feuerstein and David Frawley.

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### **Nicholas Kazanas**

Nicholas Kazanas - a very well known scholar in Indo-European studies - was born in the Greek island Chios in 1939. He studied English Literature, Economics and Philosophy and Sanskrit in London and also did his post-graduation at SOAS and at Deccan College in Pune (India).

He taught in London and Athens and since 1980 has been Director of Omilos Meleton Cultural Institute. In Greece he has published treatises of social, economic and philosophical interest. He has many publications in Western and Indian Journals and some books. He has also produced a three-year course of learning Sanskrit for Greeks. From 1997 he has turned towards the Vedic Tradition of India and its place in the wider Indo-European culture. This research comprises thorough examination of Indo-European cultures, comparing their philosophical ideas and values, their languages, mythological issues and religions. He has also translated the ten principal Upanishads (ISA, KENA, KATHA, MANDUKYA, etc) from the original Sanskrit text into Greek.

## VEDIC CULTURE AND ITS CONTINUITY: NEW PARADIGM AND DIMENSIONS

**Prof. Shivaji Singh**

Former Head of the Dept. of Ancient History, Archaeology and Culture, University of Gorakhpur, Presently  
National President ABISY Keynote Address delivered at the National Seminar held at Vikram University, Ujjain  
on 25-27 March 2003

Vedic Culture, its origins, nature, developmental processes and continuity have engaged the attention of scholars since long with the result that the number of research publications on these topics, now runs into thousands. In the last two-three years itself, several significant contributions to the field of Vedic historical studies have come to light as, for example, Shrikant G. Talageri's 'The Rigved: A Historical Analysis' (2000), Michel Danino and Sujata Nahar's 'The Invasion That Never Was' (2000), S. Kalyanaraman's 'Sarasvati' (2000), Edwin Bryant's 'The Quest for the Origins of Vedic Culture' (2001), David Frawley's 'The Rig Veda and the History of India' (2001), and B.B. Lal's 'The Sarasvati Flows On' (2002), etc. Certain recent foreign publications like Bronkhorst and Deshpande edited 'Aryan and Non-Aryan in South Asia' (Cambridge, 1999), Carpelan, Parpola and Koskikallio edited 'Early Contacts between Uralic and Indo-European: Linguistic and Archaeological Considerations' (Helsinki, 2001), and Niochola's Sims-Williams edited 'Indo-Iranian Languages and Peoples' (Oxford, 2002) also contain papers discussing several aspects of the Vedic Culture. The question then is: Why a fresh National

Seminar on Vedic Culture and its continuity when a lot has already been written and said from various angles on the subject? The answer to this question may be found in the Preface of Professor G. C. Pande's book 'Vaidika Samskriti' (2001) that is to my knowledge one of the latest standard publications on the topic. Answering an inquisitive friend who wanted to know what propelled him to write a new book, Pandeji gives the following four reasons: Firstly, new archaeological discoveries have altered the historical perspective of the Vedic age. Secondly, writings of most of the vedicists of the colonial era are confined generally to discussions of legends pertaining to Vedic deities. The angle followed in them is comparative mythological that does not provide any metaphysical insight. This needs to be supplemented and coordinated, on the one hand, with the broader framework of history of religions as conceived by Max Muller and other scholars mainly the anthropologists. On the other hand, it ought to be synthesized with the traditional or the eternal interpretation that has come down the ages and finds expression in the writings of scholars like Coomarswamy and Aurobindo.

Thirdly, most of the standard works on the subject are either restricted to particular issues or are one-sided in their scope. Thus, the well-known books of Oldenberg and Keith on Vedic religion do not deal with Vedic history, society and culture at all. Similarly, the Vedic Age (brought out by the Bharatiya Vidya Bhawan) gives a very scanty treatment to philosophy and science of the age. Lastly, the Vedic Culture needs to be studied with an all-enveloping, multiple but synthetic approach since it is the implicit network interlinking all the various aspects of life and ideas, constituting the *Zusammenhang*, that provides a glimpse into what is called culture.

I am afraid, within the time constraints of an address, I can do no better than concentrate on only one of these reasons, the first one, relating to the changed perspective created mainly by new archaeological discoveries. This is to my mind the most important one at present, and its significance seems to be underlined by Pandeji too by listing it, whether intentionally or inadvertently, as the first reason (or we may say, the Reason No. 1) for a fresh study of Vedic history and culture. During the last few years efforts for understanding the genesis and historical process of Vedic Culture has begun anew because of a major shift in paradigm<sup>1</sup> that has occurred due to the availability of a harvest of new archaeological as well as literary data and other scientific information relating to this most important culture of South Asia. In earlier models, the Vedic and Harappan cultures were taken to be two totally

different cultures. Most of the scholars believed that while the former was Aryan, the latter was non-Aryan (Dravidian).

The Vedic Culture was supposed to be chronologically later than, and qualitatively inferior to, the Harappan Civilization. The Vedic Culture was not accorded even the status of a 'civilization' since by definition<sup>2</sup> the culture of an urbanized and literate society alone could be designated as a 'civilization', and the Vedic people were presumed to be illiterate village folk ignorant of city life. So powerful was the hold of the earlier paradigm that a prestigious UNESCO publication, *History of Mankind*, labelled the Aryans as a 'non-urbanized people and semi-barbarous' who destroyed the non-Aryan Harappan Civilization (Hawkes and Wooley 1963:406). But, now the perceptive is totally changed. The Vedic-Harappan dichotomy is being rejected with accumulating evidence that point to the contrary and establish their identity. While Bhagwan Singh has come out with two well-documented works (1987/97; 1995) in support of this identity, several other scholars like B. B. Lal (1997:281-87; 2001-02; 2002) and S. P. Gupta (1996:137-74) strongly uphold this equation though they prefer to wait for the decipherment of the Harappan script to put a final seal on this identity. This changed perspective is, indeed, of a very great consequence for it has opened up several new dimensions for further researches in the field of Vedic historical studies. If the Vedic and Harappan cultures are actually one and the same, we have enormous archaeological data at hand to supplement the knowledge that we presently have about the Vedic

Culture based as yet almost solely on literature. Today, not only the existing fund of knowledge about Vedic Culture is on the threshold of a qualitative and quantitative leap but also, and more importantly, the genesis of Indian Culture itself is on the point of being redefined. So far, the foundation of Indian Culture was interpreted in terms of a synthesis of mainly two great cultural traditions: Vedic Aryan and non-Vedic Harappan. But now it is becoming clear that there is in fact only one great cultural tradition forming the base of all subsequent development of Indian Culture, call it Vedic or Vedic-Harappan. This cultural tradition, has transcended all linguistic boundaries and, acting and reacting and ultimately synthesizing with other traditions in different parts of the country, exists even today. The Vedic Culture is, thus, multilinear in its sources but unilinear in its formation. Its course is exactly analogous to that of a mighty river which is joined by several other rivers, big and small, and which flows on swelling with the rich waters of all its tributaries finally contributing to, and enriching, the ocean of human or global culture as a whole.

It is rightly said that when the paradigm changes the whole discourse begins afresh. So much has changed in Vedic historical studies - data, methodology, logic and perspective - that it is difficult in a single lecture like the present one to cover even briefly all the various new dimensions that have been opened up by the newly emerged paradigm. However, I shall try to give some idea about a few more important of them.

We shall start with an overview of the considerations that brought about the paradigm change. This will be followed by an update on the Vedic-Harappan identity debate. Then, we shall refer to Aryattva, the ideal of Vedic Culture and its continuity, and finally mention the challenges ahead in the field of Vedic historical studies.

## I

### **The paradigm change: the authors of the Vedic Culture, the Aryans, sons of the soil, not aliens**

For the last over a century and a half, scholars concerned with Vedic historical studies have remained under the spell of what is called the Aryan Invasion Theory (AIT).

Though the spell has broken recently its hangover still continues and it might take some more time to be completely cleared off. It was indeed a period of spell, a bewitched state, for otherwise it is difficult to understand why during such a long span of time scholars, who normally maintain a distinction between a theory and a fact, not only overlooked this important epistemological difference but even accepted this theory as a Gospel Truth that cannot be doubted or challenged. This theory perpetuated the notion that the authors of the Vedic Culture were not indigenous to South Asia but had arrived here from somewhere outside as invaders in about 1500 BC. While the place of their original habitat continued to be debated, the image of the early Vedic Aryans as a culturally backward but physically

vigorous and bellicose people soon found general acceptance.

By the time the Indus Valley Civilization, now known as the Harappan or Indus-Saraswati Civilization, was discovered, the image of the 'barbarous invading Aryans' had turned into an article of faith and, therefore, it was readily accepted that these very invading people destroyed this earliest civilization of South Asia. It was said that they were nomadic pastoralists not doing even agriculture but, being extremely warlike and possessing horses and horse-drawn chariots, that provided them superior maneuverability in battles, they succeeded in destroying the Harappan cities and forcing their inhabitants, the Dravidians, to move to the south. This notion of a culturally backward, nomadic and tribal Early Aryans has persisted till now and contradicted only recently.<sup>3</sup>

Scholars like L. Poliakov (1974) and Jim G. Shaffer (1984) have discussed the genesis of the Aryan Invasion Theory that fostered these notions. Its roots go back to the acute anti-Semitic racial feelings that dominated the socio-political psychology of the Christians of Europe in the 18th century. The ideas leading to the theory had several ramifications and the theory itself passed through many vicissitudes. It was soon picked up and made the very foundation of German nationalism in one context and later utilized by the British for their colonial interests in a different context. It is worth noting, however, that in the initial stages of the development of the theory the Vedic Culture was highly praised by the Europeans who admitted that India was

the original home of the entire human race and the cradle of civilization.

Many scholars like Kant and Herder delighted in showing analogies between the myths and philosophies of ancient India and the West. Voltaire was 'convinced that everything has come down to us from the banks of the Ganges, astronomy, astrology, metempsychosis, etc.' (Voltaire quoted in Poliakov 1974:185). Giving these and other examples, Poliakov (1974:188) concludes: 'Thus we see that a wide variety of authors and schools located the birthplace of the entire human race between the Indus and the Ganges'. This high esteem for India and its culture in the minds of the European scholars may have developed partly because of their anti-Semitic feelings<sup>4</sup>, but the fact remains that the image of Vedic Aryans was tarnished only in a subsequent version of the theory.

The new incarnation of the theory was quite different from the original one. It was not concerned with the origin and expansion of the whole human race but one particular white race, whose descendants are the modern Christians of Europe. It owes its origin to Sir William Jones' famous lecture delivered at the Asiatic Society of Bengal in 1786. How this lecture led to the foundation of comparative philology that aimed at dethroning Vedic Sanskrit from the high pedestal, that it previously occupied, is too well known to be repeated here. The old linguistic perspective is being still kept alive by some scholars but to this I shall come back a little later.



### **No takers now of the Aryan Invasion Theory**

The Aryan Invasion Theory stands rejected today. Even its erstwhile upholders accept this fact now. The theory claimed that a group of people speaking Indo-Aryan, a sub-branch of the Indo-Iranian branch of the Indo-European family of languages, had invaded India in 1500 BC and destroyed the Harappan Civilization which was in all probability Dravidian-speaking. A theory based on wrong assumptions is bound to collapse and this is what happened to AIT. It was based on two basic assumptions: the one, that the Harappan Civilization came to an abrupt end in about 1500 BC, and the other, that the dating of the Rigveda to circa 1200 BC, as casually estimated by Max Muller, was correct. Both these assumptions have been proved to be wrong. Surprising is not that the theory has collapsed, surprising is the fact that it lasted for such a long time in face of vehement criticisms of Max Muller's late dating by eminent scholars (Winternitz 1933/91: 292-94) and Max Muller's contradiction of his dating himself.

Surprising is also the fact that the historians accepted this linguistic theory without verifying it independently. All subsequent efforts to find any historical evidence of the theory failed. Neither literature nor archaeology obliged the linguist. There was no proof of any invasion either in the Vedic texts (literature of the presumed invaders) or in the old Tamil texts (literature of the presumed invaded people). However, at the flag end of his career in India, Sir

Martimer Wheeler claimed to have at last found a clinching archaeological evidence of Aryan destruction of Harappan cities. On the basis of a few skeletons reported earlier to have been found scattered in disorderly manner at Mohenjo-daro, he concluded: 'It may be no mere chance that at a late period at Mohenjodaro men, women and children appear to have been massacred there. On circumstantial evidence, Indra stands accused' (Wheeler 1947:82). Later, on examination G. F. Dales found that Wheeler had misread the archaeological evidence for neither those skeletons belonged to one and the same stratigraphical context nor were they proof of any massacre. Most of the skeletons positively showed that the persons were actually drowned in severe and sudden flood in the river Indus. Only two or three of out of a total of 37 skeletons bore cut marks and those too were found to have healed up. So he wrote a paper entitled 'The Mythical Massacre at Mohenjodaro' (Dales 1964:36-43) and exploded the myth of the Aryan destruction of Harappan cities. K. M. Srivastava (1984:441) aptly remarks: 'Indra, therefore, stands completely exonerated'. There are several other arguments proving that the AIT is wrong, but I do not think it necessary to mention them since the theory is already rejected.

Those interested may refer to a recent publication enumerating as many as 'seventeen arguments why the Aryan invasion never happened' (Feuerstein et al. 1995) and a 1999 update on the Aryan invasion debate (Elst 1999).



### **The Aryan Migration Theory too contradicted by archaeological and genetic findings**

At present the Aryan Invasion Theory has been replaced by what is known as the Aryan Migration Theory (AMT). According to it, though the Aryans did not invade India, they did come here from outside. They arrived here as migrants in small batches at different points of time spread over a long duration. It must be noted that the AMT is not just AIT minus invasion. It is different from the AIT in two important respects. First, while the AIT was based on purely linguistic data without any archaeological support, the AMT has been carefully linked up with archaeological evidence at each and every phase of the migration beginning from Ukraine and successively advancing through Pontic steppes, Turkmenistan, northern Afghanistan to India. Second, while in the AIT the Dasas, Dasyus and Panis were taken to be non-Indo-European-speaking aboriginals of India, in the AMT they too are taken to be outsiders and Indo-Aryan-speakers, albeit speaking a dialect somewhat different from the one used by the Aryans. It is not necessary to go into the details of the different archaeological cultures like the Srednij Stog, various Grave cultures (distinguished as Pit, Hut and Early Timber), and Andronovo, etc. that have been identified with the migrating Indo-European-speakers on their way to South Asia. Justification of their correlation with migrating Aryans or Indo-European-speakers needs to be investigated by Indian archaeologists.

However, just to give an idea of how speculative these linguistic-archaeological correlations are, the case of the BMAC (Bactria Margiana Archaeological Complex) may be briefly described. Bactria is the basin of the Amu Darya or Oxus River in northern Afghanistan and adjacent southeastern Uzbekistan, and Margiana is the deltaic region of the river Murghab in South Turkmenistan. Both are referred to in ancient Indian literature.<sup>5</sup>

BMAC is the name of the Bronze Age culture that was discovered during archaeological excavations done for about three decades at several sites of the Bactria-Margiana area by Viktor Sarianidi and his Russian team (Sarianidi 1979; 1993). The culture is placed in the 1900-1700 BC bracket, and is found to have its own distinctive traits such as steatite falcons, steatite stamp seals, characteristic bowls (called *serie recente*), cenotaph burials and ceremonial architecture. The proponents of the AMT believe that it represents the final 'staging ground' of the migrants who were soon to bring the Indo-Aryan language to South Asia. The cenotaphs found in Mehrgarh-VIII and at Sibri, taken to be typical of BMAC, the Central Asian influence on some seals discovered in the Jhukar Culture of Sindh, and the 'strong resemblance between the antennae-hilted swords from BMAC sites in Bactria and the Gangetic Copper Hoards' (Parpola 1995:370) are considered to be the archaeological proof of the diffusion of these people from Central Asia to Baluchistan, Indus plains and eastern India successively.

However, when one goes through this discourse and examines the evidence and arguments in some depth, it becomes apparent that it is a clear case of special pleading and tunnel thinking in which 'willing' rather than 'thinking' dominates the entire exercise. Consider, for example, some of the arguments of Asko Parpola, the most outstanding propagator of the AMT. Parpola (1988; 1995) believes that the authors of the BMAC are the Dasas, and the destruction of their strongholds (purs) described in the Rigveda relates to Arya-Dasa battles in Central Asia. On this point one needs only to be reminded that the notion that some of the hymns of the Rigveda were composed by the Aryans outside India before their presumed entry into the subcontinent, once held by Hillebrandt, had been rejected long ago by competent vedicists (Macdonell and Keith 1912/95: 357-58). Moreover, recent archaeological investigations have proved beyond doubt that the Rigvedic river Sarasvati is the Ghaggar-Hakra of the Survey of India maps and not Avestan Harakhvaiti, identified with Arghandab flowing in Arachosia, on which Hillebrandt's theory mainly relied. Parpola simply cannot succeed in reviving Hillebrandt's theory today.

Parpola connects the ceremonial structure with three concentric circular walls found at the BMAC site of Dashly-3 in southern Bactria with Indian Tripur, associated with the Asuras in post-Vedic literature. He claims that a reference to the same is found in the Satapatha Brahmana 6.3.3.24-25. This is in fact a wrong statement of facts. The passages of the text under question prescribe the

drawing of three circular lines around the ritual fire to protect it from odds and this prescription has absolutely nothing to do with the Asuras. If these three lines represent a Tripur, it is an evidence of a Tripur being made by the followers of the Aryan ideology! Even, otherwise, 'tripura' means three purs existing side by side and not a single pur surrounded by three circular walls.

On the basis of the depiction of a goddess connected with lions found on a few BMAC seals, Parpola has concluded that the worship of Durga was prevalent among the Dasas of Bactria and Margiana. Thus, according to him, the Sakta cult too is a Central Asian contribution to India. Now, let us see Parpola's arguments in this connection and the background of his arguments. Earlier the supporters of the AIT used to say that the purs of the Dasas destroyed by Indra were the cities of the Harappan Civilization. But, when Indra was exonerated from Wheeler's accusation of massacre at Mohenjo-daro on the evidence of Dales and Kennedy, and when vedicists made it clear that Dasa chief Sambar's purs were located in mountainous regions, not in plains, scholars like Parpola started looking for a place to locate Sambar's purs that we mountainous as well as enroute of Aryan migrants heading towards India. Their efforts appeared to have succeeded when Sarianidi announced the discovery of strongholds in Bactria and Margiana region.

Parpola took no time in declaring that these BMAC forts were indeed the purs of Sambara! He had a glimpse of the

'tripur' in the Satapatha Brahmana, but what to do with this deity connected with lions? One must accept that Parpola's brain is extremely fertile. He opines that this deity is none else but Durga. He interprets the name Durga as 'the protectress of the stronghold (durga)'. This is wrong. Durga is so named because she is Durgama or Durgamya, that is, difficult to be approached. Even today the famous seats of her worship are found located in places that are inaccessible or difficult to be reached despite modern improvements in transportation. The scholar states: 'Durga is worshipped in eastern India as Tripura, a name which connects her with the strongholds of the Dasas' (Parpola 1995:370). Parpola forgets that Tripura is not located in eastern India only. It is found in other parts of India (as, for example in Maharashtra) too and even outside India as Tripoli in Lebanon, as Tripoli and Tripolitania in Libya, and as Tripolis in Greece. Once we stop speculating and come to hard facts, the AMT starts evaporating. I would refer to only a few of them. Let us first take only one such fact from archaeology.

As is well known, the Harappans used copper extensively, but they used bronze also which they produced by alloying copper with tin to harden the metal. While copper was readily available to them in abundance tin was considered to be a precious commodity as it had to be procured from Khorasan and the areas between Bukhara and Samarkand (Chakrabarti 1979:70; Asthana 1993:276-78). After the decline of the Harappans, tin-based bronze objects are not found in India for more than a millennium. No tin-

based bronzes are reported from Copper Hoards and Painted Grey Ware assemblages, and Ahar and Kayatha complexes also do not have them (Agrawal 1971; 1974). It is evident that the earlier contacts with the areas of Baluchistan and Northern Afghanistan from where tin was obtained were severed. Referring to AMT, J. M. Kenoyer (1995: 230) puts the point-blank question: 'why were the migrants not supplying one of the most important raw materials for bronze production, i.e., tin?'

Now a fact from biological anthropology. After a detailed examination of biological adaptations and affinities in the Indus-Sarasvati area, a team of towering scholars in the field, namely, Hemphill, Lukacs and Kennedy has found only two biological discontinuities: the one between 6000 and 4500 BC and the other between 800 and 200 BC (Hemphill et al 1991). This shows that in the intervening period between 4500 and 800 BC, the biological make-up of the people living the area remained fairly constant. 'In such a situation', B. B. Lal (1997: 287) rightly wonders, 'how can one envisage the entry of hoards and hoards of Vedic Aryans who are supposed to belong to an alien, non-Harappan biological group around the middle of the second millennium BC?'

Next a fact from genetics.

In a recent analysis of Indian and Western Eurasian gene pools, T. Kivisild and his team of scientists have found that while the North and South Indian gene pools are almost similar, they differ markedly from the gene pool of Western

Eurasia. Their analysis is based on mitochondrial DNA test, a well-known procedure in genetics that can measure genetic inheritance for thousands of generation. The analysis shows that the Western Eurasian strain, which is present over 70 percent in the populations of European countries like Germany, is found to be merely 5.2 percent in Indian gene pool. They remark: 'The supposed Aryan invasion of India 3000-4000 years before present, therefore, did not make a major splash in the Indian gene pool. This is specially counterindicated by the presence of equal, though very low, frequencies of the Western Eurasian mt-DNA types in both southern and northern India' (Kivisild et al 1999: 1134). Though they refer to Aryan invasion, the inference is equally applicable to Aryan migration and it is quite clear: the much-propagated theory of Aryan invasion/migration is contradicted by genetics. More importantly, the notion of ethnic divide between northern and southern Indians is also brushed aside by genetics.

Lastly a fact about the Rigvedic horse. Referring to authoritative technical studies on animal anatomy and taxonomy, Manansala (2000) has shown that the Indian indigenous horses with only 17 pairs of ribs constitute a category different from that of the Iranian, Central Asian and European horses that have 18 pairs of ribs. That, this difference between Indian and northwestern horses existed in the Rigvedic times too, is demonstrated by him on the testimony of the Rigveda (1.162.18) which informs: 'The axe penetrates the thirty-four ribs of the swift horse; the beloved of the

gods, (the immolators), cut up (the horse) with skill, so that the limbs may be imperforated, and recapitulating joint by joint' (Wilson's translation). I have scrutinized the translation of the original verse occurring in context of a horse sacrifice. There is absolutely no ambiguity about the number of ribs (vankrih), which is clearly stated to be 34 (chatuhtrinsat). Obviously, had the Aryans arrived in India on horse back or horsedrawn chariots, as the AMT presumes, they would have never used inferior indigenous horses in their most important sacrifice.

These are a few hard facts, and there are many more equally solid, that have led the informed historians now to reject not only AIT but AMT too. The Vedic Aryans are not outsiders; they are sons of the soil.

## II

### **The Vedic and Harappan cultures represent a single cultural tradition**

The acceptance of the Vedic-Harappan identity is another characteristic feature of the new paradigm. This is not to say that the relationship of Vedic and Harappan cultures is expressed by the equation 'A is the same as B'. The two cultures are not identical in that sense. In fact, the Harappan or the Indus-Sarasvati Civilization is an aspect or a spatiotemporal phase of a much earlier, more extensive and more durable Vedic Civilization. There is another distinction between the two that must not be glossed over while talking about their

identity. As I have discussed elsewhere (Singh 2001; 2002), the considerations that define the Harappan and Vedic cultures are not exactly the same. It is basically the rise, intensification and collapse of an urban process that defines the Harappan Culture. As against this, it is the emergence, spread and dominance of an ideology based on a kind of sacrificial ritual and concomitant social psychology that constitutes the hallmark of the Vedic Culture. Unlike urbanization, this ideology is characterized by a world-view based on concepts like 'Rita' creating harmony in sensual, mental and spiritual levels and generates a social identity. Significant is also the fact that the ideological process survived the collapse of the urban process. Thus, notionally they represent two distinct processes, urban and ideological but, as we shall see, despite this perceived functional difference, they are part and parcel of one and the same cultural tradition. Space-time considerations and literary-archaeological convergence lead us to infer that Early Vedic, that is, Rigvedic Culture corresponds to the archaeological cultures called the Pre-Harappan (Hakra, Kunal I), Early Harappan and early phases of Mature or Urban Harappan. The identification of the Later Vedic Culture with the PGW Culture suggested by R. S. Sharma (1975-76: 63-67) is untenable in view of recent revision of later Vedic chronology as a sequel to a pre-1900 BC dating of the Rigveda. Late Harappan and other contemporary Neolithic-Chalcolithic cultures must also be included in the Late Vedic horizon of which the PGW Culture appears to represent the last phase.

The debate on Vedic-Harappan identity relates mostly to the correspondence between Rigvedic and Early-to-Mature Harappan cultures. This identity is based on three basic parities between the two: geographical, chronological and cultural. Let us discuss them briefly.

Rigvedic and Early-to-Mature Harappan geographical horizons coincide. The core area as well as the contact area of the Rigvedic and Early-to-Mature Harappan cultures are found to be one and the same. The region extending from the Sarasvati Valley in the east to the left bank of the Indus in the west was the cradle of both the cultures. It is known as *Sapta Sindhavah* in the Rigveda (8.24.27) and it is the region in which the maximum number of Harappan sites is located. Still more important is the fact that within this core area too it is the Sarasvati region that constitutes the pith. The Vedic Culture originated on the banks of the Sarasvati and, as I had shown earlier (Singh 1997-98b) and has now been confirmed also by Shrikant G. Talageri (2000: 103-5), during the time of composition of the earliest hymns, the Vedic people were not acquainted with the river Indus. Of course, later in the Rigvedic period itself they reached the Indus, settled in its valley and glorified it, but Sarasvati continued to be the most important river for them (Rigveda 2.42.16). Recent archaeological discoveries prove that the Harappan Culture too is basically a Sarasvati Culture. The Harappan sites in the Sarasvati Valley far outnumber those located in the Indus Valley. The latest counting as given by B. B. Lal (2002: 47-



48) is: a total of 50 sites (both Early and Mature) in the Indus Valley as against 177 Early and 283 Mature Harappan sites in the Sarasvati Valley. But it is not only the number of sites that matters. The archaeologists now agree that the cultural integration of several social groups that gave rise to the Harappan Culture had occurred in the Sarasvati Valley (Shaffer and Lichtenstein 1989: 123).

A comparison of the contact areas also suggests the equation. In the northwest, both extend up to Afghanistan . The discovery of a Mature Harappan site named Shortughai in northeastern Afghanistan and the references in the Rigveda to Rasa (Syr Darya, but Panjsher, an affluent of the Kabul , according to some), Anitabha (Amu Darya), Kubha ( Kabul ), etc., show this. In the southwest, the contact areas extend up to Gujarat as proved by the location of Harappan sites like Lothal, Surkotada and Dholavira in the case of one, and the description in the Rigveda (1.116.3-5) of the shipwreck met by Bhujyu, son of Tugra, in the case of the other. As shown by R. N. Nandi (1994-95: 31-33), Bhujyu's shipwreck had occurred in the Kutch area.

In my view, Bhujyu, as his name suggests, most probably belonged to the Bhuj locality of Gujarat . The contact areas of the Rigvedic Aryans and the Harappans in the east also have the same extent. However, the present understanding about how far they extended in this direction is not correct. Since Ganga is the easternmost river mentioned in the Rigveda, historians

generally believe that the expansion of the Vedic Culture in Rigvedic times was limited only up to Ganga-Yamuna region, and that it was only in the later Vedic period that the culture extended further east in Bihar . The episode of Videgha Mathava reaching Sadanira (modern Gandak in Bihar ) described in the Satapatha Brahmana (1.4.1.14-17) is quoted in support of this view. But, just on the basis of its mention in a later Vedic text, it is wrong to think that this episode relates to later Vedic period. P. C. Pant (1996: 8-10) is right in stating that the internal evidence of the Satapatha Brahmana itself makes it clear that it is referring to an event of bygone days. In my view, however, the entire debate on this issue is meaningless and a product of ignorance for the time when Videgha Mathava visited the Sadanira area is not a matter of controversy at all. He was accompanied by his priest Gotama Rahugana, a Rishi of the Angirasa family, who is credited with the authorship of as many as twenty hymns of the Rigveda (1.74-93). Hence it is beyond doubt that the episode refers to an event of the early Vedic period proving that the contact area of the Rigvedic Aryans extended in the east up to Bihar.<sup>6</sup>

That, exactly the same was the extent of Harappan contact area in the east, is proved by two recent archaeological discoveries that indicate the eastward diffusion of Harappan elements up to Bihar through the Sarayupar<sup>7</sup> region in eastern U.P. One is the introduction of the cultivation of barley and wheat along with certain other serials at the site of Senuwar, situated in Rohtas District of Bihar, excavated by B. P. Singh (1988-89:

6-18). K. S. Saraswat of the Birbal Sahani Institute of Palaeobotany, Lucknow, who has collected and examined the botanical from the site, informs (personal communication) that earlier the farmers at Sanuwar have been growing only paddy for nearly 200 years, but after about 2000 BC they started cultivating other cereals besides paddy such as barley, wheat, pea, lentil and millets like jwar and ragi. His analysis shows that the species of barley, wheat and pulses are exactly the same that were cultivated by the Harappans. Evidently it indicates a movement of men and ideas from the Indus-Sarasvati region to Bihar in about 2000 BC. The other important information is the recovery of a large number of micro beads of steatite from Imlidih Khurd, a site located in Sarayupar plain, which has been excavated by Purushottam Singh and his team (Singh et al. 1991-92: 10-22). Such micro beads are known only from Harappan assemblages. Their existence in Sarayupar area in Pre-Narhan context (assigned to around 1800-1300 BC), is very significant in view of the fact that Sarayupar is the area through which any diffusion from the Sarasvati Valley must pass through in order to reach Bihar.

The above discussion is sufficient, I hope, to convince any one that the geographical horizons of the Early-to-Mature and the Rigvedic cultures are one and the same in every respect. Not only the core areas but also the contact areas of the two in various directions coincide perfectly. The Latest Limits of Rigvedic and Early-to-Mature Harappan chronological horizons coincide, proving their partial overlap. The various phases

of the Harappan Culture have been firmly dated by Carbon-14 method and there is little controversy about Harappan chronology today. For knowing the position as it stands to day, one may refer to the latest assessments made by Gregory L. Possehl (1996), S. P. Gupta (1996) and B. B. Lal (1997). Though the beginning of the Early Harappan proper is placed in about 3200 BC, it is accepted that its roots go back to circa 4000 BC. It is also agreed that the Mature or Urban Phase of the culture came to an end in around 2000-1900 BC. As we are not concerned with the Late (i.e. Post-Urban Harappan) at the moment, it is this span of roughly 2000 years from 4000 BC to 2000 or 1900 BC that is to be compared, as we shall see, with the later portions of the Rigvedic Period to find the relative chronological position of the two.

The Rigvedic chronology, on the other hand, has been and still continues to be a matter of controversy though during the last few years some significant light has been thrown on this problem. Linguistic, West Asian inscriptional, astronomical, archaeological, and other kinds of data and evidence have been used to fix the chronology (Singh 1997-98). Efforts to reach acceptable conclusions have so far failed partly because of inherent limitations of certain sorts of data and partly because of a lack of mental clarity in some scholars who do not maintain a clear distinction between the antiquity of the language of the Rigveda and the antiquity of the hymns contained in the text, and sometimes even confuse the time of composition of the hymns with the time of their compilation.



In any discussion on Rigvedic chronology, two issues are involved, one pertaining to its earliest limit and the other relating to its lowest limit. Fixing the lowest limit is not so difficult as ascertaining the earliest limit and so most of the scholars have concluded their discussions by stating that the Rigveda cannot be later than such and such date. To my knowledge no body has ever claimed to have fixed the earliest limit of the Rigvedic period excepting, of course, the supporters of the AIT and AMT who believe that it began in around 1500 BC directly making a fool of Max Muller on whom they depend but who had stated that 'no power on earth will ever determine' how old the Rigveda is. Ancient inscriptional evidence such as the names of characteristically Vedic gods found recorded as witness deities on tablets of about 1400 B.C discovered at Boghazkeui, a site some 145 kms east of Ankara in Turkey, names of kings like Suttarna, Yasdata, Artamanya, etc., occurring on tablets of about the same time discovered at El-Amarna in Egypt, and the use of the word Suriyas for the sun god by the Kassites ruling over Babylon in 1760 BC prove the presence of Vedic Aryans in those areas at the mentioned times but they do not help us in fixing the limits of the Rigvedic time-span.

Linguistics too has miserably failed to provide any insight on this issue. I am not a linguist myself, but I am told that linguistics is now quite advanced and sophisticated. It is no longer in its primitive 19th century stage in which it was outright rejected by eminent thinkers like Shri Aurobindo as a

discipline incapable of deciding what it aims at deciding. However, I feel surprised to find that using same methodology and similar data B. K. Ghosh (1952) thinks that the Rigveda cannot be earlier than 1500 BC and Satya Swarup Misra (1992) holds that it cannot be later than 5000 BC. Does it indicate any inherent imperfection in the discipline? I simply do not know.

Astronomical calculations, unlike linguistic considerations, have yielded uniform results. It is worth noting that B. G. Tilak in Mumbai and H. Jacobi in Bonn working simultaneously but independently of each other arrive at almost the same conclusion that the antiquity of the Rigveda goes back to 4500 BC (Winternitz 1933/91: 295-96. But under the spell of AIT this fact was overlooked and astronomical evidence was not given the importance that it deserved. Of late, when the spell has broken, some scholars like Subhash Kak (1994) have started working on Vedic astronomy and it may be expected that it would throw some significant light on Rigvedic chronology.

Unlike the archaeologists who have made serious attempts to know the causes that led to the extinction of Harappan cities, the vedicists have seldom probed the reason why the composition of the Rigvedic hymns came to an end. The Rigvedic creativity is no more present in the Vedas that follow. What was the catastrophe that killed the dynamic spirit of the Rigvedic Aryans? The recent investigations in the Sarasvati (modern Ghaggar-Hakra) Valley seem to provide an answer to this question. The

drying up of the Sarasvati has long since been taken as a line of demarcation between the Early and Late Vedic periods. It is a matter of satisfaction, therefore, that the time when the river dried up is now known. The Mature Harappan settlement at Kalibangan, located on its bank, had to be abandoned because of scarcity of water in the river, and Radiocarbon dates indicate that this abandonment occurred in 1900 BC. It has, therefore, reasonably been concluded that the river dried up 'some time at the beginning of the second millennium BC' (Lal 2002: 22). Thus, the drying up of the Sarasvati appears to be the main reason for the end of both, the urban phase of the Harappan Culture and the Rigvedic phase of the Vedic Culture though the hymn compositions, needing serene atmosphere, must have stopped long before the abandonment of the cities. Though the above conclusion can hardly be doubted, a different opinion in this connection must not be overlooked. Recently a few scholars like N. S. Rajaram, David Frawley and Subhash Kak have tried to prove that the Rigveda cannot be later than 3750 BC (Rajaram and Frawley 1995).

Like K. D. Sethna (1981) they equate the Harappan and Sutra periods and push back the Rigvedic period to an age much earlier than the Harappan. Their arguments are: (a) the ancient Egyptian and Babylonian mathematics are derived from the Sulbasutras and (b) this mathematical evidence is supported by astronomical considerations relating to the pole star Alpha- Draconis, Krittika vernal equinox and the time taken in the shift of the cycle of seasons from the days

of the Sutras to the present. Additional evidence for the proposed chronology is provided by the stand that the Rigvedic period ended with the Battle of Ten Kings that is calculated to have occurred in 3730 BC. The arguments are quite emphatic, but the difficulty is that the cultural levels depicted in the Rigveda such as those indicated by organized battles and sea trade do not match with those brought to light so far by the archaeological assemblages of pre-3750 BC horizon. Although there is nothing final in archaeology since any new discovery any day may alter the entire perception, till such evidence is brought to light, an archaeologist would find it difficult to accept this early end of the Rigvedic period.

The mosaics of the Rigvedic and Early-to-Mature cultural contents have striking resemblance. Now, let us compare the cultural contents of the Rigvedic and Early-to-Mature cultures. The perception that the former is rural and illiterate and the latter urban and literate is wrong. First, the rural-urban dichotomy itself is incorrect for in every culture and specially so of ancient times, the number of people engaged in agriculture far exceeds the number of those who participate in non-agricultural production and trade. Then the evidence now at hand shows that the Rigvedic Culture too had reached the stage of urbanization. Bhagwan Singh (1987/97; 1995) and R. S. Bisht (1988; 2000) have brought out enormous data from the Rigveda to show that some Rigvedic people lived in urban centers and carried on long distance trade by land and sea. Undoubtedly the Rigvedic Aryans

destroyed their enemy purs (strongholds or fortified towns), but they also built purs and lived in them. They describe their own purs as metal-strong (ayasi), multi-sided (satabhuji), spacious (Vipula), broad (urvi), goodlooking (subhra) and auspicious (bhadra), etc. A large number of architectural terms and descriptions found in the text, specially references to covered (surmi) and un-choked (sushira) drains (Rigveda, 8.69.12) leading discharge water to pits (kakuda) immediately bring to our mind the Harappan drainage system.

Descriptions at various places in the text refer to business activities. The word vanij denoting a businessman or merchant is known. Words expressing the concepts like 'capital investment', 'profit', 'loan', 'tax', 'contract', etc., used in the business community are found (Bisht 1988: 12). Trading was done by roadways as well as by waterways. Various kinds of land routes or roads like strait roads, deviant roads, waterlogged roads, etc., are referred to. Sea journey for trade is also referred to at several places. It was in such a sea journey for trade that Bhujyu, son of Tugra, had the misfortune of shipwreck.

Bhagwan Singh has drawn our attention to a verse of the Rigveda (10.142.7) that reads: 'This is the reservoir of water, the house of all the waters. O Agni, now you can change your route and reach any destination you like.'

The literate-illiterate dichotomy is also untenable.

Literacy was rare even in Harappan Culture limited only to a section of the society in the Mature Harappan phase only, the Early Harappans being totally illiterate. It was very limited in the Rigvedic Culture too, but not unknown. Bhagwan Singh (1987/97: 266-72) quotes several Rigvedic verses indicating literacy and V. S. Pathak (1986) is of the opinion that the Panis are called 'granthinah because they possessed account books.

Earlier, it was believed that the Harappans were peaceful people as against the Aryans who were warlike. Now, it is accepted even by scholars like Shereen Ratnagar that the Harappans too possessed weapons 'just like' Aryans (Elst 1999: 253). In fact, the fact that the Mature Harappans had invaded and occupied several regions is well-attested by archaeological evidence (Lal 1997:91). If references to wars in the Rigveda lead one to believe that the Rigvedic Aryans were 'warlike' people, he or she will have to accept that the Mature Harappans too were equally 'warlike'.

Similarly, the perception that Harappans did not use horses, while the Aryans were fond of them, has been contradicted by the recovery of horse bones from Harappan settlements like Harappa, Ropar, Kalibanga, Lothal, Surkotada and Malvan. Though remains of horse bones have not been found at Mohenjo-daro and Nausaro, the presence of the animal at these sites is attested by its terracotta figurines (Gupta 1996: 159-61; Lal 1997: 285-86).

There are many more points of convergence between the Early-to-Mature and Rigvedic cultures. Several characteristic pottery types like knobbed and perforated varieties are mentioned in Vedic literature (Singh 1969). The population shift towards east concomitant with Mature Harappan decline, thoroughly documented by Shaffer and Lichtenstein (1999), tallies perfectly with literary information according to which the center of Aryan activities had shifted from the Sapta Sindhavah area to Brahmavarta in the post-Rigvedic period. Thus, we find that Rigvedic and Early-to-Mature cultures are quite alike and the earlier notion of Vedic-Harappan dichotomy is yielding and giving place to Vedic-Harappan identity.

Do the geographical, chronological and cultural parities between Rigvedic and Early-to-Mature Harappan cultures prove their identity?

While comparing Rigvedic Culture with Early-to-Mature Harappan, scholars generally conclude that in view of the above parities between them their identity is established. However, it may be noted that though these parities point to a strong probability of the two cultures being one and the same, they do not necessarily prove their identity. I have already referred to the processual difference between the two.

These parities only prove that two distinct processes, the one urban represented by the Harappan and the other ideological represented by the Rigvedic Culture were at work in the same space-time

context. In such a situation, one may argue, and in fact some scholars have already argued<sup>8</sup> that it may be that while some (or even most) of the social groups occupying the space-time under consideration might have participated in both the processes, some others (whatever their strength) may have been involved in only one of the two or even in none of the two processes. This shows that the problem needs a deeper probe.

Correlating the ideological and urban processes The ideological and urban processes were, in fact, inter-connected. Speaking in terms of Systems Theory, we may say that they were coupled in a stimulus-response relationship like sub-systems of a system. I have dealt with in detail elsewhere (Singh 1997-98b; 2002) and shown that the Rigvedic and Early-to-Mature Harappan ethno-geographic configurations too have a structural parity and that both the processes had originated in the Sarasvati valley from where they diffused first to the lower Indus valley and then to other places towards north, south and east.

The diffusion of the ideology from the banks of the Sarasvati to the lower Indus valley is attested to by the fact that while the Rigvedic hymn-composers are ignorant about the river Sindhu in the earliest portions of the Rigveda, in middle and late portions of the text many of them like Sindhukshit, Sindhudvipa and Kakshivan are found settled in the lower Indus area and composing hymns glorifying the river Sindhu and its bounties. A northeast to southwest of ideology is confirmed also by a somewhat late inclusion of the twin gods

Asvins, originally gods of the coastal regions, in the Soma ritual that had originated in the Sarasvati valley. (Singh 1997-98b: 31 and fn 19). The urban process follows the same pattern. It too originates in the Sarasvati valley and diffuses first to lower Indus and then to other areas. This is shown by successive stages of diffusion of Early Harappan traits followed by the Urban Harappan expansion.

The ideology played a significant role in the rise and intensification of the urban process. This becomes clear when we consider variables causing transformation of the early (pre-urban) stage of the Harappan Culture into the mature (urban) stage. Earlier it was thought that trade, mainly external trade, brought about the transformation. D. K. Chakrabarti has contradicted this general belief and asserted that long-distance external trade was a concomitant of the urbanization; it did not antedate it. According to him, an ideology 'which cannot yet be defined in concrete social and institutional terms' had played an important role in this transformation (Chakrabarti 1990: 169). G. L. Possehl (1990: 276-79) too accepts the importance of ideology in this transition. The uniformity in Mature Harappan traits, specially the signs and symbols, over a large area demonstrate a kind of 'oneness', an evidence of the emergence of a sort of social identity fostered by an expanding ideology. The question is: what else this ideology was if not the Vedic? In literature we find the optimistic and martial Rigvedic Aryans waging wars against their enemies and moving from the banks of the Sarasvati towards

Indus and beyond. In archaeology we see the Mature Harappans overrunning different peoples and burning down settlements at Kot Diji in the Indus valley and at Nausharo, Gumla and Rana Ghundai west of the Indus (Lal: 1997: 91). Is this correspondence in literary and archaeological pictures not significant?

In my view, the Rigvedic and Early-to-Mature Harappan identity cannot be challenged on the basis of the notional distinction between ideological and urban processes. Their identity is proved not only by geographical, chronological and cultural parities between the two but also by the interdependence and similar developmental pattern of the urban and ideological processes that they represent.

### III

#### **Aryattva: the ideal of Vedic Culture and its continuity**

The essence of Vedic Culture lies in its perception of Aryattva, a virtue, the achievement of which is considered to be necessary for a civilized living. The slogan 'Krinvanto visvam aryam' (Rigveda 9.63.5) is an appeal to the divine almighty power to help achieve this ideal. Unfortunately, however, many historians have misunderstood this Aryattva.

Vedic Aryans, a reality; Indo-Aryans, a myth Scholars have often confused the Vedic Aryans with the Indo-Aryans forgetting the fact that the two are different concepts. 'Arya' being the self-designation of the Vedic people, 'Vedic Aryans' represents a historical reality. As



against this, the term 'Indo- Aryan' is a linguistic construct denoting the speakers of a subgroup of languages within the Indo-Iranian branch of the Indo-European family, and being a construct, its validity is subject to verification. Although language and culture are intimately connected, Arya does not mean a speaker of a particular language. In Vedic view, even a person speaking a Dravidian language is an Arya if he possesses the virtue called Aryattva.

Semantics of Arya: modern linguistic versus traditional Bharatiya view V. S. Pathak (1993) has discussed in depth the semantics of Arya. Starting with ara (which initially indicated a pointed digging stick and later acquired the sense of 'the tilling equipment') he traces the semantic development the term through aram, ari, and arya to Arya. According to him, all these words are derived from the root ar. Ara letter acquired the sense of 'master' and 'procreator' and aram came to denote 'the mystic power of generation and protection'. Ari, according to him, 'appears to be an extension of the concept of ara, the master. While ara was merely 'leader', ari became 'priest' too. Arya, (beginning with short a), he believes, was derived from ari. As an antodatta it means 'master', but as adyudatta it denotes a 'Vaisya'. Pathakji does not appear to distinguish much between arya (beginning with short a) and ari. Benveniste (1973: 303), however, believes that in the exogamous society of the Indo-Aryans, Arya (beginning with short a) was the common reciprocal term used by members of the same moiety, while ari was the designation for the members

of other (different from ones own) moieties. Be as it may, according to linguists, the word Arya (beginning with long a) is derived from ari/arya and is basically an agricultural term. In the words of Pathakji it is an 'agro-technological term'.

The traditional Bharatiya interpretation of the word is different. Nighantu (2.22) takes arya to be one of the four terms denoting God (Chatvari Isvaranamani). According to Yaska, ari also means Isvara, that is, God (Isvaropi arih, Nirukta 5.7) and Arya, therefore, means Isvaraputra, son of Isvara. Right from the Vedas down to glossaries like Sabdakalpadruma and Vachaspathivrihadabhidhana, the Bharatiya tradition defines Arya as one who is noble and refined in ideas and actions. It is believed that nobility and refinement depend on a world-view characterized by a belief in certain concepts like Rita, Satya, Tapas, Yajnya, Brahma, etc. The fundamental concept from which other concepts are derived is Rita, which means proper, true, divine, pious, religious, perfect, brilliant and glorious all rolled into one. Rita and Satya are so near to each other that they have been taken to be synonymous. Sayana says: Ritamiti Satyanama (Rita is another name of Satya); Ritam manasam yatharthasamkalpanam. Satyam vachikam yatharthabhashanam (Rita is the mental perception of Reality and Satya is verbal expression of Reality). Rita is considered to be identical to Dharma and Brahma too ('Dharma sreyas-prapti ke lokottar sadhana ka vidhana hai, Brahma nihsreyasabhuta param sat hai.' Pande 2001: 69). It is this world-view

based on Rita and related concepts that define Aryattva. One who has this vision is Arya. It is because of this that the word Arya is translated as noble or respected in English and as Sreshtha in Hindi.

Though the modern linguistic concept of Arya and the traditional Bharatiya concept of Arya are poles apart, I think they are not contradictory but supplementary. Aryattva is a fine blending of virtues that lead to the highest material as well as spiritual achievements.

#### **Aryattva: a historical necessity**

The Vedic ideology originated in the Sarasvati valley to fulfill a historical need. It emerged to break the isolation of the various ethnic units present in and outside the valley that were busy maintaining their individual cultural boundaries and living in a state of mistrust and fear for each other. The historical process at the time had reached a stage in which a transition from tribal society to state society had become the need of time.

Performance of public sacrificial ritual generated a sense of cooperation and unity, and Vedic ideology formed the basis for the rise of a social identity that was needed to organize the society at a much larger scale needed for the birth of the earliest civilization of South Asia . Thus, the emergence of Vedic ideology and the social identity that it fostered were both a cause as well as an effect a historical process. In fact, the sense of unity, cooperation and goodwill inherent in Aryattva has provided morale to

Bharatiyas at various critical junctures of their history.

#### **Continuity of Aryattva, the ideal of Vedic Culture**

The Epics, the Puranas and all subsequent Sanskrit literature stand witness to the continuity of the Aryan way of life. Now that the Vedic-Harappan identity is beyond any doubt, we need to utilize archaeological data too to trace this cultural continuity. In this direction a beginning has already been made by B. B. Lal. In his latest book aptly entitled as *The Sarasvati Flows On*, he has shown how several practices that are still current like Yogasana (Yogic postures), the Hindu manner of Namaskara (salutation) with upraised folded hands, etc. have come down to us from Indus-Sarasvati (Harappan) times. Even the practice of putting vermilion in the hair parting (Manga-bharana), practice by all married Hindu women, goes back to Indus-Sarasvati times (Lal 2002).

This line of research, which has many more surprises in store, must be taken up by the new generation of archaeologists in India .

### **IV**

#### **Vedic historical studies: the challenges ahead**

In the end, I must refer to present challenges in the field of Vedic historical studies that need to be met immediately. I have already taken a lot of your time and the duration fixed for the key-note address is also almost over. So, I shall



bring to notice only one or two of these challenges which, in my view, are the most serious ones. Arya indigenous, Sanskrit foreign! This is one of the latest and most serious challenges posed by the variety of linguistics that has perpetuated the problem called 'Aryan Problem' and thereby distracted the attention of historians from the real issue of reconstructing the glorious history of the Vedic Aryans. There was a time when the Bharatiyas were the leaders in the field of 'linguistics'. as pointed out by G. C. Pande (2001:519), four out of the six Vdangas, namely, Siksha, Vyakarana, Nirukta and Chhanda, relate directly to language. Unfortunately, however today linguistics has become almost wholly a western science. The result is that the 'Aryan Problem' remains to be a problem and, despite Shaffer's earnest call to end the "Linguistic Tyranny" (Shaffer 1984:88), it still continues. But, linguistics is being contradicted by archaeology, a discipline which has several western adherents too, and during the last two decades the linguistic-archaeological divide has been much debated.

A few years ago, an international conference was held in Toronto, Canada, with the specific purpose of bringing together linguists and archaeologists so that they could understand each other's point of view and collaborate in solving the Aryan problem. The papers presented to the conference have been published in the book entitled *The Indo-Aryans of Ancient South Asia* (1995). It has been edited by George Erdosy. Erdosy is genuinely interested in finding out areas of collaboration between adherents of the two disciplines. This is

evident from the Preface as well as the first paper of the book contributed by Erdosy himself. He agrees with the archaeologists that the Rigvedic Aryans are indigenous, but he also upholds the opinion of linguists that Vedic Sanskrit has arrived to India from outside. Trying to summarize the debate and striking a happy balance(?) between the linguist and the archaeologist, George Erdosy states: 'The inescapable conclusion is that while Indo-Aryan languages have an external origin, the Aryas of the Rigveda were not their carriers into South Asia' (Erdosy 1995: 4). 'Arya indigenous, Sanskrit foreign' is indeed a strange conclusion. But it is not merely a strange inference, it is a very serious statement. We need to remember that scholars like Parpola and Sergent now believe that the Dasas, Dasyus and Panis too were Indo-Aryan-speakers who had like the Vedic Aryans, arrived in India from outside. In the background of this new stand, Erdosy's statement becomes quite serious. Indian historians and archaeologists need to understand the seriousness of Erdosy's above conclusion.

#### **Neither AIT nor AMT, OBT**

Related to the above challenge is the question: Since Aryan Invasion Theory (AIT) stands demolished and Aryan Migration Theory (AMT) found baseless, how to explain the linguistic affinities in the vocabulary, grammar, etc. found in the so-called Indo-European languages and certain socio - religious and mythological parities observed in the tradition of the speakers of this family of languages? While some scholars like Jim

G. Shaffer (1984) do not think that migrations are necessary for language diffusion, many others emphatically say that population movements must accompany language dispersal since languages do not have legs and they move only with their speakers. Recently, Koenraad Elst (1999) and Shrikant G. Talageri (2000) have tried to show that the flow of so-called Indo-European languages was just in the opposite direction from India to Central Asia and Europe. Many more scholars have started considering this possibility and the talk of a theory called Out of Bharat Theory is very much in the air. One may decide on the name of the theory whether it should be called OBT or AET (Aryan Emigration or Exodus Theory), the usage itself would fix the designation, but the need of the hour is to develop this theory on solid textual, linguistic, archaeological and other kinds of data and evidence. May be the needed data and evidence are already on our table, only we have not noticed them!

## Notes

1. I have dealt with the concept of 'paradigm' and the significance of paradigm changes in the growth of knowledge in my book *Models, Paradigms and the New Archaeology* (1985). For a more detailed discussion one may refer to Thomas S. Kuhn's *The Structure of Scientific Revolutions* (1962).

2. This definition of 'civilization', still prevalent in archaeology, actually depends on a materialist conception of history. It was initially suggested by Lewis

H. Morgan in 1877 in his book *Ancient Society, or Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization*. Frederick Engels adopted this definition in his famous essay 'The Origin of the Family, Private Property and the State' written in German which appeared in Zurich in 1884 wherefrom it was applied in the field of archaeology by V. G. Childe. The definition is defective in several respects, but we need not elaborate the points here. Suffice it to say that a definition given from a particular view-point cannot hold good for others who do not accept that point of view.

3. An example of the persisting notion of culturally backward and warlike Early Aryans may be found in R.S. Sharma's book *Material Culture and Social Formations in Ancient India* published in 1983. Sharma has concluded that down to the time of composition of the Family Books of the Rigveda, the Vedic Aryans were largely nomadic pastoralists ignorant of settled agriculturists' life and were engaged mostly in booty capture. According to him, booty capture was their most important economic institution. On page 38 of his book he declares: 'War in the predominantly tribal society of the Rg Veda was a logical and natural economic function' and that it was 'the main source which supplied, to the tribal chief or prince, cattle, other animals and women in the shape of spoils'. On page 24 of the book, he opines that 'the Family Books show the Rig Vedic people to be predominantly pastoral'. But R. N. Nandi contradicts this statement and notes: 'Not much exercise is needed to show that permanent

dwelling, which together with fertile fields constitute the nuclei of sedentary life, already dominate the family portions of the Rgveda. But the obsession with pastoral nomads has frequently led scholars to gloss over the data bearing on these essentials of sedentary life' (Nandi 1989-90:45). Bhagwan Singh (1993:192) goes still a step ahead and remarks: 'Contrary to the general belief that the Vedic society was pastoral and nomadic, we find it to be one of the most civilized societies of its time. Rgveda is agog with mercantile activities undertaken by its traders against all conceivable odds' (Singh 1993:192). The changing paradigm is clearly reflected by these opinions expressed by three scholars all of whom, it may incidentally be noted, are Marxists.

4. According to Poliakov (1974) and Shaffer (1984), the anti-Semitic feelings were quite dominant among the Christians of 18th century Europe. They wanted to get rid of the Judaic heritage to which they were bound by the Old Testament. This propelled the scholars to seek their origins in some other tradition. They paid special attention to the concept of 'the Flood' and the importance of the mountains found in Christian myths of creation. The discovery of seashells even in high latitudes was interpreted to confirm the existence of the Flood from which the humanity could have survived only in mountainous areas. Since the highest mountains were in India and China, they looked towards east for their origins. India was preferred 'perhaps influenced by the reluctance of the Whites to admit affiliation to the Yellow races' (Poliakov 1974:184).

However, their preference for India was rooted in the respect that they had developed towards this country on being early acquainted with the Vedas and the Mahabharata, etc., and not in their dislike for Yellow races as Poliakov is inclined to believe.

5. Oxus is Vankshu or Vakshu also mentioned as Chakshu. Bactria is Balhika later known as Balkha and Bakhtri. According to V. S. Agrawal (1956:9-10), 'The name Afghanistan itself is derived from Asvakayan mentioned by Panini and corresponding to Gk. Assakenoi, with their capital at Massaga or ancient Masakavati'. He further notes: 'The river Murg-ab, which has its source on the western slopes of the Hindukush and flows through Russian Turkestan with Merv on its left bank, represents the Sanskrit Mrig, Avestan Mouru, old-Persian Margu, of which the country was called Margiana. According to him, 'the Mrigas are mentioned in the Mahabharata as one of the four Saka tribes whose original homeland was in Central Asia '.

6. This is further corroborated by the reference in the Rigveda (3.5314) to Kikatas and their leader Pramaganda who were a people of Magadha area. As noted by Griffith in his comment on the verse, the country of the Kikatas is usually identified with South Bihar. Talageri (2000: 119) believes that Kikata is another name of Magadha and informs that several scholars connect the name Pramaganda with Magadha.

7. Sarayupar is the area to the north of the river Sarayupar in eastern U.P. that

extends from Gorakhpur to Gonda and Baharaich.

8. As far as I know, so far no one has come out with this argument in writing, but such an argument was indeed put before me by some western scholars during discussions in the WAVES (World Association for Vedic Studies) Conference held at New Jersey ,USA , in July 2000.

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## The Mythical Massacre at Mohenjo-Daro

George F.Dales



Nothing delights the archaeologist more than excavating the ruins from some ancient disaster—be it a flood, earthquake, invasion, or massacre. This does not reflect any inordinately ghoulish tendency in the character of archaeologists. It is simply that a much more complete picture of the life and times of an ancient site is preserved if it was the victim of some quick, devastating disaster than if it had just died a slow natural death, had been abandoned or remodeled.

The classic example of the rewards that we can reap as the result of an ancient natural disaster is Pompeii where the eruption of Vesuvius preserved for posterity a full-scale authentic model of daily life in an ancient Roman town. But more popular with historians and disasters that can be blamed on mankind itself. Scholars and laymen alike have

always delighted in being able to boo and hiss the evil villain, the murderous invader, the barbarian hordes. Only the approach is different—the one flicks on the “Late Syhow,” the other writes learned footnotes.

One of the most enigmatic whodunits of antiquity concerns the decline and fall of the Indus Valley (Harappan) civilization. Remains of this vast civilization of South Asia are scattered over an area considerably larger than those covered by either ancient Egypt or Mesopotamia. The life cycle of this third major experiment in the origin and development of the world’s earliest civilizations is at present highly speculative and is the subject of increasingly intensive investigation by archaeologists, historians, linguists, and natural scientist alike.





It is now apparent that a re-evaluation is necessary of some of the earlier theories that have come to form over the past thirty years the basic structural members in the framework of early South Asian history. It is especially necessary to call for a retrial concerning the placing of guilt for the demise of the Indus civilization. Evidence was published some 30 years ago suggesting that Mohenjo-daro, the southernmost of the two major cities of the Harappans, was destroyed by armed invaders and that the hapless victims—including a large percentage of women and children—were massacred on the spot. The excavators of Mohenjo-daro were content—at least at first—to put the blame for the “massacres” on several disassociated causes and incidents. The “massacre” idea immediately ignited and has been used as a torch up to the present day by some historians, linguists, and archaeologists as visible, awful proof of the invasion of the sub-continent by the Aryans—the eastern branch of the vast Indo-European language family—heralded the beginning of the historical era in South Asia. The social and religious life of the times is described in detail in the hymns of the Sanskrit Rig-Veda, the earliest book known in India. The Vedic hymns describe the principal god, Indra, as the “fort destroyer” who

“rends forts as age consumes a garment.” In attacking the fortresses of the *dasyu* (the name applied to the non-Aryan enemies, be they mortal or supernatural), Indra is specifically described as setting fire to the buildings—

..... in the kindled fire he burnt up all their weapons, and made him rich with kine and carts and horses.

The texts describe how the Aryan warriors were protected by armor and shields. In addition to the bow and arrow—the chief weapon—they used the javelin, axe, and sword. Horses were common but were probably used to pull the chariots rather than for riding.

It seems logical to assume that, as Sir Mortimer Wheeler put it, “Indra stands accused” of destroying the cities of the Harappan civilization and of the responsibility for the “massacre” at Mohenjo-daro. Apart from a few dissenting comments in rather obscure publications, the general literature on the subject current today still repeats vivid, dramatic descriptions of the barbarian hordes descending upon the one great and proud cities of the Indus civilization. For example:

*The Indus cities fell to barbarians who triumphed not only through greater military prowess, but also because they were equipped with better weapons, and had learnt to make full use of the swift and terror-striking beast of steppes (i.e. the horse).*

(Basham, 27)



Panoramic view of Mohenjo-daro with the citadel on the horizon

It is still premature to talk in terms of absolute dates—the entire chronology of South Asia down to the 6<sup>th</sup> century B.C. is a web of pluses and minuses of hundreds of years—so, on purely chronological grounds, we cannot even establish a definite correlation between the end of the Indus civilization and the Aryan invasion. But even if we could, what is the material evidence to substantiate the supposed invasion and massacre? Where are the burned fortresses, the arrowheads, weapons, pieces of armor, the smashed chariots and bodies of the invaders and defenders? Despite the extensive excavations at the largest Harappan sites, there is not a single bit of evidence that can be brought forth as unconditional proof of an armed conquest and destruction on the supposed scale of the Aryan invasion. It is interesting that Sir John Marshall himself, the Director of the Mohenjo-daro excavations that first revealed the “massacre” remains, separated the end of the Indus civilization from the time of the Aryan invasion by two centuries. He attributed the slayings to bandits from the hills west of the Indus, who carried out sporadic raids on an

already tired, decaying, and defenseless civilization.

What of these skeletal remains that have taken on such undeserved importance? Nine years of extensive excavations at Mohenjo-daro (1922-31)—a city about three miles in circuit—yielded the total of some 37 skeletons, or parts thereof, that can be attributed with some certainty to the period of the Indus civilization. Some of these were found in contorted positions and groupings that suggest anything but orderly burials. May be either disarticulated or incomplete. They were all found in the area of the Lower Town—probably the residential district. Not a single body was found within the area of the fortified citadel where one could reasonably expect the final defense of this thriving capital city to have been made.

It would be foolish to assert that the scattered skeletal remains represent an orderly state of affairs. But since there is no conclusive proof that they all even belong to the same period of time, they cannot justifiably be used as proof of a single tragedy. Part of this uncertainty



The so-called massacre in HR area, Room 74 of House V

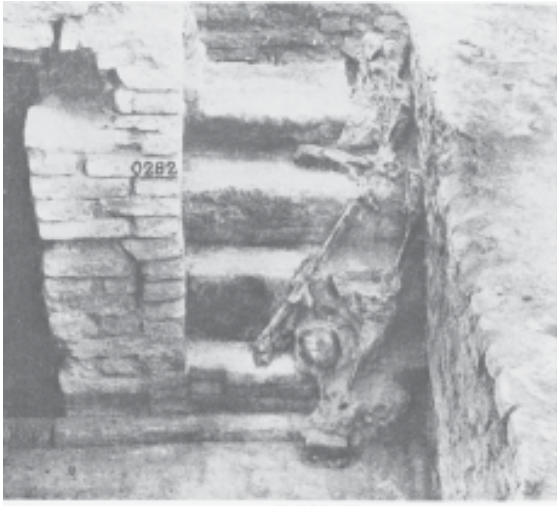
results from the unsatisfactory methods used by the excavators to record and publish their finds. But even allowing for this serious methodological shortcoming, it is possible to re-evaluate the published evidence and to come to some definite conclusions concerning the massacre myth.

The most celebrated group of skeletons, the photograph of which is usually published to provide visible proof of the "massacre," was found in the area of Room 74, House V (HR area). The interpretation of this grisly discovery was not even agreed upon by the excavators themselves. Mr. Hargreaves, who did the actual excavating, states that because four of the fourteen skeletons were found above the ruins of the southern wall of the room, the entire group belongs to a date subsequent to the decay of the building and thus to a period posterior to the abandonment of the latest stage of the city. Marshall, the over-all director of the excavations, says on the other hand "this does not seem to be proven." He points out that the building belongs to the Intermediate

period of the city and that this entire area was covered over and rebuilt in the Late period (the assumed Late period remains were not preserved at this part of city; it is probable they had eroded away). Marshall suggests that the skeletons could belong to the interval between the Intermediate and Late period, "though the possibility of their being posterior to the Late period

may be admitted." He also disagrees with Hargreaves over the circumstances that produced this gruesome spectacle. Hargreaves stated with questionable perspicacity that the fourteen bodies "appear to indicate some tragedy." Furthermore, he observed that the twisted, intermingled positions of the bodies are those "likely to be assumed in the agony of death than those of a number of corpses thrown into a room." Marshall read the evidence differently. He believed that the bodies were intentionally interred "within a few hours of death" or else they would have been prey for animals and birds. "There is no reason whatever for doubting that these burials date from the declining years of Mohenjo-daro's prosperity," stated Marshall, but didn't suggest they represent any final massacre of the population.

During the removal of the thick accumulation of debris covering a courtyard of the Intermediate period (House III, HR area), incomplete remains of three skeletons were found. Their location in the debris shows, however,



The Well Room Tragedy, DK area, G section

that they did not belong to the time of the courtyard but to sometime after it had fallen into disuse and had been filled in, possibly in preparation for the buildings of the Late period. The excavator suggests that it represents a late funerary deposit and doesn't intimate any connection with a final "massacre" of the city's population. Those who have so stated have misread the archaeological evidence.

One reads about "the slaughtered Harappans" who "lay unburied amid their streets." This melodramatic description was prompted, in part, by the reported find of six skeletons in a lane between two houses in the VS area of Mohenjodaro. And yet, the excavator stated in his report that "from their position they appear to be posterior to the adjacent remains." They were covered with loose earth, free from bricks and other debris that would indicate any violent destruction. There is no suggestion in the report that they were lying on the actual street surface.

Marshall suggests again that they were probably burials of the Late period that just accidentally penetrated down between the building walls bordering the lane—the lane itself having been long before covered over. Had the skeletons really been found directly on the street surface, there would still be no case for a final "massacre" because the lane belongs to the Intermediate period of the city.

Deadman's Lane in the HR area of the city was the scene of another well publicized but mythical street slaughter. One fragmentary skeleton (part of a skull, the bones of the thorax, and the upper arm of an adult) was found lying on its back diagonally across the narrow lane. But this incomplete skeleton was not resting directly on the walking surface of the lane. It appears to have been in the debris that accumulated between the walls of the building facing the lane sometime after the lane had fallen into disuse. The lane itself belongs to the Intermediate period of the city. This area was rebuilt during the Late period and houses covered the location of the earlier lane. The excavator suggests that this partial skeleton was interred under the floor of a house of the Late period. Thus, it was just accidentally located in the proximity of the lane and was not associated with it at all.

Another celebrated group of "victims" consists of nine skeletons that "lay in strangely contorted attitudes and crowded together" (Block 10A, DK area). Ernest Mackay, the excavator, expressed considerable doubt about the date of these remains. They were reportedly found at a level



corresponding to the early part of the Intermediate period. For ‘convenience sake,’ Mackay termed the find-spot a burial pit although he admitted that he noticed no definite walls for the “pit” nor any traces showing that the area had been dug. Only two objects were found with the skeletons—an ivory comb that is not like the known Harappan period combs, and a copper bracelet. On the evidence of the bracelet, Mackay dates the remains to “the period of the occupation of the city.” The technical report on the skeletal remains states that they probably do not represent a massacre per se because many of the skeletons were incomplete, represented by only a few fragments of cranium and odd bits of bone.

Mackay suggests that these were the remains of a family who tried to escape from the city with their belongings at the time of a raid but were stopped and slaughtered by the raiders. Their bodies were then “thrown pell-mell into a hurriedly made pit.” He says it is “quite possible” that the tragedy took place in the final period of the city but can offer no supporting evidence. That at least five of the nine skeletons were of children prompted the anthropologist who studied the remains to conclude that “the raiders nursed a consistent hatred of the people of Mohenjo-daro as a whole, and total extermination appears to have been their endeavour.”

Finally, bringing this rather macabre account to an end, mention must be made of the lone bit of evidence from Mohenjo-daro that could conceivably be used as positive evidence of some murderous tragedy during the Late

period of the city. In what we might call the “Well Room tragedy” (DK area, G section), two skeletons were found on a flight of stairs “evidently lying where they died in a vain endeavor with their last remaining strength to climb the stairs to the street.” But the circumstances surrounding this tragedy are unknown and it would be presumptuous to cry “massacre” on this bit of evidence alone.

Thus stands the evidence in the case against Indra and the Aryans, or to be less specific, against the idea of a “final massacre” by whomever you prefer. The contemporaneity of the skeletal remains is anything but certain. Whereas a couple of them definitely seem to represent a slaughter, in situ, the bulk of the bones were found in contexts suggesting burials of the bones were found in contexts suggesting burials of the sloppiest and most irreverent nature. There is no destruction level covering the latest period of the city, no sign of extensive burning, no bodies of warriors clad in armor and surrounded by the weapons of war. The citadel, the only fortified part of the city, yielded no evidence of a final defence. (See photograph on page 4).

The evidence that is being gathered by present investigators from various branches of the natural and physical sciences is tending to support—in part—the theory expressed years ago by Mackay. Regarding the decay of Mohenjo-daro and the Harappan civilization, he suspected the cause to be “the vagaries of the Indus rather than pressure by invaders, of whose existence we have, in fact, little positive evidence.”

The details of the story of the decline and fall of the Indus civilization are, as yet, far from clear, but a pattern of contributing factors is taking shape. This pattern does not include invasion and massacre as basic factors. on the contrary, it appears that a series of natural disasters occurred—possibly as swiftly, certainly more devastating than any hypothetical invasion. A sudden rise in the Arabian Sea coastline of West Pakistan apparently took place sometime around the middle of the second millennium B.C. This resulted in a disastrous increase in the already serious floods in the major river valleys with the subsequent rise of the underground water table, contributing to an increase in the soil salinity to the point where it was impossible to sustain the population of the vast urban settlements. The economy must have decayed rapidly; to more fertile territory. There is now incontrovertible archaeological evidence that the major population shift was to the southeast into the area of the Kathiawar peninsula, north of Bombay. Here the Harappans mingled with other indigenous populations and gradually there was a complete absorption and transformation of the remnants of the formerly great Harappan culture into what we are coming to recognize as a distinctive chalcolithic culture of Central India. The former capitals of Mohenjodaro and Harappa were virtually abandoned and became easy prey for bandits from the Baluchistan hills.

denuding the watersheds through overgrazing and deforestation. They would have eventually put themselves out of business through such malpractices—just as the Sumerians did in southern Mesopotamia—but the process was speeded, up by a sardonic twist of the earth's surface. Thus ended one of the three earliest civilizations of antiquity—indira and the barbarian hordes are exonerated.

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The enemy of the Harappans was Nature aided and abetted by the Harappans themselves, who accelerated the spoliation of the landscape through improper irrigation practices, and by



## GENETICS AND THE ARYAN DEBATE

**Michel Danino**

### *Background*

**A**long with the birth of anthropology, the nineteenth century saw the development of semi-scientific to wholly unscientific disciplines, such as anthropometry, craniometry or phrenology. Unquestioningly accepting the prevalent concept of race, some scientists constructed facial and nasal indexes or claimed to measure the skull's volume for every race, of course with the result that the white race's cranium was the most capacious and its owner, therefore, the most intelligent; others went further, insisting that amidst the white race, only the Germans were the "pure" descendants of the "Aryan race" which was destined to rule the earth.

In India, from 1891 onward, Herbert H. Risley, an official with the colonial government, set about defining in all seriousness 2,378 castes belonging to 43 "races," all of it on the basis of a "nasal index." The main racial groups were Indo-Aryan, Turko-Iranian, Scytho-Dravidian, Aryo-Dravidian, Mongoloid and Mongolo-Dravidian. Unfortunately, this imaginative but wholly unscientific work weighed heavily on the first developments of Indian anthropology; in the 1930s, for instance, B. S. Guha studied skeletons from Mohenjo-daro and

submitted a detailed report on the proto-Australoid, Mediterranean, Mongoloid and Alpine races peopling the city, all of them "non-Aryan" of course. Long lists of such fictitious races filled academic publications, and continue to be found in Indian textbooks today.

In the wake of World War II, the concept of race collapsed in the West. Rather late in the day, anthropologists realized that race cannot be scientifically defined, much less measured, thus setting at naught a whole century of scholarly divagations on "superior" and "inferior" races. Following in the footsteps of pioneers like Franz Boas, leading scientists, such as Ashley Montagu, now argued strongly against the "fallacy of race."

It is only with the emergence of more reliable techniques in biological anthropology that anthropometry got a fresh chance; it concentrated not on trying to categorize noses or spot "races," but on tracing the evolution of a population, on signs of continuity or disruption, and on possible kinships between neighbouring populations.

In the Indian context, we are now familiar with the work of U.S anthropologists

Kenneth Kennedy, John Lukacs and Brian Hemphill. Their chief conclusion, as far as the Aryan debate is concerned, is that there is no trace of “demographic disruption” in the North-West of the subcontinent between 4500 and 800 BCE; this negates the possibility of any massive intrusion, by so-called Indo-Aryans or other populations, during that period. Die-hard proponents of such an invasion / migration have therefore been compelled to downscale it to a “trickle-in” infiltration,<sup>4</sup> limited enough to have left no physical trace, although they are at pains to explain how a “trickle” was able to radically alter India’s linguistic and cultural landscape when much more massive invasions<sup>5</sup> of the historical period failed to do so. Other proponents still insist that “the Indo-Aryan immigrants seem to have been numerous and strong enough to continue and disseminate much of their culture,”<sup>6</sup> but do not explain how the “immigrants” failed to leave any trace in the anthropological record.

#### *A powerful new tool*

In the 1980s, another powerful tool of inquiry came on the scene: genetics, with its growing ability to read the history contained in a human body’s three billion bits of information. In particular, techniques used in the identification of genetic markers have been fast improving, leading to a wide array of applications, from therapeutics to crime detection to genealogy. Let us first summarize the basic definitions relevant to our field.

In trying to reconstruct ancestry, biologists use two types of DNA, the

complex molecule that carries genetic information. The first, Y-DNA, is contained in the Y-chromosome, one of the two sex chromosomes; it is found in the cell’s nucleus and is transmitted from father to son. The second, mtDNA or mitochondrial DNA, is found in mitochondria, kinds of power generators found in a cell, but outside its nucleus; this mtDNA is independent of the Y-DNA, simpler in structure, and transmitted by the mother alone. For various reasons, all this genetic material undergoes slight alterations or “mutations” in the course of time; those mutations then become characteristic of the line of descendants: if, for instance, the mtDNAs of two humans, however distant geographically, exhibit the same mutation, they necessarily share a common ancestor in the maternal line. Much of the difficulty lies in organizing those mutations, or genetic markers, in consistent categories called “haplotypes” (from a Greek word meaning “single”), which constitute an individual’s genetic fingerprint. Similar haplotypes are then brought together in “haplogroups,” each of which genetically identifies a particular ethnic group. Such genetic markers can then be used to establish a “genetic distance” between two populations.

Identifying and making sense of the right genetic markers is not the only difficulty; dating their mutations remains a major challenge: on average, a marker of Y-DNA may undergo one mutation every 500 generations, but sudden changes caused by special circumstances can never be ruled out. Genetics, therefore, needs the inputs from palaeontology and archaeology, among other disciplines, to confirm its historical conclusions.

### India's case

Since the 1990s, there have been numerous genetic studies of Indian populations, often reaching apparently divergent conclusions. There are three reasons for this: (1) the Indian region happens to be one of the most diverse and complex in the world, which makes it difficult to interpret the data; (2) early studies relied on too limited samples, of the order of a few dozens, when hundreds or ideally thousands of samples are required for some statistical reliability; (3) some of the early studies fell into the old trap of trying to equate linguistic groups with distinct ethnic entities — a relic of the nineteenth-century erroneous identification between language and race; as a result, a genetic connection between North Indians and Central Asians was automatically taken to confirm an Aryan invasion in the second millennium BCE, disregarding a number of alternative explanations. More recent studies, using larger samples and much refined methods of analysis, both at the conceptual level and in the laboratory, have reached very different conclusions (interestingly, some of their authors had earlier gone along with the old Aryan paradigm). We will summarize here the chief results of nine studies from various Western and Indian Universities, most of them conducted by international teams of biologists, and more than half of them in the last three years; since their papers are complex and technical, what follows is, necessarily, highly simplified and represents only a small part of their content.

The first such study dates back to 1999 and was conducted by the Estonian biologist Toomas Kivisild, a pioneer in the field, with fourteen co-authors from various nationalities (including M. J. Bamshad). It relied on 550 samples of mtDNA and identified a haplogroup called “U” as indicating a deep connection between Indian and Western-Eurasian populations. However, the authors opted for a very remote separation of the two branches, rather than a recent population movement towards India; in fact, “the subcontinent served as a pathway for eastward migration of modern humans” from Africa, some 40,000 years ago:

“We found an extensive deep late Pleistocene genetic link between contemporary Europeans and Indians, provided by the mtDNA haplogroup U, which encompasses roughly a fifth of mtDNA lineages of both populations. Our estimate for this split [between Europeans and Indians] is close to the suggested time for the peopling of Asia and the first expansion of anatomically modern humans in Eurasia and likely pre-dates their spread to Europe.”

In other words, the timescale posited by the Aryan invasion / migration framework is inadequate, and the genetic affinity between the Indian subcontinent and Europe “should not be interpreted in terms of a recent admixture of western Caucasoids with Indians caused by a putative Indo-Aryan invasion 3,000–4,000 years BP.”

The second study was published just a month later. Authored by U.S. biological anthropologist Todd R. Disotell,<sup>11</sup> it dealt with the first migration of modern man from Africa towards Asia, and found that migrations into India “did occur, but rarely from western Eurasian populations.” Disotell made observations very similar to those of the preceding paper:

“The supposed Aryan invasion of India 3,000–4,000 years before present therefore did not make a major splash in the Indian gene pool. This is especially counter-indicated by the presence of equal, though very low, frequencies of the western Eurasian mtDNA types in both southern and northern India. Thus, the ‘caucasoid’ features of south Asians may best be considered ‘pre-caucasoid’ — that is, part of a diverse north or north-east African gene pool that yielded separate origins for western Eurasian and southern Asian populations over 50,000 years ago.”

Here again, the Eurasian connection is therefore traced to the original migration out of Africa. On the genetic level, “the supposed Aryan invasion of India 3000–4000 years ago was much less significant than is generally believed.”

A year later, thirteen Indian scientists led by Susanta Roychoudhury studied 644 samples of mtDNA from some ten Indian ethnic groups, especially from the East and South.<sup>12</sup> They found “a fundamental unity of mtDNA lineages in India, in spite of the extensive cultural and linguistic

diversity,” pointing to “a relatively small founding group of females in India.” Significantly, “most of the mtDNA diversity observed in Indian populations is between individuals within populations; there is no significant structuring of haplotype diversity by socio-religious affiliation, geographical location of habitat or linguistic affiliation.” That is a crucial observation, which later studies will endorse: on the maternal side at least, there is no such thing as a “Hindu” or “Muslim” genetic identity, nor even a high- or low-caste one, a North- or South-Indian one — hence the expressive title of the study: “Fundamental genomic unity of ethnic India is revealed by analysis of mitochondrial DNA.”

The authors also noted that haplogroup “U,” already noted by Kivisild et al. as being common to North Indian and “Caucasoid” populations, was found in tribes of eastern India such as the Lodhas and Santals, which would not be the case if it had been introduced through Indo-Aryans. Such is also the case of the haplogroup “M,” another marker frequently mentioned in the early literature as evidence of the invasion: in reality, “we have now shown that indeed haplogroup *M* occurs with a high frequency, averaging about 60%, across most Indian population groups, irrespective of geographical location of habitat. We have also shown that the tribal populations have higher frequencies of haplogroup *M* than caste populations.”

Also in 2000, twenty authors headed by Kivisild contributed a chapter to a book

on the “archaeogenetics” of Europe.<sup>13</sup> They first stressed the importance of the mtDNA haplogroup “M” common to India (with a frequency of 60%), Central and Eastern Asia (40% on average), and even to American Indians; however, this frequency drops to 0.6% in Europe, which is “inconsistent with the ‘general Caucasoidness’ of Indians.” This shows, once again, that “the Indian maternal gene pool has come largely through an autochthonous history since the Late Pleistocene.” The authors then studied the “U” haplogroup, finding its frequency to be 13% in India, almost 14% in North-West Africa, and 24% from Europe to Anatolia; but, in their opinion, “Indian and western Eurasian haplogroup U varieties differ profoundly; the split has occurred about as early as the split between the Indian and eastern Asian haplogroup M varieties. The data show that both M and U exhibited an expansion phase some 50,000 years ago, which should have happened after the corresponding splits.” In other words, there is a genetic connection between India and Europe, but a far more ancient one than was thought.

Another important point is that looking at mtDNA as a whole, “even the high castes share more than 80 per cent of their maternal lineages with the lower castes and tribals”; this obviously runs counter to the invasionist thesis. Taking all aspects into consideration, the authors conclude: “We believe that there are now enough reasons not only to question a ‘recent Indo-Aryan invasion’ into India some 4000 BP, but alternatively to consider India as a part of the common gene pool ancestral to the diversity of

human maternal lineages in Europe.” Mark the word “ancestral.”

After a gap of three years, Kivisild directed two fresh studies. The first, with nine colleagues, dealt with the origin of languages and agriculture in India.<sup>14</sup> Those biologists stressed India’s genetic complexity and antiquity, since “present-day Indians [possess] at least 90 per cent of what we think of as autochthonous Upper Palaeolithic maternal lineages.” They also observed that “the Indian mtDNA tree in general [is] not subdivided according to linguistic (Indo-European, Dravidian) or caste affiliations,” which again demonstrates the old error of conflating language and race or ethnic group. Then, in a new development, they punched holes in the methodology followed by studies basing themselves on the Y-DNA (the paternal line) to establish the Aryan invasion, and point out that if one were to extend their logic to populations of Eastern and Southern India, one would be led to an exactly opposite result: “the straightforward suggestion would be that both Neolithic (agriculture) and Indo-European languages arose in India and from there, spread to Europe.” The authors do not defend this thesis, but simply guard against “misleading interpretations” based on limited samples and faulty methodology.

The second study of 2003, a particularly detailed one dealing with the genetic heritage of India’s earliest settlers, had seventeen co-authors with Kivisild (including L. Cavalli-Sforza and P. A. Underhill), and relied on nearly a thousand samples from the subcontinent,



including two Dravidian-speaking tribes from Andhra Pradesh.<sup>15</sup> Among other important findings, it stressed that the Y-DNA haplogroup “M17,” regarded till recently as a marker of the Aryan invasion, and indeed frequent in Central Asia, is equally found in the two tribes under consideration, which is inconsistent with the invasionist framework. Moreover, one of the two tribes, the Chenchus, is genetically close to several castes, so that there is a “lack of clear distinction between Indian castes and tribes,” a fact that can hardly be overemphasized. This also emerges from a diagram of genetic distances between eight Indian and seven Eurasian populations, distances calculate on the basis of 16 Y-DNA haplogroups (Fig. 1). The diagram challenges many common assumptions: as just mentioned, five castes are grouped with the Chenchus; another tribe, the Lambadis (probably of Rajasthani origin), is stuck between Western Europe and the Middle East; Bengalis of various castes are close to Mumbai Brahmins, and Punjabis (whom one would have thought to be closest to the mythical “Aryans”) are as far away as possible from Central Asia! It is clear that no simple framework can account for such complexity, least of all the Aryan invasion / migration framework. The next year, Mait Metspalu and fifteen co-authors analyzed 796 Indian (including both tribal and caste populations from different parts of India) and 436 Iranian mtDNAs.<sup>16</sup> Of relevance here is the following observation, which once again highlights the pitfalls of any facile ethnic-linguistic equation:

“Language families present today in India, such as Indo-European, Dravidic and Austro-Asiatic, are all much younger than the majority of indigenous mtDNA lineages found among their present-day speakers at high frequencies. It would make it highly speculative to infer, from the extant mtDNA pools of their speakers, whether one of the listed above linguistically defined group in India should be considered more ‘autochthonous’ than any other in respect of its presence in the subcontinent.”

We finally jump to 2006 and end with two studies. The first was headed by Indian biologist Sanghamitra Sengupta and involved fourteen other co-authors, including L. Cavalli-Sforza, Partha P. Majumder, and P. A. Underhill.<sup>17</sup> Based on 728 samples covering 36 Indian populations, it announced in its very title how its findings revealed a “Minor Genetic Influence of Central Asian Pastoralists,” i.e. of the mythical Indo-Aryans, and stated its general agreement with the previous study. For instance, the authors rejected the identification of some Y-DNA genetic markers with an “Indo-European expansion,” an identification they called “convenient but incorrect ... overly simplistic.” To them, the subcontinent’s genetic landscape was formed much earlier than the dates proposed for an Indo-Aryan immigration: “The influence of Central Asia on the pre-existing gene pool was minor. ... There is no evidence whatsoever to conclude that Central Asia has been necessarily the recent donor *and not the receptor* of the R1a lineages.” This is also highly suggestive (the R1a



lineages being a different way to denote the haplogroup M17).

Finally, and significantly, this study indirectly rejected a “Dravidian” authorship of the Indus-Sarasvati civilization, since it noted, “Our data are also more consistent with a peninsular origin of Dravidian speakers than a source with proximity to the Indus....” They found, in conclusion, “overwhelming support for an Indian origin of Dravidian speakers.” Another Indian biologist, Sanghamitra Sahoo, headed eleven colleagues, including T. Kivisild and V. K. Kashyap, for a study of the Y-DNA of 936 samples covering 77<sup>18</sup> Indian populations, 32 of them tribes. The authors left no room for doubt:

“The sharing of some Y-chromosomal haplogroups between Indian and Central Asian populations is most parsimoniously explained by a deep, common ancestry between the two regions, with *diffusion of some Indian-specific lineages northward*.” So the southward gene flow that had been imprinted on our minds for two centuries was wrong, after all: the flow was out of, not into, India.”

The authors continue:

“The Y-chromosomal data consistently suggest a *largely South Asian origin for Indian caste communities* and therefore argue against any major influx, from regions north and west of India, of people associated either with the development of agriculture or the spread of the Indo-Aryan language family.”

The last of the two rejected associations is that of the Indo-Aryan expansion; the first, that of the spread of agriculture, is the well-known thesis of Colin Renfrew,<sup>19</sup> which traces Indo-European origins to the beginnings of agriculture in Anatolia, and sees Indo-Europeans entering India around 9000 BP, along with agriculture: Sanghamitra Sahoo et al. see no evidence of this in the genetic record. The same data allow the authors to construct an eloquent table of genetic distances between several populations, based on Y-haplogroups (Fig. 2). We learn from it, for instance, that “the caste populations of ‘north’ and ‘south’ India are not particularly more closely related to each other (average *Fst* value = 0.07) than they are to the tribal groups (average *Fst* value = 0.06),” an important confirmation of earlier studies. In particular, “Southern castes and tribals are very similar to each other in their Y-chromosomal haplogroup compositions.” As a result, “it was not possible to confirm any of the purported differentiations between the caste and tribal pools,” a momentous conclusion that directly clashes with the Aryan paradigm, which imagined Indian tribes as *adivasis* and the caste Hindus as descendants of Indo-Aryans invaders or immigrants. In reality, we have no way, today, to determine who in India is an “adi”-vasi, but enough data to reject this label as misleading and unnecessarily divisive.

### Conclusions

It is, of course, still possible to find genetic studies trying to interpret

differences between North and South Indians or higher and lower castes within the invasionist framework, but that is simply because they take it for granted in the first place. None of the nine major studies quoted above lends any support to it, and none proposes to define a demarcation line between tribe and caste. The overall picture emerging from these studies is, first, an unequivocal rejection of a 3500-BP arrival of a “Caucasoid” or Central Asian gene pool. Just as the imaginary Aryan invasion / migration left no trace in Indian literature, in the archaeological and the anthropological record, it is invisible at the genetic level. The agreement between these different fields is remarkable by any standard, and offers hope for a grand synthesis in the near future, which will also integrate agriculture and linguistics. Secondly, they account for India’s considerable genetic diversity by using a time-scale not of a few millennia, but of 40,000 or 50,000 years. In fact, several experts, such as Lluís Quintana-Murci,<sup>20</sup> Vincent Macaulay,<sup>21</sup> Stephen Oppenheimer,<sup>22</sup> Michael Petraglia,<sup>23</sup> and their associates, have in the last few years proposed that when *Homo sapiens* migrated out of Africa, he first reached South-West Asia around 75,000 BP, and from here, went on to other parts of the world. In simple terms, except for Africans, all humans have ancestors in the North-West of the Indian peninsula. In particular, one migration started around 50,000 BP towards the Middle East and Western Europe: “indeed, nearly all Europeans — and by extension, many Americans — can trace their ancestors to only four mtDNA lines, which appeared between 10,000 and

50,000 years ago and originated from South Asia.”<sup>24</sup>

Oppenheimer, a leading advocate of this scenario, summarizes it in these words:

“For me and for Toomas Kivisild, South Asia is logically the ultimate origin of M17 and his ancestors; and sure enough we find the highest rates and greatest diversity of the M17 line in Pakistan, India, and eastern Iran, and low rates in the Caucasus. M17 is not only more diverse in South Asia than in Central Asia, but diversity characterizes its presence in isolated tribal groups in the south, thus undermining any theory of M17 as a marker of a ‘male Aryan invasion’ of India. One average estimate for the origin of this line in India is as much as 51,000 years. All this suggests that M17 could have found his way initially from India or Pakistan, through Kashmir, then via Central Asia and Russia, before finally coming into Europe.”

We will not call it, of course, an “Indian invasion” of Europe; in simple terms, India acted as an incubator of early genetic differentiation of modern humans moving out of Africa.”<sup>25</sup> Genetics is a fast-evolving discipline, and the studies quoted above are certainly not the last word; but they have laid the basis for a wholly different perspective of Indian populations, and it is most unlikely that we will have to abandon it to return to the crude racial nineteenth-century fallacies of Aryan invaders and Dravidian autochthons. Neither have any reality in genetic terms, just as they have no reality in archaeological or cultural terms. In this sense, genetics is joining other

disciplines in helping to clean the cobwebs of colonial historiography. If some have a vested interest in patching together the said cobwebs so they may keep cluttering our history textbooks, they are only delaying the inevitable.

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<sup>4</sup> See for instance Michael Witzel, "Autochthonous Aryans? The Evidence from Old Indian and Iranian Texts," *Electronic Journal of Vedic Studies*, vol. 7 (2001), No. 3 (25 May), § 8.

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<sup>6</sup> Ram Sharan Sharma, *Advent of the Aryans in India* (New Delhi: Manohar, 2001), p. 52.

<sup>7</sup> See a few examples in *The Indian Human Heritage*, ed. D. Balasubramanian & N. Appaji Genetics and the Aryan Debate / p. 12

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<sup>10</sup> "Caucasoid" is a nineteenth-century term for a member of the white race, coined at a time when the Caucasus was thought to be the homeland of the Indo-Europeans. The term has no scientific meaning but has stuck, and is still used occasionally by biologists, although, as further quotations will show, often within quotation marks, as a reminder of its inadequacy.

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## Re-discovery of River Sarasvati

Everyone agrees that Rigveda was perceived on the banks of River Sarasvati. In one place, the Rigveda notes: *sarasvati saptathi sindhu maataa* (sarasvati as the mother of seven rivers; *sindhu* means 'natural ocean frontier, river'.) As Sarasvati connotes the roots of Hindu civilization, Coedes' (French epigraphist's) work on Hinduised states of southeast Asia, show that Hindu migrated eastwards along the Indian Ocean Rim to set up the largest Vishnu mandiram of the world in Nagara Vatika (Angkor Wat). Hindumahaasagar is the only ocean so named after the Hindu *raashtra*. This is an evocation of an extraordinary span of time from Vedic times to the early centuries of the Common Era when Hindu culture reached many shores along the Indian Ocean rim which extends over 63,000 miles.

The story of the discovery of Vedic River Sarasvati and a riverine, maritime civilization of ancestors of the present-day Hindus everywhere has been made possible by a remarkable coalition of scientists of a number of disciplines ranging from archaeology to glaciology. Rishi Gritsamada among Rigveda rishis, calls Sarasvati as mother, river and *devi* (ambitame, naditame, devitame *sarasvati*). This shows that Sarasvati had attained the stature of a *devi*, divinity even in Rigvedic times. Why was she, a river, called a mother? Because, she nurtured

a civilization on her banks. A civilization evidenced by over 2,000 archaeological sites out of a total of 2,600 sites of the so-called Indus Valley Civilization, making it appropriate to call it Sarasvati Civilization.

Archaeological excavations and a series of scientific discoveries have established beyond doubt that the evolution of Indian civilization was indigenous and that the Sarasvati was once an over-ground reality, flowing from the Himalayas to the Indian Ocean.

### Importance of the river

The river figures in the Mahabharata, and flows north of the Kurukshetra battlefield. The epic writers however, also noted its drying up and the resultant desertification of the land, recording for posterity that the river was "disappearing into the desert" and was later "lost." It is truly noteworthy that when in modern times British archaeologists mapped the Indus Valley sites, they found most were located round the dried-up Ghaggar-Hakra (Sarasvati), which is why modern Indian archaeologists feel it should be renamed the Sarasvati civilization. The Indus Valley civilization was so named because the first site discovered by Sir John Marshall in the 1920s, Mohenjo Daro or "mound of the dead," happened to be situated in the Indus Valley.



Thereafter, more discoveries were made and eventually as many as 2600 sites were unearthed between Iran in the west, Turkmenia, Bactria and the Pamirs in the north, beyond Delhi into western UP in the east, up to the Godavari in Maharashtra in the south, encompassing over one million square kilometres.

The culture goes back to around 7000 BC in Mehrgarh (Pakistan), which shows evidence of a strong agricultural economy and the presence of granaries for storing surplus grain. In its mature phase, this culture spawned the great cities of Mohenjo Daro, Harappa and Lothal, around 2600 BC.

To this day, Mohenjo Daro startles us with the quality of its urban planning, water supply and drainage systems.

The more recently discovered Dholavira created elaborate stone gateways and water harvesting structures, and is deservedly renowned for creating the world's first sign-board in the Harappan script. Lothal had a port with a dockyard and granaries. Yet by 1900 BC, the Indus-Sarasvati cities were being abandoned and an eastward shift in population took place. This is reflected in the Sanskrit literature, with increasing importance bestowed upon the Ganga and Yamuna. Saraswat Brahmins preserve a tradition of their southward migration, while Gaud Saraswat Brahmins say they came South via Gaud (Bengal) after the Sarasvati disappeared.

There is no evidence of invasion, or even substantial inward migration, but a population shift following the loss of a

major water source. It seems reasonable to conclude that the Rig Veda was composed by people who called themselves 'Arya' (noble) long before 2000 BC, when the Sarasvati was a mighty river, and that Harappa was one of their cities. One clinching evidence is the finding of the Vedic fire altar in several Harappan buildings (homes) and seals showing yogic meditation postures. The discovery of Vedic River Sarasvati sounds the death-knell of an Indological myth called Aryan Invasion/Migration Theory.



## The Saraswati: Where lies the mystery

**Saswati Pai k**  
GIS Development

**C**limatic change and geotectonic movements have led to migration and abandonment of several rivers and drainage systems. Some of them are 'lost' because of the overburden of silt. But several evidences left by them usually help in proving the existence of a geomorphic feature in a particular location, which attract the attention of the interested people to discover the past. In India, the river Saraswati reflects such a fascinating history, supported by geological, hydrological and archaeological evidences as well as the records of the most modern tools, such as remote sensing and GIS. With the aid of remote sensing through orbiting satellites, the mystery of the river is more or less solved.

### History behind the mystery

Geological record indicates that during the late Pleistocene glaciation, the water of the Himalayas was frozen and that in the place of rivers, there were only glaciers, masses of solid ice. When the climate became warmer, the glaciers began to break up and the frozen water held by them surged forth in great floods, inundating the alluvial plains in front of the mountains. The melting of glaciers

has also been referred in Rig Vedic literature, in mythological terms. It was the first interglacial period in Holocene marking the break-up of glaciers and release of the pent-up waters that flowed out in seven mighty river channels referred as the 'Sapta Sindhu' in the Rig Veda, traced from east to west. The 'Sapta Sindhu' refers to the rivers Saraswati, Satadru (Sutlej), Vipasa (Beas), Asikni (Chenab), Parosni (Ravi), Vitasta (Jhelum) and Sindhu (Indus). Among these, the Saraswati and the Sindhu were major rivers that flowed from the mountains right up to the sea. The hymns in praise of the Saraswati are probably some of the oldest, composed more than 8000 years ago.

For 2000 years, between 6000 and 4000 B.C., the Saraswati flowed as a great river. R. D. Oldham (1886) was the first geologist who argued logically pointing to the great changes in the drainage pattern of the rivers of Punjab and western Rajasthan converting a once fertile region into a desert. According to geological and glaciological studies, the Saraswati was supposed to have originated in Bandapunch massif (Saraswati-Rupin glacier confluence at Naitwar in western Garhwal).

The river, which had originated from Kapal tirth in the Himalayas in the west of Kailash, was flowing southward to Mansarovar and then taking a turn towards west. Even today the Saraswati flows from the south of Mana pass which meets river Alaknanda, 3 km away in the south of Mana village. Descending through Adibadri, Bhavanipur and Balchapur in the foothills to the plains, the river took roughly a southwesterly course, passing through the plains of Punjab, Haryana, Rajasthan, Gujarat and finally it is believed to have debouched into the ancient Arabian Sea at the Great Rann of Kutch. In this long journey, the Saraswati is believed to have had three tributaries, Shatadru (Sutlej) originating from Mount Kailas, Drishadvati from Siwalik Hills and the old Yamuna. They flowed together along a channel, presently known as the Ghaggar River, which is known as Hakra River in Rajasthan and Nara in Sindh. Some experts consider these two rivers as a single river whereas others consider the upper course of the Saraswati as Ghaggar and the lower course as the Hakra River, while some others call the Saraswati of the weak and declining stage as the Ghaggar. The river was obliterated within a short span, in the Quarternary period of the Cenozoic era, through a combination of destructive catastrophic events. The decline of the river appears to have commenced between 5000 and 3000 B.C., probably precipitated by a major tectonic event in the Siwalik Hills of Sirmur region. Geological studies reveal that the massive landslides and avalanches were caused by destabilising tectonic events which occurred around the beginning of now

being annually deposited in the depressions which are specimens of those numerous pools which have given the Saraswati its name, 'The River of Pools'; and there seems little doubt that the same action, as now goes on, has been going on for centuries".

**Archaeological evidences** Most of the archaeological sites of the-then civilisation are located on the Saraswati river basin. There are four Harappan and pre-Harappan sites in Punjab, in addition to the sites in Rajasthan and U.P. These sites are located at Rupar (present Ropar), Nihang Khan, Bara and Sirsa valley. Harappan culture flourished in the western part of Punjab around 2500 B.C. It is believed that the Harappans entered through the Indus Valley into Kalibangan valley on the left bank of Ghaggar (erstwhile Saraswati) and spread to Punjab along the Saraswati River. Carbon dating of the material at Kalibangan suggests that Harappan culture flourished around 2500 B.C. in India and existed for 1000 years. So the present day geomorphologic set up did not exist till 1500 B.C. and the Indus, the Sutlej and the Beas followed independent courses to the sea.

**Evidences from Remote Sensing and GIS** A remote sensing study of the Indian desert reveals numerous signatures of palaeochannels in the form of curvilinear and meandering courses, which is identified by the tonal variations. The Saraswati River could be traced through these palaeochannels as a migratory river. Its initial course flowed close to the Aravalli ranges and the successive six stages took west and northwesterly shifts

till it coincides with the dry bed of the Ghaggar River.

It is found that the course of the river Saraswati in the states of Punjab, Haryana and Rajasthan is clearly highlighted in the LANDSAT imagery by the vegetation cover thriving on the rich residual loamy soil along its earlier course. Digital enhancement studies of IRS-1C data (1995), combined with RADAR imagery from European Remote Sensing satellites ERS 1/2, identified subsurface features and recognised the palaeochannels beneath the sands of the Thar Desert. A study of NRSA, based on satellite derived data, has revealed no palaeochannel link between the Indus and the Saraswati, confirming that the two were independent rivers; also, the three palaeochannels, south of Ambala, seen to swerve westwards to join the ancient bed of the Ghaggar, are inferred to be the tributaries of Saraswati/Ghaggar, and one among them, probably Drishadvati. Digital enhancement techniques using high resolution LISS-III data of IRS-1C satellite, together with pyramidal processing, identified two palaeochannels trending NE-SW in Jaisalmer district of Rajasthan, which are presumed to be the lost river Saraswati. In a study, NRSA used Indian Remote Sensing Satellite (IRS-P3) Wide Field Sensor (WiFS) data covering the Indus river system to study the palaeodrainage in northwestern India. The image elements such as tone, colour, texture, pattern, association of WiFS and SIR-C/X-SAR images helped to derive information on current as well as palaeodrainage. WiFS image reveals

very faint trace of the river Saraswati/Ghaggar while in the SIR-C/X-SAR image, the connectivity of the palaeochannel could be easily established due to the presence of dark irregular shaped features associated with wetness.

Missing of a prominent river from the map is not a mystery; it is quite natural as the natural phenomena evolve through environmental changes. A part of the river Saraswati till now exists as Ghaggar in Haryana, the rest of it has disappeared in the fringes of the Marusthali or the Thar Desert. Bhabha Atomic Research Centre, Mumbai has made a breakthrough in its research for the existence and probable location of the mythical Saraswati river. The Rajasthan Ground Water Department undertook the task to 'unearth' the river with the collaboration of BARC and Physical Research Laboratory, Ahmedabad (a wing of ISRO) in 1998. If the effort is successful, the people living in the desert belt of Rajasthan will be hopefully supplied more than 3500 year old water derived from palaeo-channels, believed to be the mythical Saraswati

## Constructing the 'Aryan' and Exploiting the 'Dravidian': European Fabrication of Indian Races

**-Rajiv Malhotra**

It is not widely known that the European quest to appropriate the highly prized library of Sanskrit's ancient spiritual texts motivated the construction of the "Aryan" race identity, one of the ideological roots of Nazism. The Sanskrit word "arya" is an adjective that means noble or pure. For example, the famous Buddhist Four Noble Truths are described as the Four Arya Truths or catvâri âryasatyâni in Sanskrit. Arya does not refer to a race, but a cultural quality venerated in Sanskrit texts.

German nationalism turned this word into a noun, "Aryan," and capitalized it to refer to an imagined race of people that were the original Sanskrit speakers who had composed its great texts. Early romantic claims that Indians were the ancestors of the Europeans were gradually replaced by the new myth that a race called "Indo-Aryans" was the common ancestors to both. Their origin was thought to be in the Caucasus Mountains, hence the term "Caucasian." Later, the "Indo" was dropped and the white Aryan Race Theory emerged. Thus, from the European desire to be seen as the inheritors of the Sanskrit civilization, the notion of a European super-race was born, with Germany as its highest manifestation.

participants in European forums, there was widespread plagiarism of Indian texts, as well as much distorted interpretation.

By "becoming" the Aryans, Europeans felt that they were the rightful custodians of the massive corpus of Sanskrit texts that were generating new breakthroughs in the humanities and liberal arts. Germans took their newly adopted Aryan identity to extremes, and most of the influential European thinkers of the time colluded. Their racist theories often had an anti-Semitic dimension, seeking to reconstruct the Bible in Aryan terms. Ernest Renan, a philologist and Hebrew scholar, drew sharp distinctions between Semitic and Aryan languages and peoples. He proposed that though Aryans began as polytheists they were later transformed into Christian monotheists, and that Semitic peoples comprised an entirely different (and inferior) civilization. Adolphe Pictet, a Swiss linguist and ethnographer, was fully committed to the notion of European Aryans who were destined to conquer the world being blessed with "innate beauty" and "gifts of intelligence." He separated Jesus from Judaism, and turned him into the Aryan Christ.

How did this come about? In the late 1700s, European identity was shaken when scholars discovered that Sanskrit was closely related to the European languages, though much older and more sophisticated. At first, this discovery fed European Romantic imagination, in which India was glorified as the perfect past. Herder, a German Romanticist, saw Europe's "discovery" of India as a "re-discovery" of its own foundation. India was viewed as Europe's mother civilization by Frederick Schlegel in Germany and by Voltaire in France. William Jones, a British colonial administrator, considered Sanskrit the most marvelous product of the human mind. Sanskrit and Indology entered most major European universities between 1800 and 1850, challenging if not replacing Latin and Greek texts as a source for "new" ideas. Many new disciplines were shaped by the ensuing intellectual activity, including linguistics, comparative religion, modern philosophy and sociology.

With European nations competing among themselves for civilizational legacy, many rival theories emerged regarding the origins of the original Sanskrit speakers and their civilization. German nationalists found in the affinity between Sanskrit and German the possibility of a newly respectable pedigree vis-à-vis the French, and claimed the heritage of the treasure trove of Sanskrit literature to bolster their cause. The British interpreted India and Sanskrit in a manner that would strengthen their own role as empire-builders, with India as the jewel in the crown. Because Indians were not

The nascent discipline called "race science" was reinforced by such ideas. Joseph Arthur Comte de Gobineau, a French diplomat, philosopher and historian argued in his hugely influential *Essay on the Inequality of Human Races* that Adam from the Bible was the "originator of our white species." He wrote of the "superiority of the white type and within that type of the Aryan family." His thesis on India claimed that white Aryans had invaded India and subsequently began to intermarry with the local population. Realizing the danger of intermarriage, the Aryan lawgivers invented the caste system as a means of self-preservation. India was held up as an example of how interbreeding with an inferior race could bring about the decline of a superior one. Hitler's idea of "purifying" the Aryans was born out of this, and it culminated in the Holocaust.

Houston Chamberlain was a British historian whose magnum opus, *Foundations of the Nineteenth Century* (written in German), also projected Aryan-Germans as the most evolved among Aryan races. He introduced Christian, scientific and philosophical arguments to lend credibility and explained the benefits that Christianity would derive by supporting German racism. Anthropologist Kenneth Kennedy concludes of Gobineau and Chamberlain, that they "transformed the Aryan concept, which had its humble origins in philological research conducted by Jones in Calcutta at the end of the eighteenth century, into the politics and racial doctrines of Adolph Hitler's Third Reich."<sup>\*</sup>



Today, the Western mainstream has made special efforts to remove the notion of an Aryan race from the vocabulary and the public psyche. However, as my recently released book, *Breaking India*, explains, the damage in India has worsened. The Dravidian Race Theory was formulated by British missionaries in the 1800s in parallel with the Aryan theory, and it divides the peoples of India into racial categories of “Aryans” and “Dravidians.” Western scholars and institutions continue to support Dravidian racism, which is dependent upon acceptance of the Aryan race construct.

Next we will see how Christian missionaries are now exploiting these dangerous constructs.

Most liberal Americans are simply unaware of the international political machinations of evangelicals. Funded and supported by the American Christian right, they promote a literal and extreme version of Christianity abroad and attempt to further a fundamentalist Christian political agenda using unscrupulous methods. In India, picking up where the colonialists left off, they have gone so far as to revive discredited racial theories and fabricate scholarship in a dangerous game of divide and rule.

In south India, a new identity called Dravidian Christianity is being constructed. It is an opportunistic combination of two myths: the “Dravidian race” myth and another that purports that early Christianity shaped the major Hindu classics!

The discredited Aryan race theory was discussed in my previous blog. Its counterpoint is the “Dravidian” race theory. Both constructs are equally damaging and have been proven false. The “Dravidians,” the theory goes, were the original inhabitants of the Indian subcontinent and were driven to southern India by the invading, lighter skinned and racially different “Aryans.”

His successor, another prolific missionary scholar, Bishop G.U. Pope, started to glorify the Tamil classics era, insisting that its underpinnings were Christianity, not Hinduism. Though subsequently rejected by serious scholars of Tamil culture, the idea was successfully planted that Hinduism had corrupted the “originally pure” Tamil culture by adding Sanskrit and pagan ideas.

Meanwhile, an increasing number of Tamil leaders began to embrace the Dravidian identity. This evolved into Tamil chauvinism that was initially secular and not religious. It was fed by the theory that in the Indian Ocean there once existed a lost continent called Lemuria (similar to the Atlantis myth), the original homeland of the Dravidians. Accounts glorifying Lemuria were taught as historical fact under British rule, because this exacerbated the regional faultlines. After India’s independence, Dravidian identity entered politics, and now dominates the state’s power structure.

The Dravidian identity is now being increasingly Christianized. A new religion called “Dravidian Christianity”



has been invented through a sudden upsurge of writings designed to “discover” the existence of quasi-Christianity in Tamil history prior to the coming of the “Aryan” Brahmins. The project is to co-opt Tamil culture, language and literature and systematically cleanse them of Hinduism. Christian interpretations and substitutes are being injected into the most cherished symbols, artifacts and literary works of Tamil Hindu culture.

The preposterous claim is that Tamil classical literature originated in early Christianity. The Tamil classical tradition consists of two great components: an ethical treatise called Thirukural (abbreviated Kural, authored by the great sage Thiruvalluvar), and a sophisticated Vedanta philosophical system called Saiva Siddhanta, which traces its origins to the Vedas and was nurtured by many Tamil savants over the centuries. Dravidian Christianity appropriates both these foundational works, attributing them to Christian influence. To make this credible, the pre-Christian date for Kural has been replaced by more recent dates.

The narrative used is that St. Thomas, the apostle, visited south India and taught Christianity to the great sage, Thiruvalluvar, who was inspired by Christianity, but did not capture St. Thomas’ message accurately. This is often portrayed in recently published paintings showing the sage sitting at the feet of St. Thomas, taking notes. Sanskrit is downgraded as a language created by St. Thomas to spread the Christian message to the uncivilized north Indian races.

The Indian church has periodically announced archeological “discoveries” to back the visit of St. Thomas to south India, but none of them have been verified by professional archeologists. Even the famous Jesuit archeologist, Father Heras, dismissed the so-called discovery of Thomas’ tomb in Chennai.

Western churches send billions of dollars to Tamil Nadu, the epicenter of the project to harvest Indian souls. While the sheer scale of intellectual fraud and prejudice is breathtaking, the church’s political clout has enabled it to permeate university research, education, museums, politics and film. The state government is even supporting the production of an epic feature film on St. Thomas that will popularize this myth.

The Dravidian Christianity movement has organized an entire series of international conferences over the past decade, where its scholars make outlandish revisions to Indian religious history. They claim that the Bhagavad Gita, Tamil classics and even Sanskrit originated after Christ and under the influence of Christianity. The crackpot Lemurian theory pops up as well. A 2005 conference in New York had the theme, “International Conference on the History of Early Christianity in India.” Senator Hillary Clinton greeted it with the message:

“I am confident that the breadth of resources presented during the conference will shed light on the impact of Christianity on medieval and classical India and its effects on the cultural and political climate of India...”

Dravidian Christianity has penetrated high places. For instance, Marvin Olasky, an advisor to President George W. Bush, declared that “the two major denominations of Hinduism — Vishnu-followers and Shiva-followers — arose not from early Hinduism but from early Christian churches probably planted by the apostle Thomas in India from AD 52 to 68.” He goes on to explain to his American readers how Christianity brought many key notions into Hinduism.

My book ‘Breaking India’ demonstrates how an influential nexus of Christian funded institutions and scholars, often supported by western governments, are indulging in large-scale manipulations similar to those in colonial times. Meanwhile, in one of Chennai’s most prominent public places stands a magnificent statue of Bishop Robert Caldwell, the icon who gave the Tamil people their “true history.”

## End Notes

\* In 2007, I played a role in a historic milestone when I was invited to address the first Hindu-Jewish Summit. I spoke on the Aryan myth and the suffering that it had inflicted on both religious communities. Contrary to earlier apprehensions of some Hindus that this was a “risky” topic to bring up, the head of the Jewish delegation, Rabbi Rosen, member of the Chief Rabbinate of Israel’s Commission for Inter-religious Dialogue, was very impressed. The Jewish delegation decided to appoint a team of scholars to study the issue and the references I had supplied. As a result, at the following year’s Summit, a joint declaration was signed, which included the following language from my draft: “Since there is no conclusive evidence to support the theory of an Aryan invasion/migration into India, and on the contrary, there is compelling evidence to refute it; and since the theory seriously damages the integrity of the Hindu tradition and its connection to India; we

call for a serious reconsideration of this theory, and a revision of all educational material on this issue that includes the most recent and reliable scholarship.”

The discredited Aryan race theory was discussed in my previous blog. Its counterpoint is the “Dravidian” race theory. Both constructs are equally damaging and have been proven false. The “Dravidians,” the theory goes, were the original inhabitants of the Indian subcontinent and were driven to southern India by the invading, lighter skinned and racially different “Aryans.”

While there is no mainstream “Aryan” political party in India, the Dravidianization of mainstream identity in the southern state of Tamil Nadu keeps the pernicious pair alive. The Aryan/Dravidian constructs are mutually dependent, and have been very successfully used to generate conflict, including violence (as in Sri Lanka in recent years).

The Dravidian race theory originated in 19th century European scholarship when colonial and evangelical interests used linguistics and ethnic studies to formulate imaginary histories and races. While European scholars were busy appropriating the Sanskrit classics as the heritage of Europeans, British linguists Francis Ellis and Alexander Campbell worked in India to theorize that the south Indian languages belong to a different family than the north Indian ones. Meanwhile, another colonial scholar, Brian Houghton Hodgson, was promoting the term “Tamulian” as a racial construct, describing the so-called aborigines of India as primitive and uncivilized compared to the “foreign Aryans.” all educational material on this issue that includes the most recent and reliable scholarship.”

But it was a scholar-evangelist from the Anglican Church, Bishop Robert Caldwell (1814-91), who pioneered what now flourishes as the “Dravidian” identity. In his *Comparative Grammar of the Dravidian Race*, he argued that the south Indian mind was structurally different from the Sanskrit mind. Linguistic speculations were turned into a race theory. He characterized the Dravidians as “ignorant and dense,” accusing the Brahmins — the cunning Aryan agents — for keeping them in shackles through the imposition of Sanskrit and its religion.

## Why Perpetuate Myths? A Fresh Look at Ancient Indian History

**B. B. Lal**

**F**or a pretty long time the following four myths have been obscuring our vision of India's past:

Myth 1: 'There was an Aryan Invasion of India'

Myth 2: 'The Harappans were a Dravidian-speaking People'

Myth 3: 'The Rigvedic Sarasvati was the Helmand of Afghanistan,' and

Myth 4: 'The Harappan Culture became Extinct'

And here is how these myths came into being. In the nineteenth century a German scholar, F. Max Muller, dated the Vedas, on a very ad hoc basis, to 1200 BC. Granting that the Sutra literature may have existed in the sixth-fifth centuries BC, he assigned a duration of two hundred years to each of the preceding literary periods, namely those of the Aranyakas, Brahmanas and Vedas and thus arrived at the figure of 1200 BC for the last-named texts. However, when his own colleagues, like Goldstucker, Whitney and Wilson, challenged him, he stated that his dating was 'merely hypothetical' and confessed: 'Whether the Vedic hymns were composed in 1000 or 1500 or 2000 or 3000 BC, no power

on earth will ever determine.' However, the saddest part of the story is that his blind followers, both in India and abroad, even today swear by 1200 BC and do not dare cross this Laksmana rekha.

Be that as it may. The first quarter of the twentieth century witnessed the discovery of an altogether unknown civilization on the Indian subcontinent, datable to the third millennium BC. Called variously the Harappan, Indus or Indus-Sarasvati Civilization, it is characterised, amongst other things, by systematic town-planning, an underground drainage, excellently engraved seals, a monumental script, a refined system of weights and measures and some beautiful statuary.

However, recent excavations have thrown new light on various other aspects of this civilization, which call for a fresh look at many issues connected with it. Radiocarbon dates indicate that its roots go back to the 5th millennium BC, while its peak period lay between 2600 and 2000 BC, after which began its decline.

With the discovery of Harappan Civilization there also started a debate about its authors. Because of Max Muller's fatwa that the Vedas were not

earlier than 1200 BC, it was argued that this civilization could not be associated with the Vedic people. Since the only other major language spoken on the subcontinent was the Dravidian it was but natural at that point of time to assume that the Dravidian-speakers were its authors.

In 1946 Sir Mortimer Wheeler carried out further excavations at Harappa and discovered a fortification wall around one of the mounds. However, his interpretation of it was nothing more than a mere flight of imagination. Since the Rigveda refers to Indra as puramdara (destroyer of forts), he jumped at the idea that there was an 'Aryan invasion' which destroyed the Harappan Civilization, and the latter became 'extinct'. To give a prop to his thesis, he referred to certain skeletal remains found at Mohenjo-daro, which, he held, provided evidence of a 'massacre' by the invaders.

If these skeletons are at all to be associated with a massacre by invaders, one expects that these would have come from the latest level. But the hard fact is that these came from various levels, some from the middle and some from the late, and some were found in deposits which accumulated after the site had been abandoned. Thus, there is no case for a massacre; and Professor George F. Dales of the University of California, Berkeley, has rightly dubbed it as a 'mythical massacre'. Further, if there at all was an invasion, one expects at the site the weapons of warfare as also some remains of the material culture of the invaders. But there was no such evidence. On the other hand, there is a

clear case of cultural continuity, not only at Mohenjo-daro but also at other Harappa Culture sites.

Commenting on this issue, Lord Colin Renfrew (UK) avers: 'If one checks the dozen references in the Rigveda to the Seven Rivers, there is nothing in any of them that to me implies invasion... Despite Wheeler's comments, it is difficult to see what is particularly non-Aryan about the Indus Valley Civilization.'

After a thorough analysis of the skeletal data, Professor Hemphill (of USA) holds: 'As for the question of biological continuity within the Indus Valley, two discontinuities appear to exist. The first occurs between 6000 and 4500 BC. The second occurs at some point after 800 BC but before 200 BC.' It is, thus, abundantly clear that no new people entered the Indus Valley between 4500 BC and 800 BC. So, where is any case for an 'Aryan invasion' around 1500-1200 BC?

Now to the second myth, viz. the 'Harappan = Dravidian' equation. It has been made out that the Aryan invaders drove away the 'Dravidian-speaking' Harappans to South India but a small section somehow managed to stay on in Baluchistan, speaking the Brahui language. However, many scholars do not agree that Brahui belongs to the Dravidian group. Some even hold that the Brahui-speaking people migrated to that region from elsewhere during the medieval times. Further, if the so-called Dravidian-speaking Harappans were pushed down to South India, one expects some Harappan sites over there. But the

hard fact is that in none of the four Dravidian-speaking states of South India, viz. Tamil Nadu, Andhra Pradesh, Karnataka and Kerala do we have even a single site of the Harappan culture !! On the other hand, what we do have in South India about that time is a neolithic culture. Do then the proponents of the 'Harappan = Dravidian' equation expect us to believe that the urban Harappans, on being sent away to South India, shed away overnight their urban characteristics and took to a Stone Age way of living?

Again, it has been observed all over the world that even if the original inhabitants are pushed out of an area, some of the rivers, mountains and towns in that area continue to bear the original names. Thus, for example, even after the Europeans overran North America and gave their own names to the towns, such as New York, New Jersey, etc., many of the names of the towns and rivers given by the earlier inhabitants, viz. the Red Indians, may still be noted: for example, Chicago and Massachusetts those of towns and Missouri and Mississippi as of rivers. But in the entire region once occupied by the Harappans there is not even a single name of river, mountain or town which can claim a Dravidian origin. Why? The obvious answer is that the Harappans were not a Dravidian-speaking people.

Let us deal with the third myth, viz. that the Helmand of Afghanistan was the Rigvedic Sarasvati. This is totally wrong. According to RV 10.75.5, it lay between the Yamuna and Sutlej (imam me Gange Yamune Sarasvati Sutudri stotam sachata Parusnya...). RV 3.23.4 states that

the Drishadvati and Apaya were its tributaries (Drishadvatyam manusa Apayam Sarasvatyam revadagne didihi...). Further, RV 7.95.2 clearly mentions that the Sarasvati flowed all the way from the mountains to the sea (ekachetat Sarasvati nadinam suchir yati giribhya a samudrat...). In Afghanistan there are no rivers by the name of Yamuna and Sutlej, nor are there Drishadvati and Apaya. Further, there is no sea in Afghanistan. So how can the Rigvedic Sarasvati be placed there? All this evidence  $\frac{3}{4}$  positive in the case of India and negative in the case of Afghanistan  $\frac{3}{4}$  clinches the issue: the present-day Sarasvati-Ghaggar combine, though now dry at places, does represent the Rigvedic Sarasvati, the Helmand of Afghanistan does not.

Earlier we had established that the Harappans were not a Dravidian-speaking people. Were then they the Sanskrit-speaking Vedic people? Against such an equation the following four objections have been raised. First, the Vedic Aryans were 'nomads', whereas the Harappan civilization had a major urban component. Secondly, the Vedas refer to the horse, whereas the Harappan Civilization is thought to be unfamiliar with it. Thirdly, the Vedic carts had spoked wheels, whereas the Harappan vehicles are supposed to be bereft of such wheels. And finally, since according to the dating of Max Muller the Vedas cannot be earlier than 1200 BC and the Harappan Civilization belonged to the third millennium BC, how can the two be equated?

Unlike nomads, the Vedic people lived a settled life and even constructed forts. In



RV 10.101.8 the devotee's prayer is: '[O gods] make strong forts as of metal, safe from assailants (purahkrinadhvamayasiradhrista). RV 4.30.20 refers to 'a hundred fortresses of stone'. Sometimes these had a hundred arms (RV 7.15.14: purbhava-satabhujih).

The Vedic people carried on trade, not merely on land but also across the sea. RV 9.33.6 states: 'From every side, O Soma, for our profit, pour thou forth four seas filled with a thousand-fold riches (rayah samudranchaturo asmabhyam soma visvatah. Apavasva sahasrinah)'. Further, the ships used in sea-trade were not petty ones but could be as large as having a hundred oars (sataritra, RV.116.5).

Even on the political and administrative fronts, the Vedic people were highly organised. Not only did they have sabhas and samitis which dealt with legislative and perhaps judiciary matters, but they also had a well-established hierarchy amongst the rulers, viz. samrat, rajan and rajaka. Thus, in RV 6.27.8 Abhyavarti Chayamana is stated to be a Samrat (Sovereign), while RV 8.21.8 states that, dwelling beside the Sarasvati river, Chitra alone is the Rajan (king) while the rest are mere Rajakas (kinglings or petty chieftains). That these gradations were absolutely real is duly confirmed by the Satapatha Brahmana (V.1.1.12-13), which says: 'By offering the Rajasuya he becomes Raja and by the Vajapeya he becomes Samrat, and the office of the Rajan is lower and that of the Samraj, the higher (raja vai rajasuyenestva bhavati, samrat vajapeyena l avaram hi rajyam param samrajyam).

The horse. In his report on Mohenjodaro, Mackay states: 'Perhaps the most interesting of the model animals is one that I personally take to represent the horse.' Wheeler also confirmed the view of Mackay. A lot more evidence has come to light since then. Lothal has yielded not only a terracotta figure of the horse but some faunal remains as well. On the faunal remains from Surkotada, the renowned international authority on horse-bones, Sandor Bokonyi, Hungary, states: 'The occurrence of true horse (*Equus Caballus* L.) was evidenced by the enamel pattern of the upper and lower cheek and teeth and by the size and form of the incisors and phalanges (toe bones).' In addition, there are quite a few other Harappan sites, such as Kalibangan and Rupnagar, which have yielded the faunal remains of the horse.

The spoked wheel. It is absolutely wrong to say that the Harappans did not use the spoked wheel. While it would be too much to expect the remains of wooden wheels from the excavations, because of the hot and humid climate of our country which destroys all organic material in the course of time - the Harappan Civilization is nearly 5,000 years old, the terracotta models, recovered from many Harappan sites, clearly establish that the Harappans were fully familiar with the spoked wheel. On the specimens found at Kalibangan and Rakhigarhi, the spokes of the wheel are shown by painted lines radiating from the central hub to the periphery, whereas in the case of specimens from Banawali these are executed in low relief - a technique which continued even into the historical times.

Now to the chronological horizon of the Vedas. The Harappan settlement at Kalibangan in Rajasthan was abandoned, while it was still in a mature stage, because of the drying up of the adjacent Sarasvati river. This evidence has been thoroughly worked out by Italian and Indian hydrologists, and Raikes, the leader, aptly captions his paper: 'Kalibangan: Death from Natural Causes.' According to the radiocarbon dates, this abandonment took place around 2000-1900 BC. Eminent geologists, V. M. K. Puri and B. C. Verma, have demonstrated how the Sarasvati originated from the Himalayan glaciers and how subsequently its channel got blocked because of tectonic movements in the Himalayas, as a result of which the original channel dried up and its water got diverted to the Yamuna.

Putting together the entire archaeological, radiocarbon--dating, hydrological, geological and literary evidence, the following conclusion becomes inescapable, viz. that since during the Rig-Vedic times the Sarasvati was a mighty flowing river and according to archaeological-radiocarbon-dating-cum-hydrological evidence this river dried up around 2000 BC, the Rigveda has got to be earlier than 2000 BC. How much earlier, it would, of course, be anybody's guess.

As is absolutely clear from RV 10.75.5-6, the entire area right from the Ganga on the east to the Indus on the west was occupied by the Rigvedic Aryans. Further, since the Rigveda must be dated to a period prior to 2000 BC, a question may straightaway be posed: Which

archaeological culture covered the entire region from the Ganga on the east to the Indus on the west during the period prior to 2000 BC? Please think coolly and dispassionately. If you do that, you cannot escape the inevitable conclusion: It was none other than the Harappan Civilization itself. However, in spite of such strong evidence in support of a Vedic = Harappan equation, it would be prudent, as I have all along advocated, to put this equation on hold until the Harappan script is satisfactorily deciphered. It is needless to add that all the tall claims made so far in this respect are not tenable at all.

There is also no truth in the fourth myth, viz. that the Harappa Culture became 'extinct'. What had really happened was that the curve of the Harappa Culture, which began to shoot up around 2600 BC and reached its peak, in the centuries that followed, began its downward journey around 2000 BC. Several factors seem to have contributed to it.

Over-exploitation and consequent wearing out of the landscape must have led to a fall in agricultural production. Added to it was probably a change in the climate towards aridity. And no less significant was a marked fall in trade, both internal as well as external. As a result of all this, there was no longer the affluence that used to characterise this civilization. The cities began to disappear and there was a reversion to a rural scenario. Thus, there was no doubt a setback in the standards of living but no extinction of the culture itself. In my recent book, *The Sarasvati Flows On*, I have dealt extensively with this aspect of

continuity, giving comparable photographs of the Harappan objects and the present ones. In a nutshell, let it be stated here that whichever walk of life you talk about, you will find in it the reflection of the Harappa Culture: be it agriculture, cooking habits, personal make-up, ornaments, objects of toiletry, games played by children or adults, transport by road or river, folk tales, religious practices and so on. Here we give just a few examples. The excavation at Kalibangan has brought to light an agricultural field dating back to circa 2800 BC. It is characterised by a criss-cross pattern of the furrows. Exactly the same pattern of ploughing the fields is followed even today in northern Rajasthan, Haryana and western Uttar Pradesh. Today mustard is grown in the widely-distanced furrows and chickpea in the narrower ones and it is most likely that these very crops were grown in a similar manner during the Harappan times; we do have evidence of both these items from the Harappan levels. Kalibangan has also yielded a linga-cum-yoni of the same type as is worshipped now

This very site, along with Banawali, Rakhigarhi and Lothal, has brought to light 'fire-altars', indicating rituals associated with fire. In the illustration given here there were originally seven fire-altars, some of which have been disturbed by a subsequent drain. There is a north-south wall at the back, indicating that the performer of the ritual had to face the east. In the front may be seen the lower half of a jar in which were found ash and charcoal, signifying that fire was kept ready for the ritual. Close

to these fire-altars, on the left (not seen in the picture), there were a well and a bathing pavement, suggesting that a ceremonial bath constituted a part of the ritual. (It needs to be clarified that these fire-altars have nothing to do with those of the Parsis.)

It would appear to be a mere tale if it was stated that yogic asanas, which are now becoming fashionable even with the elites, were being already practised by the Harappans.

A married Hindu woman usually applies sindura (vermilion) to the manga (the line of partition of the hair on the head); Though most surprising, yet it is a fact that Harappan ladies did the same, as evidenced by many female terracotta figurines. In these terracottas, the ornaments are painted yellow to indicate that these were made of gold, the hair is black, while a red colour has been applied in the manga, indicating the use of vermilion. Even the Hindu way of greeting with a namaste is rooted in the Harappan Culture, as shown by certain other terracotta figures.

From the foregoing it must have become abundantly clear that all four theories, viz. that there was an 'Aryan Invasion of India', that the 'Harappans were a Dravidian-speaking People', that the 'Rigvedic Sarasvati is the Helmand of Afghanistan' and that there was an 'Extinction of the Harappa Culture', are nothing more than mere myths which, once created, have subconsciously been perpetuated. Since these have coloured our vision of India's past, the sooner these are cast away the better would it be. How

long must we continue to bury our heads, ostrich-like, into the sand of ignorance?

In retrospect. One is set wondering as to why and how this great civilization of the Indian subcontinent - called variously the Harappan, Indus or Indus-Sarasvati Civilization and whose roots go as deep as the fifth millennium BC - still lives on, not as a fugitive but as a vital organ of our socio-cultural fabric. The Indian psyche has indeed been pondering over this great cultural phenomenon of 'livingness', and the quest has very aptly been echoed by a great Indian poet and thinker, Allama Iqbal, in these words:

*Yunan-o-Misra-Ruma sab mit  
gaye jahan se*

*Ab tak magar hai baqi namo-nisan  
hamara*

*Kuchh bat hai ki hasti mitati nahin  
hamari*

*Sadiyon raha hai dusman daur-i-zaman  
hamara*

The poet says that whereas the ancient civilizations of Greece, Egypt and Rome have all disappeared from this world, the basic elements of our civilization still continue. Although world events have been inimical to us for centuries, there is 'something' in our civilization which has withstood these onslaughts.

What is that 'something', some inherent strength? Doubtless it lies in the liberal character of the Indian civilization, which allows for cross-fertilisation with other cultures, without losing its own identity.

One may well recall the words of the greatest man of our times, Mahatma Gandhi: Let me keep my doors and windows wide open so that fresh air may enter from all directions. Nevertheless, he was firmly seated in his room (the soul). The soul of India lives on !!

[B.B.Lal a world renowned archeologist has served as the Director General (Retd.), Archaeological Survey of India Lecture given at the National Council of Educational Research and Training (NCERT), New Delhi.]

## EVOLUTION OF EARLY WRITING IN INDIA

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The evolution of the earliest writing in India is sketched in light of the new finds in archaeology and the discovery of the Rgvedic astronomical code. Main arguments in the derivation of Brahmi from the writing of the Harappans are reviewed. The development of the zero sign is also traced.

### I

**T**he Indus-Sarasvati cultural tradition represents the beginnings of the Indian civilization. This tradition has been traced back to about 7000 B.C. in remains that have been uncovered in Mehrgarh and other sites<sup>1</sup>. Its first urban phase was during the Harappan period of 2600-1900 B.C. The writing used in this phase has hitherto been called the Indus writing, but it appears that it should be properly named the Sarasvati writing<sup>2</sup>, because most of the settlements in this period were along the Sarasvati river and because the Indian tradition associates Sarasvati with learning and literacy in its earliest phase. Goddesses have symbolized later scripts as well as in Brahmi and Sarada.

It is now believed that the capture of Sutudri (Satluj) and Yamuna, the two main tributaries of the Sarasvati river, by Indus and Ganga around 1900 B.C. led

to the desiccation of Sarasvati and collapse of the Harappan urban phase. The focus of the civilization started moving east and south. The Indus-Sarasvati tradition continued in a state of decline until a second urbanization began in the Ganga-Yamuna valley around 900 B.C. The earliest surviving records of this culture are in Brahmi script. This second urbanization is generally seen at the end of the Painted Gray Ware (PGW) phase and with the use of the Northern Black Polished Ware (NBP) pottery<sup>3</sup>. Late Harappan was partially contemporary with the PGW phase so that we see a continuous series of cultural developments linking the two early urbanizations of India.

The Brahmi script as seen in the earliest surviving records was systematic, reflecting the theories of Indian grammarians<sup>4</sup>. Literary evidence as well as signs on early punch-marked coins suggests that writing in India during the second urbanization goes back much before the middle of the first millennium B.C. The punch-marked coins<sup>5</sup> use a Harappan weight standard. The coins appear to have been originally issued as silver blanks by traders and their weights were checked by traders who put their own marks on the coins. By the sixth century B.C. the kings began putting their own issuing marks on the coins.



These pictorial marks were generally representative of the meaning of the king's name. Pran Nath and Fabri noted the striking similarities in the iconography of the Harappan seals and the punch-marked coins<sup>6</sup>.

Another script used in Mauryan India was called Kharosthi (Ass-lip). Used mainly in Northwest India and Central Asia for a few centuries, Kharosthi was derived from the Aramaic script and adapted to the sounds of Indo-Aryan under the apparent influence of Brahmi. Like Aramaic it was written from right to left. Its name appears to play on the cursive nature of its character. Kharosthi characters have been seen as far as in Bali<sup>7</sup>.

The evolution of writing in India after Brahmi is well understood and needs no recounting. But it may be noted that all the modern scripts of India for Indo-Aryan as well as Dravidian languages, and the scripts of Sri Lanka, Tibet, Southeast Asia, including the original scripts of Philippines and Indonesia, are derived from Brahmi. Furthermore, Indian numerals, whose evolution is tied up with that of Brahmi, have now been universally adopted. Therefore the story of the development of Brahmi is of considerable interest.

The recent discovery of the astronomical code on the basis of the Rgveda<sup>8</sup> also raises important questions regarding writing in ancient India. Even the most conservative estimates date the Rgveda to the second millennium B.C. although the fact of the drying up of the Sarasvati, the major river of the Rgvedic era,

around 1900 B.C. indicates that the Rgveda was probably completed in the third millennium B.C. In any case the existence of an intricate astronomical code suggests that the earliest Vedic phase was characterized by knowledge of writing. The continuity in the Vedic tradition then suggests that writing was not forgotten in the second millennium B.C.

The paper presents an overview of the connections between Sarasvati and Brahmi in the light of the new archaeological discoveries. Recently published analysis, that may not be easily accessible to the readers of this journal, is summarized.

## II

We begin with a brief review of the Indus-Sarasvati tradition. According to a recent estimate nearly two-third of more than 2500 settlements of this tradition have been found along the Sarasvati river and a majority of the remaining one-third of the sites have been found in Gujarat and Uttar Pradesh; the Indus valley proper has less than 100 sites<sup>9</sup>. The Sarasvati valleys were the heartland of this tradition and it appears that the Indus region belonged to the periphery.

This tradition was characterized in its earliest phase by cultivation and animal husbandry. Cattle pastoralism was an extremely important component of the economy and by 5500 B.C. domesticated cattle were central to food production. The evolution of the culture in the Indus-Sarasvati region has been divided into four broad eras<sup>10</sup>. The first is the *early*

era (c. 6500-5000 B.C.) that is characterized by an absence of ceramics. The next is the *regionalization era* (5000-2600 B.C.) where distinct artifact styles (including ceramics) develop regionally. The third is the integration era (2600-1300 B.C.) where we see pronounced cultural homogeneity and the development of urban centres. The fourth era is that of *localization* (1900-1300 B.C.) where characteristic patterns from the integration era are seen to be blended with regional ceramic styles.

Amongst the many factors at the basis of the evolution of the tradition, changes in farming has been considered to be quite important. According to Richard Meadow<sup>11</sup>.

Two distinct agricultural revolutions can be identified for the northwestern region of South Asia during the pre and protohistoric period. The first involved the establishment by the sixth millennium B.C. of a farming complex based principally on the *rabi* (winter sown, spring harvested) crops of wheat and barley... The second saw the addition by the early second millennium B.C. of *kharif* (summer sown, fall harvested) cereals including sorghum, various millets, and rice.

In the arid and semi-arid areas buildings were made out of mud bricks and fired bricks and stone but it is likely that wood structures were used in regions where wood was easily available. There was public architecture as in plazas, streets, public buildings, wells, drains, and tanks. Pottery was mass produced by using wheels and sometimes by molds. Painted

decorations used a variety of geometric, animal and floral motifs which are still popular in India. A network of long distance trade existed. Turquoise from central Asia, lapis lazuli from northern Afghanistan, and shells from the coast of the Arabian sea have been found at Mehrgarh.

The Indus-Sarasvati tradition consists of several overlapping cultures and styles that probably represent different ethnic groups. The integration era, which is the richest period of this tradition, is named Harappan after the site where the first excavations were made in 1921. Soon after the famous site at Mohenjo-Daro in Sindh was excavated. Since then thousands of other sites have been discovered. These include major sites at Dholavira, Ganweriwala, Kalibangan, Lothal and Rakhigarhi. The Harappan world covered an area of about a million square kilometers that stretches from the Himalayas in the north to the Tapti river in the south, and from the Indus river valleys in the west to the plains of the Ganga and Yamuna rivers in the east. Indus and Sarasvati valleys, Kutch and parts of Saurashtra were the focus of the early and mature Harappan settlements whereas the upper course of Satluj, trans-Yamuna region of Uttar Pradesh, and Saurashtra were the focus of the post-Harappan settlements.

Ceremonial structures that appear to be fire-altars have been found in Lothal and Kalibangan<sup>12</sup>. The brick-lined fire pit has five layers of brick just like a Vedic altar. Dhavalikar and Atre have argued that a fire temple with an altar is to be found in the remains of Mohenjo-Daro as well<sup>13</sup>.

## III

The surviving records of the writing of Figure Harappans are mainly carving on seals, small pieces of soft stone, and copper tablets (Fig. 1). The total number of inscribed objects is around 4200, but many of these are duplicates<sup>14</sup>. The number of different signs used is close to 400, but these include the various numeral signs as well as the conjuncts of the more basic signs. Most texts are very brief, the average length being 5 signs, and the longest text, on a three-sided 'amulet', is 26 signs long. The longest inscription on a single side is 17 signs, in three lines, on a seal. The primary purpose of the seals was perhaps to mark ownership and the copper tablets may have served as amulets. A large number of seal impressions on clay have also survived. These are likely to have served as tags which were attached to bales of goods, for the reverse sides often show traces of packing materials. The impressions of the seals are likely to have served as signatures. The pictorial motifs that accompany the writing include the humped bull, buffalo, elephant, tiger, rhino, crocodile, antelope, fish, tortoise and so on. Geometric designs include the *svastika*, spoked wheel, and a circle with a dot.

The Harappan seals have been recovered in Mesopotamia from the 24<sup>th</sup> century B.C. onwards while Persian Gulf seals have been found in the Harappan port of Lothal. Inlands the Harappans moved their goods using wheeled carts, camels, and boats. They used strikingly accurate weights in a series that is preserved in

later Indian weights. The same unique series is also found on the island of Bahrein in the Persian Gulf, suggesting this might have been their colony. Some of the weights are so tiny that they could have been used by jewelers to weigh gold, others are so big that they must have been hoisted by ropes. Their products would have included fine pottery wares, jewelry, copper and bronze vessels, and woven cotton goods. The variety and extent of this trade indicates that credit-keeping and calculations were very important to the Harappans.

The seals of the historical period also carry brief texts<sup>15</sup>. Most of the legends represents the possessive case as in '(seal) of X'. There are cases where no case-ending is used, or where the ending is nominative as in religious formulae. The impressions from these seals, like the earlier seals of the Harappan period, were used to authenticate records, or to serve as signatures.

## IV

Each letter in Brahmi represent a consonant combined with a. Combinations with other vowels are represented by the use of distinctive marks which modify the basic sign (Figure 2). Two consonants together were expressed by placing the signs for the two, one on top of another. This process of combination makes the total number of distinctive Brahmi signs to be 330 for the 33 consonants alone, without considering the conjuncts. It is not surprising, therefore, that Sarasvati has about 400 signs, and many of these signs

are modified in exactly the same regular manner as in Brahmi.

Based on morphological considerations, the Brahmi signs can be divided into two groups<sup>16</sup>: the primary signs and the secondary or the derived signs (Fig.3). These primary Brahmi signs look closest to the Sarasvati signs. Many of the Brahmi signs are the first syllables of familiar objects: thus *g*, *ch*, *m*, *s*, *h* appear to have been derived from the representations of *giri* (hill), *chatra* (umbrella), *matsya* (fish), *sara* (arrow), and *hasta* (hand).

An analysis of Sarasvati and Brahmi reveals connections between the two scripts that cannot be explained as arising out of chance<sup>17</sup>. One sees that the most frequent letters of Sarasvati and Brahmi look almost identical and besides they are in the same order of frequency (Figure 4). One does encounter a change in the orientation of the signs. But such modification can also be seen in the evolution of Brahmi to the later Nagari, where many signs have been turned sideways or upside-down.

## V

Both Sarasvati and Brahmi use conjuncts where signs are combined to represent compound vowels. The core set of most frequent Sarasvati signs seems to have survived without much change in shape into Brahmi where it corresponds to the most frequent sounds of Sanskrit. The writing of numerals in Sarasvati, especially the signs for 5 and 10, appears to have carried over to Brahmi. The inscriptions appear to be proper names

indicating possessions. The genitive case-ending in Sanskrit is often *sya* or *sa*, and in Prakrit the ending is generally *sa* or *ssa* and this is what we frequently see in these inscriptions (Figure 5). This suggests that the language of the Sarasvati inscriptions is likely to have been Prakritic. It may be noted that the sign value for the case-ending was obtained independently through frequency considerations.

The attested contacts between Sumer and Harappa turn out to be invaluable in understanding one specific inscription. Sumerian documents mention the regions of Magan, Meluhha, and Dilmun as lying to the east of their land. Dilmun is identified by most scholars to be the island of Bahrein in the Persian Gulf, Magan is taken to be the coast of Makran in Baluchistan, and Meluhha is considered to refer to the region of the Indus valley. The Sumeriologist S.N.Kramer in 1952 in a translation of a Sumerian epical story 'Enmerkar and the Lord of Aratta' found that a fourth region to the east is described as being *Bad Imin*, which if freely translated represents, 'the land of seven high places'. (This is from *bad* meaning 'city', *ia* meaning 'five', and *min* meaning 'two'.) Now the Vedic Indians called their land *Sapta Saindhava*, which Harold Bailey suggested originally meant 'the land of seven high places'. J.V.Kinnier Wilson identified a commonly occurring combination of Sarasvati characters as representing *Bad Imin* or *Sapta Saindhava* on the basis of parallels with Sumerian writing<sup>18</sup>. I found that these very signs are read just the same using my Sarasvati-Brahmi theory. This provides evidence of commonality

between the Harappan and the Vedic worlds. Unfortunately, the phonetic values for the most frequent Sarasvati signs do not help us in reading most of the seals and other texts. The reason for this is that the short lengths of these texts disallows unambiguous readings.

The demonstration that Sarasvati and Brahmi are related and the likelihood that the Sarasvati language was Indo-Aryan has important implications for our understanding of ancient Indian history. It also suggests that Vedic literature will be of help in understanding the nature of the Harappan phase of the Indian civilization.

## VI

Ifrah<sup>19</sup> has sketched a plausible explanation for how the place value system of the Indian (Hindu-Arabic) numerals may have arisen upon the use of the counting boards. The place value system with a clear use of zero goes back at least to 458 A.D. where it is used in a Jain work on cosmology. The earliest epigraphical evidence relating to the use of the nine numerals in a place value manner goes back to 595 A.D. on a copperplate deed from Sankheda.

The evolution of the shapes for the other signs is well understood but it has generally been assumed that the sign for zero appeared suddenly. Recently I sketched the developmental process that must have led to the round form of the zero sign<sup>20</sup>. This allows us to be more definite about the epoch when the sign was developed. It is also possible to argue

The Brahmi 10 before the advent of zero was written as a fish sign, or the sign form, lying sideways. In later forms it was also written as with a single curving stroke, or with vertical stroke attached to a circle. It appears that the shape of zero was determined by the oval related to the fish sign of the Brahmi 10. In such a representation, the zero sign clearly had the null (*sunya*) value which explains its name. We also see how the two concepts expressed by the Indian zero, namely those of the place value and that of nothing, are likely to have become self-evident. Perhaps the simultaneous existence of the two forms of expressing numbers helped in the development of the dual concepts associated with the zero sign.

We encounter the vertical stroke attached to a circle form for 10 in the 1<sup>st</sup> and 2<sup>nd</sup> century A.D. Nasik inscriptions and in the 1<sup>st</sup> and 3<sup>rd</sup> century Andhra and Ksatrapa inscriptions. And the curved form is seen in the 4<sup>th</sup> century Jaggayapeta and Pallava grants<sup>21</sup>. Therefore, it is conceivable that the development of the zero sign occurred in these epochs.

But the above epochs do not provide a definite era for the discovery of the zero sign, since it is likely that the new usage competed with the traditional number system for centuries. In fact one would expect that inscriptions and deed plates would tend to follow the older and more commonly known style for a long time. For a parallel consider Europe where it took the Indian numerals about five centuries after their first known appearance in the Codex Vigilanus in 976



A.D. to be commonly used. Even in India the older additive system with special signs for 10, 20, 30, and so on continued to be used, alongside the place value system, for centuries.

The development of the zero sign in India was motivated by numerical calculations. This is to be contrasted from the manner in which the zero signs arose in Babylon and Mexico, where the motivation was from the areas of astronomy and calendrical calculations. The Babylonian astronomical tablets use a sexagesimal numeration system. But it is imperfectly developed being partly additive and partly place valued as within the base of 60 a decimal system is used. The Babylonian system has only three specific symbols, namely those for 1, 10, and the later symbol for 0. Unless the groups of wedge marks are separated it is always possible to miscalculate the indicated number.

The Mayans, on the other hand, used a vigesimal system but with a serious irregularity since its units were 1, 20,  $18 \times 20$ ,  $18 \times 20^2$ ,  $18 \times 20^3$ , and so on. Thus in this system the glyph representing a seashell (which is the 0) does not work as an operator, as it should in a true place value system. Furthermore, the numbers upto 20 are additive as in the case of the Babylonian system, and therefore there exists the same possibility of ambiguity. The surviving inscriptions and codices do not write the numbers without specifying the units, which eliminates ambiguity but shows that the abstract nature of the place value number system was not fully understood. Clearly this system was also not designed for the

needs of ordinary calculations. The rationale behind the Mayan system was the counting of the days of 18 months, each of 20 days.

Philipp Frank has argued persuasively<sup>22</sup> that new philosophical systems have followed fundamental advances in science and, furthermore, this philosophy is a mere generalization of the conceptual advance. One would, therefore, expect that such a process must have characterized the full development of the zero sign as well. In the second to third century A.D., Nagarjuna founded the *Madhyamika* (Middle Way) school of Buddhism<sup>23</sup>. The main philosophical thesis of this school was the concept of *Sunyata* (voidness, emptiness or zeroness), that was taken to characterize the essence of nature. The word *sunya* represents zero in its technical sense in the earliest Indian records. Another representation of this is the Sanskrit word *kha*, which means space, and which was written down in the Brahmi script by a circle with a hook on top of it.

It is reasonable to suppose that the development of the zero sign provided impetus for Nagarjuna's philosophical system. The reverse could be true, but highly unlikely because of the epigraphical evidence from the middle of the second century. The rise of a powerful philosophical school based on the power of the concept of zero, indicates that it is very probable that this epoch was when the zero sign was developed.

## VII

We now take up the question of the interregnum between the Sarasvati and the Brahmi writing periods. After the drying up of the Sarasvati river around 1900 B.C. that led to the collapse of the urban Harappan civilization, the population shifted to the less arid areas of the east and the economy was transformed with concomitant changes in socio-political organization. It was during this long period that the Sarasvati script slowly transformed into the later Brahmi. The pottery marks in late second millennium B.C. are reminiscent of the Sarasvati signs. It is reasonable to assume that this was the period when the logosyllabic Sarasvati was being reorganized into a proto-Brahmi script.

The evidence from the Vedic literature also speaks of a gradual relocation from the area of Sapta Sindhu which is practically identical to the Harappan domain. The earliest Vedas describe a society that is partly urban and partly agricultural and pastoral like the Harappan society. This may be seen most easily from the many occupations listed in Yajurveda. The Rgveda describes fortified towns, Rgvedic ritual requires construction of altars out of bricks. On the other hand, certain structures in the lowest layers of the Harappan ruins have been interpreted as fire altars. The Brahmanas, which are appendices to the Vedas, describe the phase of slow expansion to the east, a region that was originally densely forested. They, in turn, are followed by Aranyakas and Upanishads that capture the cultural transformation, also paralleled in the

Harappan evidence, that values living in forests and small farming communities.

That the Vedic people were literate is indicated partially by a reference to the mark of eight that occurs in the Rigveda itself. Aitareya Aranyaka, of the period of forest dwelling, has a clear reference to how a pupil should do his writing. Several Upanishads describe different aspects of the alphabet.

## VIII

The connection between Sarasvati and Brahmi is just one more piece of evidence that suggests that the Indus-Sarasvati tradition was Indo-Aryan and Vedic. It is generally accepted that the Indo-Aryans were present in India during the Harappan phase. But the literary evidence from the Vedic texts with its astronomical time-markers forces once to accept that the tradition must have been Vedic. Although not enough thought has been given to such a conclusion in the West, it does not contradict the different proposals by Gimbutas<sup>24</sup>, T.V. Gamkrelidze and V.V.Ivanov<sup>25</sup>, Colin Renfrew<sup>26</sup>, and Mallory<sup>27</sup> that posit a dispersal of the Indo-European languages at different periods ranging from the 4<sup>th</sup> to the 7<sup>th</sup> millennium B.C. It also agrees with the analysis of the literary evidence that indicates an unbroken tradition going back to several millennia B.C.<sup>28</sup>. One might posit that the Indo-Aryans spread outside of the original Sapta Sindhava area with the spread of farming. This makes the mechanism of their expansion similar to the one that has been recently

suggested for the spread of the Indo-Europeans into Europe<sup>29</sup>.

The relationship between Sarasvati and Brahmi is one more piece of evidence that interlocks with other similar evidence from archaeology and literature linking the Harappan and Ganga civilizations. It opens up a new direction for a further study of the Sarasvati script. The beginnings of the Sarasvati script remain shrouded in mystery. Might these beginnings have had any connections with the writing of the Sumerians is a tantalizing question.

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## A. Introduction and Scope

# A FREQUENCY ANALYSIS OF THE INDUS SCRIPT

**SUBHASH C. KAK**

**Abstract:** A statistical analysis of the Indus signs is presented. It is shown that the frequencies of the most common signs support the theory of the derivation of Brahmi from Indus. Furthermore, evidence is presented that suggests that the language of the Indus inscriptions was Indo-Aryan.

**Keywords:** Decipherment of the Indus script, Indo-Aryan languages, Brahmi script, ancient writing systems.

## Introduction

In a recent article (1) it was argued why the connections between the Brahmi (earliest available record c. 300 B.C. [See Figure 1]) and the Indus (3000 B.C. – 1500 B.C.) scripts should be investigated further in order to make progress in the decipherment of the latter. In that article the identification of many Indus signs was made on general conditions of shape and the assumption that the text for the words *sapta sindhu* had been correctly identified. The question of the frequency distribution of the Indus signs is now being taken up. It is shown that this validates the earlier study and makes it possible to advance the decipherment further.

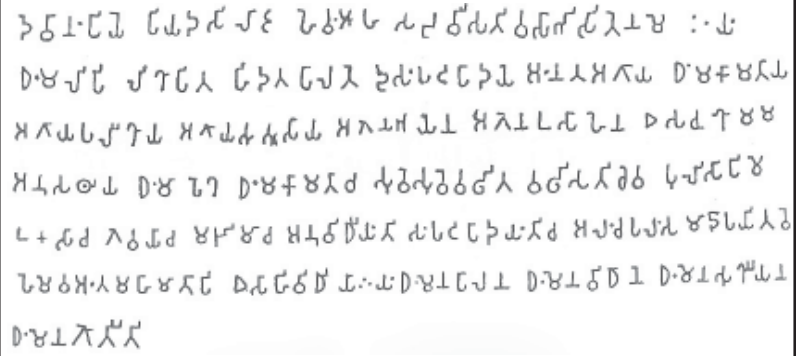
A careful analysis of the structural characteristics of the Indus texts was published by G.R.Hunter in 1934(2). Another noteworthy analysis is that of Mitchiner (3) who also provides an excellent critique of the other attempts at decipherment.

The major conclusion of Hunter was that Brahmi is derived from Indus. He demonstrated that the script is a syllabary of open and closed syllables. Since many of the signs of script appear singly, he further concluded that the language of the script is essentially monosyllabic. This last conclusion may not be correct since single signs could represent abbreviations for longer words or be symbols with religious or business implications and other paleographical formulae are likely to have been used in Indus records as indicated by such use in later Indian inscriptions. (4) To arrive at a list of possible equivalents between Indus and Brahmi signs, Hunter also considered connections with Sumerian, Egyptian, Proto-Elamite, South Semitic, Phoenician, and Cypriot.

Hunter suggested that the similarities implied that Sabaeen, Phoenician and Cypriot were derived from the Indus script. Table 1 summarizes the



m o r p h o l o g i c a l relationship between Indus and Brahmi given by Hunter. Note that this has several agreements with the smaller set of equivalences given in [1]. The most notable differences are shown in brackets in the table itself.



Ashoka's First Pillar Edict, Lauriya Nandangarh, c. 242 B.C.

#### Transcript

Michener's main contribution is an analysis of the case-endings of the Indus inscriptions. He concluded that these endings ruled out Elamite or Dravidian as the languages of the inscriptions. Furthermore, using Indus-Brahmi comparisons, he argued that the case-endings were in consonance with early Indo-Aryan. He also noted that the languages of Harappa and Mohenjo Daro had distinct features that could well indicate ancestry of Sanskrit and Prakrit respectively.

The analysis of [5], as well as the changing understanding of the Harappan civilization [6], validates the general direction of the researches of Hunter and Mitchiner. The objective of this paper is to determine if a frequency analysis of the signs of the Indus and the Brahmi scripts can yield further insights into the nature of the Indus script and its language. The analysis should be of interest to the general cryptologist as well, since the underlying problem is to see how two alphabets, one of which is used for unread texts, can be shown to be related.

(Line 1) De-va-nam-pi-ye Pi-ya-da-si la-ja he-vam a-ha sa-du-vi-sa-ti-va-sa-bhi-si-te-na me i-yam

(2) dham-ma-li-pi li-kha-pi-ta. Hi-da-ta-pa-la-te du-sam-pa-ti-pa-da-ye am-na-ta a-ga-ya dham-ma-ka-ma-ta-ya

(3) a-ga-ya pa-li-kha-ya a-ga-ya su-su-sa-ya a-ge-na bha-ye-na a-ge-na u-sa-he-na. E-sa cu kho ma-ma

(4) a-nu-sa-thi-ya dham-ma-pe-kha dham-ma-ka-ma-ta- ca su-ve su-ve va-dhi-ta va-dhi-sa-ti ce-va. Pu-li-sa pi me

(5) u-ka-sa ca ge-va-ya ca ma-jhi-ma ca a-nu-vi-dhi-yam-ti sam-pa-ti-pa-da-yam-ti ca a-lam ca-pa-lam sa-ma-da-pa-yi-ta-ve

(6) he-me-va am-ta-ma-ha-ma-ta pi. E-sa hi vi-dhi ya i-yam dham-me-na pa-la-na dham-me-na vi-dha-ne dham-me-na su-khi-ya-na

(7) dham-me-na go-ti ti.

### Translation

Thus speaks the King, Dear to the Gods, Priyadarsi. When I had been consecrated twenty-six years I ordered this inscription of the Law (Dharma) to be engraved. Both this world and the other are hard to reach, except by great Love of the Law, great self-examination, great obedience (to the Law), great respect (for the Law), great energy. But through my leadership respect for the Law and love of the Law have grown and will grow from day to day. Moreover my officers, of high, low and medium grades, follow it and apply it, sufficiently to make the wavered accept it; the officers on the frontiers do likewise. For this is (my) rule: government by the Law, administration according to the Law,

Indus	Brahmi	Devanagari	Indus	Brahmi	Devanagari
ॠ	ॠ, ॡ	a	ॡ	ॡ	ā
ॢ	ॢ	i	ॣ	ॣ	u
।	।	e	॥	॥	ai
॥	॥	o	०	०	au
०	०	ā	ॠ	ॠ	ka
ॠ	ॠ	kh	ॡ	ॡ	ga
ॢ	ॢ	ci	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
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ॠ	ॠ	ka	ॡ	ॡ	ga
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ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
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ॠ	ॠ	ba	ॡ	ॡ	ma
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।	।	gha	॥	॥	ja
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।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
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ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa
०	०	ba	ॠ	ॠ	ma
ॠ	ॠ	ba	ॡ	ॡ	ma
ॢ	ॢ	ga	ॣ	ॣ	ga
।	।	gha	॥	॥	ja
०	०	ka	ॠ	ॠ	ka
ॠ	ॠ	ka	ॡ	ॡ	ga
ॢ	ॢ	ga	ॣ	ॣ	ja
।	।	ca	॥	॥	pa

of the alphabet of the underlying languages. As to the data, only around 3000 inscriptions (many of which are multiple copies) have yet been found. Most of the inscriptions are very brief, the average length being 5 characters (Figure 2). There are no bilinguals and Brahmi, the other ancient script from the region, is not attested from epochs before 300 B.C.

There is evidence that Brahmi had a long history in India before the Mauryan times. The vowel/consonant classification system of Brahmi is a part of *Astadhyayi*, the great grammar of Panini (fifth or sixth century B.C.) who himself was at the end of a long tradition of grammarians. Written characters (letters) are mentioned in *Chandogya* and *Taittiriya Upanisad*, and *Aitareya Aranyaka* refers to the distinctions between the various consonant classes. The fact that *Chandogya Upanisad* lists the basic alphabet and at the same time analyzes words by letter counts of syllables suggests that writing at the time must have been syllabic as in Brahmi. This indicates that the antecedents of Asokan Brahmi can be seen at least several centuries before Panini. The interval between Indus writing and early Brahmi writing is thus likely to be much narrower than the inscriptional evidence implies.

A hypothesis of Indus-Brahmi relationship suggests that the frequencies of the different sounds of the Sanskrit alphabet may be a guide in identifying the indus alphabet. Table 2 is from (9) and was obtained from 10,000 sounds of continuous text, in ten different

passages, of 1,000 sounds each, selected from different epochs of the literature. Note that since Brahmi is really a syllabary where each consonant subsumes *a*, and where the other vowels shown in the first column could be represented by ligatures on the consonants, the frequencies of these vowels as separate letters in written text will be much lower. Since our objective, in this study, is to determine what letters the most likely Indus signs could represent, and then validate this on morphological grounds, we only indicate the most likely 10 consonants in decreasing frequency:

*t, r, v, n, m, y, s, d, p, k*

The frequency of each one of these consonants is greater than 1.99 percent. The next most frequent sounds are *s* (palatal sh) and *s* (lingual sh) with frequencies of 1.57 and 1.45 respectively. It is conceivable that like Prakrit, early Indo-Aryan could have often substituted *s* for *s* and *s*. If this were to have been the case the total frequency of *s* could be close to that of *t*.

Assuming that the system of ligatures used for the Indus alphabet had not reached the perfection it shows in Brahmi, the vowels that may need to be taken into consideration are, *a, i, u, e*. With the possible exception of *a*, the frequencies of these vowels in individual appearance is likely to be lower than that of the ten consonants listed before, however.

Next we list the ten most common Indus signs (Table 3) from the concordances (7)


Sound Freq.	Sound Freq.	Sound Freq.
a 19.78	k 1.99	th 0.58
ā 8.19	kh 0.13	d 2.85
i 4.85	g 0.82	dh 0.83
ī 1.19	gh 0.15	n 4.81
u 2.61	ñ 0.22	p 2.46
ū 0.73	c 1.26	ph 0.03
r 0.74	ch 0.17	b 0.46
ṛ 0.01	j 0.94	bh 1.27
ṛ̣ 0.01	jh 0.01	m 4.34
ṛ̣̣ -	ṇ̃ 0.35	y 4.25
e 2.84	ṭ 0.26	r 5.05
āi 0.51	tḥ 0.06	l 0.69
o 1.88	ḍ 0.21	v 4.99
āu 0.18	dḥ 0.03	ś 1.57
ṁ 0.63	ṇ 1.03	ṣ 1.45
ḥ 1.31	ṭ̣ 6.65	ṣ̣ 3.56
		ḥ̣ 1.07

Table 2. Frequencies of various sounds of the Sanskrit alphabet (Source : Whitney [9]).

or (8). The counts include signs when they appear as components of 'compound' signs. The specific frequencies have not been indicated since they can be misleading because the concordances list multiple inscriptions and because the texts can hardly be representative of the Indus language.

### Analysis of Data

Table 3 presents the ten most frequent Indus symbols so that even though the Indus texts cannot be expected to yield reliable statistics, one would be reasonably sure to have included many of the ten most likely symbols of the language. An

examination of this Table shows a clear morphological connection between the Indus signs and the ten most common consonants of Brahmi. Further note that Lal has observed Chalcolithic-Megalithic intermediary forms of  (the most common Indus sign) such as and, therefore, it is comparable to the Brahmi sign for sa. (3, p.73) The other similar sign is the 'fish' sign of Indus and *ma* of Brahmi, and Indus has signs that look identical to the *ra* and *va* of Brahmi. Another case of similarity are the Brahmi *ta* and the Indus 'man' signs.

If it is accepted that four signs have survived into Brahmi from Indus,

Sanskrit consonants (decreasing freq)	t, r, v, n, m, y, s, d, p, k
Brahmi	𑀲, 𑀸, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁
Indus (Hunter [2])	𑀲, 𑀸, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁
Indus (Kak [1])	𑀲, 𑀸, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁
Indus (decreasing freq) [8]	𑀲, 𑀸, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁

Table 3. The ten most common consonants in decreasing frequency.

the question of what is the probability that this signifies a real connection arises. Similarity between signs could be due to one of the three following reasons:

1. The Brahmi letters have no connection whatsoever with the Indus signs, and any perceived similarities are purely random arising owing to the simplicity of the shapes.

2. The Brahmi letters were devised by those who had seen the Indus inscriptions but did not know how to read them. This would explain why the letters of the two scripts would look greatly similar; but the sound values of the letters would have no connection.

3. The Brahmi letters are derived from the Indus signs.

We investigate each of the cases now.

### Cases 1 and 2

The problem here is to determine how two scripts can be found to be related. Note that we have found that special subsets – the most frequent letters – of the two alphabets are morphologically connected. Assuming that four letters are unchanged (for which different evidence will be presented in the next sections), the probability of this happening by chance for two scripts of size 33 (Brahmi consonants) and about 300 (Indus signs with obvious variants and transformed signs not counted) is

$$\frac{29! \times 296!}{33! \times 300!} = 0.1 \times 10^{-12}$$

$$33! \times 300!$$

This probability is so small that the correspondence of Table 3 cannot be taken to be accidental.

Indus	Brahmi	Devanagari	Indus	Brahmi	Devanagari
𑀓	𑀓, 𑀔	a		𑀕	ā
	𑀕	ā		𑀖	ī
	𑀖	i		𑀗	u
	𑀗	u		𑀘	ē
𑀘	𑀘	ē		𑀙	ai
	𑀙	ai		𑀚	o
	𑀚	o		𑀛	au
	𑀛	au		𑀜	ā
	𑀜	ā		𑀝	h
	𑀝	h		𑀞	k
	𑀞	k		𑀟	kh
	𑀟	kh		𑀠	g
𑀠	𑀠, 𑀡	g		𑀢	gh
	𑀡	gh		𑀣	ṅ
	𑀣	ṅ		𑀤	ch
𑀤	𑀤	ca		𑀥	cha
	𑀥	cha		𑀦	j
𑀦, 𑀧	𑀦	ja		𑀨	jha
	𑀨	jha			

Table 4. Tentative identification of the Indus characters.

### Case 3

The conclusion that there is no alternative to Case 3 is strengthened by the connection between the Indus signs of Hunter, obtained using structural analysis and comparisons with other scripts, and Indus for the ten most frequent signs. There is an exact correspondence for four signs. The connection between the Indus identification of [1] and the ten most frequent signs of the script is even more striking, with five correspondences.



Consider now the letter frequencies for short Brahmi records in Sanskrit. If these records were to represent ownership or epithets of kings, or sacred formulae, they would generally terminate with the genitive case and sometimes with the dative case. This was true of the Brahmi seals. The letter frequencies would now change somewhat with *s*, *m*, *ai* becoming more probable since *s* and *m* are associated with the genitive singular and plural respectively; and *ai* is associated with the dative case-endings. This implies that *s* and *m* may be the most likely consonants in such brief Brahmi records. It is noteworthy to see that these are precisely the two most likely Indus signs. Not only does this indicate an Indus-Brahmi continuity, but also a connection in the underlying languages.

### Further Sign Identification

Given that the frequency of all the *s* signs of Brahmi is next to that of *t*, the six most likely Brahmi consonants then become *t*, *s*, *r*, *v*, *n*, *m*, and we observe that four of these correspond to the signs amongst the six most frequent Indus signs. This increases our confidence in the identification of *s*, *v*, *m*, and suggests that the 'man' sign could be *t*. Also the sign for *y* may be the "arrow with the triangle head" that had been identified as *ai* in [1]. This is because Indo-Aryan languages often substitute *ai* for *y* and also because the 'triangle/arrow' sign is amongst the most frequent in the Indus script. Of course, all sign identifications will remain tentative till the script is fully deciphered. Nonetheless, as the analysis proceeds, one needs to weigh evidence








from different lines of attack to constantly refine ones assumptions. At present we will keep both *y* and *ai* as possible readings of the 'triangle/arrow' sign. Also the Brahmi *p* and the Indus  look related. Perhaps the Indus *p* is  and  represents a common ligature such as *pu* or *pra*.

Table 4 presents Indus signs whose relationship with the corresponding Brahmi signs is supported by Sumerian parallels or by frequency considerations. One may thus place some confidence in this identification at this stage of decipherment.

### Case-Endings

The case-endings of the Indus inscriptions have been analyzed by Hunter, Parpola, and Mitchiner. Table 5 presents a list of these case endings, that we have grouped under two categories. Figure 3 shows how these case-endings are defined.

The terminal sign 1 of Table 5 was shown by Hunter to represent an open syllable, and that it is an affix or suffix rather than a determinative. Most scholars take it to be the ending of the genitive case. Mitchiner argues that it should represent the genitive singular case-ending. The optional form  was shown by Hunter to represent the 'spelling-out' of the sign .

The second main terminal sign  performs a task different to that of , as can be seen by the mutually exclusive nature of sign groups that precede them. It was suggested by

Parpola that this sign could represent a form of dative case-suffix and this suggestion has been widely accepted.

consonance with the Indus language being an early Indo-Aryan. For a quick reference of the case-endings of Sanskrit, one may consult Whitney.[9]


















Genitive case-endings		Dative case-endings	
1.	 -sa	15.	 -ya(-āi)
2.	 -s.sa	16.	 -ya.ja(-āi.ja)
3.	 -sa.ja	17.	 -jaya(-ja.āi)
4.	 -vowel variants of sa		
5.	 -s.sa.ja		
6.	 -ja.sa		
7.	 -sam		
8.	 -sat(-sa.am)		
9.	 -ām		
10.	 -sa.ām		
11.	 -sām.ja		
12.	 -ta.ja(-am.ja)		
13.	 -am.ja		
14.	 -yam (-āi.ām)		

Table 5. Case-endings of Indus.

Table 5 presents hypothetical values of the case-endings. Except for the case-ending number 7 and related signs, the values are supported by the relation with Brahmi signs. Note that these are essentially the same as proposed by Mitchiner. Wherever there is a difference, Mitchiner's values are shown in brackets. These case-endings are in

To repeat Mitchiner's argument [3] as to why the case-endings rule out other languages: The indicator of genitive singular in Sumerian is -ak, in Elamite -na, in Dravidian -a or -in.

That the case-endings appear appropriate for an Indo-Aryan language further validates the sound values assigned to the Indus signs in the endings, especially because these signs look strikingly similar to the corresponding Brahmi letters. The probability of this happening by chance would be even lower than the number in Section 3. Also note that the archaeological evidence now supports the hypothesis of the presence of the Aryan people in the Indus area during the period of the Indus civilization.[6]

Furthermore, the charge of circularity that could have been leveled at Mitchiner's original study of case-endings is no longer valid. It cannot be now said that arbitrary values to case-endings have been assigned to support the Indo-Aryan theory. The assignment has been guided by comparing the frequencies of the most common signs.

### The Common Combinations

The most frequent pairwise combinations of the Indus signs are shown in Figure 3. The data has been taken from the Mahadevan Concordance.[8] The frequency of a pair has been shown at the corresponding link. Figure 3a shows all pairs that occur more than 40 times, and Figure 3b shows all pairs that occur more than 20 times. These figures allow us to see the common case endings, as well as the most frequently occurring sign combinations graphically. Note that we can examine combinations that are more than 2 signs long.

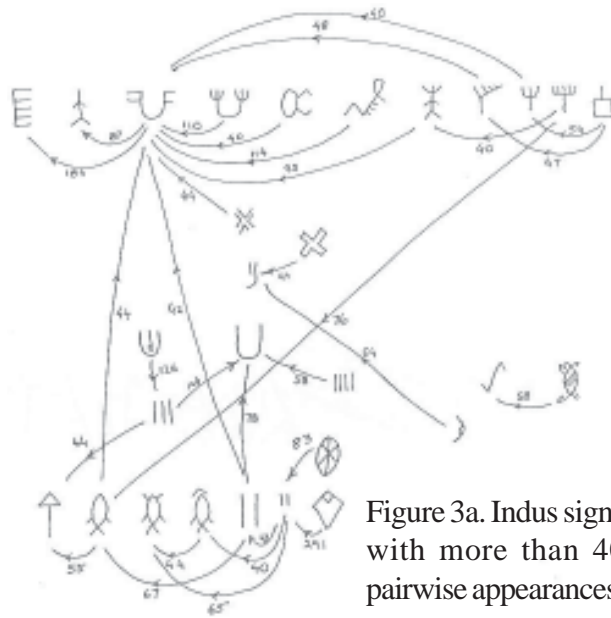


Figure 3a. Indus signs with more than 40 pairwise appearances.

An examination of Figure 3 reveals that the most frequent links are between what are clearly basic signs. As the frequencies decrease the signs that come into play are increasingly compound and some are (perhaps) polysyllabic words. This implies that syllabic representation in Indus is not as systematic as in Brahmi.

As to the Indus language, it is clear that words are constructed using a system of prefixes and suffixes, a process that occurs in Indo-Aryan languages as well.

It might be said that the graphs of Figure 2 have excessive directional structure for the signs to represent a syllabary. Two arguments may be made against this view. First, as new graphs are

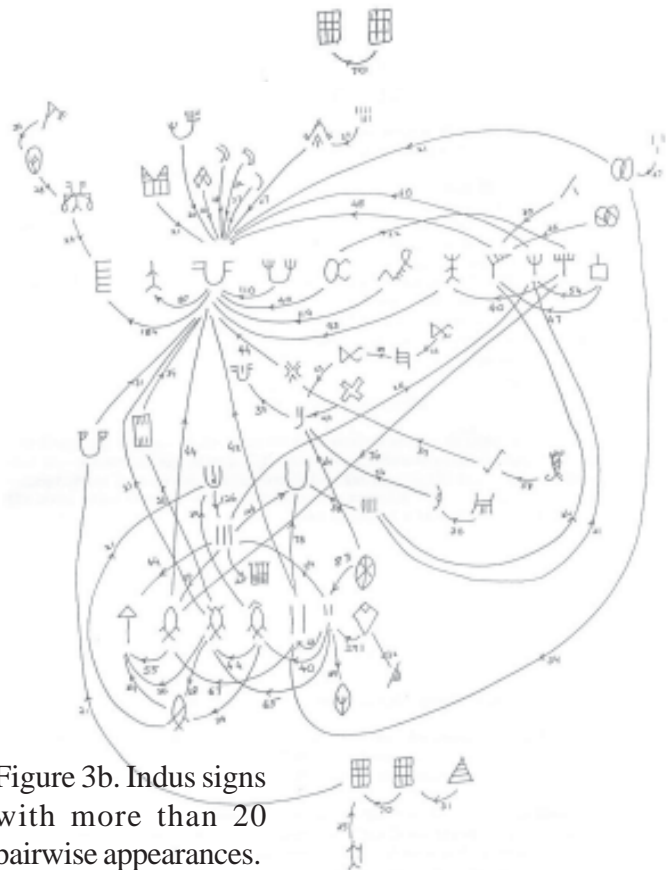










Figure 3b. Indus signs with more than 20 pairwise appearances.

made where the number of pairs is much less than 20, the directionality reduces greatly. Secondly, the structural characteristics of graphs such as in Figure 3 cannot represent the structure of the underlying language since the length of the inscriptions is so short. Note also that many compound signs of the Indus script are words. Also, as true for later Brahmi records, many signs are abbreviations for commonly occurring words. The evidence does not rule out a core group of Indus signs representing a syllabary.



### Numerals

Consider numerals now. Frequency considerations suggest that  should be the symbol for the number 5. This is seen in Figure 3b which shows that there is large probability that  will appear together with symbols for 2, 3, and 4. The frequency of  with 1 is 7 and with itself is 10 which do not, therefore, show up in Figure 3b. Presumably, the lower frequency for  is because 6 is also written as six vertical strokes. It also appears that 10 is represented both as  as well as one of the other signs. The identification of  as 5 means that Mitchiner's assumption that it might stand for 100 is invalid.

It is noteworthy that the later Nagari sign for 5 is this  with a stylized tail added to it. Also Brahmi *pa* is  which looks very close to this sign. Note further that the symbol for 5 in Brahmi comes from the first syllable of *panca*. The fact that the same symbol was used by the Harappans indicates that their word for 5 started with *pa* as well. This is further evidence

against the theory of Dravidian origin of the Indus language since 5 in Tamil is *aindu*, in Telugu *aidu*. It reinforces our identification of the Indus language as being Indo-Aryan.

### Conclusions

The frequency analysis of the most common Brahmi and Indus signs confirms the hypothesis that the two scripts are related. The case-ending evidence suggests that the language of the inscriptions is Indo-Aryan. The inference that the language is Indo-Aryan is strengthened by the observation that the words that follow the formulae “  “  , which Hunter has argued should be proper names, indeed read as plausible Indo-Aryan names at several places.

But an analysis of the case-endings alone has its limitations. It cannot, by itself, establish conclusively that the language is Indo-Aryan. That will have to await a full decipherment of the Indus texts. In any event, the demonstration that Brahmi is derived from Indus, and the indubitable relationship between Brahmi and the Phoenician script indicates that the theories of the rise of early writing systems require a complete revision.

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### Biographical Sketch

Subhash Kak was born in Srinagar, Kashmir and educated at Kashmir University and the Indian Institute of Technology, Delhi, completing his PhD at the latter in 1970. He joined the faculty of the Indian Institute of Technology, Delhi, in 1971 and moved to Louisiana State University in 1979 where he is currently a professor of electrical and computer engineering.



## What is the Aryan Migration Theory?

### Part I : Genesis of AMT

In the late 18<sup>th</sup> century, it was discovered that most languages of Europe, India, Iran and Caucasus had striking similarities. Hence, several scholars belonging to academic and non-academic disciplines actively sought a genetic link between them. In the following century, philologists constructed 'language trees' to show the supposed genetic relationships-kinship between various members of this newly discovered 'Indo-European' (or variously called 'Aryan' and 'Indo-German') family of languages. India and Western Europe formed the eastern and western extremities of the continuum/spectrum of this proposed language family, which explains the name 'Indo-European' (henceforth 'IE').

The equation 'language = races/people' was a standard underlying assumption in those days. Therefore, it was concluded that the speakers of these languages, spread over a vast geographical area, might have descended in whole or in part from an original set or race of people who spoke the 'Proto-Indo-European' (henceforth PIE) language, before dispersal from their 'homeland'. This dispersal supposedly led to the fragmentation and diversification of the original tongue PIE into various IE languages. There was (and is) no unanimity on the geographical location of the original homeland of these

'proto' Indo-Europeans. But, most of the suggestions by Europeans placed this homeland in various parts of Europe, and a few in western Central Asia, which was close to Europe. This was partly due to certain philological and logical reasons, and partly because of allegiance to ideologies and notions like White-Caucasian superiority, European imperialism and colonialism, the notion of 'White Man's Burden', Judeo-Christian biases, European ethnocentrism, and German Nationalism on the part of these scholars [Chakrabarti 1999:10-11; Kennedy 2000:80-84; Halbfass 1988:138-139; Poliakov 1974; Rajaram:1995] – a phenomenon whose details are beyond the scope of the present essay.

A branch of the IE peoples, speaking the 'Indo-Aryan (IA) Languages' (from which medieval and modern Indian languages are derived) are said to have transferred their languages to the aboriginal, non-IA speakers of India. So far, the following scenarios have been used till date to explain the supposed arrival of IA speakers and/or languages into India around the middle of the 2nd millennium BC[1] -

1. The Aryan Invasion Theory (AIT)
2. The Aryan Migration Theory (AMT)

3. Pure Acculturation Models: There is a school of thought that [Kenoyer 1998; Shaffer 1986:230 and 1999] holds that this process of language transfer took place entirely by acculturation and culture shifts and no migrations of Aryan speakers were involved [2]

4. Complex/Composite Models – various combinations of the first three models. In this web page, we deal with the AMT cum acculturation model in a little detail, focusing on the role of migrations in such a model (see below).

This web page intends to introduce the readers to the basics of the Aryan Migration Theory (AMT). It must be noted that AMT is typically used in conjunction with Acculturation and other complex models to explain the ‘Aryanization’ of much of South Asia. Details on the evidence for and against the AMT, the relationship of the AMT to AIT and to other related viewpoints and models (e.g. acculturation models); as well as the ideological implications/affinities of AMT would be dealt with in separate web-pages. For a consideration of some of the issues not dealt with here in much detail, the reader may also refer to the forthcoming book by Edwin Bryant [2001]. Elst [1999] and Danino [2000] have described and have critiqued a wide range of evidence related to AIT, and much of their[3] discussion is applicable to corresponding issues in AMT as well. A brief summary of the relevant arguments is also contained in a recent article by the Greek Sanskritist Nicholas Kazanas [1999]. Following a somewhat different perspective, the Communist

historian R. S. Sharma [1999] offers a multi-faceted argument in favor of AMT, which is somewhat selective in its awareness of the latest archaeological data.

## **B. From Aryan Invasions to Aryan Migrations**

When the link between the various languages of the Indo-European family was first discovered, it was automatically assumed that languages are spread primarily by groups of intruding invaders. Since the homeland of the IE languages was already placed outside India, it was proposed that a group of IA speaking invaders (who were derived from PIE speakers) had invaded India sometime in the middle of the 2nd millennium B.C., imposing their language on the ‘Dravidian’ and on the other non-Aryan aboriginal inhabitants of India, by force. With archaeology in its infancy, the proof for these invasions was discovered in the Rigveda. Uncritical, erroneous and tendentious interpretations of the text were relied upon to conclude that European looking Aryans had subdued dark, short, snub nosed non-IE speaking natives of India militarily and had imposed the IE languages on them[4].

As more and more historic and pre-historic sites came to be studied and excavated by archaeologists, it was naturally expected that traces of such destructive invasions of the Aryans would be unearthed in plenty. Then, in the 1920’s [Possehl 1999:38-154; Kenoyer 1998:20-25], the ruins of a hitherto unknown civilization were identified/

found spread across the Indus Valley in what is now Sindh and lower Punjab. The Bronze Age culture, somewhat contemporaneous with the great Bronze Age cultures of Egypt and Mesopotamia, was named 'Indus Valley Civilization (IVC)' because most of the sites were located in the area drained by the Indus and its tributaries. It is also called 'Harappan culture' because it is a convention in archaeology to name excavated cultures after its first site that is excavated. After British India's independence in 1947 and the birth of Pakistan, archaeologists in independent India found several hundred sites along the dried bed of the Ghaggar (ancient Sarasvati river) and Chautang (ancient Drshadvati), in Gujarat and adjacent areas. Some sites have even been found east of the Yamuna in its higher reaches. Currently, the IVC area is said to have more than 2600 sites associated with Harappan culture, although not even 2% of them have been excavated completely. The excavated sites however are distributed over the entire area of IVC and may be taken as representative of the IVC *per se*.

The discovery of the IVC led to an inversion of one of the older paradigms concerning AIT. In the earlier versions of AIT, it was assumed that the ancient, aboriginal inhabitants of India were a primitive people with a low level of culture and that the superior invading Aryans made them civilized. This perception of 'aboriginal Indians' did not seem to match the sophistication seen in the urban planning and organization of the Harappan cities that were excavated. So, the nomadic Aryan invaders were

now deemed as destroyers of the advanced Bronze Age Harappan Civilization, heralding a dark age of cultural stagnation for several centuries before the rise of the sixteen *Mahajanapadas* and numerous other *Janapadas* around 600 BCE. Thus, instead of being discarded, the AIT was simply imposed on the new discoveries in its new *avatar*. The IVC was now identified as that Indian, non-Aryan civilization which was destroyed by the invading, nomadic, primitive Aryans. By tendentious logic and without any proof, the IVC was equated with Dravidian culture [5] (where Dravidian as an over-arching category had been invented in the 19th century to include speakers of Tamil, Telugu, Malayalam, Kannada, Tulu, Kodagu, Malto and other languages of peninsular India).

Naturally then, as the IVC sites were further excavated, tell tale signs of the destructive fury of the Aryan invaders were sought. Ratnagar [2000:30-31], has neatly summarized the kind of tell-tale evidence generally encountered when sites destroyed by violent incursions (leading to a hurried departure of its inhabitants) are excavated by archaeologists:

a) burnt buildings with their fixtures and appointments during use still in place, though charred or broken. Items that were to be baked may remain stacked near a kiln that was never lit, as at Ugarit (Drower 1968). The tip of a spearhead may be found embedded in a piece of wood (Shahr-i Sokhta). A child's scarred skeleton may be found clutching some

object and lying under fallen roof logs (Shahr-i Sokta, Tosi 1983:88).

b) jars set in floors can be seen to have broken there, so that they can be reconstructed from their pieces. The shards on the floor of a hurriedly abandoned room will tend to give the parts of entire pots that were in use in that structure (Godin Tepe, Weiss and Young 1975)

c) walls with signs of recent repair or plaster

d) craft items left half finished at the place of manufacture as at Ugarit (Drower 1968)

e) valuables or culturally significant items, of no use to the destroyers or to subsequent squatters, used in ways never intended. After destroying Ugarit its pillagers used some clay tables inscribed with religious texts to support shanty walls (ibid). At Dholavira, a vandalized stone statue came to support a wall.

f) valuables or culturally significant items like a religious emblems or statuary or rulers' inscriptions smashed or defaced

g) the dead hurriedly buried in non-customary spots or ways

h) safely or secretly deposited wealth items left behind in the rush to flee the enemy. That these were secreted wealth and not votive offerings or ritual building foundation placements will be indicated by disturbed floor paving.

d) pottery (broken or intact) recovered in individual households representing the entire range required for domestic use

e) clean-swept house floors and courtyards

f) the figurine or emblem of a family deity in its place in the home

g) thick (say 30 cm) layers of roof collapse on disused floors showing that roofs were not salvaged and subsequently fell in (Schlanger and Wilshusen 1993:92-3)

h) buried wealth left un-retrieved (?)

i) usable items left behind, these being obviously not part of the day-to-day refuse of a family.

If the Aryans had indeed invaded the IVC area, bringing an end to this great Bronze-Age Civilization, we would have seen one or more of the above scenarios attested in the archaeological record. Strangely however, this was not the case. Rather, the excavated sites presented a picture of gradual abandonment in general. There were distinct signs of a cultural decay, a collapse of urban society probably accompanied by periods of internal strife, a breakdown of social and political systems. This evidence of a collapse of the IVC due to causes other than any large scale invasions from the north west has been studied in detail by Ratnagar [2000], and others and would be summarized by me elsewhere. The net conclusion from the archaeological record of the demise of IVC can be stated in the following words of Kenoyer [1998]

Contrary to the common notion that Indo-Aryan speaking peoples invaded the subcontinent and obliterated the culture of the Indus people; we now believe that there was no outright invasion; the decline of the Indus cities was the result of many complex factors. [pg. 19]

...there is no archaeological or biological evidence for invasions or mass migrations into the Indus Valley between the end of the Harappan phase, about 1900 B.C. and the beginning of the Early Historic Period around 600 B.C. [pg. 174]

Likewise, Romila Thapar[6] , an eminent Marxist historian of India also states [2000:82]:

There is virtually no evidence of the invasion and the conquest of northwestern India by a dominant culture coming from across the border. Most sites register a gradual change of archaeological cultures. Where there is evidence of destruction and burning it could as easily have been a local activity and is not indicative of a large-scale invasion. The borderlands of the northwest were in communication with Iran and Central Asia even before the Harappa culture with evidence of the passage of goods and ideas across the region. This situation continued into later times and if seen in this light when the intermittent arrival of groups of Indo-European speakers in the northwest, perhaps as pastoralists or farmers or itinerant traders, would pose little problem. It is equally possible that in some cases local languages became Indo-Europeanized through contact.

It must be emphasized that elsewhere, for instance in Aegean and the Near East [Drews 1988], the violent destruction and succession of older Bronze Age cultures by invading IE speakers is clearly attested in an archaeological record of the type that has been described by Ratnagar [7] above.

It is pertinent to note here that the use of iron played an important role in the older versions of the Aryan Invasion Theory. It was proposed that the Aryans invaded India with their superior and stronger iron weapons and were therefore able to overpower the inhabitants of the Indus Valley Culture and the Neolithic tribals of the Ganga basin further east. Moreover, the invading Aryans were said to have used iron axes for clearing the dense forests of the Ganga basin, promoting agriculture with the accompaniment of the 'Aryanization' of the region. Such reconstructions of the Indian past were based partly on fantasy, partly on an uncritical reading of the Rigveda, and finally, on certain reprehensible ideologies as mentioned above. Most archaeologists as well as many Indologists have now rejected such simplistic invasionist scenarios. Erdosy [1995:83-84] summarizes the argument:

The traditional view, that iron was brought into the subcontinent by invading 'Aryans' (Banerjee 1965), is wrong on two counts: there is no evidence of any knowledge of iron in the earliest Vedic texts (Pleiner 1971), where *ayas* stands either for copper or for metals in general, and the idea that the *aryas* of the Rigveda were invaders has become just as questionable. Wheeler's



assertion that iron only spread to India with the eastward extension of Achaemenid rule (Wheeler 1962) is even more untenable in the face of radiocarbon dates from early iron-bearing levels. The alternative thesis (Chakrabarti 1977), that iron smelting was developed in the subcontinent, rests on two principal arguments. First, iron ore is found across the length and the breadth of India, outside alluvial plains, in quantities that were certainly viable for exploitation by the primitive methods observable even in this century (Ball 1881; Elwin 1942). Ample opportunities thus existed for experimentation, although given the complexity of iron smelting this is not a conclusive point. The second argument, that the earliest evidence for iron comes from the peninsula and not from the northwest, is much more persuasive, even if better examples than quoted by Chakrabarti can be adduced in support of it. Briefly, while the dating of Phase II of Nagda (the earliest iron bearing level) depends on ceramic analogies, and the stratigraphy of Ahar (another site which is claimed to have produced evidence for iron) is hopelessly muddled, the testimony of radiocarbon dates is instructive. Iron Age levels have yielded dates of  $2970 \pm 105$  bp (TF-570) 1255, 1240, 1221 cal. BC and  $2820 \pm 100$  bp (TF-573) 993 cal. BC from Hallur, and  $2905 \pm 105$  bp (TF-326) 1096 cal. BC and  $3130 \pm 105$  bp (TF-324) 1420 cal. BC from Eran. They are not only earlier than any date from the Ganga valley (which dates fall between 2700-2500 bp) but are also earlier than the dates from Pirak in the northwest, with the exception of an anomalous reading of  $2970 \pm 140$  (Ly-1643) 1255, 1240, 1221 cal. BC. Since the

process of diffusion from the west should produce rather the opposite pattern, a strong case can be made for an indigenous origin of iron smelting, although it could do with further support given the complexity of this industrial process which by common consent renders multiple centers of innovation unlikely.

Thus, another bedrock of the Aryan Invasion Theory has thus been knocked off, leading the field open to other scenarios like the Aryan Migration Theory. However, the use of iron technology is now sometimes used to explain the later spread of 'Aryanism' in the Ganga plains by the Aryan Migrants, as we shall see below.

In the end, it must be pointed out that, some archaeological findings in the IVC area are still cited to suggest that barbarians coming from the northwest overwhelmed at least parts of that civilization. Communist Historian D. N. Jha [1998:40] for instance, summarizes:

At several places in north Baluchistan thick layers of burning have been taken to imply the violent destruction of whole settlements by fire. .... Indirect evidence of the displacement of Harappans by peoples from the west is available from several places. To the south-west of the citadel at Harappa, for example, a cemetery, known as Cemetery H, has come to light. It is believed to have belonged to an alien people who destroyed the older Harappa. At Chanhudaro also evidence of the superimposition of barbarian life is available.

Mercifully, these few incidents have not been used to resuscitate the full blown AIT. Thus Jha, who subscribes to AMT, [1998:40] concludes:

Interestingly, even the *Rigveda*, the earliest text of the Aryans contains references to the destruction of cities of the non-Aryans. .... All this may imply that the 'invaders' were the horse riding barbarians of the Indo-Aryan linguistic stock who may have come from Iran through the hills. But neither the archaeological nor the linguistic evidence proves convincingly that there was a mass-scale confrontation between the Harappans and the Aryans who came to India, most probably in several waves.

The reason for the above conclusion is that the archaeological and anthropological record is overwhelmingly opposed to the invasion scenarios. The decline of the IVC is now attributed to or related to a combination of a host of factors: desiccation of the Sarasvati river, shifting of river courses, flooding in the lower reaches of Indus, environmental degradation caused by over-exploitation of natural resources (forests, grazing land), climatic changes (decline in rainfall), cultural decay, decline in the metal trade with Mesopotamia, internal social and political strife, epidemics, an over-expansion of the geographical area covered by the IVC and even a prolonged drought lasting over three centuries.

I must caution the reader that all this does not imply that AIT is dead. Quite to the contrary, it has been used in recent times and is still being used by mainstream

Indologists and scholars belonging to other disciplines to explain various facets of Indian civilization, culture, religion and history. For the laity then, the AIT is obviously the gospel truth.

### **C. The Mythical Massacre at Mohenjodaro**

Sir Mortimer Wheeler made an attempt in the 1940's to re-interpret some archaeological data as a proof of the Aryan Invasion scenarios. He [1947:81] identified mound AB at Harappa as a citadel. Linking it with the intrusive/foreign elements at Cemetery H burials [ibid:82], and following the Marxist scholar Vere Gordon Childe, Wheeler concluded that he had at last found proof that the bellicose Aryans had indeed invaded IVC, extinguishing that Bronze Age culture violently.

The Aryan invasion of the Land of the Seven Rivers, the Punjab and its environs, constantly assumes the form of an onslaught upon the walled cities of the aborigines. For the cities, the term used in the *Rigveda* is *pur*, meaning a 'rampart', 'fort' or 'stronghold' .... Indra, the Aryan god, is *puramdar*, 'fort destroyer' .... In brief, 'he rends forts as age consumes a garment'. Where are or were these citadels? It has in the past been supposed that they were mythical, or were merely places of refuge against attack, ramparts of hardened earth with palisades and a ditch'. The recent excavations of Harappa may have thought to have changed the picture. Here, we have a highly evolved civilization of essentially non-Aryan type, now known to have dominated the river-

system of north-western India at a time not distant from the likely period of the earlier Aryan invasions of that region. What destroyed this firmly-settled civilization? Climatic, economic, political deterioration may have weakened it, but its ultimate extinction is more likely to have been completed by deliberate and large-scale destruction. It may be no mere chance that at a late period of Mohenjodaro men, women and children appear to have been massacred there. On circumstantial evidence, **Indra stands accused**. (emphasis added).

The rash pronouncement by Wheeler came in for a lot of adverse comment. Archaeologist B. B. Lal [1954/55:151] examined the matter closely. He concluded that according to Wheeler's excavation report itself, the Harappans and the Cemetery H people (viz. the invaded and the invaders) had never come into contact with each other. There was a clear-cut chronological break between the Cemetery H culture and the culture represented by the Citadel.

Another archaeologist George V. Dales [1961-62] forcefully argued for caution in interpreting the presence of skeletons as a proof of invasions:

...we cannot even establish a definite correlation between the end of the Indus civilization and the Aryan invasion. But even if we could, what is the material evidence to substantiate the supposed invasion and massacre? Where are the burned fortresses, the arrowheads, weapons, pieces of armor, the smashed chariots and bodies of the invaders and defenders? Despite extensive excavations

at the largest Harappan sites, there is not a single bit of evidence that can be brought forth as unconditional proof of an armed conquest and the destruction on the supposed scale of Aryan invasion. It is interesting that Sir John Marshall himself, the Director of the Mohenjodaro excavations that first revealed the "massacre" remains separated the end of the Indus civilization from the time of the Aryan invasion by two centuries. He attributed the slayings to bandits from the hills of west of the Indus, who carried out sporadic raids on an already tired, decaying, and defenseless civilization.

Dales pointed out that the stratigraphic context of these skeletons had not been recorded properly and so it was impossible to verify if they really belonged to the period of the Indus civilization. He also highlighted the fact that these skeletons did not constitute an orderly burial, and were in fact found in the Lower town – probably the residential district, and not in the fortified citadel where one could have reasonably expected the final defense against the so called invaders.

Therefore, Dales concluded:

The contemporaneity of the skeletal remains is anything but certain. Whereas a couple of them definitely seem to represent a slaughter, *in situ*, the bulk of the bones were found in contexts suggesting burials of sloppiest and most irreverent nature. There is no destruction level covering the latest period of the city, no sign of extensive burning, no bodies of warriors clad in armor and surrounded by weapons of war. The

citadel, the only fortified part of the city, yielded no evidence of a final defense.

.....**Indra and the barbarian hordes are exonerated.** (emphasis added)

Subsequently, Kenneth Kennedy pointed out that skulls of two of the victims did carry marks of injury. However, it was clear that they had survived the attack by several months [1982:291]. Finally, in his study of the word '*pur*' in the Rigveda, German Indologist Wilhelm Rau [1976] pointed out that the typical plan of Harappan cities was square in shape, whereas the Rigvedic *pur* of the '*Dasas*' was a circular structure with numerous concentric walls. Moreover, while the Harappan cities employed baked bricks on a large scale, the Rigvedic *pur* was a temporary structure made of palisades, mud, stones etc. Indra was indeed exonerated finally of the massacre at Mohenjodaro.

The skeletons are no longer taken as a proof of the AIT. Rather, they are interpreted in a different manner [Ratnagar 2000:42]:

...I would urge that we do not throw out the political significance of these skeletons just because the Aryan connexion (sic) is dubious. The fact that they do not amount to a massacre does not rule out conflict, strife, or raids on the city in the last days of its occupation.

Very unfortunately, Wheeler did not relinquish his allegiance to AIT even in his last work published in 1968 [Kazanas 2000:35]. And in fact, many academicians continue to cling to this theory to this day.

## Part II: The Aryan Migrants

### D. Varieties of AMT

The various versions of the AMT all seek to explain the central dogma of introduction of the Indo-Aryan branch of the Indo-European languages from Central Asia into hitherto 'non-Aryan' India around the middle of the 2nd millennium BCE. Talageri [2000:335-397] has explained the various versions of AIT[8]. Since the AMT paradigms are rather new, we do not encounter such a bewildering variety as has been noted by him in case of AIT. Below, I attempt a simple classification of the various AMT models encountered by me:

**Grand Migration Model:** Some academicians (E.g. Victor Mair – see below) appear to hold that the IA speakers migrated to India in very large numbers so as to alter the genetic make up or phenotype of the Indian population to a significant extent. Incidentally, the older versions of AIT also advocated that 'waves after waves of Aryans invaded India'. Marxist historian R. S. Sharma [1999:50-52] also opines:

In several ancient societies the victorious were culturally conquered by vanquished, but the Indo-Aryan immigrants seem to have been numerous and strong enough to continue and disseminate much of their culture.

Most scholars currently hold that the migrants were very few in number. Hence, let us consider only the diversity in the latter view.

**Second Colonization Model:** There is also a view that by the time the Aryans arrived in the IVC area, the original inhabitants had already fled the region (to Peninsular India?) as a result of which it had become depopulated. Apparently then, the old IVC area then came to be dominated demographically by these migrants without much violence. This model might be close to being a pure migration model. For instance, Dandekar [1997b:322-323] speculates[9]

It may be incidentally mentioned that some modern historians have attributed the decline of the Indus culture to economic causes, such as non-clearing of wilderness and lack of food surplus and metals. However, the view which is now generally accepted is that the people of the Indus Civilization had fled away, before the advent of the Aryans, mainly on account of some natural calamity. The deserted settlements in the region, which had presumably come to be regarded as evil and inauspicious, were subsequently burnt down by the Aryans themselves. But the Rigvedic hymns suggest that Vedic Aryans, under the leader of purandara Indra, human hero who later became god, must have been responsible for the destruction of the fortified settlements of the Harappan people while that civilization had already begun to decay. In any case, one thing is certain, namely that the invasion or the migration of the Aryans was by no means on a massive scale.

One does wonder why IA speakers could colonize the area easily when it was inhabitable by the IVC people. A standard explanation given is that IVC

was agriculture bases, and the desiccation of Sarasvati River and its environs made the area unfit for large-scale agriculture. In contrast, the pastoral Aryans could have subsisted without any intensive agriculture, because they relied much more on their livestock for food.

**Long March Model:** Others advocate that the initial migrants came in several small waves and while they were themselves small in number altogether, they continued their migrations beyond the Saptasindhu region into the Gangetic plains. During these migrations, the Aryans fought amongst themselves as well as with the original inhabitants of India. This model comes closest to AIT and is subscribed to mainly by the Marxist historians of India like D. N. Jha (see below). German Indologists Hermann Kulke and Dietmar Rothermund [1997:37-38] and Kochhar [2000] also seem to uphold such a scenario. Curiously, iron technology plays a crucial role in at least some descriptions of this model - not for invasions and weapons but for clearing forest growth for settlement by Aryans. In the words of Rajesh Kochhar [2000]:

The compilation of the Rgveda had taken up after c. 1700 BC in Afghanistan by a section of the Indo-Iranians, designated the Rgvedic people or the Indo-Aryans. After 1400 BC, when the late Harappan cultures were in decline, the Rgvedic people entered the Punjab plain and eventually spread further eastwards up to the Yaga doab. In about 900 BC, the compilation of Rgveda was finally closed and the Bharata battle fought. Armed with the newly acquired iron technology,



the Aryans moved east of the Ganga. The migration was not in a single procession but in phases. The first entrants were the Mahabharata people, the Puru-Bharatas, who settled close to the Yamuna. [pg. 92]

The clearing of the Ganga Plain forests had to await the development of the iron technology. The technique would have been to first burn down the jungles and then remove the stumps with axes. The Mahabharata itself provides an example of such a clearing, when the Khandava forest was burnt down to found Indraprastha. Another example is provided by Satapatha Brahmana (1.4.1.10-16), according to which Mathava, the king of Videgha (Vidaha), starting from Sarasvati “followed Agni [fire] as it went burning along this earth towards the east”. [pg. 90]

I shall consider this model in somewhat greater detail below.

**Migration cum Acculturation Models:** Most ‘migrationist’ Indologists and archaeologists (e.g. Allchin, Erdosy, Witzel etc. – see below) seem to hold that the migrants lost their racial identity amongst the larger native population of India as soon as they reached the Saptasindhu region, but somehow their language, culture and religion went on propagating till it became dominant in most of the Indian subcontinent. These migrants could have come at various times, and some of them could in fact have been ‘pre-Vedic’. Such migration models are therefore combined with various acculturation or elite dominance models to explain the later spread of ‘Aryanism’ over large parts of India.

Let us consider the last model, as explained by Frank Raymond Allchin [1995]. First, Allchin rejects [ibid:41-42] the pure-acculturation model of archaeologist Jim Shaffer:

We cannot agree with the school of thought which maintains that ‘introduction of the Indo-Aryan language family to South Asia was not dependent upon population movement (Shaffer 1986,230); we hold the view that the initial introduction of any ancient language to a new area can only have been a result of the movement of speakers of that language into that area. This in no way disregards the probability that thereafter, increasingly as time went by, the further spread of the languages took place, along with processes of bilingualism and language replacement, meaning that the proportion of original speakers would decline while that of acquired speakers would continue to rise.

Allchin proposes a flexible hypothetical model allowing for multiple, multi-stage and several kinds of movements of people which, eventually leading to the prevalence of the Indo-Aryan languages in South Asia [ibid: 47-52]:

**First Stage (2200-2000 BCE?):** According to him, sometime around 2500 BCE, the Indo-Iranian nomads split up into Iranian and the Indian speaking tribal groups, with the latter moving southwards into the Iranian plateau, and spread west towards the Caucasus and East towards Afghanistan and thence into the Indus plains via the Bolan Pass. Allchin tries to link this first stage, i.e., the appearance of Indo-

Aryans in the Indian subcontinent, with newly excavated sites like cemeteries south of Mehrgarh and nearby Sibri, the Quetta grave cache and other assemblages in Baluchistan. The material culture deducible from these graves appears to have been imported from Bactria. Trade and the prospect of rich plunder of the richer Indus cities is postulated as the possible reasons for the SE migration of these nomads and the signs of destruction of some sites in Baluchistan are attributed to these first Indo-Aryans. However, the nomads are not held accountable for the demise of the IVC, which is attributed to other factors. The decaying IVC is held to have a power vacuum, which was then filled with these incoming Indo-Aryans.

**Second Stage (2000-1700 BCE):** The arrivals of the first stage are called 'pre-Vedic Aryans' by Allchin, following Asko Parpola, since the characteristics of the Vedic lifestyle/material culture like fire altars are not visible in Baluchistan. In contrast, such structures have been unearthed at Kalibangan. Secondly, some foreign intrusion is seen in the Cemetery H culture and signs of a violent end are found, to some extent, at Mohenjodaro in this period. Simultaneously, a 'Jhukar phase' follows Harappan occupation at Chanhudaro and Amri in the lower Indus. All this is taken to mean the following by Allchin [ibid:49]

Taken together, these sites may be interpreted as representing a major stage in the spread of the early Indo-Aryan speaking tribes, leading to their achieving hegemony over some sections

of the existing Indus population and to the beginning of the process of acculturation.....During this time, many of the distinctive traits of material culture which pointed to the foreign origin of the makers of the Mehrgarh cemeteries disappear. It may be expected that the process of bilingualism which preceded language replacement began to operate in a limited way. By the end of stage 2 the Indo-Aryan speakers would have been substantially different from their ancestors who some centuries earlier had arrived on the frontiers of the Indus valley.

Thus, after these first two stages of rather violent migrations into the Indus valley and northern Rajasthan, further 'Aryanization' of North India now proceeds via acculturation in **stage three** (1700-1200 BCE). Finally, in **stage four** extending from 1200 BCE to 800 BCE, there is an emergence of an 'Aryan' consciousness accompanied by an expansion of the 'Aryan' culture and the assimilation of diverse ethnic groups into an poly-ethnic 'Aryan' society. This last stage is said to be contemporaneous with the Purusha Sukta (Rigveda X.90) wherein all the four castes are mentioned, and paves the way for the rise of second urbanization and empire formation in the Ganga basin. Recently, Raymond and Bridget Allchin have reiterated their belief in the above model, but also state [1997:222] that these migrations are 'scarcely attested in the archaeological record'.

As stated above, we shall treat the acculturation models/stages in greater detail in other web pages.

### E. The First Aryan 'Migrants': Victorious Marchers or Lost Tribes?

Witzel considers Bactria[10] as the 'staging area' [Witzel 1997:xvii, note. 54, also 1995:113, fn.73] and in a similar vein, Dandekar [1997a] considers Balkh (adjacent to Bactria) as the place from where the Aryan migrants marched gloriously to the Saptasindhu region. Dandekar [1997a:23] describes[11] this event rather romantically:

The second important period in the age of the Rgveda was marked by the migration and victorious onward march of the Vedic Aryans from the region round about Balkh, where they had lived for a pretty long time, towards Saptasindhu or the land of the seven rivers (roughly the northwestern portion of the Indo-Pakistan subcontinent) and their subsequent colonization in Saptasindhu and beyond.

The north-west region of the Indian subcontinent plays a pivotal role in all the theories concerning Indo-Aryans, because it lies directly between Bactria-the staging area, and north India, where the Aryans migrants eventually imposed their language, and to a great extent, their culture over the native, non-Aryan inhabitants. Witzel [1997:xvi] explains:

North-West India was a large "colonial" area, where the Indo-Iranian or early Vedic immigrant clans and tribes (including their poets) were struggling with each other and with more numerous local populations of non-Aryan descent which belonged to the

post-Indus civilizations (c. 1900 B.C. and later).

North-West India comprises, to a large extent, the Saptasindhu region. The Long AMT model explains the spread of the Aryan 'migrants' from this region across north India in the following manner [Jha 1998:44-45] :-

The early Aryan settlers were engaged in taking possession of the Land of the Seven Rivers (*saptasindhu*) represented by the Indus and its principal tributaries. This often lead to conflict between the various Aryan tribes. .... The chief opponents of the Aryans were however the indigenous inhabitants of non-Aryan origin. Many passages show a general feeling of hostility toward the people known as Panis. Described as wealthy, they refused to patronize the Vedic priests or perform Vedic rituals, and stole cattle from the Aryans. More hated than the Panis were the Dasas and the Dasyus. The Dasas have been equated with the tribal people called the Davaes, mentioned in the ancient Iranian literature, and are sometimes considered a branch of the early Aryans. Divodasa, a chief of the Bharata clan, is said to have defeated the non-Aryan Sambara. The suffix dasa in the name of the chief of the Bharata clan indicates his Aryan antecedents. In the Rigveda, instances of the slaughter of the Dasyus (*dasyu-hatya*) outnumber references to conflicts with the Dasas, thus giving the impression that the Rigvedic Aryans were not as hostile to them. Dasyu corresponds to dahyu in the ancient Iranian language. It has therefore been suggested that conflicts between the Rigvedic tribes and

the Dasyus were those between two main branches of the Indo-Iranian/Indo-Aryan peoples who came to India in successive waves. The Dasas and Dasyus were most likely people who originally belonged to the Aryan speaking stock and in course of their migration into the subcontinent they acquired cultural traits very different from those of the Rigvedic people. Not surprisingly, the Rigveda describes them as 'black-skinned', 'malignant', and 'nonsacrificing' (sic) and speaking a language totally different from that of the Aryans.

More recently however, Witzel seems to have abandoned such models of dramatic and glorious Aryan migrations in favor of scenarios involving vagrant pastoral tribes. He says, in a message dated 13 April 2001 on the Indology list[12] :

Ehret's "elite kit" and a post-Indus, opportunistic shift to more pastoralism will work best here. No big wave of "invaders" is necessary then, just some Afghani tribesmen who chose to stay in their winter quarters in the Indus, instead of going back to the Afghani highlands (as they did in Avestan times and as they still do.)

The lost tribe is then said to have unfurled a long, unstoppable, irreversible and mighty cascade of events that eventually lead to the Aryanization of almost the entire area of modern Pakistan, Bangladesh, much of India north of the provinces Karnataka/Andhra Pradesh and parts of Nepal. Witzel states (ibid):

Such a group could set off a wave of change, with adaptation (and further change!) of the dominant elite kit, all across the Panjab and beyond...(See forthcoming EJVS 7-3).

At present, almost 85% of the 1.35 billion inhabitants of the Indian subcontinent speak Indo-Aryan languages. Such a monumental change effected by a single tribe (or a few tribes) over an area of more than 3 million sq. km. might be unparalleled in human history elsewhere, especially when all this was caused without any large scale use of force, and has not left any archaeological, literary or anthropological evidence. In short, this historical process was nothing short of the famous example in which a single flutter of a butterfly wing unleashes a chain of events eventually leading to a tidal wave.

Scholarly opinion is also divided on the question of the exact time of the arrival of the Aryans, although the consensus is that they came sometime in the 2nd millennium BCE. In recent years, the time period of these migrations (assuming that there was more than one) has been expanded to cover several centuries. Kulke and Rothermund [1997:32] exemplify this recent tendency:

The arrival of a new population in South Asia which were the speakers of Indo-European languages therefore can be dated quite safely in the first half of the second millennium around 2000 to 1400 BC. The terminal points in time of these movements were, on one hand, the 'intrusive traits' in Late Harappan strata which indicate a close relationship with

the Central Asian and Iranian Bronze Age culture of the Namazga V period and, on the other hand, the Rigveda as the oldest Vedic text in India which clearly reveals a semi-nomadic 'post-urban' civilization. Linguistically and culturally the Rigveda is linked with the fourteenth century evidence from West Asia. ....

The 'intrusive traits' mentioned above are signs of a violent intrusion in the Baluchistan area (mentioned above by me), new burial rites, horse bones and the discovery of some artifacts (buried treasures) that bear a clear affinity to similar artifacts in Central Asia and Iran. These traits are found in the late strata of 'Cemetery H' of Harappa and at chronologically similar strata of other sites like Mehrgarh and Nausharo in Baluchistan.

### **F. The Aryans Migrate Further**

As noted above, some Indologists believe that the 'Aryans' continued their migration beyond the Saptasindhu region into the Ganga valley eastward. A typical exposition of this viewpoint might be stated in the story like words of Jha [1998:52-53]

During the later Vedic period the Aryans shifted their scene of activity from Panjab to nearly the whole of the present-day western Uttar Pradesh covered by the Ganga-Yamuna doab. The Bharata and Purus, the two important tribes, came together and formed the Kuru people. From the fringes of the doab they moved to its upper portion called Kurukshetra or the land of the Kurus. Later they coalesced with the Panchalas. Together

with the Kurus they occupied Delhi, and the upper and middle parts of the Ganga-Yamuna divide and established their capital at Hastinapur (Meerut-district).

Towards the end of the later Vedic period Vedic people moved further east to Koshala in eastern Uttar Pradesh and Videha in north Bihar. In course of this eastward movement they encountered copper using groups who used a distinctive pottery called the Ochre Coloured Pottery, as well as people associated by archaeologists with the use of the Black-and-Red Ware. They now seem to have forgotten their old home in Panjab. References to it in the later Vedic texts are rare; the few that exist describe it as an impure land where the Vedic sacrifices were not performed.

According to one view, the main line of Aryan thrust eastward was along the Himalayan foothills, north of the Ganga. But expansion in the area south of this river cannot be precluded. Initially the land was cleared by means of fire. In a famous passage of the Shatapatha Brahmana we are told that Agni moved eastward, burning the earth until he reached the river Sadanira, the modern Gandak. There he stopped. In his wake came the chieftain Videha Mathava, who caused the fire god to cross over the river. Thus the land of Videha was Aryanized; and it took its name from its colonizer. The legend may be treated as a significant account of the process of land clearance by burning, leading to the founding of new settlements by migrating warrior-peasants. Burning may have been supplemented by the use of the iron-axe for cutting the forests in



some areas. This metal is referred to in literature as *shyama ayas* (dark or black metal) and has also been found at excavated sites like Atranjikhhera and Jakhera in western Uttar Pradesh and adjoining regions. The number of iron agricultural tools and implements is less than that of weapons. On this basis the importance of iron technology in facilitating the clearance of land altogether has been denied by some scholars who see no relationship between technological development and social change.

Thus, Jha ascribes the colonization of Videha to Aryan Migrants by referring *Shatapatha Brahmana* 1.4.1.14-17. R. S. Sharma [1996:42-43] also interprets this passage as a reference to the migration of Aryan Brahmins and Kshatriyas. In fact, he attempts to identify these migrants with the users of the Painted Grey Ware (PGW), black slipped ware and even with the earliest Northern Black Polished Ware (NBPW) from the Kuru-Pancala land or western U.P. and its neighborhood [ibid, 59]. Among archaeologists, the Allchins [1997:232-233] also take this passage to mean the actual migration of people from the Sarasvati valley to the Gandak basin in Videha.

It must be noted however, that this passage of *Shatapatha Brahmana* is rejected as a proof of the eastward migrations of Aryans by many - from the perspective of archaeology or of textual studies. As an example of former, we may mention Erdosy [1985:90] who points that excavations at Chirand have shown that the region of Videha supported

permanent settlements even in Neolithic times. As an example of the latter, we could mention Witzel [1995:86, fn.3; also pg.92] who takes this passage to mean that the Srauta cult alone was spread to Videha by, and not that there was there was a large migration of Vedic Aryans from the Sarasvati basin in the west to the Videha region.

While the role of iron in Aryan invasions has now been discounted, it is nevertheless used in this AMT model to explain the further expansion of Aryans from the Saptasindhu region into the Ganga valley. Kochhar [13] for instance, states [2000:219]:

Though the Aryans had entered India in the Copper Age itself, they remained confined to the region west of the Yamuna-Ganga doab. It is only when they were fully armed with the iron technology and probably needed more land for an expanding population that they entered the Ganga Plain, cleared the forests and took to large-scale farming, trade and manufacturing.

Earlier, Thapar [1984:68] has expressed similar views. However, it is relevant to point out here that whether we subscribe to migrations or to invasions, the very role of iron in clearing the forests of the Ganga plain is now questioned by archaeologists. Erdosy states [1995:84] that iron was used very sparingly in the Ganga valley, and that too mainly for the manufacture of weaponry, till as late as the 6th century BC. In a recent evaluation of issues related to the use of iron in ancient India, Possehl and Gullapalli [1999:164] also seem to side with the

opinion of Lal [1986] and Chakrabarti [1985:76] that iron implements did not play any significant role in the clearing of forests in the Ganga valley.

### **G. Physical Appearance of the Aryan 'Migrants'**

Invasions are more violent, tumultuous and catastrophic than migrations, and invaders often traverse larger distances in a shorter time than slow moving migrants. Moreover, invaders are more likely to maintain their 'genetic purity' till they reach their final destination, compared to slower moving migrants.

In the 19th century, German (and other) romantics, white-supremacists, numerous Indologists and a host of other scholars and non-scholars pictured the Aryan invaders as blue eyed, virile, masculine, well built, noble, blond savages who were often endowed with much more intelligence, energy and innovativeness compared to the dark, dull-witted and primitive natives inhabiting the Indian Subcontinent. The notions of these 'genetically pure' blond and blue eyed Nordics swooping down on and overpowering dark Indians is somewhat incompatible with the migration scenarios. The slowly advancing migrants are expected to lose these recessive genetic traits (i.e., blond hair and blue eyes) while migrating (and stopping many a time en route) and become somewhat similar in physical appearance to modern day Afghans just before they enter the Indian subcontinent from Afghanistan.

Witzel [1997:xxii, note 54] clarifies this point:

If they had resided and intermarried with the local population of the northern borderlands of Iran (the so called Bactro-Margiana Archaeological complex) for some centuries, the immigrating Indo-Aryan clans and tribes may originally have looked like Bactrians, Afghans or Kashmiris, and must have been racially submerged quickly in the population of the Punjab, just like later immigrants whose staging area was in Bactria as well: the Saka, Kusana, Huns, etc.

D. N. Jha, a Marxist historian also states [1998:49]:

It is likely that the early Aryans had some consciousness of their distinctive physical appearance. They were generally fair, the indigenous people dark in complexion. The colour of the skin may have been an important mark of their identity.

Victor Mair, a doyen of Indo-European studies, is not content with these *partial* European looks of migrating Aryans, and he suggests that they even had light eyes, skin and hair [Mair 1998:14-15]:-

"There may be instances in world history where a dominant or highly influential elite who were few in number were nonetheless able to impose their language on a subject population. (I suspect that could have happened where the conquered population was also small in number and ravaged by war, disease, and the like. But then, would they have

survived at all?). North India, Pakistan and Afghanistan 3500 years ago have been suggested as examples of such a scenario, with a relatively small number of Aryan warriors supposedly being able to impose Indic languages upon the native population. In light of the above discussion, I find this to be an unconvincing explanation of how IE languages entered the subcontinent. The fact that a significant portion of the population in these countries possesses blue eyes, fair skin, and brown or even blond hair (where the environment makes these traits which are more suited to northern latitudes disadvantageous from the standpoint of survival) would seem to indicate that sizeable numbers of IE speakers actually did intrude upon the subcontinent and have left not only their linguistic but their genetic imprint upon it as well.

Needless to say, Mair[14] has really erred in stating that a significant proportion of Indians and Pakistanis have Nordic physical appearance. Mair also apparently rejects the elite domination model, and it is unclear whether he is advocating the AIT or the AMT. He does seem to link the elite domination model with 'Aryan warriors' but then speaks of the *intrusion* of large numbers of IE speakers as the alternate acceptable scenario.

#### **H. Language Transfer/Replacement in South Asia**

The exact mechanism by which the Indo-Aryan languages came to prevail in much of South Asia remains a vexed problem to this day due to lack of any hard

evidence that would help in reaching a decision. Renfrew and Bahn [1996:447] give a lucid summary of how languages come to dominate different geographical areas of the world-

A specific language can come to be spoken in a given territory by one of the four processes: by initial colonization; by divergence, where the dialects of speech communities remote from each other become more and more different, finally forming new languages, as in the case of the various descendants of Latin (including French, Spanish, Portuguese, Italian, etc.); by convergence, where contemporaneous languages influence one another through the borrowing of words, phrases, and grammatical forms; and by language replacement, where one language in the territory comes to replace another.

Language replacement can occur in several ways:

1. by the formation of a trading language or lingua franca, which gradually becomes dominant in a wide region;
2. by elite dominance, whereby a small number of incomers secure power and impose their language on the majority;
3. by a technological innovation so significant that the incoming group can grow in numbers more effectively. The best example is farming dispersal

Since the Aryan migrants were nomads, not large-scale traders unlike the inhabitants of sea-faring IVC, we should expect the migrants would have adopted

the language of the IVC inhabitants. For some mysterious reasons, this did not happen. Instead, the reverse scenario occurred. Hence, we can safely reject Renfrew's first mechanism of language transfer in explaining the spread of Indo-Aryan languages over much of non-Aryan South Asia.

The third mechanism can also be rejected because the Aryan subjugation of the natives of India actually entailed a reversal to a more primitive way of life. This is because the subjugated non-Aryan natives of India were inheritors of an advanced, literate, urban culture whereas the migrating Aryans were nomadic/pastoral with a very inferior material culture. Even the metallurgical skills of the Aryans were inferior to those of Harappans [Jha 1998:45]:

As might be expected of a people without cities, the early Aryans did not have an advanced technology even though their use of horses and chariots, and possibly of some better arms of bronze did give them an edge over their opponents. Their knowledge of metals seems to have been limited. The Rigveda mentions only one metal called *ayas* (copper/bronze). In view of the widespread use of bronze in Iran around the middle of the second millennium BC, the word has been taken to mean bronze. Yet bronze objects assignable to the period of Rigveda have not hitherto been found in any significant quantity at the sites excavated in the Land of the Seven Rivers. The evidence for the use of bronze on any considerable scale being slight, there is no archaeological basis for the view that the early Aryan bronze-smiths were highly skilled or

produced tools and weapons superior to those of the Harappans. Nor did the Rigvedic people possess any knowledge of iron.

To explain this apparent anomaly, it is sometimes proposed that when the Aryans came, the Harappans had already undergone cultural decay to such an extent that they adopted the language and numerous aspects of the culture of their new Aryan masters easily. However, Indologists and archaeologists often pay more attention to the 'intrusive traits' of 'Aryan migrants' found at Late Harappan level in the archaeological record and propose that the Indo-Aryan speakers came before Harappan civilization decayed away.

As a result, we are left with the Elite Dominance Model to explain how the Indo-Aryan languages were spread by a few Aryan migrants over most of South Asia. This is not a comfortable choice, because the Elite Dominance Model is more compatible with the AIT scenarios, rather than with AMT models. Renfrew has discussed this model in detail [1988:131-134] and states clearly that it entails military superiority of the invading group. He considers various possibilities within this model to explain the spread of IA languages in South Asia, all of which include an invasion of IA speakers. Therefore, it is a bit odd that this model has been used by Indologists to explain the spread of IA languages by 'immigrants'.

**Elite Dominance Model- Chariots and Horses:** Erdosy [1995:90-91] quotes archaeologist Colin Renfrew in

discussing the application of the Elite Dominance Model to the IVC area:

According to the Elite Dominance model (Renfrew 1987), the invading or the migrating Aryans comprised of a tripartite social division – corresponding to the 3 higher castes of Brahmin, Kshatriya/Rajanya and Vaishya. These comprised the conquering or the dominating elite, which was superimposed on the native population, resulting in the addition of the ‘non-Aryan’ sudra varna to the 3 castes.

A minor variant of this model due to D. D. Kosambi, the doyen of Marxist historiography in India (and an upholder of AIT) has also been cited by Erdosy[15] [ibid:91, fn. 16]

Alternately, Kosambi (1950) proposed that the Brahmanas were rather indigenous ritual specialists who were co-opted by the conquering elite composed of Kshatriyas, Vaishyas and the now defunct sacrificial priests who died out along with their complex rituals.

The domination over and subjugation of the Harappans by migrating Aryans is then said to have been aided by the latter possessing spoke wheeled, light chariots and horses – articles of immense military importance which, the Harappans supposedly did not have. Witzel [1997:xxii, note 54] summarizes this explanation, illustrating it with the example of the Norman invasion of England in 1066 AD and the arrival (in reality invasions) of Sakas, Hunas and Kushanas into N. W. India:-

The immigrating group(s) may have been relatively small one(s), such as Normans who came to England in 1066 and who nearly turned England into French speaking country- while they originally had been Scandinavians, speaking N. Germanic. This may supply a model for the Indo-Aryan immigration as well.....However, the introduction of the horse and especially of the horse-drawn chariot was a powerful weapon in the hands of the Indo-Aryans. It must have helped to secure military and political dominance even if some of the local elite were indeed quick to introduce the new cattle-based economy and the weapon, the horse drawn chariot, - just as the Near Eastern peoples did on a much larger and planned scale. If they had resided and intermarried with the local population of the northern borderlands of Iran (the so called Bactro-Margiana Archaeological complex) for some centuries, the immigrating Indo-Aryan clans and tribes may originally have looked like Bactrians, Afghanis or Kashmiris, and must have been racially submerged quickly in the population of the Punjab, just like later immigrants whose staging area was in Bactria as well: the Saka, Kusana, Huns, etc.....

Elsewhere, Witzel [1995:114] elaborates on the role played by the chariot (‘Vedic tank’) and the horse in enabling the Aryans secure elite domination over the descendants of Harappans:

The first appearance of thundering chariots must have stricken the local population with a terror, similar to that experienced by the Aztecs and Incas



upon the arrival of the iron-clad, horse riding Spaniards.

He elaborates further [ibid, fn. 74]

Something of this fear of the horse and of the thundering chariot, the “tank” of the 2nd millennium B.C. is transparent in the famous horse ‘Dadhikra’ of the Puru king Trasadasya (“Tremble enemy” in RV 4.38.8) .....The first appearance of thundering chariots must have stricken the local population with terror similar to that experienced by the Aztecs and the Incas upon the arrival of the iron-clad, horse riding Spaniards.

In such a scenario, it was possible that the locals were quick to adopt the use of the horse and the chariot and thus outsmart the Aryan migrants. However, while doing so, the locals also supposedly ‘appropriated’ the Indo-Aryan language and culture as their own, becoming Aryans themselves [Witzel 1995:109]:-

Not only the language, but also the culture of the newly arrived elite was appropriated, including the ‘Vedic Tank’ the horse drawn chariot.

The crucial and definitive role played by horses and chariots in over-awing the non-Aryan natives and then transforming them to acculturated Aryans was explained by Michael Witzel in his inimitable vivid style on 13 February 2000 on the Indology list, while addressing the present author and a few others[16]:

I invite Messrs. Wani, Subrahmanya, Agarwal, et al., to stand still and hold their position in front of quickly approaching (modern) horse race ‘chariots’, or in front of a line of police on horseback (even without Lathi charge), and then report back to the list ... if they are able to do so after this little experiment.

Ratnagar [1999:232] also refers to the terror striking capacity of a swift horse driven chariot and subscribes to the romantic notion that the pastoral Aryan elite rode gloriously into the Saptasindhu region on their chariots, acquiring the servitude of the non-Aryan populace as a result.

Writing in the Indology list on 3 December 2000, Lars Martin Fosse, a Norwegian Indologist also elaborated on how the ‘migrating’ Aryans came to dominate the aboriginal Indians, using examples from Europe [17] :

An aside concerning marriage and the spreading of genes: in archaic (and not so archaic) societies, men did not have sex only with their wives (sic). There was also the reward of the warrior: rape and capture of slave girls, not to mention regular concubines and servant girls. So even if an Aryan warrior brought his wife (or wives) to India, he may as well have shared out his sperm generously among the local women. Please remember that the model for a migrating Aryan tribe is more like a migrating Germanic or Celtic tribe: which included women, children, pigs, cows etc. etc. It was a society on the move, not a regular army like the Roman legions or the Greek phalanx, or for that matter the Muslim

central asian armies that overran India in the Middle Ages. Read Caesars *De bello gallico* (first book) for a vivid impression on how such a migration worked. (Germanic and Celtic women often worked as “supporters” during a battle, standing “ring-side” and urging their men on. And well they might, because if the men lost, they ended up as slaves.)

A natural question is: Did the Aryan migrants construct their horse-powered chariots (‘Vedic Tanks’) to the east of the Khyber Pass, i.e., in the Saptasindhu region and after migrating from Bactria slowly; or did they hurtle across the Hindu Kush mountain range/Khyber Pass gloriously, suddenly and dramatically in their chariots, from Bactria to Saptasindhu region? The former possibility seems to have been negated, in the light of the imagery presented by Witzel *et al* – ‘police on horseback’, ‘thundering chariots’ etc. Moreover, if the Aryan migrants had slowly trickled into the Saptasindhu and had used the local wood for their chariots, the non-Aryan natives would not have been alarmed or scared so much at the functioning of vehicles fashioned in front of their own eyes or upon seeing the neighing horses. Thus, Witzel seems to have the second scenario in mind – that of horse driven chariots of migrating Aryans traversing mountain ranges and descending dramatically into the terror struck crowds of non-Aryan natives of the Saptasindhu. The imagery of the migration of the first Aryans presented by Witzel is more akin to a roaring helicopter descending on the tribals of Papua, who have never seen one before.

As the possibility of the ‘thundering chariots’ proposed by Witzel was questioned by some on the Internet, Witzel has come up with another speculation in a post dated 10 April 2001 on the Indology list[18] according to which the chariots might have been transported across the Khyber on the ‘*rathavahana*’ – a cart for carrying the disassembled chariots over longer distances:

Lars Fosse is of course entirely right about the *rathavaahana* vehicle transporting the light (c. 30 kg) and vulnerable *ratha*. A *ratha* is used in sport and battle on even ground, not for long distance travel (and certainly that not across the Khyber, as some always facetiously maintain to ‘disprove’ any sort of movement into the subcontinent of Indo-Aryan speaking tribes).

Of course then, we will have to assume that the migrating Aryans first transported their chariots (= *ratha*) across the Khyber on the ‘*rathavaahanas*’. Once in the Saptasindhu, these chariots were yoked to their neighing horses, and then driven to a thundering din. The native non-Aryans got scared at the sight of these ‘Vedic tanks’ and readily accepted the culture, language and religion of the migrants. But even then, how did these ‘Vedic tanks’ or the *rathavaahanas* cross the seven mighty rivers of the Saptasindhu region?

What was it about these Aryan tribesmen and their culture that Aryanism came to predominate, just like fission of a few molecules leads to an unstoppable

nuclear explosion? Witzel draws an analogy from Japan, where a few 'aggressive horse riders' from Northern China were able to influence the Japanese culture dramatically. Writing in the IndicTraditions List on 11 December 2000, he states [19] :

The stone age, but already pottery using Jomon culture was supplanted by the HORSE riders' Yayoi (roughly 3rd century BC – 3rd century CE) and subsequent Kofun (grave mound, Kurgan type) 'people'/culture. No horse in Japan before that time. ...and a new language. Of Altaic type, — while the clearly visible substrate in Japanese has Austric (Austronesian/ Austroasiatic....) roots (often similar to Indian substrate words) ...

But, no one in Japan (or in Europe!) complains that their "ancestors" (1500-2000 years ago!!) are a mixed lot: the very talent potters of the Jomon period were superseded by aggressive horse riders – as seen in the Haniwa type clay figures of armor clad warriors found at grave sites – who came, along with their mythology and language, out of Korea and Manchuria, (the 'N. Korean' Koguryo language has close affinities to Japanese)...

In sum, you have an "Aryan-like scenario", with horse riding Altaic (N. "Korean", Koguryo) speaking REAL invaders/immigrants that set off a process of Yayoization all over the country, an "Aryanization" so to speak, of the society resulting in a mixed population, language, mythology etc. etc.

The scenario is exactly as the one of S. Asia: a long unbroken local tradition of local cultures (potter, agriculture) etc. with continuous settlement by a local type people, before and after Yayoi/'Indo-Aryan' type influence...

Witzel has recently professed his acceptance of the acculturation model of Ehret [1988] to explain the spread of IA languages in South Asia after the 'lost tribe' found its way into the Saptasindhu region. Writing in the Indology list on 23 July 2000, he states[20]:

As I have written here before, you only need one tribe out of Afghanistan who took the wrong turn and stayed in the Panjab instead of returning to the Afghani summer pastures, — and you start Ch. Ehret's scenario of billiard-ball like innovation and cultural change, which spreads successfully, so that no member of the end of the chain must have any (genetic or other direct) connection with those that started it.

I shall discuss this model elsewhere in detail. Nevertheless, I would like to emphasize that in Witzel's '**Lost Tribe Model**' (as I would like to name it), the role of the chariots and horses in promoting Aryan values via elite domination followed by acculturation becomes very dubious. Did these tribes bring their horse chariots to the Indus plains every winter, taking them back with them? If yes, how could the familiar sight of thundering 'Vedic Tanks' and neighing horses strike terror in the hearts of the non-Aryan natives of the Saptasindhu region? Moreover, what did these pastoral nomads use horse drawn

chariots for? Certainly not for herding their sheep and cows, as had been suggested by Stuart Piggott in the 1950's!

The reader will note that all these elite dominance models involving 'Vedic Tanks' and 'aggressive horsemen' are just versions of AIT. It is therefore intellectually dishonest to adopt the politically more correct terminology of 'migrations' for the IA speaking invaders described by these models. In fact, such models are quite fanciful and romantic in nature (if true migrations are assumed) and all the analogies drawn from other parts of the world to validate the spread of IA languages in India in a similar manner are in fact clear-cut cases of invasions. I shall explain this point in detail elsewhere [21] .

### **I. Material Culture of the Aryan Migrants**

Elizarenkova [1995:5-6], an eminent Russian Indologists specializing in Vedic studies, speculates that the nomadic/pastoral lifestyle of the incoming [22] Aryan necessitated a Spartan material culture:-

The Aryans did not know strongly built dwellings planned for a long or even for constant life. They lived rather on wheels, moving from one place to another surrounded by their herds, then in a settled way on one and the same place. The carriage was more important, than the house not only because they spent in it as much time or even more, than in a "stationary" house, but because they carriage itself was regarded as a "small" house, "small" homeland, where all was

intimately connected with man, and all was for the whole span of one's life: constant was the ever-moving carriage, variable was the immovable house. They lived in a carriage according to tradition, habit, desire, but in a house - depending on circumstances, needs, to secure future life in a carriage for oneself. It was not the house and the settled way of life that were determinative, but the traveling and its possibilities. A day of travel was followed by a day of rest (yogakhema-), and for the night the carriages were so arranged that they made a circular fortification ("Wagenburg", as W. Rau calls this arrangement) inside of which the cattle were placed. All the possessions and all the things necessary for life were kept in each cases in carriages or near them, and therefore neither possessions, nor these things could be rich and various. People had at their disposal only things that were of first necessity.

The Aryans did halt temporarily at various places before moving further eastwards, but even such short breaks in their journey did not entail an enhancement in the level of their material culture [ibid: 6-7]:-

But even when the Vedic Aryans had to stop for a longer time (to fill their food supplies by means of agriculture), this stop was temporary and lasted no longer than half a year, from sowing to cutting crop (yava-), and therefore the very form of settled life implied its temporary character, which also limited the increase of the material worked. Nevertheless, it was just during these short days that a social group of people, forming a kind of

community the members of which were relatives united by a common cause and common fate, acquired its special and economic projection in the form of settlement – grama- “a village”, that is strictly speaking “aggregate of people living in a village”, and earlier “a crowd”, “mass”, “heap” with the idea of gathering together; cp. Indo-European \*ger- “to get together”, “join” (see Pokorny 1, 382-383). Settlements of this kind required innovations in the type of dwelling itself- from shed-awnings above the carriages and mates around them up to the independent from the “carriage-type” dwellings more often of a rectangular, rarer of a circular form with a wooden supporting pillar in the middle of the habitation, dug into the earth deeply enough and bearing on itself a bamboo overhead cover with a kind of walls made by stretched mats of reed and fastened with ropes, with a door, but without windows. Premises for meetings were built more or less similar to human inhabitations as well as objects of economic purpose, for instance, for keeping the cattle, stores of food, wells etc.

### J. The Vedic Night

Although archaeological evidence has been cited to prove the advent of Aryans into India, the subsequent period of acculturation, or further eastward migrations is marked by a stark paucity of material remains. Elizarenkova sums up this observation, and follows Wilhelm Rau in explaining why the archaeological record of this period is so scanty:

One is struck first of all by the fact that in contradistinction to the majority of the great ancient cultures (such as in Egypt, Mesopotamia, Asia minor, Ancient Balkans, the Aegean and Hellenic world, Italy, China etc.) which relatively well preserve traces of “material” life, the Vedic culture is rather mute from the archaeological viewpoint, even more so mute that one of the best authorities (= Wilhelm Rau) in this field seriously puts the question: “Is the Vedic archaeology possible?” There is a striking contrast between the muteness of the Vedic archaeology and the “eloquence” of archaeological testimonies of a much earlier urban civilization of the Indus valley. After the decay of this civilization, approximately in the middle of the XVIII century B.C., there was an epoch called the “Vedic night” which had lasted almost 1200 years up to the time of Buddha. This night had been illuminated by such flashes of creative spirit and marked by such prominent achievements of religious speculations and poetry, that nobody could doubt the greatness of the Vedic culture. But the creators of this culture seem not to have left any traces on earth. [pg. 2]

The scarcity of material culture of the Vedic tribes is evident, though Vedic archaeology is still “not impossible”. But to make this phantom acquire a real shape, it is necessary to know where one has to look for its ‘flesh’, and what it might be like....Rau stresses that the Vedic archaeology should not have any hopes to find Vedic dwellings made of stone or of bricks and that the graves and altars found in a certain chronological layer can be identified as Vedic only a



happy exception. Dwellings of Vedic Aryans were kind of huts made of wood (First of all bamboo), thatch, skins of beasts, that is of materials of very short duration. Carriages that were playing such a prominent part in the life of Vedic Aryans were also made of wood, and only war chariots had metallic ornaments and rims of the wheels. But metallic things (at least those made of gold, silver and copper) were usually smelted anew. Vedic graves are not known as a rule, if not to take into consideration some rare and ambiguous cases. Therefore, archaeologists have to limit the Vedic heritage with rather a few things: pits of bearing posts and pits for baking of pots, cavities for smelting of copper and forms for moulding, clay crocks and imprints of tracts of cattle on clay in places where it was kept in enclosures; small things made of stone, baked clay, and partly also of metal could remain in principle as well. [pg. 3-4]

Ratnagar [1999] also admits that Aryan migrations are not attested in the archaeological record. However, she argues why the Aryan migrations cannot leave any material traces - her hypothesis is that chariot driving Aryan warrior aristocrats migrated in small numbers in periodic movements (involving fission and fusion, and also encompassing non IA-speaking members) over several generations and transferred their language to the non-IA speaking Indians via elite dominance, starting occasional domino effects before the cultures of the two categories of people fused. She holds that such migrations cannot leave any archaeological record.

## K. Religion of the Migrants

The religious beliefs of the Aryan migrants are contained in the Rigveda, and in the later Samhitas and need not be discussed here since many scholars have studied them earlier. Dandekar [1997a:34] opines the new surroundings did have a profound effect on the original religion of the Aryans, and it would be worthwhile to quote his speculations here:-

The concept of Indravarunau is however of far greater consequence. The dominant religious cult of the Proto-Aryan period was the Varuna-cult. The last years of the Proto-Aryan period witnessed the migration of the Proto-Aryans towards Iran on the one hand and towards Saptasindhu or the land of Seven rivers on the other. The migration towards Saptasindhu meant for these people, whom we may now call Vedic Aryans, a drastic change in their way of life and thought, particularly after their fairly long sojourn in the region of Balkh. It was now a life of fateful confrontation with the Vrtras- human foes and environmental impediments- and of consequent warlike adventures. This new life of conquest and colonization called for a new religion and a new god. The cosmic religion of the world sovereign Asura Varuna could no longer adequately meet the exigencies of the new age. The Vedic Aryans naturally craved for a heroic god who could bless and promote their onward march towards the Saptasindhu and beyond. So was Vrtraha Indra 'born' in the Vedic pantheon. Consequently, there developed in Vedic religion two major sects,

presumably rivaling each other, namely, the more ancient sect centering round Asura Varuna and the newly evolved one centering around Asura Varuna. A headlong conflict between these two sects could have adversely affected the solidarity of the Vedic community. The impending schism within the Vedic Aryandom had to be avoided at all costs. This was achieved by the evolutionary Vedic mythology through the conception of the dual divinity Indravarunau.

In this manner, the migrations into India are said to have had a profound effect on the original religion of the Aryans.

#### **L. Evidence for the AMT – A Summary**

This section will merely list the evidence adduced by various scholars as a proof for the AMT. The details and validity of the same will be discussed in other web pages

**Direct Literary Evidence:** There is no direct evidence in the vast corpus of Vedic literature for the migration of Aryans from Central Asia/Afghanistan into the Indian Subcontinent. However, Witzel [1989:235; 1995a:320-321,339-340; 1997:xxiii, fn.60] claims that a late Vedic text namely Baudhayana Srautasutra 18.44 contains the most pregnant memory of these migrations. Communist historians Romila Thapar [1999] and R. S. Sharma [1999: 87, 89, 99] have accepted this claim uncritically although it has been the subject of a fierce controversy. I have summarized

this controversy elsewhere [Agarwal 2000].

**Indirect Literary Evidence:** This is summarized by Witzel [1995a] etc. and is mostly deductive in nature.

**Linguistic Evidence:** This is summarized by numerous authors like Witzel [1995:101-109; 1999], Deshpande [1995] etc.

**Archaeological Evidence:** We have already mentioned that some 'intrusive traits' attested in the archaeological record that are sometimes taken as an archaeological proof for the migration of the Indo-Aryans into India. The evidence has been summarized recently by the Parpola [1994:142-159; 1995] and Astrophysicist Rajesh Kochhar [2000:180-207]. It is important to point out that this evidence is however rejected by archaeologists like Chakrabarti [1999:201] and Indo-Europeanists like Mallory [1998:192] as well, although for different reasons.

**Genetic Evidence:** Sometimes, genetic differences between the 'upper caste' and 'lower caste' Hindus are used to postulate their different geographical origins, with the former declared as descendants of Central Asians who migrated to India. Such evidence is often subject to divergent, even mutually contradictory conclusions.

**Logical Arguments:** Here, as an example, we can recall Allchin's rejection of diffusionist/pure acculturation model (see above).

There are several other kinds of evidence are adduced to prove that the IA languages entered India from Central Asia, but these are not specific to migration scenarios and hence are left out here. Again, readers are advised to refer Bryant [2001], Sharma [1999] and Elst [1999] for divergent perspectives for the time being. There are some relevant articles in the volume [23] edited by Johannes Bronkhorst and Madhav M. Deshpande [1999]. To conclude, it must be emphasized here that correct understanding and interpretation of the archaeological traces left by supposed pre-historic migrations still eludes us, and there are several complex issues involved in this area including competing scenarios of diffusion and trade [Burmeister 2000].

### M. Summary

The Aryan Invasion Theory was proposed initially by a motley group of people including philologists to explain the presence of IA languages in India. With the commencement of archaeological excavations in India, these invasionist paradigms were adopted uncritically, and subscribed to by archaeologists for some time, even after the discovery of IVC. However, as the spade of these archaeologists did not unearth any sign of invasions, the theory was modified to AMT, and accordingly the interpretations of the Rigveda were also changed. The archaeological and biological record refused to offer proof even for large-scale migrations of Aryans into India and so complex models involving small scale initial migrations followed by 'Aryanization' of India via

acculturation are now used. Language transfer via Elite Dominance (over IVC inhabitants) of IA speaking 'migrants' on horse driven chariots often plays a significant role in these 'complex' scenarios. Nevertheless, all these models remain just models with no conclusive evidence supporting them – despite claims to the contrary. The prior acceptance of these models is often used to 'explain' several features of the Indian civilization. In other words, assumptions are often taken as 'results' of these models.

## Part III: Notes and References

### Notes

[1] There is also a minority view that IA (or other IE) languages entered India much earlier. For instance, Renfrew suggests that IE languages could have left Anatolia towards India around 6000 BCE [Renfrew 1987:189-197, 206]. Renfrew's views have come in for sharp criticism because they are opposed to the standard paradigms of the Indo-European studies. Jose Carlos Calazans, a Portuguese scholar also opines that the PIE homeland was in Central Asia, whence the IA languages entered India around 3000 BCE. See Koenraad Elst's message on the Indology List dated 14 July 2000, available at URL <http://listserv.liv.ac.uk/cgi-bin/WA.EXE?A2=ind0007&L=indology&P=R16562>

In such scenarios, IVC is considered a Sanskritic culture, or at least a culture wherein IA speakers formed a dominant membership of its milieu. Calazans' work on the decipherment of the IVC script is said to be under publication by the Oxford University Press, per the information provided by Koenraad Elst (on 7 February 2000) in an article at the URL <http://pws.the-ecorp.com/Chbrughmans/articles/Indusscr.html>

Diametrically opposed to the view of the intrusion of IE or IA languages into India from Central Asia, is the view that the PIE homeland was in India. I propose to deal with the different varieties of this view elsewhere.

In addition, there are AIT skeptics (but non-believers in OIT) like Koenraad Elst. The question of Aryan Invasions is still open. As an Indo-Iranist, George Thompson states [1997:424]:

..it is clear that the problem of Aryan origins remains essentially intractable, for largely political reasons. While the linguistic origins of Sanskrit, and its genetic relationship with Indo-European, can sacredly be denied, the conception of an Aryan invasion of the subcontinent at some unspecifiable time in prehistory remains a matter of continuing controversy....

[2] Archaeologists like Jim Shaffer and D. A. Lichtenstein [1999] completely reject the notion of transfer of IA languages into South Asia as a result of migrations and invasions, and speak in terms of cultural shifts and diffusion of cultural traits. They do however, acknowledge a population shift from the IVC area to East Punjab and Gujarat [1999:256]:

That the archaeological record and significant oral and literature traditions of South Asia are now converging has significant implications for regional cultural history. A few scholars have proposed that there is nothing in the "literature" firmly placing the Indo-Aryans, the generally perceived founders of the modern South Asian cultural traditions(s), outside of South Asia, and now the archaeological record is confirming this.... Within the context of cultural continuity described here, an archaeologically significant indigenously significant discontinuity was a regional population shift from the Indus valley, in the west, to locations east and southeast, a phenomenon also recorded in ancient oral traditions. As data accumulate to support cultural continuity in South Asian prehistoric and historic periods, a considerable restructuring of existing interpretative paradigms must take place. We reject most strongly the simplistic historical interpretations, which date back to the eighteenth century, that continue to be imposed in South Asian culture history. These still prevailing interpretations are significantly diminished by European ethnocentrism, colonialism, racism, and anti-Semitism. Surely, as South Asia studies approaches the twenty-first century, it is time to describe emerging data objectively rather than perpetuate interpretations without regard to the data archaeologists have worked so hard to reveal.

[3] An online review of Koenraad Elst's book by Navaratna Rajaram is available at <http://voi.org/reviews/rev-uaid.html>

[4] See Hock [1999:149-156] and Vaidya Ramagopal Shastri's monograph *Veda mein Arya dasa yuddha*

sambandhi paschatya mata ka khandana (Ram Lal Kapoor Trust; Sonapat, Haryana). See also the following on-line article by Koenraad Elst on the literary evidence for <http://koenraadelst.voiceofdharma.com/articles/aid/urheimat.html>

[5] Recently however, Michael Witzel has proposed that the Saptasindhu region was most probably inhabited by the 'para-Mundas', an Austro-Asiatic speaking group. He points out that the Dravidian loan words are extremely rare in the earlier strata of the Rigveda, and start appearing only in the middle and late levels of the text. See his online article named 'Substrate Languages in Old Indo-Aryan' available on-line in 4 parts at <http://northshore.shore.net/%7Eindia/ejvs/issues.html>

[6] Romila Thapar was one of the first Indian historians who rejected the AIT in favor of migration scenarios – a viewpoint to which she still subscribes. She opposes all attempts to equate IVC with the Vedas vehemently.

[7] Professor Shireen Ratnagar is a Professor of Ancient Indian History and Archaeology at the Centre for Historical Research in New Delhi's Jawaharlal Nehru University (JNU). The JNU is considered a bastion of Marxist thought in India. Ratnagar holds that the migration of Aryans into India took in such a manner that no archaeological evidence of these migrations should be expected [1999]. I have explained her views within this web page itself.

[8] An on-line review of Talageri's book by Navaratna Rajaram is available at <http://voi.org/reviews/rev-trha.html>

[9] R. N. Dandekar is the famous compiler of the multi-volume 'Vedic Bibliography'. He has served on the editorial board of the Indo-Iranian Journal (Netherlands) for several years.

[10] Recently, Witzel [2000:183-188] sees the homeland of the Aryans in the 'Greater Ural Region'.

[11] It is actually unclear if Dandekar, a mainstream Indologist, is an invasionist or a proponent of Migrations. Talageri clearly considers him an invasionist, offering plenty of proof from Dandekar's writings [Talageri 2000:Chapter 8]

[12] Available at URL <http://listserv.liv.ac.uk/cgi-shl/WA.EXE?A2=ind0104&L=indology&D=1&O=A&P=19960>

[13] An on-line review of Rajesh Kochhar's book by Koenraad Elst is available at following URL:<http://koenraadelst.voiceofdharma.com/reviews/kochhar.html>

Another review by K. Chandra Hari is available on-line at the URL:[http://sarasvati.simplenet.com/book\\_review1.htm](http://sarasvati.simplenet.com/book_review1.htm)

[14] A laudatory overview of the conference, where these remarks were made by Victor Mair, is available in a webpage ( <http://www.people.fas.harvard.edu/~witzel/mt26i.html> ) maintained by Michael Witzel

[15] In a similar manner, Kuiper [2000] speculates on the Munda origins of the Kanva priests, who have contributed numerous hymns to the 8th and other Mandalas of the Rigveda.

[16] Available at the URL <http://listserv.liv.ac.uk/cgi-bin/l/WA.EXE?A2=ind0002&L=indology&D=1&O=A&P=16129>

[17] Available at the URL <http://listserv.liv.ac.uk/cgi-bin/l/WA.EXE?A2=ind0012&L=indology&D=1&O=A&P=4854>

[18] Available at the URL <http://listserv.liv.ac.uk/cgi-bin/l/WA.EXE?A2=ind0104&L=indology&D=1&O=A&P=12411>

[19] See message number 2735 dated 11 December 2000 at the Indic Traditions Discussion list at the URL <http://groups.yahoo.com/group/indictraditions/>

[20] See also Witzel [2000:291]

[21] I want to emphasize very strongly that I am not denying the role that chariots have played during Bronze-Age warfare in general, as discussed by Drews [1993:104-134]. However, the notion of an elite overpowering an entire culture merely by merely migrating to that area is too romantic. I shall discuss this viewpoint elsewhere. For details in the functions and ritual uses of the Vedic chariot, refer Sparreboom [1985]. Kulkarni [1994:15-33] has described the Vedic chariot in the Samhitas, Brahmanas and Sutras quite exhaustively, proceeding on with the later descriptions of chariots in the Indian tradition. For a recent scholarly and up-to-date work on IE linguistics and chariots/horses, refer Raulwing [2000].

[22] It appears sometimes that T. Elizarenkova is still an invasionist. In a recent publication for instance [1995:41], she flip-flops between 'entered' and

'invaded', and says: "The role of the forests in the RV might also have bearings on the studies of the prehistory of the Aryan tribes that **invaded** India". (emphasis added)

[23] An on-line review of this volume by Koenraad Elst is available at the following URL:<http://koenraadelst.voiceofdharma.com/reviews/hock.html>

#### Abbreviations:

IA = Indo-Aryan  
IE = Indo European  
Ilr = Indo-Iranian  
IVC= Indus Valley Civilization  
PIE= Proto Indo-European  
RV = Rigveda

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## The Rgveda pre-dates the Sarasvati-Sindhu Culture.

**N. Kazanas, Athens February 2009.**

**1. Introduction.** All dates are BCE except where stated as CE (and after Authors in brackets). There are several important features of the Harappan (=Sarasvati-Sindhu) Culture absent in the RV(=Rigveda). These very features are found in post-rigvedic texts (Brâhmana, Sûtra etc). Then, both the Brâhmana explications of Rigvedic brief allusions and the teachers lists in the Brhadaranyaka Upanisad suggest the passing of very many centuries from the composition of the *RigVedic* hymns. These post Rigvedic texts can be assigned to the end of the 4<sup>th</sup> millennium on astronomical considerations and the beginning of the 3rd. Finally, the palaeoastronomical examination of star and planet allusions in the *Mahabharata* suggest dates c 3000 or little after. All such considerations suggest *Rigveda* of many centuries earlier. Thus, since the SSC (=Sarasvati-Sindhu Culture) arises c3000 and the *Rigveda* knows nothing of its important features, then its composition must be placed several centuries earlier. Since the river Sarasvati was flowing to the ocean only before 3200, and the *Rigveda* knows it as such, then its bulk must be assigned at c3800-3500.

However, before we embark on the presentation of all these types of evidence and the reasoning supporting them, I must clarify three modern

misconceptions regarding the terms *pur*, *ratha* and *samudra* which occur frequently in the *RigVeda*.

**2. *pur*.** I have dealt very fully with this issue in my *Rigvedic Pur* (2003, 2006). Back in 1994 G. Erdosy had also dealt with the matter in his 'The meaning of Rigvedic pur' published in J.M. Kenoyer's *From Sumer to Meluha* (Wisconsin The Univ. Press). Here I shall present only some of the evidence. This word was used in post-Rigvedic texts (and today!) very obviously in the sense of castle/fort/town; the same holds for *pura* as in *Hastina-pura* or modern *jai-pur(-a)* etc. This is not so in the ancient most Indoaryan text.

The word *pur* occurs in the *Rigveda* more than 70 times, when compounds *purbhih* and *puramdara* are put aside. Mayrhofer (1956-) rightly questions a relation with *piparti*, but surprisingly makes no connection with *piparti* saves,protects; The ancient *Dhatupatha* gives *palanapurayanayoh* in the sense of protecting and filling, where obviously the first meaning connects with *pur*.

The word is recognized as cognate with Greek *polis*, Lithuanian *pilis* and Lettish *pils*, all three meaning 'town, fort'. However, a careful examination of the use of *pur* in the *Rigveda* (with the aid of A. Lubotsky's *Concordance*... and the

*Vedic Index*) shows that it has only the meaning of defence or protection. Take the example of Susna's 'mobile' *carisnu pur*, VIII 1, 28. None of the structures mentioned above can fit here: no such structure in the Rigvedic material world is mobile and, in any case, this *pur* belongs to the demon of drought, a supernatural figure. (It was once suggested that *pur* might be a chariot, but *pur* is a defensive structure and not offensive like the chariot.) K. Geldner translates *wandelnde Burg* 'mobile/mutable town/fort' and adds in a note (28a) *die Zauberburg* 'the magical Burg' which seems correct (1951-7). He helps further by giving two references: (a) I 121, 10 is ambiguous because it speaks of light and darkness, of Susna's *ojas* 'might' and of his *phaliga* which has uncertain meaning but has been thought to be 'cloud' or 'cave'; (b) V 31, 7 is unambiguous in that it lauds Indra's strength shown in killing the serpent Ahi, in arresting Susna's *mâyâ* 'magic, occult power' and in driving away the Dasyus. Then, *rsi* Agastya prays (I 166, 8) to the Maruts (regarded as Storm-gods) to protect (*raks-*) from evil (*agha*) and injury (*abhihruti*) the man they favour (*av-*) "with hundred-fold purs *sastabhujibhih purbhih*: here too no physical structures with hundred walls or folds could possibly protect a man from evil (sin or impurity) and injury; no such many-walled structure existed (allowing for a hyperbole) and, in any case, the Maruts are not builders. Here, however, Geldner gives (1951-7) *Mit hundertfachen Burgen* 'with 100fold Burgs (=towns/forts)' – which means nothing. Of course it could be argued that the use here is metaphorical, but we shall find that in all

instances the use is "metaphorical" and that *pur* rarely denotes unambiguously a material fortification and nowhere a town. Most frequently it denotes a supernatural, occult or magical protective force or field.

Some other occurrences of *pur* to which writers often refer (Bisht 1999/2000, Frawley 2002) are RV 6.48.8, 2.4.6, 4.27.1 and 1.189.2.

a) The first reference 6.48.8 is a prayer to god Agni to protect (*pâhi*) from anxiety (*amhas*) the one-who-kindles-the-fire with *satam purbhih* "a hundred purs" – whatever *pur* might be. Here the text *does not* say there are 100 'cities' but that a specific type of person should be protected with 100 *purs*; obviously, as above, a fire-kindler can't be protected from anxiety with 100 forts or cities!

b) The second reference (2.4.6) is to Indra crushing the 100 *purs* of Sambara, a much repeated motif in the RV. Sambara is not a native aboriginal king against whom the Aryans are fighting but is a fiend or demonic figure in a magical, *non-material* dimension of the world we know; his 100 (or 99) *purs*, prove nothing about the existence of actual Aryan cities.

c) The third reference is again to 100 *purs* but these are *âyasî*, i.e. of metal (copper, bronze?), and surely the Vedic people had no metal-made cities. What is more, these 100 metallic *purs* are said to guard/confine/conceal (*rakc*) the celestial Eagle (or some such divine figure). There is no conceivable sense in which 100 cities could possibly do such a thing; here Geldner translates *hundert eherne*



*Burgen* '100 bronze Burgs' but connects them with demons (Dämonen, n 1c). (Further down, in note 2, he considers the possibility that these purs are within the womb *garbhe*.) Consequently all three references (and one could quote several more just as inapt) do not indicate that there were cities in the ordinary world of the *Rigveda*.

d) However, in a fourth reference the *pur* is 'wide, broad and extensive' (in *RV* I 189,2). But in this hymn also the poet prays to Agni to lead him and his clan or people afresh and with prosperity (*svastibhih*) beyond all difficulties and become (*bhāvâ*) a *pur* "wide, broad and extensive" for them and their offspring (*tokâya tñayâya*). It is again inconceivable that Agni would become a "city". Here, surely Agni will become devine protection – something quite unknown to us and to material considerations.<sup>1</sup>

e) Ignoring W. Rau (1976) and Mayrhofer (1996), I advert briefly to the entry in the *VI(=Vedic Index)* (1912) which describes "strongholds of iron" (*âyasî pur*: very common) as 1. If one thinks the *rigvedic* people lived in towns and had forts, one should look for other kinds of evidence – though I think there is no indication of urban structures in the *Rigveda*. "probably only metaphorical". The entry concludes with reference to post-*rigvedic* "sieges of forts" and the fire used in a siege in *RV* 7.5.3. This last point is based on the AIT (=Aryan Invasion Theory). It is well established now that no Harappan towns had been sacked by allegedly invading Aryans. *RV* VII 5,3 says merely that the 'dark tribes' (*visa*

*ásiknîh*) fled in disarray for fear of Agni Vaisvânara, the god (not ordinary fire, surely) who shone glowing while 'rending' (*darayan*, not 'burning down') their purs. The 'dark tribes' could be fiends or fears active at night and/or evil, demonic forces.

f) Interesting are some references to 'autumnal' *sâradî purs* but not many. In *I* 131,4 Indra overpowered unspecified "autumnal *purs*" known in former times. In *I* 174,2 he broke down the seven autumnal *purs*, shelter of tribes "with abusive speech *mrđhrávâc*". Here these tribes could be human beings. In *VI* 20,10 Indra again destroys seven autumnal *purs*, shelter of *Dâsas*. Here too the *Dâsas* may be said to be human beings. These may be instances where the *purs* could belong to humans. However, the recurring mystical number 7 and the destruction by a god introduce strong elements of doubt and suggest again the supernatural. Moreover, I wonder if we are entitled to translate this adjective *sârada-* as 'autumnal'. It would be more correct, perhaps, in these cases to translate as 'ancient/old/enduring', or 'annual' in the sense of being renewed every year. These are ancient or annual (and to us) supernatural means of protection.

In connection with the supernatural aspect, most interesting is the curious reference to Agni's metallic *purs* and particularly the one which is *satabhujî*, *VII* 15,14: obviously this fiery field with 100 folds or encirclements can only be magical or occult. One may argue that it is ordinary physical fire that destroys the *purs* of enemies but it is difficult to see

how such a fire (or many fires) could repulse inimical armies. (Surely the enemies also could use fire as a weapon.) Fire would dispel the darkness of night or creatures of darkness like ghosts and fiends – or wild animals. Then, there are the prayers that Agni should guard people against distress and anxiety with his *purs* (I 58,8; VI 48,8), which would involve an esoteric psychological or spiritual type of protective means. The *satábhujî pur* of the Maruts, I 166,8, is not very different, as was indicated earlier.<sup>sl</sup> 2

g) Just as interesting is the reference to *âmâsu pûrsú paráh* wherein is protected the Offspring-of-Waters *Apâm Napât* II 35,6. W. O' Flaherty translates this as "far away in fortresses of unbaked bricks" (1981:105) and one can't help but wonder where she found the "bricks", since the *RV* mentions them nowhere! I can only assume she follows Geldner who translates *In den rohen Burgen* 'in raw towns/forts', which means nothing, and who, to cover up the deficiency, adds in a note (6c) *nicht wie die gewöhnlichen Burgen aus gebrannten Ziegelsteinen gemacht* 'not like the usual Burgs made from baked bricks' (!) without telling us where in the *RV* we find 'usual Burgs made from baked bricks' (1951-7) – since there are no such constructions! Then O' Flaherty in an explanatory note mentions Agni, "safe... among enemies who do not control fire and so do not fire their bricks, or who (as the sun) is safe from his enemies... in his own 'natural' citadels not made of baked bricks, i.e. the clouds". The confusion here is almost unbelievable. Why and how exactly would Agni feel safe in such conditions

and who are these "enemies"? Fire's biggest enemy is water; so fire dives and dwells in the waters protected within fortresses of unbaked bricks! Is this at all sensible? I don't think so. As for the sun, are not the clouds themselves his only traditional enemies? Neither unbaked-brick-fortresses (in water?!) nor physical enemies are involved here. *âma-* here (and perhaps elsewhere) should mean 'non-artificial, natural'. Thus *Apâm Napât* in his own non-artificial, natural, divine condition with his own occult, defensive powers (*pûrsu*) is protected against any malignity or niggardliness (*arâti*) and falsehood or unrighteousness (*anrta*). If we had even one description of material forts/towers elsewhere in the *RV*, we could take *pûrsu* here as being metaphorical towers (billows, perhaps).

h) Another interesting case is the *gómati pûr* in *RV* VIII, 6, 2. The phrase at first sight presents a difficulty since the adjective is usually translated as 'having kine'. But *go-* can mean 'wealth' by extension and certainly 'star, light'. So the phrase can just as plausibly be translated as 'protective-fold rich in light'. So this is ambiguous: it could be a pen with cows also but hardly a city.

**3. Ratha.** Here, the mainstream basic assumption that the rigvedic *ratha* was like the chariots of the NE or Europe in the 2nd millennium may be justifiable under the preconceptions of the AIT but it is not warranted by the testimony of the *Rigveda*. Although many references to *ratha* and its aspects in the *RV* are mythological and we cannot be certain that they apply to human physical

realities, there are enough others to enable us to form a good picture. The many more realistic details in the later Vedic texts are too far removed in time to be of indubitable relevance. Many interpretations of rigvedic issues suffer from precisely this drawback: because of insufficient information in the RV scholars seek help from later texts and even from non-Indic material, always under the spell of the AIT. Such procedures have generated assumptions that are untrue and arguments that are circular (as those noted by Bryant, 2001: 117, 144, etc). Here I shall use only rigvedic evidence and such references from later texts as do not affect it; I shall ignore historical semantics since most such material comes from IE branches of late attestation.

M. Witzel refers at length to an Egyptian chariot of the 15th century (now in Florence) with parts of it made of elm, ash, oak and birch, all imported from places like south Russia, and weighing 30 kg (2000:6). He does not say here that this is like the rigvedic chariot but as he states elsewhere that the latter also weighs c 30 kg (2001: n 192), this is what he intends. This may be legitimate but utterly irrelevant and misleading since the rigvedic vehicle is made of *salmali* (X 85, 20; also *kimsuka* ?) or *khadira* and *simsapâ* (III 53,19) and its axle of *aratu* (VIII 46, 27) - all these woods being native to India. We have no information at all about its weight.

Most of the evidence is collected in the VI (=Vedic Index) under *Anas* and *Ratha* and all other erudite studies add nothing - except confusion imported from other

texts and/or non-Indic material. Under *Anas* it is said that the cart is "sometimes expressly contrasted with the chariot (*ratha*) for war or sport": the reference III 33,9 is given (but note that the phrase "for war or sport" is not of rigvedic origin but an imported notion that beclouds the matter). This hymn doesn't present any express contrast: it says simply (in stanzas 9 and 10) that Visvâmitra "has come from afar *ânasâ râthena*, ie "by means of *anas/ratha*" which may mean "by cart [and] chariot" or "by cart [which is ] chariot" (or vice versa). One must wonder here why a priest of high order, a renowned *rsi* who displays magical powers in stopping the onrush of the river-waters, would need a chariot "for sport or war". The VI corrects its first statement saying (now under *Ratha*) that "this distinction [between *anas* and *ratha*] is not absolute". Indeed, Ucas has *ratha* in (late) I 48, 10 and (early) III 61, 2 but *anas* in (early) IV 30, 11 and (late) X 73, 7. Indra, the mighty warrior who is called arranger *âjikrt* and lord *âjipati* of the race (or battle: VII 53, 6-14), is said to be *anarvis* (in late I 121, 7) "seated on a cart" not chariot. The references are by no means exhausted but enough has been said to show that, in fact, there is little if any distinction in *anas/ratha* : "of differences in the structure of the two we have no information " (VI, *Ratha*).

4. Here it is worthwhile to say a few words about the 'horse' *asva*, also *atya*, *vâjin*, *haya* etc. The assumption that these words denote the *equus caballus*, the usual horse we know, is quite unwarranted. The rigvedic horse has 34 ribs (1.62.18, a late hymn) not 36 as in the usual horses found in other IE regions.

R.S. Sharma confirms this distinction (1995: 17). So the horse was not brought by in coming Indoaryans; it is indigenous.

The only race described in the *RV* is that of Mudgala-Mudgalânî in a late hymn, 10.102: here the animals are oxen! We find also asses pulling *rathas* in races as in 1.34.9, 1.116.2, 1.162.21, 3.53.5 etc etc. The two Asvins who are in fact the 'horse-gods' have their vehicle drawn by asses *râsabha* (1.34.9) or birds (1.118.4; 4.45.4; etc). Ucas, the Dawn-goddess, has oxen (1.92; 5.80) as often as *asvas* 'studs' (3.61; 7.75). Then, Pûsan's car is drawn by goats (6.55)!

Thus in reality the horse (if *asva* etc be 'horse') is not at all common and we don't find it in places where we would expect it as in the Asvins' car.

The horse was not, I think, quite as common as is generally believed. Certain hymns mention, of course, large numbers of horses: VI 63, 10 has 100s and 1000s; VIII 46, 22 has 60,000! In VIII 55-3, 400 mares are mentioned in a *dânastuti* "praise of gift". What would anyone want with 400 or even 100 horses let alone thousands, unless they had a large force of cavalry? Or they drank the mares' milk and ate horse meat. Or have we here hyperboles?.. Other hymns speak of very few horses: IV 32, 17; VI 45, 12; etc. Now, if there were plenty of horses why should a sage like Vâmvadeva (IV, 32) be praying to Indra for horses (for his whole clan, the Gotamas)?... Perhaps, and I repeat perhaps, the horse was not so common in Saptasindhu as is usually thought. Elst

(1999:181) and R Thapar (1996:21) suggest that the horse was "symbolic of nobility" thus giving social status. I would add that there is so much admiration and so much praying for horses precisely because it was not at all plentiful.

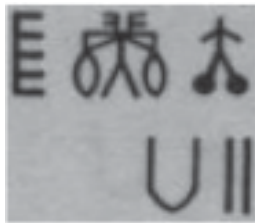
5. Measurements and dimensions of the chariot are given in the much later *sulba Sûtras*, so I shall ignore them. But there is one passage in the *Rigveda* that is helpful (perhaps more). In VI 61,13 the river Sarasvatî is likened to a chariot: *râtha iva brhatî*: "like a chariot tall/big/stately/bright". So if a large river is compared to a chariot for size (*brhat-*), the chariot cannot be a small and narrow contraption of 30 kg. (In III 33,2 a river is again compared or related to a chariot *rathyâ+iva* but the size is not explicit here). This hint of large size is reinforced by the references that follow.

These vehicles, *anas* or *ratha*, were drawn by 1,2,3 or 4 animals. "Horses were normally used for chariots but the ass (*gardabha*) or mule (*asvatari*) are also mentioned" (VI, *Ratha*) as indeed we saw above. What is surprising is that while in the Upanishads the cars are said to have two wheels, in the *RV* they have one wheel (I 53,9 & 164, 2; VI 54,3; VIII 63,2 where the sun is obviously meant), sometimes 3 wheels (e.g. that of the Rbhus in IV 36,1), sometimes 7 (II 40,3) - all obviously mythological. Once the car has 2 wheels and, all-golden, is that of the Asvins (VIII 5,29, again mythological) but in six other instances this car is said to be 3-wheeled *tricakra*. These cars have another curious aspect in the *Rigveda*: in III 6,9 and VI 47,9 the *ratha* carries three and more on its *vâristhe* ...

*vandhûre* : “widest seat/box”. Then in (late) X 53, 7 we find a chariot *ratha* that has seating for 8 *astvândhura*.

All these details (plus the fact that, as we saw in §1, above, the chariot is drawn by an ass or ass and horse) constitute the picture of a vehicle that is not at all like the (war) chariots appearing in the 2nd millenium in the NE. P Raulwing’s admirably erudite study on the IE chariots and horses sheds not one ray of light on the *rigvedic* vehicles. The evidence for the development in the NE of the first light chariots for war (Littauer & Crouwel 1996) as against the Pontic Steppe (Anthony & Vinogradov 1995) seems fairly convincing. But neither the former nor the latter tell us anything useful about the *Rigveda*.

**6. Wheels.** S. Piggott established the presence of a sophisticated type of vehicle with “one or two pairs of wheels with their axles... from the Rhine to the Indus by around 3000” (1992: 18).



Spoked Wheel

Archaeological evidence does not consist only of the actual remains of buildings, weapons, tools, chariots etc. Pictures, reliefs, toys and figurines of these things are also evidence. Many years ago H. K. Sankalia had pointed out that the six-

spoked wheel appears on seals and signs of the alphabet (1974: 363). S. R. Rao found at Lothal “terracotta wheels ... with diagonal lines suggesting spokes” (1973: 124). This representational practice seems to have been widespread, for S. Piggott mentions similarly marked wheels found in the Karpathian Basin from the Earlier Bronze Age (1983: 91-92). In his recent study, Lal presents four terracotta wheels (from Mature Harappan sites Banawali, Kalibangan, Rakhigarhi) with spokes painted on (2002:74, Figs 3.28ff). The Harappans had the technology for making spoke-wheels (Kazanas 1999:33; Basham 1954:21).

Finally, it was A. Parpola, an inveterate adherent of the AIT, who identified the figure on Harappan seal No 3357 as representing simplistically a man with outstretched arms standing on two six-spoked wheels (of a chariot) realizing that this was “a later invention of the Aryans’ (1969: 24). The later notion that it is a potter on two wheels is obviously far-fetched and, in any case, the wheel is spoked (Sethna 1992)! L. S. Rao has recently presented many more finds of models of terracotta toy wheels with spokes from Harappan locations in *Purâtattva*, vol 36 (pp 59-66), 2006.

The question of course is whether there were spoked wheels before 3000 since the *RV* uses the word *ara* which is usually translated as ‘spoke’ (1.32.15; 5.58.5; etc.). We don’t know. Some Indian scholars approach the issue strategically and say that *Rigvedic* hymns with *ara* are later intrusions from the second millenium when the spoked wheel was quite common. This is possible of course,



since we know that some hymns are later interpolations. However, there could have been spoked wheels as we know them even at c3200 and before. But then again, *ara* need not mean 'spoke'. It could mean a section of the (solid) wheel. After all, different IE branches have a different stem for spoke (Gk *aktis*, *kneme*; L *radius*; Gmc *speca/speihha*, etc) which suggests that spokes were developed after the dispersal (in the 6th or 8th millennium, or whichever). So *ara* could well have meant something other than spoke and only later acquired the meaning of 'spoke', as we know it now.

The spoked wheel poses, in fact, no problem for dating the *RV*.

**7. Samudra.** This word means literally 'confluence/mass of water' *sam+ud-ra*. M. Mayrhofer (1956-96) gives *Ozean* 'ocean', *Flut* 'flood' and *Meer* 'sea' (for the *RV*) and also 'a large river formed by the confluence/combination (*Vereinigung*) of two or more rivers'. Certainly in some cases in the *RV* *samudra* denotes a confluence. Equally certainly, in other cases it denotes ocean/sea.

It is well established that the Harappans knew the ocean and had maritime trade with Mesopotamia since the late third millennium if not earlier (Saggs 1989: 130; Crawford 1994: 148; Lal 1997: 182-8). They had large ports like Lothal and perhaps Dholavira (on an island) and Dvaraka (later) and obviously large ocean-faring ships and smaller craft, sailing up and down the Indus and the other rivers. Surely, even in the AIT frame, it is not likely in all those decades

and centuries that the Aryans never heard from the natives about the expanse of the ocean in the south and the former trade. Then, the Aryans themselves were intrepid adventurers who had trekked 100s of miles over rough and dangerous regions and had conquered the Saptasindhu. Surely it is not likely that nobody thought of travelling by chariot to the south, or by boat down the Indus and so gain first-hand knowledge of the ocean. And if a few did this, then more would follow and, in any case, knowledge of the ocean would spread among the Indoaryans, including some of the composers of the hymns.

Thus common sense compels us to accept that the Indoaryans had knowledge of the ocean/sea even in the AIT scenario. With its customary caution the *Vedic Index*, which does not at all promote indigenism or an early *Rigveda*, but adheres to the AIT, states "knowledge of the ocean... was almost inevitable to people who knew the Indus" (vol 2, 432). Why modern scholars abandon common sense is a mystery.

We should note that the recent claims about *samudra* denoting various water-masses other than the ocean are not new nor more "scientific". The *Vedic Index* (1912) mentions some scholars who rejected totally the meaning 'ocean', others who accepted it in few and others in many cases. It cites Zimmer who thought *samudra* "denotes the river Indus when it receives all its Panjab tributaries" and gives numerous references (see example no 10, end). But it adds "even Zimmer who is inclined to restrict [the Vedic Indians'] knowledge

of the sea as far as possible admits it in one passage of the Rigveda and of course later" (*Vedic Index II* 431). Zimmer's one exception is VII 95, 2, (*Vedic Index II* 432), Sarasvati flowing *giríbhya â samudrât* 'from the mountains to the ocean' (which Witzel takes as 'terminal lake')! K. Klaus (1989: 365) also in his study agrees with Zimmer and accepts that in this passage *samudra* may denote *Meer* 'sea'. On the other hand, in some instances *samudra* can denote 'confluence' (RV III 33, 2) and in others primeval celestial 'ocean' (X 190, 1-2), while in yet others earthly 'ocean/sea'. Let us now pass to some examples in the RV.

a) 1.116.4. 'For three nights and three days' *tísrah ksápas trír áha-* o Asvins, you carried Bhujyu *samudrásyā dhánvan ádrásyā pâré* 'to the distant dry-shore of the watery samudra'. Here, in this allusion to the oft-mentioned rescue of Bhujyu by the Asvins, the twin gods need three nights and days to ferry Bhujyu across samudra in the flying car. The key here is three nights and days. No confluence or lake could be so large as to require so much time to be crossed over by the Asvins. Only the vast expanse of the ocean will do here. K. Klaus refers to this passage but mentions only the aspect of moisture (*feucht*) and ignores all else (Klaus 1989: 366, n12). The tale may be pure myth but this does not invalidate the long duration of the Asvins' flight to the dry sandshore *dhánvan* and the enormous expanse of the samudra. Consequently, in the other allusions to this incident (1.118.6; 6.62.6; 7.69.7; etc.) also samudra denotes 'ocean'. And since we know that Bhujyn was a human being tossed about in a tempest, the ocean was

not the heavenly one – which is also mentioned in other instances.

b) 5.55.5 *úd îrayathâ marutah samudrató yuyám vrstim varsayatha* 'O Maruts, you raise up rain from the samudra [and] cause-rainfall'. Here there is plainly an upward (*ud*) movement of water/moisture/vapour and then rainfall caused by the storm-gods. The upward movement excludes an atmospheric/heavenly ocean; so *samudra* must be a terrestrial watermass. Since it is singular it must be only one. Therefore it cannot denote river-confluence or lake since there are many of them; if it were so it would have been in the plural or it would have had the adjectival *sarva* – 'every, all'. Rivers and confluences are waters in motion and therefore not amenable to evaporation. Nor would lakes be so large as to provide sufficient vapour for the rain of the Stormgods. This leaves only the ocean which is a large enough stationary watermass. Then again, the rigvedic seers must have known that evaporation occurs more in hot conditions rather than cold and that in the south it was hotter. So they obviously referred to the vast ocean that lay far south of Saptasindhu (Ignoring all these aspects Klaus takes this as a reference to the river Indus: 1989: 370!).

c) 7.6.7: Agni Vaisvanara received treasures at the rising of the sun *â samudrât ávarad âpárasmâd ... divá â prthivyâh* 'from the samudra lower and upper, from sky and from earth'. Here we have a lower and an upper samudra, then sky and earth in a chiasmus figure (ad - bc: *avara samudra* with *prthivî* and *para samudra* with *dyu-*). Since the upper

one is the heavenly ocean, well-known from many passages, and since neither the Indus river nor a confluence of streams would provide the contrast demanded by the poetic figure, the lower one can only be, by explicit contrast, the ocean on earth *prthivî*.

Other instances could be cited and analysed: 1.32.1-2; 1.56.2; 2.35.3; 5.33.2; 5.78.8; 8.20.25, etc. They all denote the ocean unequivocally.

A final example.

d) 10.98.5 *sá úttarasmâd ádharam samudrâm apó divyâ asrjad*: 'from the upper to **the lower samudra** he [[ci Devâpi] released the celestial waters'. Since it can't be a confluence, surely it must be the terrestrial ocean here.

When RV 7.95.2 states that the river Sarasvatî flows 'pure in her course from the mountains to the *samudra*', it refers to the ocean, as we shall see below in § 12. Let us now turn to our main subject which is the precedence of the Rigveda over the SSC.

**8. Features of SSC not in the RV.** The Harappan or Sarasvati-Sindhu Culture has certain characteristics which help to define its uniqueness. A number of these features are absent from the RV and this absence indicates that the RV is pre-Harappan. Arguments *e silentio* are not decisive since absence of evidence is not always evidence of real absence. But in this case the features are far too many. (Some of these were noted by Sethna, 1992.)

a) *istakâ* 'brick'. The RV mentions as building materials metal, stone, mud and wood but not 'brick', which was the basic material in Harappan constructions. This is found in post-Rigvedic texts: the word *istakâ* is not in the RV. Archaeologists write of the early Harappan or Ravi phase (ie 3300-2800): "These early settlers built huts made of wood with wattleand-daub" (K. Kenoyer and R. H. Meadow 2008:125). This is the common habitation in the whole of the RV. Brick-walls came later, as Kenoyer pointed out much earlier: these appear after this early phase, ie after 2800 (Kenoyer 1997/2000:56). The dates 3300-2800 BCE are different from those given by S. P. Gupta who places this early phase c 3700 and before and calls it Hakra-Ravi (2007:223).

b) Fixed altars or hearths are unknown in the RV but common in the SSC cities. The Rigvedic altar is a shallow bed dug in the ground and covered with grass (e.g. RV 5.11.2, 7.43.2-3; Parpola 1988: 225). Fixed brick-altars are very common in post-Rigvedic texts.

c) No cotton *Karpâsa* appears in the RV although this plant was extensively cultivated in the SSC and the fabric was exported as far as Egypt in the middle of the 3rd millennium while the Mesopotamians adopted the name as *kapazum* (? from prâkrta *kapâsa*). The RV has 'skin' *eta* (1.166.10; *ajina* in AV 5.21.7 etc), 'wool' *avi* (RV 9.78.1) and *sâmulya* (10.85.29) and numerous terms for clothing and weaving but no mention of cotton. Be it noted that *karpâsa* is the only word for cotton in Sanskrit. It is found first in the sūtra texts, in Gautama's (1.18) and in Baudhâyana's (16.13.10)

*Dharmasûtra*. Now, although cotton seeds were found at Mehrgarh period II, c5000, none were found in subsequent periods. Cotton cultivation appears only in the Mature SSC, after 2600. Thus these sûtra-texts can be placed at this period at the earliest, i.e. c2600.

d) Silver *rajata* also makes no appearance in the *RV* though gold and copper are well attested and silver is plentiful in the SSC. The word *rajata* occurs in *RV* 8.25.22 and it denotes a steed or a chariot 'shining white'. Only in later texts is it used singly (*AV* 5.28.1) or with *hiranya* to denote 'silver' or 'white gold' = 'silver' (see *Vedic Index* 2: 196-7 and Lubotsky 2: 1169).

e) Urbanization is wholly absent in the *RV*. There certainly was "nomad pastoralism" as mainstreamers emphasize repeatedly but there were also agricultural settlements (a fact which mainstreamers underplay or do not mention). The hymn to Ksetrapati 'Lord of the Field/Soil' (4.57) alone should suffice but also the girl Apâlâ refers to her father's *urvarâ* 'fertile field' (8.91.5); then there are many cultivation implements *khanitra* 'shovel', *lan-gala/sîra* 'plough', *sri* 'sickle', etc. Moreover, there is weaving with loom, shuttle, warp and woof (*RV* 1.134.4; 1.3.6; etc, etc) and metallurgy with smithies of sorts (4.2.17; 5.9.5; etc.). Such activities imply settlement.

Some writers think the Rigvedic and Harappan cultures converge (Gupta 2005, Bisht 1999, Lal 1998, Singh 1995). As evidence is cited the word *pur*- which denotes 'city, citadel, fort, town' as its

Greek and Baltic cognates '*polis*' and '*pil(i)s*' do. This is a very general misconception. In the *RV* *pur* never means anything other than an occult, magical, esoteric defence or stronghold which is not created nor ever destroyed by humans as we saw earlier (§2, above). The SSC cities had regular blocks, large buildings, also domestic and urban water-supply (McIntosh 2001: 100-101): the *RV* knows nothing of all these. There are references to *oka*, *grha*, *dama*, *dhâma* etc, all of which can denote any type of 'home/house' (made of wood and mud), or the thousand-pillared mansion of kings Mitra and Varuna in the sky (2.41.5; 5.62.6: probably suggested by sunrays streaming down through clouds; for not even SSC cities had such mansions!). These most certainly do not indicate any urbanization: neither brick- nor stone-walls are mentioned nor other features as in the SSC towns.

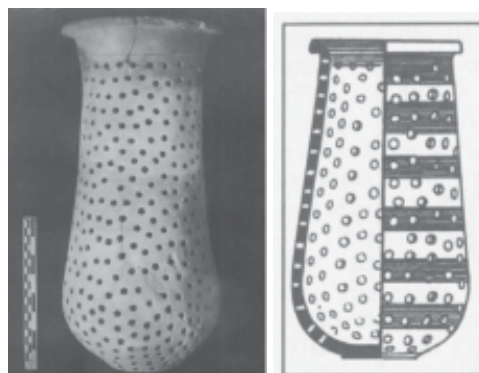
The words for 'council' *sabhâ* and *samiti* are also cited but, surely, any community can have a council of elders without urbanization. Allusions in the *RV* to chiefs/kings *râjâ* and overlords/emperors *samrât* also do not show urbanization since such offices can just as easily exist in rural communities. (The Red Indians in North America, nomadic and rural tribes, had local chiefs and overlords.) Pathways and/or roads (*path*-) also have been mentioned as crossing or branching out, but these too can be just as easily seen in a rural context. (For all these claims see Singh 1995; Bisht 1999 and Lal 2002, 2005.)

f) Many cities were abandoned and fell to ruination after 1900 BC when the

Harappans began to move eastward because of the drying up of the Sarasvatī and of the more general desiccation due to tectonic disturbances and climatic changes. The *RV* knows nothing of such ruins even though, according to the AIT, the IAs moved through these regions c 1700-1500 (in small waves, settled there, in the midst of deserts, and wrote the hymns which praise the mighty Sarasvatī!). Some attempts have been made to read hymn 1.133 with its *arma-ka* (=of unknown meaning, really) as a description of a ruined city (e.g. Burrow 1963, Rao 1991:32) but, in fact, the hymn mentions no ruined buildings, no fallen walls and no materials such as wood, stone or bricks! It is a ghostly scene of frightful desolation, peopled only with unfriendly she-fiends and demons (*yâtumati*, *pisâci* and *raksas*). In sharp contrast the Old English poem *The Ruin* contains such persuasive details of the ancient remains (from Roman times?) that some scholars think it refers to the town of Bath (Mitchell & Robinson 1996:252-5).

g) **Literacy is not known in the *RV*.** Some writers claim that a verse in *RV* 10.71.4 refers to writing (e.g. Kak 2003): *utâ tvah pâsyan na dadarsa vâcam utâ tvah srnvân na srnoty enâm* 'someone though seeing has not seen Vâk, someone though hearing has not heard her'. Here Vâk is the goddess as the subsequent hemistich makes it clear "To someone she has shown her beauty as to her husband a loving well-dressed wife". Vâk is always Speech and only much later do we find other terms to cover language and writing: the first line of the hymn confirms this since

Brhaspati sent forth *vâcâh* 'utterances, words' and gave names. Verse four says figuratively that some people do not



Pot with 100 perforations :  
Satapatha Br 12.7.2.13.  
No such perforated jars in *RV*.

appreciate the essence (=force, real meaning) of Vâk and that she reveals this to those very close to herself. Then, verse



dvaya in Atharvaveda  
5.19.7 / symbol of OM?

three says that 'seven singers (*rebhâh*) praise her in harmony (*sâm-navante*)': here we have an explicit statement and no hint at all of any writing or reading. D. Frawley thought that a passage in *AV*



19.72 may refer to writing: 'From whichever receptacle *kosât* we have taken the Veda, into that we put it down'. Books in ancient India consisted in collections of palmleaves or strips of birch-bark and were kept in boxes (1991: 249). Whether this is enough to establish knowledge of writing is doubtful. The word *veda* is 'knowledge' generally and not necessarily one of the three Vedas which in any case were transmitted orally. The word *kosa* could refer to some (metaphorical) non-material storing-place, e.g. memory, lower mind (*manas*), higher mind (*-cetas*, *bodha*, both in AV) etc.

In any case there is no other passage even remotely hinting at writing. Words like *likh-*, *lekha(-na)* and mainly *lipi* denoting 'writing' are not in use before the sūtra texts (see also H. Falk 1992). The vast corpus of *Brāhmaṇa*, *Aranyaka* and *Upanisad* texts have not a single hint about writing and so create an enormous gap between the AV and the sūtra period. Someone would have made a reference to writing somewhere in all these texts! Any mention of the alphabet, syllables, words or language, when scrutinized, is seen to refer to sound(s) and oral speech: the Prâtisâkhyas deal with pronunciation (and sandhi, of course) and contain no hint of writing. So writing was known in the SSC and the sūtras but not in the RV.

h) Rice *vr̥hi* too is absent from the RV although it appears in various sites of the SSC from at least 2300 (and in the Ganges Valley from the 6th millennium)<sup>2</sup>. The RV knows only *yava* 'barley'. Rice becomes important in post-Rigvedic ritual and the more general diet.

Some writers argue that the RV has food-preparations of rice like *apûpa*, *purolâs* and *odana* (Talageri 2000:126-7). This is possible of course. All three are in post-rigvedic tradition said to be rice-preparations (though *apûpa* is given as flour-cake in most texts and 'wheat' in Lexica). But *odana* is primarily a water or fluid preparation (root *-ud*) and *odati* 'refreshing, dewy' is an epithet of Ucas, the Dawngoddess. Since *vr̥hi* 'rice' does not appear in RV (but does appear in AV) and rigvedic *yava* is from the earliest tradition accepted as 'barley', I take it that the rigvedic people had barley and not rice. (The *purolâs* preparation is of uncertain constitution – until much later texts).

i) The RV has no allusions to artistic iconography – paintings, relief representations, statue (-tte)s or seals, all so common in the SSC. (The RV 4.24.10 asks "Who will buy this my Indra" and this is thought by some to refer to a statuette, but this could be a transfer of favour and it is the only reference in the whole RV without the use of any word for statue or icon.)

j) We must also take into account that many iconographic motifs, Harappan

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2. Private communication from the late S.P. Gupta, Chairman of Indian Archaeological Society (June 2006). See also Sharma 1980 for rice in the Ganges basin in the 5th millennium and R.Tewari et al in *Purâtattva* 2006 (vol 36: 68-75) for rice, again in the Ganga basin, north-east, in the district Sant Kabir Nagar (UP) in 7th millennium. These locations are too far from Vedic Saptasindhu but it seems likely that by 3000 the composers of the AV had become acquainted with rice *vr̥hi* and later this grain was cultivated in the SSC too.

artefacts, decorations or seals, show affinity with elements found in post-Rigvedic texts. Thus PK Agrawala (2005) draws attention to round-bottomed perforated pots from Harappan sites and a vessel (*kumbha*) with nine holes (*navavitrnna*) or 100 holes (*satavitrnna*) mentioned in '*satapatha Br* 5.5.4.27 and *satatrnnâ kumbhî* 'a pitcher with 100 perforations' in 12.7.2.13. These and other similar descriptions echo the White Yajurveda (*Vâjasaneyî Samhitâ*) verse 19: 87 'a pitcher with 100 streams'. Such vessels were used for ritual sprinkling. A second parallel is furnished by the two-horned bovine-like animal, duplicated and facing itself, on a Mohenjodaro seal with long necks and the pipal tree growing out of their juncture. This corresponds (writes Agrawala) to the two-headed cattle *dvâyâ* in *AV* 5.19.7. Some see in this the precursor of OM (Rajaram 2005). Agrawala mentions other parallels of a two-headed tiger and a two-headed bird (2005: 10 - 13). Thus it is indeed the later Vedic texts that have parallels with the Harappan arts and crafts, not the *RV*.

**9. Some Brâhmanas comment on** or give explanations of incidents in the Rigvedic hymns. For example, the *Aitareya Br* 7.13.33 narrates extensively the story of *sunahsepa*, alluded to briefly in *RV* 1.24.12-13 and 5.2.7, while the *satapatha Br* 11.5.1 comments on the Pururavas and Urvasî love story given elliptically in dialogue form in *RV* 10.95. Another point to note. Some legends in the *RV* remain unexplained. For instance, who was Bhujyu whom the Asvins saved from a tempest (1.116.3-4; etc) and how did he find himself in that predicament?

The later texts say nothing more. Or, take the birth of Indra; was he an unwelcome child to Aditi and did he commit parricide (4.18.1ff; etc)? Again, the Brâhmanas tell us nothing. Obviously such exegetical texts would not be composed until the understanding regarding the older texts has lapsed: this implies many centuries.

What is the date of the Brâhmanas? Well, S. Kak ascribes the *satapatha* to the early third millennium (1997, 1994) saying that the Pleiades/Krttikas not swerving from the east, as is stated in this *Brâhmana* (2.1.2.3), could only occur c2950 BCE. Narahari Achar (Prof. Astrophysics, Memphis, USA) using computer and planetarium apparatus arrived at a date c 3000 pointing out that S. B. Dikshit had arrived at similar conclusions 100 years earlier but was ignored by Western scholars (1999): these scholars really had no knowledge of astronomy.

So we could again place the *Rigveda* easily before 3000.

**10. The Brhadâranyaka Upanisad** has three vamsas, i.e. list of teachers, each comprising 65-70 names. The first 4 or 5 are names of gods in the normal Indic way which ascribes the beginning of every human activity to some deity. Let us take the mainstream date of early sixth century for this text (say 550) according to the AIT premises and let us take 60 teachers giving to each one an average of 15 years, though 20 and 30 would be more realistic. This exercise is already tilted very heavily in favour of the AIT and mainstream views because, in truth, in this text we read "I ask about that upanishadic Person (*aupanisadam*

*purusam prcchâmi* 3.9.26) which indicates that there was a traditional upanishadic teaching about Purusa as a spiritual being (=Self) and this aspect we meet in the *Atharvaveda*. However, let us bypass this point. These calculations ( $60 \times 15 = 900$  plus 550) give us a date c1450 for the inception of the doctrines in this Upanicat. The chief doctrine is that the self of man (*âtman*) is the same in all beings and the same as the Self of the universe (*brahman* 'Mystic Spirit' or 'Absolute'). We should also bear in mind that the teachers' names are quite different from those of the seers of the *Rigvedic* hymns as given by the native tradition. Following others, M. Witzel thinks these lists "rest on typically weak foundations" (2001, §19) but this is a typically weak subterfuge because the results of calculating the number of years prove how unrealistic the AIT chronologies are! Let us see, then.

The Upanishadic doctrine of the identity of the individual self and the universal self, in the formulations *ayam âtmâ brahma* and *aham brahmâsmi* 'the Self is the Absolute' and 'I am the Absolute', should be known, then, c1500 or 1300 or 1200, when, according to the AIT, the *Rigveda* was composed. Yet, for undetermined reasons, quite surprisingly, this doctrine is totally unknown in the *Rigveda* in these terms (although enunciated differently) and begins hesitantly to appear in the AV (e.g. 10.2.32-3; 11.4.23; etc). Consequently, the AV should be placed at least c 1600 and the RV c 1800, always following the AIT assumptions. But the RV is composed, even according to Witzel (2005: 90), in Saptasindhu, yet the IAs do not appear

in this area before, at the very earliest, 1700, and the RV gets composed after several centuries!

This is one of the comical paradoxes that the mainstream chronology refuses obdurately to resolve. Yet, on the grounds given in §§8-9 above, we saw that the *Rigveda* should be assigned to the 4th millennium, say around 3600. Now subtracting two hundred years for the AV hymns and the start of the Upanishadic doctrine and a further 900 or 1000 years (for the teachers) we should place the early Upanisads at the start of the period of the Mature Harappan, i.e. 2500 (with the *âtma-brahman* doctrine having come down orally) and the Sûtra texts immediately after. These dates satisfy yet another requirement. The word for cotton *karpâsa* is first used in the Sûtra texts as we saw in §8,c above and the cultivation of the plant (although seeds of it were found in much earlier periods) gets well established c 2500. All these dates are, of course, approximate.

**11.** Astrophysicist Achar pursued his **palaeoastronomical research** into the *Mahâbhârata* epic also, examining astronomical references in Books 3, 5 and 18. His sky map showed that all these converge in the year 3067. (Achar 2003; see also Kazanas 2002: 295-7). Achar acknowledged that, in 1969, S. Raghavan had arrived at the same date. Now, it is obvious that the *Mbh* had acquired many accretions over many centuries and that it was streamlined stylistically perhaps first in the 2nd millennium and finally at about the start of the Common Era. It is obvious that it contains much late

material like 2.28.48-9, which mentions Rome and Antiochia (*româ* and *antakhî*): this could not be earlier than 300 BCE since Antioch was founded in 301. On the other hand, the frequent use of the bow and, moreso, the use by Bhîma of a (tree trunk as a) club show much more primitive conditions.

Thus the war took place in 3067 and the core of the *Mbh* in poems and songs was laid down in that year. This and the native traditional view that the Kali Yuga came at 3102 are both correct, according to Achar. He pointed out that the Kali Yuga had no full force until the death of Kṛṣṇa which occurred 35 years after 3067, at 3032 (private communication June 2006); but immorality had set in already, as is shown by the unjust behaviour of the Kauravas and some reprehensible acts during the war itself. Surely no bards (compilers or redactors) in the 3rd cent CE or the 3rd cent BCE could possibly know the star and planet positions relative to the *nakṣatras* or the zodiac signs of the year 3067. The astronomical references examined by Achar (and Raghavan) are so numerous that chance coincidence has to be discarded (Achar 2003). However, that the war took place in 3137 and bards began to sing of these events two generations later should not be precluded. Personally, I still tend towards the traditional view of the War taking place in 3137. The Megasthenes report (from c300 BCE) of the ancient kings from 6000+, surviving in Arrian and other classical writers, supports these long periods of the past (Kazanas 2003). Then, deterioration in behavior would have started in the *sandhyâ* transitional period before the onset of the

Kali Yuga – when also the Kṣatriyas passed away. Here a question remains: how did the astronomers (and Āryabhata especially) determine the date for Kali Yuga as 3102?

**12. The Sarasvatî** river furnishes useful literary and archaeological evidence for dating the *Rigveda*. It is a mighty river extolled in all Books of the *Rigveda* except the fourth. It is *nadîtamâ*, *ambitamâ*, *devitamâ* ‘best river, best mother, best goddess’ (2.41.16); it is swollen and fed by three or more rivers *pînvamânâ sîndhubhih* (6.52.6); it is endless, swift moving, roaring, most dear among her sister rivers; together with her divine aspect, it nourishes the Indoaryan tribes (6.61.8-13). In 7.95.2 the river is said to flow pure in her course “from the mountains to the ocean” *girîbhyah â samudrât*. Then 7.96.2 and 10.177 pray to the rivergoddess for sustenance and good fortune while 10.64.9 calls upon her (and Sarayu and Indus) as “great” and “nourishing”. Clearly then, we have here, even in the late Bk 10, a great river flowing from the Himalayas to the ocean in the south, fed and swollen by other rivers and sustaining the tribes of the IAs on its banks – not a river known in the past or in some other region, or a river now considerably shrunk (Witzel 2001)3..

Some scholars claim that here *samudra* does not mean ‘ocean’ but confluence and especially the place where a tributary flowed into the Indus (e.g. Klaus 1989 and Witzel 2001). The last point can be discarded since there is not the slightest hint elsewhere that the Sarasvatî flowed into the Indus – in which case the Indus and not Sarasvatî would have been

lauded as the best river (2.41.16) We can also aver with full certitude (as the *Vedic Index* does under *Samudra*) that the rig-vedic people knew the ocean (see §4, above; also Prabhakar 1994). The meaning 'terminal lake(s)' adopted by Witzel is entirely fanciful. In his Dictionary M. Mayrhofer gives for *samudra* only 'confluence' and 'ocean/sea' (1996 *EWA*). And the Vedic poet would certainly have used (not *â samudrât* but) *â sarobhyah* 'to the terminal lakes' maintaining his cadence. This phrase would then have indicated clearly the alleged fanciful etymological connection of the name *Saras-vatî* 'she who has (terminal) lakes'. The name means rather 'she who has swirls and currents', since the primary sense of (>*saras*) is 'movement' (*gatau*) or 'flowing, leaping, rushing'.

Please, consider also that the Vedic *-s-* is inherited from PIE, according to all IEnists, whereas Avestan *-h-* is a devolved, not PIE, sound. Vedic *Śs[* has many primary and secondary cognates like *sara*, *sarit* etc. Now Avestan has no cognates for *Śs[* and its products, and the Avestan noun for lake is *vairi-* while *vâr-* is 'rain(-water)'=S *vâri* (?). The stem *hara-* (cognate with Vedic *saras*) occurs only in the river name *Haravaiti*. Consequently, it is the Iranians that moved away from the Indoaryans as, indeed, is shown by their memory of having lived in a location they called *Haptahendu* = Saptasindhu. The root *s[* has cognates in other IE branches, Gk *hial-*, Latin *sal-*, Toch *sal-* etc as is shown by Rix H., 1998. Now, it would be ludicrous to claim that the IAs left the common Indo-Iranian habitat, as per the

AIT, moved into Saptasindhu and turning the *Haraxvaiti* name into *Sarasvatî* gave it to a river there to remember their past while they proceeded to generate the root *s[* and its derivatives to accord with other IE languages. Occam's razor, which here is conveniently ignored by AIT adherents, commands the opposite: that the Iranians moved away, lost the root *s[* and derivatives but retained the memory of the *Sarasvatî* river in its devolved form *Haraxvaiti* and gave it to a river in their new habitat. This, together with the fact that, like Greek, Avestan has no obvious system of roots and derivatives (as Sanskrit has), should be enough to question if not refute various IEnists' claims that Avestan retains older forms of nouns and verbs and that therefore the Indoaryans were with the Iranians in Iran in the common Indo-Iranian period – before moving to Saptasindhu. One should also note that these linguists rely entirely on linguistic facts amenable to a reverse interpretation and ignore other aspects – literary, mythological, archaeological and genetic (for which see §14).

The river *Sarasvatî* in Saptasindhu is thought to have dried up almost completely by 1900 (Allchins 1997: 117; Rao 1991: 77-79). In previous years it had lost tributaries to the Indus in the West and the Ganges in the East. Is there any

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3. The mainstream view (Witzel's really) that the Vedic river is merely a memory of the Iranian *Haraxvaiti* which belongs to the common Indo-Iranian period, when the Iranoaryans lived together in Iran before the IAs moved further southeast (according to the AIT), is no more than modern myth-making. Mainstreamers often invoke Occam's razor (i.e. that the simpler solution is more probable) but here they forget it and prefer their own complex scenario



evidence that it flowed down to the Indian (or Arabian) ocean at any earlier period?

G. Possehl examined (1998) all the palaeoenvironmental and geological data relevant to the Sarasvatî river and concluded that the river could have flowed down to the ocean only before 3200 at the very latest and, more probably, before 3800! He re-stated his finds in his study of 2002 (pp 8-9). P-H. Francfort has been just as certain of a date 3600-3800 in his survey of 1992.

All this helps us place the passages ascribing the grandeur of river Sarasvatî at a date before 3200 at least. (For a detailed examination of this entire issue see Kazanas 2004a; for more recent scientific investigations through satellite showing the course of the old Sarasvatî reaching the ocean see Sharma J.R. et al 2006.)

**13.** In a recent publication **Dr S. Levitt** ( of New York), who is by no means an indigenist, examined the development of the “early Indic tradition” and the development of religion in ancient Mesopotamia.

After comparing several elements in the Vedic and Mesopotamian religions, Levitt concluded: “We can date the early Indic tradition on the basis of comparable points in ancient Mesopotamia. By this, the *Rigveda* would date back to the beginning of the third millennium BC, with some of the earliest hymns perhaps even dating to the end of the fourth millennium BC” (2003: 356).

However, unaware of Levitt’s paper, I myself made at about that time a very detailed comparative study of Vedic and Mesopotamian religious (mythological) motifs, published in *Migration and Diffusion* vol 24, 2005<sup>4</sup>. In this I showed that since more than 20 motifs in the Vedic texts had close parallels in other IE branches (e.g. the horse mythology, the skyboat of the Sungod, the Flood, the elixir from heaven, the creation of cosmic parts from the dismemberment of a divine being, etc) and were therefore of Proto-Indo-European provenance, they could not have been borrowed by the Vedics from the Mesopotamians as is usually alleged (McEvelley 2002; Dalley 1998) but must be inherited and therefore older than the Mesopotamian (Sumerian, Babylonian etc) parallels. Since the Mesopotamian culture (starting with old Sumerian) surfaces c 3000, the Vedic motifs must be earlier. Most of these have no parallels in Ugarite, Hebrew and other intermediate Near-Eastern cultures.

Thus again we arrive at a date before 3000 for the bulk of the *Rigveda*.

**14.** Since, according to the preceding discussion we must now assign the (bulk of the) *Rigveda* to c 3200 at the latest and since the *Rigveda* by general consent was composed in Saptasindhu, then it follows that the IAs were ensconced in Saptasindhu by 3200 and that the SSC was a material manifestation of the early oral Vedic tradition expressed in the

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4. This was badly printed and the Sanskrit transliterations are unreadable! A revised version was published in *Adyar Library Bulletin* 2007.

*Rigveda*. A large number of archaeologists, experts on the SSC, insist on the unbroken continuity of this civilization

and preclude the significant entry of any other culture until the Persian invasions after 600 BCE (Gupta and Lal 1984; Shaffer 1984 and with Lichtenstein; 1999; Rao 1991; Allchins 1997; Kenoyer 1998; Possehl 2002/3; McIntosh 2001; et al). This issue was treated by me extensively in preceding papers and no more need be said now. I should only add that, in fact, more and more scholars in the West have re-examined the issue and rejected wholly or in part the mainstream view advocating instead a movement Out of India into Europe: Schildmann 1998; Elst 1999; Klostermaier 1998, 2000; Friedrich 2004; Hasenpflug 2006.

To all this I should add the increasing evidence from Genetics which declares that no substantial flow of genes occurred from Europe or the northwestern adjacent areas into India before 600 BCE. On the contrary, recent genetic studies show an outflow from India into countries west and north and Europe (Sahoo et al 2006; Oppenheimer 2003).

Why mainstreamers insist on the AIT is a mystery. Lord C. Renfrew wrote of the AIT (1989:182): “this comes rather from a *historical assumption* about the ‘coming’ of the Indo-Europeans” (my emphasis). Then Edmund Leach wrote (1990): “Because of their commitment to a unilateral segmented history of

language development that needed to be mapped onto the ground, the philologists took it for granted that proto-Indo-Iranian was a language that has originated outside India or Iran... From this we derived the myth of the “Aryan invasion”.” These are the two legs of clay upon which stands the AIT and its variants.

Leach went further saying that after the discovery of the Indus-Sarasvati Civilization “Indo-European scholars should have scrapped all their historical reconstructions and started again from scratch. But this is not what happened. Vested interests and academic posts were involved” (1990). This is still true. But the new genetic evidence will soon perhaps force linguists to reconsider their theories. And we must not forget that there may well have been an IE continuum from the Steppe to Saptasidhu and the IAs did not move from their location. It is worth noting that S. Zimmer admitted (2002) that (although himself a mainstream non-indigenist) he could not be certain of the exact location of the PIE homeland since the facts are so obscure in those far-off times. More recently, H-P Francfort, the eminent excavator of Shortughai, expert on Central Asia Oxus area (or BMAC) and NW India, critiqued V. Sarianidi, E. Kuzmina and J. Mallory and their theories about [proto-]Indo-Iranian movements through Oxus region (2005: 262-8); further on (p 283 ff) he pointed out that the pantheon in the Oxus iconography has a dominant goddess and so does not tally with Iranian and Indoaryan religions: on the whole he is most reluctant to accept Indo-Iranians

(or Aryans) passing through that area c 1800-1400 BCE. So even some mainstreamers have now serious doubts about the alleged Aryan immigration/invasion.

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## VEDIC ROOTS OF EARLY TAMIL CULTURE

Michel Danino

In recent years attempts have been made to cast a new look at ancient India. For too long the picture has been distorted by myopic colonial readings of India's prehistory and early history, and more recently by ill-suited Marxist models. One such distortion was the Aryan invasion theory, now definitively on its way out, although its watered-down avatars are still struggling to survive. It will no doubt take some more time—and much more effort on the archaeological front—for a new perspective of the earliest civilization in the North of the subcontinent to take firm shape, but a beginning has been made.

We have a peculiar situation too as regards Southern India, and particularly Tamil Nadu. Take any classic account of Indian history and you will see how little space the South gets in comparison with the North. While rightly complaining that "Hitherto most historians of ancient India have written as if the south did not exist,"<sup>1</sup> Vincent Smith in his *Oxford History of India* hardly devotes a few pages to civilization in the South, that too with the usual stereotypes to which I will return shortly. R. C. Majumdar's *Advanced History of India*,<sup>2</sup> or A. L. Basham's *The Wonder*

*That Was India*<sup>3</sup> are hardly better in that respect. The first serious *History of South India*,<sup>4</sup> that of K. A. Nilakanta Sastri, appeared only in 1947. Even recent surveys of Indian archaeology generally give the South a rather cursory treatment.

### The Context

It is a fact that archaeology in the South has so far unearthed little that can compare to findings in the North in terms of ancientness, massiveness or sophistication : the emergence of urban civilization in Tamil Nadu is now fixed at the second or third century BC, about two and a half millennia after the appearance of Indus cities. Moreover, we do not have any fully or largely excavated city or even medium-sized town : Madurai, the ancient capital of the Pandya kingdom, has hardly been explored at all ; Uraiyur, that of the early Cholas, saw a dozen trenches ;<sup>5</sup> Kanchipuram, the Pallavas' capital, had seventeen, and Karur, that of the Cheras, hardly more ; Kaveripattinam,<sup>6</sup> part of the famous ancient city of Puhar (the first setting of the *Shilappadikaram* epic), saw more widespread excavations, yet limited with regard to the potential the site offers.

The same may be said of Arikamedu (just south of Pondicherry), despite excavations by Jouveau-Dubreuil, Wheeler, and several other teams right up to the 1990s.<sup>7</sup>

Il in all, the archaeological record scarcely measures up to what emerges from the Indo-Gangetic plains—which is one reason why awareness of these excavations has hardly reached the general public, even in Tamil Nadu; it has heard more about the still superficial exploration of submerged Poompuhar than about the painstaking work done in recent decades at dozens of sites.

But there is a second reason for this poor awareness : scholars and politicians drawing inspiration from the Dravidian movement launched by E. V. Ramaswamy Naicker (“Periyar”) have very rigid ideas about the ancient history of Tamil Nadu. First, despite all evidence to the contrary, they still insist on the Aryan invasion theory in its most violent version, turning most North Indians and upper-caste Indians into descendants of the invading Aryans who overran the indigenous Dravidians, and Sanskrit into a deadly rival of Tamil. Consequently, they assert that Tamil is more ancient than Sanskrit, and civilization in the South older than in the North. Thus recently, Tamil Nadu’s Education minister decried in the State Assembly those who go “to the extent of saying that Dravidian civilization is part of Hinduism” and declared, “The Dravidian civilization is older than the Aryan.”<sup>8</sup> It is not uncommon to hear even good Tamil scholars utter such claims.

Now, it so happens that archaeological findings in Tamil Nadu, though scanty, are nevertheless decisive. Indeed, we now have a broad convergence between literary, epigraphic and archaeological evidence.<sup>9</sup> Thus names of cities, kings and chieftains mentioned in Sangam literature have often been confirmed by inscriptions and coins dating back to the second and third centuries BC. Kautilya speaks in his *Arthashastra* (c. fourth century BC) of the “easily travelled southern land route,” with diamonds, precious stones and pearls from the Pandya country ;<sup>10</sup> two Ashokan rock edicts (II and XIII<sup>11</sup>) respectfully refer to Chola, Pandya and Chera kingdoms as “neighbours,” therefore placing them firmly in the third century BC ; we also have Kharavela’s cave inscription near Bhubaneswar in which the Kalinga king (c. 150 BC) boasts of having broken up a “confederacy of the Dravida countries which had lasted for 113 years.”<sup>12</sup> From all these, it appears that the earliest Tamil kingdoms must have been established around the fourth century BC ; again, archaeological findings date urban developments a century or two later, but this small gap will likely be filled by more extensive excavations. But there’s the rub : beyond the fourth century BC and back to 700 or 1000 BC, all we find is a megalithic period, and going still further back, a neolithic period starting from about the third millennium BC. While those two prehistoric periods are as important as they are enigmatic, they show little sign of a complex culture,<sup>13</sup> and no clear connection with the dawn of urban civilization in the South.

Therefore the good minister's assertion as to the greater ancientness of the "Dravidian civilization" finds no support on the ground. In order to test his second assertion that that civilization is outside Hinduism, or the common claim that so-called "Dravidian culture" is wholly separate from so-called "Aryan" culture, let us take an unbiased look at the cultural backdrop of early Tamil society and try to make out some of its mainstays. That is what I propose to do briefly, using not only literary evidence, but first, material evidence from archaeological and numismatic sources as regards the dawn of the Sangam age. I may add that I have left out the Buddhist and Jain elements, already sufficiently well known, to concentrate on the Vedic and Puranic ones, which are usually underemphasized. Also, I will not deal here with the origin of South Indian people and languages, or with the nature of the process often called "Aryanization of the South" (I prefer the word "Indianization," used in this context by an archaeologist<sup>14</sup>). Those complex questions have been debated for decades, and will only reach firm conclusions, I believe, with ampler archaeological evidence.

### **Vedic & Puranic Culture—Material Evidence**

Culturally, the megalithic people of the South shared many beliefs and practices with megalithic builders elsewhere in the subcontinent and beyond. Yet certain practices and artifacts were at least compatible with the Vedic world and may well have prepared for a ready acceptance of Vedic concepts—a natural

assimilative process still observable in what has been called the "Hinduization" of tribals. Thus several cists surrounded by stone-circles have four vertical slabs arranged in the shape of a swastika.<sup>15</sup> The famous 3.5 metre-high figure of Mottur (in North Arcot district), carved out of a granite slab, is "perhaps the first anthropomorphic representation of a god in stone in TamilNadu."<sup>16</sup> Some megalithic burials have yielded iron or bronze objects such as mother goddess, horned masks, the trishul etc. As the archaeologist I. K. Sarma observes, such objects are intimately connected with the worship of brahmanical Gods of the historical period, such as *oiva*, *Kàrtikeya* and later *Ambà*. The diadems of Adichanallur burials are like the mouth-pieces used by the devotees of Murugan.<sup>17</sup>

The archaeologist K. V. Raman also notes:

Some form of Mother-Goddess worship was prevalent in the Megalithic period [...] as suggested by the discovery of a small copper image of a Goddess in the urn-burials of Adichchanallur. More recently, in Megalithic burials the headstone, shaped like the seated Mother, has been located at two places in Tamil Nadu.<sup>18</sup>

Megalithic culture attached great importance to the cult of the dead and ancestors, which parallels that in Vedic culture. It is also likely that certain gods later absorbed into the Hindu pantheon, such as *Aiyanar* (or *Sastha*), *Murugan* (the later *Kartik*), *Koççavai* (*Durga*),



Naga deities, etc., were originally tribal gods of that period. Though probably of later date, certain megalithic sites in the Nilgiris were actually dolmen shrines, some of them holding Ganesh-like images, others lingams.<sup>19</sup> Megalithic practices evocative of later Hinduism are thus summarized by the British archaeologists Bridget and Raymond Allchin :

The orientation of port-holes and entrances on the cist graves is frequently towards the south. [...] This demands comparison with later Indian tradition where south is the quarter of Yama. Among the grave goods, iron is almost universal, and the occasional iron spears and tridents (*trisulas*) suggest an association with the god *øiva*. The discovery in one grave of a trident with a wrought-iron buffalo fixed to the shaft is likewise suggestive, for the buffalo is also associated with Yama, and the buffalo demon was slain by the goddess Durgà, consort of *øiva*, with a trident. [...] The picture which we obtain from this evidence, slight as it is, is suggestive of some form of worship of *øiva*.<sup>20</sup>

About the third century BC, cities and towns appear owing to yet little understood factors ; exchanges with the Mauryan and Roman empires seem to have played an important catalytic role, as also the advent of iron. From the very beginning, Buddhist, Jain and Hindu<sup>21</sup> streaks are all clear. Among the earliest evidences, a stratigraphic dig by I. K. Sarma within the *garbagriha* of the Parasuramesvara temple at

Gudimallam,<sup>22</sup> brought to light the foundation of a remarkable Shivalingam of the Mauryan period (possibly third century BC) : it was fixed within two circular *pāthas* at the centre of a square *vastu-mandala*. "The deity on the frontal face of the tall *linga* reveals himself as a proto-*puranic* Agni-Rudra" *devayāna*<sup>23</sup> standing on a kneeling . If this early date, which Sarma established on stratigraphic grounds and from pottery sherds, is correct, this fearsome image could well be the earliest such representation in the South.

Then we find "terracotta figures like Mother Goddess, Naga-*linga* etc., from Tirukkampuliyur ; a seated Ganesa from Alagarai ; Vriskshadevatā and Mother Goddess from Kaveripakkam and Kanchipuram, in almost certainly a pre-Pallava sequence."<sup>24</sup> Cult of a Mother goddess is also noticed in the early levels at Uraiyur,<sup>25</sup> and at Kaveripattinam, Kanchipuram and Arikamedu.<sup>26</sup> Excavations at Kaveripattinam have brought to light many Buddhist artefacts, but also, though of later date, a few figurines of Yakshas, of Garuda and Ganesh.<sup>27</sup> Evidence of the Yaksha cult also comes from pottery inscriptions at Arikamedu.<sup>28</sup>

The same site also yielded one square copper coin of the early Cholas, depicting on the obverse an elephant, a ritual umbrella, the Srivatsa symbol, and the front portion of a horse.<sup>29</sup> This is in fact an important theme which recurs on many coins of the Sangam age,<sup>30</sup> recovered mostly from river beds near Karur, Madurai etc. Besides the Srivatsa (also found among artefacts at

Kanchipuram<sup>31</sup>), many coins depict a swastika, a trishul, a conch, a *shadara-chakra*, a *damaru*, a crescent moon, and a sun with four, eight or twelve rays. Quite a few coins clearly show a *yagnakunda*. That is mostly the case with the Pandyas' coins, some of which also portray a *yubastambha* to which a horse is tied as part of the ashvamedha sacrifice. As the numismatist R. Krishnamurthy puts it, "The importance of Pandya coins of Vedic sacrifice series lies in the fact that these coins corroborate what we know from Sangam literature about the performance of Vedic sacrifices by a Pandya king of this age."<sup>32</sup>

Finally, it is remarkable how a single coin often depicts symbols normally associated with Lord Vishnu (the conch, the *srivatsa*, the *chakra*) together with symbols normally associated with Lord Shiva (the trishul, the crescent moon, the *damaru*).<sup>33</sup> Clearly, the two "sects"—a very clumsy word—got along well enough. Interestingly, other symbols depicted on these coins, such as the three-or six-arched hill, the tree-in-railing, and the ritual stand in front of a horse, are frequently found in Mauryan iconography.<sup>34</sup>

All in all, the material evidence, though still meagre, makes it clear that Hindu concepts and cults were already integrated in the society of the early historic period of Tamil Nadu side by side with Buddhist and Jain elements. More excavations, for which there is great scope, are certain to confirm this, especially if they concentrate on ancient places of worship, as at Gudimallam. Let

us now see the picture we get from Sangam literature.

### Vedic & Puranic Culture—Literary Evidence

It is unfortunate that the most ancient Sangam compositions are probably lost for ever ; we only know of them through brief quotations in later works. An early text, the Tamil grammar *Tolkàppiyam*, dated by most scholars to the first or second century AD,<sup>35</sup> is "said to have been modelled on the Sanskrit grammar of the Aindra school."<sup>36</sup> Its content, says N. Raghunathan, shows that "the great literature of Sanskrit and the work of its grammarians and rhetoricians were well known and provided stimulus to creative writers in Tamil.... The *Tolkàppiyam* adopts the entire *Rasa* theory as worked out in the *Nàtya øàstra* of Bharata."<sup>37</sup> It also refers to rituals and customs coming from the "Aryans," a word which in Sangam literature simply means North Indians of Vedic culture ; for instance, the *Tolkàppiyam* "states definitely that marriage as a sacrament attended with ritual was established in the Tamil country by the Aryas,"<sup>38</sup> and it uses the same eight forms of marriage found in the *Dharmashastras*. Moreover, it mentions the caste system or "fourfold jathis" in the form of "Brahmins, Kings, Vaishyas and Vellalas,"<sup>39</sup> and calls Vedic mantras "the exalted expression of great sages."<sup>40</sup>

The *Tolkàppiyam* also formulates the captivating division of the Tamil land into five regions (*tiōai* ), each associated with one particular aspect of love, one poetical

expression, and also one deity : thus the hills (kuriñji) with union and with Cheyon (Murugan) ; the desert (pàlai) with separation and Koççavai (Durga) ; the forests (mullai) with awaiting and Mayon (Vishnu-Krishna) ; the seashore (neytal) with wailing and Varuna ; and the cultivated lands (marutam) with quarrel and Ventan (Indra). Thus from the beginning we have a fusion of non-Vedic deities (Murugan or Koççavai), Vedic gods (Indra, Varuna) and later Puranic deities such as Vishnu (Màl or Tirumàl). Such a synthesis is quite typical of the Hindu temperament and cannot be the result of an overnight or superficial influence ; it is also as remote as possible from the separateness we are told is at the root of so-called "Dravidian culture."

Expectedly, this fusion grows by leaps and bounds in classical Sangam poetry whose composers were Brahmins, princes, merchants, farmers, including a number of women. The "Eight Anthologies" of poetry (oreññuttokai) abound in references to many gods : Shiva, Uma, Murugan, Vishnu, Lakshmi (named Tīru, which corresponds to *ōrā*) and several other Saktis.<sup>41</sup> The Paripāṭal, one of those anthologies, consists almost entirely of devotional poetry to Vishnu. One poem<sup>42</sup> begins with a homage to him and Lakshmi, and goes on to praise Garuda, Shiva on his "majestic bull," the four-faced Brahma, the twelve ādityas, the Ashwins, the Rudras, the Saptarishis, Indra with his "dreaded thunderbolt," the devas and asuras, etc., and makes glowing references to the Vedas and Vedic scholars.<sup>43</sup> So does the Puranānāru, Akanānāru<sup>44</sup> another of the eight anthologies, which in addition

sees Lord Shiva as the source of the four Vedas (166) and describes Lord Vishnu as "blue-hued" (174) and "Garuda-bannered" (56).<sup>45</sup> Similarly, a poem (360) of a third anthology, the , declares that Shiva and Vishnu are the greatest of gods.<sup>46</sup>

Not only deities or scriptures, landmarks sacred in the North, such as the Himalayas or Ganga, also become objects of great veneration in Tamil poetry. North Indian cities are referred to, such as Ujjain, or Mathura after which Madurai was named. Court poets proudly claim that the Chera kings conquered North Indian kingdoms and carved their emblem onto the Himalayas. They clearly saw the subcontinent as one entity ; thus the Puranānāru says they ruled over "the whole land / With regions of hills, mountains, / Forests and inhabited lands / Having the Southern Kumari / And the great Northern Mount / And the Eastern and Western seas / As their borders...."<sup>47</sup>

The *Kural* (second to seventh century AD), authored by the celebrated Tiruvalluvar, is often described as an "atheistic" text, a hasty misconception. True, Valluvar's 1,330 pithy aphorisms mostly deal with ethics (*aram*), polity (*porul*) and love (*inbam*), following the traditional Sanskrit pattern of the four objects of human life : *dharma*, *artha*, *kāma*, and *moksha*—the last implied rather than explicit. Still, the very first decade is an invocation to Bhagavan : "The ocean of births can be crossed by those who clasp God's feet, and none else"<sup>48</sup> (10) ; the same idea recurs later, for instance in this profound thought :

“Cling to the One who clings to nothing ; and so clinging, cease to cling” (350). The *Kural* also refers to Indra (25), to Vishnu’s avatar of Vamana (610), and to Lakshmi (e.g. 167), asserting that she will shower her grace only on those who follow the path of dharma (179, 920). There is nothing very atheistic in all this, and in reality the values of the *Kural* are perfectly in tune with those found in several shastras or in the Gita.<sup>49</sup>

Let us briefly turn to the famous Tamil epic *Shilappadikaram* (second to sixth century AD), which relates the beautiful and tragic story of Kannagi and Kovalan ; it opens with invocations to Chandra, Surya, and Indra, all of them Vedic Gods, and frequently praises Agni, Varuna, Shiva, Subrahmanya, Vishnu-Krishna, Uma, Kàli, Yama and so forth. There are mentions of the four Vedas and of “Vedic sacrifices being faultlessly performed.” “In more than one place,” writes V. Ramachandra Dikshitar, the first translator of the epic into English, “there are references to Vedic Brahmans, their fire rites, and their chanting of the Vedic hymns. The Brahman received much respect from the king and was often given gifts of wealth and cattle.”<sup>50</sup> When Kovalan and Kannagi are married, they “walk around the holy fire,” a typically Vedic rite still at the centre of the Hindu wedding. Welcomed by a tribe of fierce hunters on their way to Madurai, they witness a striking apparition of Durga, who is addressed equally as Lakshmi and Sarasvati—the three Shaktis of the Hindu trinity. There are numerous references to legends from the Mahabharata, the Ramayana, and the Puranas. After worshipping at two temples, one of

Vishnu and the other of Shiva, the Chera king Shenguttuvan goes to the Himalayas in search of a stone for Kannagi’s idol, and bathes it in the Ganges—in fact, the waters of Ganga and those of Cauvery were said to be equally sacred. Similar examples could be given from the *Manimekhalai* : even though it is a predominantly Buddhist work, it also mentions many Vedic and Puranic gods, and attributes the submergence of Puhar to the neglect of a festival to Indra.

As the archaeologist and epigraphist R. Nagaswamy remarks, “The fact that the literature of the *Sangam* age refers more to Vedic sacrifices than to temples is a pointer to the popularity of the Vedic cults among the Sangam Tamils.”<sup>51</sup>

I should also make a mention of the tradition that regards Agastya, the great Vedic Rishi, as the originator of the Tamil language. He is said to have written a Tamil grammar, *Agattiyam*, to have presided over the first two Sangams, and is even now honoured in many temples of Tamil Nadu and worshipped in many homes. One of his traditional names is “Tamil muni.” The *Shilappadikaram* refers to him as “the great sage of the Podiyil hill,” and a hill is still today named after him at the southernmost tip of the Western Ghats.

It would be tempting to continue with this enumeration, which could easily fill a whole anthology. As a matter of fact, P. S. Subrahmanya Sastri showed with a wealth of examples how “a knowledge of Sanskrit literature from the Vedic period to the Classical period is essential

to understand and appreciate a large number of passages scattered among the poems of Tamil literature."<sup>52</sup> Others have added to the long list of such examples.<sup>53</sup> In other words, Vedic and Puranic themes are inextricably woven into Sangam literature and therefore into the most ancient culture of the Tamil land known to us.

### ***Historical Period***

The historical period naturally takes us to the great Pallava, Chola and Pandya temples and to an overflowing of devotional literature by the Alvars, the Nayanmars and other seekers of the Divine who wandered over the length and breadth of the Tamil land, filling it with bhakti. But here let us just take a look at the rulers. An inscription records that a Pandya king led the elephant force in the Mahabharata War on behalf of the Pandavas, and that early Pandyas translated the epic into Tamil.<sup>54</sup> The first named Chera king, Udiyanjeral, is said to have sumptuously fed the armies on both sides during the War at Kurukshetra; Chola and Pandya kings also voiced such claims—of course they may be devoid of historical basis, but they show how those kings sought to enhance their glory by connecting their lineage to heroes of the Mahabharata. So too, Chola and Chera kings proudly claimed descent from Lord Rama or from kings of the Lunar dynasty—in other words, an "Aryan" descent.

As regards religious practices, the greatest Chola king, Karikala, was a patron of both the Vedic religion and Tamil literature, while the Pandya king

Nedunjelyan performed many Vedic sacrifices, and the dynasty of the Pallavas made their capital Kanchi into a great centre of Sanskrit learning and culture. K. V. Raman summarizes the "religious inheritance of the Pandyas" in these words :

The Pandyan kings were great champions of the Vedic religion from very early times.... According to the Sinnamanur plates, one of the early Pandyan kings performed a thousand *velvi* or *yagas* [Vedic sacrifices].... Though the majority of the Pandyan kings were Saivites, they extended equal patronage to the other faiths ... [and included] invocatory verses to the Hindu Trinity uniformly in all their copper-plate grants. The Pandyas patronised all the six systems or schools of Hinduism.... Their religion was not one of narrow sectarian nature but broad-based with Vedic roots. They were free from linguistic or regional bias and took pride in saying that they considered Tamil and Sanskritic studies as complementary and equally valuable.<sup>55</sup>

This pluralism can already be seen in the two epics *Shilappadikaram* and *Manimekhalai*, which amply testify that what we call today Hinduism, Jainism and Buddhism coexisted harmoniously. "The sectarian spirit was totally absent,"<sup>56</sup> writes Ramachandra Dikshitar. "Either the people did not look upon religious distinctions seriously, or there were no fundamental differences between one sect and another."<sup>57</sup>

That is also a reason why I have not stressed Buddhism and Jainism here.



Those two faiths were no doubt significant in the early stages of Tamil society, but not as dominant as certain scholars insist upon in an attempt to eclipse the Vedic and Puranic elements. Buddhism and Jainism did contribute greatly in terms of religious thought, art and science, but faded centuries later under the flood of Hindu bhakti ; their insistence on world-shunning monasticism also did not agree very well with the Tamil temperament, its cult of heroism and its zest for life.

In any case, this superficial glance at Sangam literature makes it clear at the very least that, in the words of John R. Marr, "these poems show that the synthesis between Tamil culture and what may loosely be termed Aryan culture was already far advanced."<sup>58</sup> Nilakanta Sastri goes a step further and opines, "There does not exist a single line of Tamil literature written before the Tamils came into contact with, and let us add *accepted with genuine appreciation*, the Indo-Aryan culture of North Indian origin."<sup>59</sup>

### **The Myth of Dravidian Culture**

And yet, such statements do not go deep enough, as they still imply a North-South contrast and an unknown Dravidian substratum over which the layer of "Aryan" culture was deposited. This view is only milder than that of the proponents of a "separate" and "secular" Dravidian culture, who insist on a physical and cultural Aryan-Dravidian clash as a result of which the pure "Dravidian" culture got swamped. As we have seen, archaeology, literature and Tamil

tradition all fail to come up with the slightest hint of such a conflict. Rather, as far as the eye can see into the past there is every sign of a deep cultural interaction between North and South, which blossomed not through any "imposition" but in a natural and peaceful manner, as everywhere else in the subcontinent and beyond.

As regards an imaginary Dravidian "secularism" (another quite inept word to use in the Indian context), it has been posited by many scholars : Marr,<sup>60</sup> Zvelebil<sup>61</sup> and others characterize Sangam poetry as "secular" and "pre-Aryan"<sup>62</sup> after severing its heroic or love themes from its strong spiritual undercurrents, in a feat typical of Western scholarship whose scrutiny always depends more on the magnifying glass than on the wide-angle lens. A far more insightful view comes from the historian M. G. S. Narayanan, who finds in Sangam literature "no trace of another, indigenous, culture other than what may be designated as tribal and primitive."<sup>63</sup> He concludes :

The Aryan-Dravidian or Aryan-Tamil dichotomy envisaged by some scholars may have to be given up since we are unable to come across anything which could be designated as purely Aryan or purely Dravidian in the character of South India of the Sangam Age. In view of this, the Sangam culture has to be looked upon as expressing in a local idiom all the essential features of classical "Hindu" culture.<sup>64</sup>

However, it is not as if the Tamil land passively received this culture : in

exchange it generously gave elements from its own rich temperament and spirit. In fact, all four Southern States massively added to every genre of Sanskrit literature, not to speak of the signal contributions of a Shankara, a Ramanuja or a Madhwa. Cultural kinship does not mean that there is nothing distinctive about South Indian tradition ; the Tamil land can justly be proud of its ancient language, culture and genius, which have a strong stamp and character of their own, as anyone who browses through Sangam texts can immediately see : for all the mentions of gods, more often than not they just provide a backdrop ; what occupies the mind of the poets is the human side, its heroism or delicate emotions, its bouncy vitality, refined sensualism or its sweet love of Nature. "Vivid pictures of full-blooded life exhibiting itself in all its varied moods," as Raghunathan puts it. "One cannot but be impressed by the extraordinary vitality, variety and richness of the poetic achievement of the old Tamil."<sup>65</sup> Ganapathy Subbiah adds, "The aesthetic quality of many of the poems is breathtakingly refined."<sup>66</sup> It is true also that the Tamil language developed its own literature along certain independent lines ; conventions of poetry, for instance, are strikingly original and more often than not different from those of Sanskrit literature.

More importantly, many scholars suggest that "the bhakti movement began in the Tamil country [and] later spread to North India."<sup>67</sup> Subbiah, in a profound study, not only challenges the misconceived "secular" portrayal of the Sangam texts, but also the attribution of

the Tamil bhakti to a northern origin ; rather, he suggests, it was distinctly a creation of Tamil culture, and Sangam literature "a reflection of the religious culture of the Tamils."<sup>68</sup>

As regards the fundamental contributions of the South to temple architecture, music, dance and to the spread of Hindu culture to other South Asian countries, they are too well known to be repeated here. Besides, the region played a crucial role in preserving many important Sanskrit texts (a few Vedic recensions, Bhasa's dramas, the *Arthashastra* for instance) better than the North was able to do, and even today some of India's best Vedic scholars are found in Tamil Nadu and Kerala.<sup>69</sup> As Swami Vivekananda put it, "The South had been the repository of Vedic learning."<sup>70</sup>

In other words, what is loosely called Hinduism would not be what it is without the South. To use the proverbial but apt image, the outflow from the Tamil land was a major tributary to the great river of Indian culture.

## Conclusion

It should now be crystal clear that anyone claiming a "separate," "pre-Aryan" or "secular" Dravidian culture has no evidence to show for it, except his own ignorance of archaeology, numismatics and ancient Tamil literature. Not only was there never such a culture, there is in fact no meaning in the word "Dravidian" except either in the old geographical sense or in the modern linguistic sense ; racial and cultural

meanings are as unscientific as they are irrational, although some scholars in India remain obstinately rooted in a colonial mindset.

The simple reality is that every region of India has developed according to its own genius, creating in its own bent, but while remaining faithful to the central Indian spirit. The Tamil land was certainly one of the most creative, and we must hope to see more of its generosity once warped notions about its ancient culture are out of the way.

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<sup>6</sup> K. V. Soundara Rajan, *Kaveripattinam Excavations 1963-73* (New Delhi : Archaeological Survey of India, 1994).

<sup>7</sup> See *The Ancient Port of Arikamedu—New Excavations and Researches 1989-1992*, vol. 1, ed. Vimala Begley (Pondicherry : École Française d'Extrême-Orient, 1996).

<sup>8</sup> As reported in *The New Indian Express* (Coimbatore edition), 12 April 2000. The occasion was a debate on "saffronization of the education system," and the full first part of the quotation is : "The RSS has gone to the extent of saying that Dravidian civilization is part of Hinduism...."

<sup>9</sup> For a good overview of the archaeological picture of ancient South India, see K. V. Raman, "Material Culture of South India as Revealed in Archaeological Excavations," in *The Dawn of Indian Civilization* (Up

To c. 600 BC), ed. G. C. Pande (Delhi : Centre for Studies in Civilizations, 1999), p. 531-546.

<sup>10</sup> K. A. Nilakanta Sastri, *A History of South India*, p. 84.

<sup>11</sup> *Uttankita Sanskrit Vidya Aranya Epigraphs* vol. II, *Prakrit and Sanskrit Epigraphs 257 BC to 320 AD*, ed. K. G. Krishnan (Mysore : Uttankita Vidya Aranya Trust, 1989), p. 16 ff, 42 ff.

<sup>12</sup> *Ibid.*, p. 151 ff.

<sup>13</sup> I use the word "culture" in its ordinary meaning, not in the technical sense used by archaeologists, i.e. the totality of material artefacts of a particular category of settlement.

<sup>14</sup> R. Nagaswamy, *Art and Culture of Tamil Nadu* (New Delhi : Sundeep Prakashan, 1980), p. 23.

<sup>15</sup> B. Narasimhaiah, *Neolithic and Megalithic Cultures in Tamil Nadu* (Delhi : Sundeep Prakashan, 1980), p. 211 ; also in Bridget and Raymond Allchin, *The Rise of Civilization in India and Pakistan* (New Delhi : Cambridge University Press, 1996), p. 331.

<sup>16</sup> B. Narasimhaiah, *Neolithic and Megalithic Cultures in Tamil Nadu*, p. 203.

<sup>17</sup> I. K. Sarma, *Religion in Art and Historical Archaeology of South India* (Madras : University of Madras, 1987), p. 33. <sup>18</sup> K. V. Raman, *Sakti Cult in Tamil Nadu—a Historical Perspective* (paper presented at a seminar on Sakti Cult, 9<sup>th</sup> session of the Indian Art History Congress at Hyderabad, in November 2000 ; in press).

<sup>19</sup> William A. Noble, "Nilgiris Prehistoric Remains" in *Blue Mountains*, ed. Paul Hockings (Delhi : OUP, 1989), p. 116.

<sup>20</sup> Bridget and Raymond Allchin, *The Rise of Civilization in India and Pakistan*, p. 339-340.

<sup>21</sup> The word "Hindu" is as convenient as it is unsatisfactory ; I use it in a broad sense that encompasses Vedic, Epic, Puranic culture, but without being exclusive of Buddhist or Jain faiths.

<sup>22</sup> In the district of Chittoor (A.P.) near the present Tamil Nadu border ; this area was then regarded as part of Tamilaga (which extended as far north as present-day Tirupati).

<sup>23</sup> I. K. Sarma, *Religion in Art and Historical Archaeology of South India*, p. 35.

<sup>24</sup> *Ibid.*, p. 34.

<sup>25</sup> K. V. Raman, *Excavations at Uraiyur*, p. 84.

<sup>26</sup> K. V. Raman, *Sakti Cult in Tamil Nadu*.

<sup>27</sup> K. V. Soundara Rajan, *Kaveripattinam Excavations 1963-73*, p. 111-112.

<sup>28</sup> Iravatham Mahadevan, "Pottery Inscriptions in Brahmi and Tamil-Brahmi" in *The Ancient Port of Arikamedu*, p. 295-296.

<sup>29</sup> K. V. Raman, "A Note on the Square Copper Coin from Arikamedu" in *The Ancient Port of Arikamedu*, p. 391-392.

<sup>30</sup> R. Krishnamurthy, *Sangam Age Tamil Coins* (Chennai : Garnet Publications, 1997). The following examples are drawn from this book.

<sup>31</sup> K. V. Raman, "Archaeological Excavations in Kanchipuram", in *Tamil Civilization*, vol. 5, N°1 & 2, p. 70-71.

<sup>32</sup> R. Krishnamurthy, *Sangam Age Tamil Coins*, p. 26.

<sup>33</sup> Ibid., p. 46-47, etc.

<sup>34</sup> Two important studies in this respect are : Savita Sharma, *Early Indian Symbols* (Delhi : Agam Kala Prakashan, 1990) and H. Sarkar & B. M. Pande, *Symbols and Graphic Representations in Indian Inscriptions* (New Delhi : Aryan Books International, 1999).

<sup>35</sup> Sangam texts are notoriously hard to date and there is among scholars nearly as much divergence of views as with Sanskrit texts. Thus some date the Tolkāppiyam as late as the fifth or sixth century AD.

<sup>36</sup> K. A. Nilakanta Sastri, *A History of South India*, p. 130.

<sup>37</sup> N. Raghunathan, *Six Long Poems from Sanham Tamil* (reprint Chennai : International Institute of Tamil Studies, 1997), p. 2, 10.

<sup>38</sup> K. A. Nilakanta Sastri, *A History of South India*, p. 130.

<sup>39</sup> Tolkāppiyam Marabus 71, 72, 77, 81, quoted by S. Vaiyapuri Pillai in *Life of Ancient Tamils*. <sup>40</sup> Tolkāppiyam, Porul 166, 176, quoted by K. V. Sarma, "Spread of Vedic Culture in Ancient South India" in *The Adyar Library Bulletin*, 1983, 43:1, p. 5.

<sup>41</sup> K. V. Raman, *Sakti Cult in Tamil Nadu*.

<sup>42</sup> Paripāḍal, 8.

<sup>43</sup> Paripāḍal, 3, 9, etc..

<sup>44</sup> Puranānāru, 2, 93, etc. See also invocatory verse.

<sup>45</sup> The last three references are quoted by K. V. Sarma in "Spread of Vedic Culture in Ancient South India," p. 5 & 8.

<sup>46</sup> Quoted by K. V. Sarma in "Spread of Vedic Culture in Ancient South India," p. 8.

<sup>47</sup> Puranānāru, 17 as translated in *Tamil Poetry Through the Ages*, vol. I, Eññuttokai : the Eight Anthologies, ed. Shu Hikosaka and G. John Samuel (Chennai : Institute of Asian Studies, 1997), p. 311.

<sup>48</sup> Tiruvalluvar, *The Kural*, translated by P. S. Sundaram (New Delhi : Penguin, 1990), p. 19.

<sup>49</sup> For more details on Tiruvalluvar's indebtedness to Sanskrit texts, see V. R. Ramachandra Dikshitar's study of the Kural, as quoted by P. T. Srinivasa Iyengar in *History of the Tamils* (Madras : reprinted Asian Educational Services, 1995), p. 589-595.

<sup>50</sup> V. R. Ramachandra Dikshitar, *Cilappatikaram* (Madras : 1939, reprinted Chennai : International Institute of Tamil Studies, 1997), p. 57,

<sup>51</sup> R. Nagaswamy, *Art and Culture of Tamil Nadu*, p. 7.

<sup>52</sup> P. S. Subrahmanya Sastri, *An Enquiry into the Relationship of Sanskrit and Tamil* (Trivandrum : University of Travancore, 1946), chapter 3.

<sup>53</sup> See for instance : K. A. Nilakanta Sastri, "Sanskrit Elements in Early Tamil Literature," in *Essays in Indian Art, Religion and Society*, ed. Krishna Mohan Shrimali (New Delhi : Munshiram Manoharlal Publishers Pvt. Ltd., 1987) ; K. V. Sarma, "Spread of Vedic Culture in Ancient South India" in *The Adyar Library Bulletin*, 1983, 43:1 ; Rangarajan, "Aryan Dravidian Racial Dispute from the Point of View of Sangam Literature," in *The Aryan Problem*, eds. S. B. Deo & Suryanath Kamath (Pune : Bharatiya Itihasa Sankalana Samiti, 1993), p. 81-83.

<sup>54</sup> K. V. Raman, "Religious Inheritance of the Pandyas," in *Sree Meenakshi Koil Souvenir* (Madurai, n.d.), p. 168.

<sup>55</sup> Ibid., p. 168-170.

<sup>56</sup> V. R. Ramachandra Dikshitar, *Cilappatikaram*, p. 53.

<sup>57</sup> Ibid., p. 58.

<sup>58</sup> John Ralston Marr, *The Eight Anthologies – A Study in Early Tamil Literature* (Madras : Institute of Asian Studies, 1985), p. vii.

<sup>59</sup> K. A. Nilakanta Sastri, "Sanskrit Elements in Early Tamil Literature," p. 45 (emphasis mine).

<sup>60</sup> John R. Marr, "The Early Dravidians," in *A Cultural History of India*, ed. A. L. Basham (Delhi : OUP, 1983), p. 34. <sup>61</sup> Kamil Zvelebil, *The Smile of Murugan : On Tamil Literature of South India* (Leiden : E. J. Brill, 1973), p. 20, quoted in Ganapathy Subbiah, *Roots of*

*Tamil Religious Thought* (Pondicherry : Pondicherry Institute of Linguistics and Culture, 1991), p.6.

<sup>68</sup> Ganapathy Subbiah, *Roots of Tamil Religious Thought*, p. 160.

<sup>62</sup> Ibid.

<sup>63</sup> M. G. S. Narayanan, "The Vedic-Puranic-Shastraic Element in Tamil Sangam Society and Culture," in *Essays in Indian Art, Religion and Society*, p. 128.

<sup>64</sup> Ibid., p. 139.

<sup>65</sup> N. Raghunathan, *Six Long Poems from Sanham Tamil*, p. 32.

<sup>66</sup> Ganapathy Subbiah, *Roots of Tamil Religious Thought*, p. 5.

<sup>69</sup> I dare say that important ancient texts may yet be discovered among palm-leaf manuscripts in Tamil Nadu or Kerala (many of which are being mindlessly lost or destroyed for want of active interest). For instance, I was once shown in Kerala, among many ancient texts, a thick palm-leaf manuscript of a *Ramayana* by Vyasa. (Some traditions do mention it, but it has been regarded as lost.) Post-Independence India has been prodigiously careless in preserving its cultural heritage.

<sup>70</sup> Swami Vivekananda, "Reply to the Madras Address," *The Complete Works of Swami Vivekananda* (Advaita Ashrama, 1948), p. 278.

<sup>67</sup> N. Subrahmanian, *The Tamils—Their History, Culture and Civilization* (Madras : Institute of Asian Studies, 1996), p. 118.

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Here we provide three book-reviews that deal with the issues dealt here:

## Saraswathi River: A Scientific Study: Book Review by Yuva Bharathi

**T**he river Saraswathi has been an enchanting mythological memory and a thrilling historical mystery and of late an unnecessary political controversy. However can this river be rescued from such unwanted controversies and returned to its rightful place as an eye-opened for the depth and extent of our civilizational past, our knowledge of it or our ignorance?

The book 'The Lost River: On the trail of the Saraswathi' by Michel Danino, does exactly that and much more. The book is a scientific odyssey into the past that still flows in our veins as our culture and whose deep wellsprings may be running down under the desert beds and paleo-channels that extend from the Himalayan valleys to the north-western coastline of India.

The part one of the book has some very interesting maps belonging to the colonial period painstakingly collected by Danino. For example there is the 1862 British map of India where a tributary to Ghaggar is labeled 'Soorsutti' i.e. Sarsuti. (p.20) Contrary to the popular misconception that the modern day discovery of Saraswathi starts with the satellite photography, Danino documents how Saraswathi was a vivid memory in localized oral traditions of rural

Rajasthan and how colonial British cartographers traced a dried river bed which they invariably considered as the lost river Saraswathi. Thus Danino quotes C.F.Oldham who claimed that the course of the 'lost river' had now been traced from the Himalayas to the Rann of Kutch and the accounts given by Mahabharatha and Vedas "were probably both of them correct at the periods to which they referred" (p.34)

Then Danino moves through the Vedic literature to the maze of mythological lore searching for clues on the geological history as well as geographical spread of the river. Vishnu Purana curiously does not mention her; Makeandeya Purana does and in the same way as the famous Vedic river hymn does. Padma Purana mentions an all consuming fire in connection with Saraswathi. Danino speculates aloud if this all consuming fire could actually be the mythologized memory of an actual drought that engulfed the whole area (p 44) Danino also ploughs through epigraphic data and even quoted an Islamic source, as late as fifteenth century Tarijh-i-Mubarak Shahi which testifies to the existence of Saraswathi (p.46)

He then seamlessly moves to the modern research that is being done in search of the river. In this exciting phase of the book

Danino explains lucidly how Satellite pictures and studies of tectonics revealed seismic factors that changed the history of a river and gave birth to mythologies that a nation would preserve for millennia to come. This scientific thriller starts with the famous 'Remote Sensing of the 'Lost' Sarasvati River' paper by Yashpal et al Danino concludes:

Overall the ISRO study confirms the existence of numerous paleochannels and proposes the most likely courses for the Sarasvati – not as neat as the single line we see on many maps (including mine). It is a welcome reminder of the complexity of the region's history. (p.72)

The scientific search for Saraswathi has a multi-disciplinary approach. In the north-western part of Jaisalmer district BARC scientists discover that the groundwater there is not a static water table but a subterranean flow whose stable isotope content compared to that of Himalayan rivers with absence of any modern recharge. An isotopic confirmation of a mythological river now unfolds in the pages. A 1999 study again showed that in the Jaisalmer region despite some of the tubewells had been in use for up to forty years, their output was stable and there was no sign of water table receding. Danino recalls with wonder the words of Mahabharatha "invisible current through the bowels of the earth" (p.75)

Then Danino takes on a grand archeological tour through the Saraswathi-Sindhu civilization which has often been presented in our dilapidated textbooks through certain yester-century

photographs and line drawings of select features. However in the tour we are taken by Danino we are shown the exciting new discoveries of the latest archeological excavations. Fire temple in Banwali (p.157), a tiled floor in Kalibangan (p.160), Lothal's huge baked-brick basin with artist impression of the same (pp.162-3), rock-cut reservoir at Dholavira... all these throw up a new world before our eyes. The photos even in black and white are so beautiful and excite our interest in the subject. The author has got them from Archeological Survey of India which begs the question why our textbooks could never do that. Here is a side note. In post-independent India the famous historian K.M.Panikkar wrote a note to Jawaharlal Nehru the first Prime Minister of India asking him to sanction explorations of Archeological Survey of India in "the desert area in Bikaner and Jaisalmer through which ancient Saraswathi flowed into the Gulf of Kutch at one time" and Nehru sanctioned the project. (p.135)

Danino's own thesis backed by archeological and geological data unfolds now in the book. Saraswathi river played an important part in the evolution and later a critical transformation of what is called the Harappan culture which should be more aptly called Saraswathi-Sindhu culture. The modern Indian culture has strong cultural continuity with this riverine civilization. Like the dynamic water of the Himalayan river still running under the deserts of Rajasthan nourishing people there, the cultural-spiritual continuity with the Saraswathi-Indus culture sustains in ways we know not consciously. What is

that gigantic event (or was that a gradual change like the centuries prolonged global warming we face today) that triggered the critical transformation of the river? Danino simply expands before us a sheet of data : seven studies that point to an arid environment during the mature Harappan phase and seven studies pointing to the wetter environments. Whatever may be the cause which the geological sleuths will tell us in the future, draughts or floods, Saraswathi played an important role. Perhaps her 'Vinasanna' produced severe droughts in some places and produced floods elsewhere as her branches shifted. A river changed its course and perhaps went underground and a material civilization collapsed but its spiritual culture sustained a people who spread over the entire landscape that is now known as India and in their memory she remained both as a river and as a Goddess.

And as Danino concludes She becomes a metaphor for the eternal rebirth.

This is a book which may not be for the beginners for whom one could suggest Danino's 'Invasion that Never was'. But for anyone who is interested in the ancient Indian history, on the way science combines with ancient history to investigate ancient mysteries, how a holistic multi-disciplinary approach can open up new vistas into our own past and throw light on our present, this book is a must. Danino has done wonderful service to popularizing ancient Indian history and brining the fruits of the sun-basked labors of India archeologists to lay public. He deserves to be

complimented and thanked for this wonderful book.

**Michel Danino, The Lost River –On the trail of the Sarasvati**

Penguin Books, 2010, Pages: 357

**Review of : Indoaryan Origins and other Vedic Issues, N. Delhi, Aditya Prakashan – written by N. Kazanas.**  
Reviewer : David Stollar, BA Atc, London.

Dr N. Kazanas is a noted Greek Sanskritist and the Director of a Cultural Institute in Athens, Greece. Apart from multifarious studies in Greek, he has published numerous articles in English in Indian and Western Journals and has participated in many Conferences in India and in the West.

In this book are collected ten essays of his, all dealing with different aspects of Indology

and particularly the ancient Vedic Tradition. The second paper examines exclusively the

religiophilosophical thought of the Indoaryans from the Zgveda to the Upanishads and shows that, despite some differences in terminology and emphasis, the main thread remains one and unchanged – i.e. the full realization that one's true Self (âtman) is the same as the Self of the universe (brahman).

The other nine essays revolve round a double axis. One axis is that the bulk of the hymns

of Zgveda were composed before 3100 BCE and enshrine an old oral tradition which

remained alive well into the 20th century. The Indus-Sarasvatî (or Harappan) culture is but a phase, a material expression, of that ancient oral culture that is known as Vedic Tradition. The other axis is that there is no evidence whatever for the mainstream notion of the Aryan Invasion/Immigration Theory which is a dogmatic assertion that the Indoaryans entered N-W India c 1700-1500 BCE. On the contrary, the essays present various types of evidence and argue that the Indoaryans were settled in their historical habitat since, at the very latest, c 5000 BCE. The archaeological evidence itself shows that the material culture, present and developing from the seventh millennium onward in that wider area, received no intrusion from another culture of a size that would alter the existing native one (and turn it into the Indo-European culture of the Indoaryans).

The essays utilize all the latest evidence from the fields of Anthropology Archaeology,

Genetics, History and Literature; also from Comparative Mythology and from Comparative Philology with its linguistic games. Mainstream theory on these issues is highly speculative but its conjectures are presented by scholars of this persuasion as facts and perpetuated

through mechanical repetition. These essays pose a direct and bold challenge to the mainstream views. How come, for instance, that the Zgveda knows nothing of ruins (from abandoned Harappan towns), of bricks (the chief building material of the Indus-Sarasvatî Civilization and of cotton (cultivated and exported by Harappans) but knows of a mighty river Sarasvatî which dried up c2000-1900 BCE?

Some essays examine also the cultures of the Near East and the civilizations of Mesopotamia and Egypt, always in relation to the Vedic Tradition. Herein it is argued that, contrary to general belief, the influence does not run from the Near East to India but rather the opposite direction. The evidence adduced is quite strong. This is a book that every serious Indologist, whether sanskritist, comparativist, archaeologist or historian, ought to consult

### **Book Review: In Search of the Cradle of Civilization**

**In Search of the Cradle of Civilization by Georg Fuerstein, Subhash Kak and David Frawley,**

Quest Books (September 2001), 341 pages.

Reviewed by Varnam.org: an eminent website of online book reviews

In 1786, Sir William Jones, a British judge in Calcutta noticed that there were striking similarities in the vocabulary and

grammar of Sanskrit, Persian, Greek, Latin, Celtic and Gothic. This discovery resulted in the creation of a new field called comparative linguistics which led scholars to believe that all these languages were derived from a pre-Indo-European language which had its origins somewhere in Northern Europe, Central Asia, Southern Russia, India or Anatolia.

Soon we got the Aryan Invasion Theory, which claimed that Aryans, barbaric semi nomadic tribes who spoke the Indo-European language invaded India and then composed the Vedas. A date of between 1500 – 1200 B.C.E was also proposed for the invasion. The word Aryan comes from Sanskrit language and means “noble” or “cultured” and does not refer to a particular race or language. The whole Aryan Invasion Theory is scholarly fiction according to authors Georg Feuerstein, Subhash Kak and David Frawley and they present both literary and archaeological evidence for it.

The literary history is provided by the Vedic literature from the Rig-Veda to the Upanishads. The Vedic Aryans were not just cattle and sheep breeding semi nomadic pastoralists, but city dwellers, seafarers and merchants whose business took them along the length of Saraswati, Indus and also into the ocean. In the ancient scriptures there is no reference to a five river system, but to a seven river system which was called sapta-saindhava (land belonging to seven rivers) and the center of the vedic times was not Punjab, but some place further east on the Saraswati.

Satellite images have shown evidence of paleo channels in Haryana believed to be this mythical Saraswati. According to geologists, before 1900 B.C.E, Saraswati had shifted course at least four times. Then major tectonic shifts occurred which altered the flow of the river resulting in the eventual drying. Following this people migrated to the Ganges valley which is described in the Shatapata Brahmana.

Following the archaeological discovery of Harappa and Mohenjo-Daro, hundreds of other sites were discovered in the region like Ganweriwala, Rakhigarhi, Dholavira, Kalibangan and Lothal. The Harappan culture area far exceeded the combined area occupied by the Sumerian and Egyptian civilizations and has provided various seals of significance. This civilization declined around 1900 B.C.E and the cause is attributed to climate change or the disappearance of substantial portions of the Ghaggar Hakra river system.

The authors argue that the people of Harappa were Vedic Aryans who had reached India a long time back. Indo-European speakers are now thought to have been present in Anatolia at the beginning of the Neolithic age. Migrations would have happened during the Harappan times as well, but the new immigrants would have found a prominent Sanskrit speaking Vedic people in Harappa. It is possible that the Vedic people walked on the streets of Mohenjo-Daro and Harappa and even possibly Mehrgarh and they did not come as conquerors or destroyers from



outside India, but lived and even built the cities in the Land of Seven Rivers.

There are reasons to believe that the Rig-Veda was composed much before Muller's imaginary date. The authors claim that some of the oldest hymns of Rig-Veda were composed before the decline of Saraswati. According to them, Rig-Veda fills the gap between the Neolithic town of Mehrgarh and the Indus-Saraswati civilization. One of the stellar patterns suggested by the hymns of the Rig Veda could only have occurred in the period from 4500 to 2500 B.C.E. Still Max Muller quite arbitrarily came up with a date of 1500 – 1200 B.C.E for the Vedas and it has been repeated constantly by various historians. The Rig Veda speaks about the seven rivers and if they were composed by people who came from outside in 1500 B.C.E, then they would not have known about the two vanished rivers.

Among the artifacts obtained from the Indus-Saraswati region is the pashupati seal named so after the Hindu God Shiva. The seal shows a seated figure, in a yogic posture, with headgear surrounded by animals. Rudra/Shiva is the most prominent deity of the Yajur Veda and this links the Harappan religion with Vedic texts. Polished stones which look like the linga and recently the swastika was also found in Indus Valley. Numerous clay figurines have been found in Harappa which show a Mother Goddess cult and Goddesses are common in Hinduism even now.

There is also evidence of tree worship in Harappan times as mentioned in Rig

Veda and Atharva Veda. The core of the Vedic religion was sacrifice and fire altars have been found in several Indus sites. In Kalibangan seven rectangular fire altars have been found aligned north-south beside a well which parallels the six Vedic dishnya hearths. With all the evidence the authors conclude that the Vedic and Indus-Saraswati civilization is one and the same and Rig-Veda and other sacred hymns were the product of the people who created the urban civilization of the Land of the Seven Rivers.

According to the Aryan Invasion/Migration theory Aryans came and conquered the dark skinned Dasyus. In Sanskrit dasa means servant and could have been the opposite of the Aryans. The battle between the Aryans and Dasyus could be a metaphor for the fight between light and darkness like the struggle between the Egyptian God Ra and the demons of darkness or the Zoroastrian conflict between Ahura Mazda and Ahriman. This reference which appears once in the entire Vedic literature became the cornerstone for the Aryan invasion theory. The Dasyus were not Dravidians or non-Aryans, but fallen Aryans or members of the warrior class who had become unspiritual. Arya and dasyu are terms not describing race, but behavior.

Some of their arguments are not that convincing. For example, they cite that priesthood played an important part of Harappans and similarly emphasis on priesthood is found in Vedic literature and hence Harappa was vedic. Priesthood was an important part of Egyptians, and Zoroastrians as well. The

authors believe that Indo-European peoples were at least present in Mehrgarh or that they could be the creators. This belief comes not from any archaeological evidence, but from the assumption that some hymns of Rig Veda could go back to the fourth millennium B.C.E. They even state that literary evidence is more important than archaeological evidence. In one case they go even as far as suggesting that ancient Egyptians got their wisdom from the sages of India since there was a colony of Indic people in Memphis around 500 B.C.E.

gives us a glimpse of the world in which the authors of the Vedas lived. This book brings into attention many interesting pieces of information from various fields to make a strong case for the antiquity of Indic civilization and is highly recommended.

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Recently there was a program on The History Channel titled, The Exodus Decoded, which tried to provide a scientific explanation to the Exodus and the ten plagues that struck Egypt. The Smithsonian of May 2006 has an article titled Mideast Archaeology: The Bible as a road map which talks about how an archaeologist identified a structure in West Bank which is believed to have been built by Joshua on instructions from Moses. In both these cases the Bible has been taken as a valid historical document and then archaeology was conducted to validate it. Today Biblical Archaeology is a scientific discipline in its own right.

When it comes to ancient Indian scriptures like the Vedas, scholars are not that lenient. They have always chosen to see in them literary creations of little more than mythological and theological significance. While they contain theology and mythology, it also reveals the names of rivers, astronomical information and gives geographical descriptions which could be valuable clues for historians. It

Vivekananda Kendra – A call to the youth  
Sri A.Balakrishnan, Vice-President, Vivekananda Kendra, Kanyakumari.

### VIVEKANANDA ROCK MEMORIAL

Swami Vivekananda, with intense love in the heart for motherland undertook wanderings all over India. He came to Kanyakumari and set on 25<sup>th</sup>, 26<sup>th</sup> and 27<sup>th</sup> December 1892 on the mid-sea rock meditating on India's past, present and future.

It was on this rock that he discovered the mission for glorious India and later shook the world by India's spirituality. On this sanctified place Sri Eknathji Ranade, with the place Sri Eknathji Ranade, with the participation of millions of people of India constructed the Vivekananda rock Memorial, which symbolizes the glorious mission of India as seen by Swami Vivekananda in his meditation. Eknathji was chosen by Sri Gururji Golwalkar to take up this challenging task. He could complete this massive monument with the help of his co-workers from Rashtriya Swayamsevak Sangh, the blessings of Swami Ranganathananda and all other monks of Ramakrishna Math and great sanyasis like Swami Chinmayananda, Swami Chidananda, Swami Chidbhavananda, Paramacharya Sri Chandrashekharendra Saraswati of Kanchi Kamakoti peetham, leaders like Dr.Radhakrishnan, Lal Bahadur Shastri, S.K.Patil, Atalbihari Bajpeyi, Annadurai, M.C.Chagata, etc. and many others from all over the country.

As the Vivekananda Rock Memorial was taking shape, Sri Eknathji Ranade also envisaged a living Memorial for Swami Vivekananda. The

result was the conception and formation of the Vivekananda Kendra as a spirituality oriented service mission, which reflected Swami Vivekananda's vision of glorious India in action. The Kendra – a cadre based organization-is an eternal call for those youth who aspire to dedicate their life to serve the nation. Vivekananda Kendra is a call to those youth who want to lead a meaningful, different life in the service of the society.

Vivekananda Kendra aims of national reconstruction through 'Man Making.' The Kendra has evolved a system of moulding Karyakartas – dedicated workers – by screening selected youth and training them as Karyakartas with dedication and skill to undertake the great task of national regeneration. The Karyakartas are of four categories. Jeenavrati Karyakarta-the young men and women who join Kendra for life, Sevavrati Karyakarta-who join Kendra for a specific period of time, Vanaprasthi Karyakarta – who join Kendra after their retirement and Sthanik Karyakarta – the local people who commit their specific time everyday for the work of Kendra.

Today around 200 Jeevan vrati, Vanaprasthi and Sewavrati Karyakartas are rendering service through 225 branch centres situated all over India.

## **YOGA; THE CORE OF VIVEKANANDA KENDRA**

Taking Yoga as its core, to attract, contact and involve people belonging to various strata of society in the work of national regeneration. Kendra has a unique method of regular activities for children, youth and all others. There are:

1. Yoga Varga-Daily classes for practice of Yoga to lead the Yoga Way of Life.
2. Samskar Varga – Weekly classes for children for developing confidence and learning to work in teams.
3. Swadhyay Varga – Weekly classes for knowing the purpose of life and for acquiring knowledge about our culture, country and current affairs so as to able to contribute for nation-building.

Number of camps like Yoga Shibir, Spiritual Retreat, Personality Development Shibir, Youth Camps and training camps for the teachers and Karyakartas are also organised at Kanyakumari and other places.

Vivekananda Kendra works to create the awareness for the need of organized work for the regeneration of nation. Such awareness is reflected in its ever-growing activities. To cater to the needs of specific areas in the country and fields of work many service projects as mentioned below are also taken up.

## **KENDRA'S SERVICE PROJECTS EDUCATION**

In the field of education, Kendra running 58 regular schools affiliated to CBSE, out of these 29 are in Arunachal Pradesh, 16 are in Assam, 1 in Nagaland, 9 in Andaman Islands, 2 in Tamil

Nadu and 1 in Karnataka. In all these schools, besides other subjects, English, Hindi, Sanskrit and the local languages are given prime importance. Regular cultural classes are conducted in all the schools in order to give value based education to the children. Total number of students studying in Vivekananda Kendra Vidyalayas as on today is approximately 30,000.

Kendra runs around 220 Balwadis (Nursery schools) to take care of the nutrition, health and hygiene along with development of the personality of the tiny-tots.

Kendra is also running 4 Vocational Training Centres for women, out of which 2 are located in Arunachal Pradesh, 1 in Assam and 1 in Karnataka.

In the field of education a unique initiative of Kendra is Anandalaya. Anandalayas are run for the school going rural children to improve their academic as well as also to help to develop confidence. Gradually Anandalaya become the focal point of positive change for the whole village. Today Kendra is running Anandalayas in Arunachal Pradesh, Assam and Orissa.

## **WORK IN THE RURAL AREAS FOR GRAM VIKAS**

Kendra works in the villages of Assam, Arunachal Pradesh and Orissa. In the rural areas of 5 Southern district of Tamilnadu, in rural areas of Nashik in Maharashtra and rural areas near Bangalore in Karnataka. The Rural development work is for the all round development of men, women and children of these economically backward areas. As part of these Rural Development Programmes, Kendra runs

Balwadis, weekly Samskar Vargas, cultural competitions are organized for encouraging the rural talents. Medical centers and mobile medical vans take care of the health aspects. For the interior areas the youth are trained as Swasthya-Rakshkas who take care of the health and also guide the patients to seek medical help in the initial stages of diseases. The rural youth is guided through one day camps, written examinations etc. to face the challenges of life. Deepapooja, Shivapooja, Mahila Jagaran Shibirs, training in tailoring, weaving & food preservation are the activities to focus on the rural women, to bring them together to learn about health and hygiene and upbringing of children etc. Besides number of Youth Camps and Personality Development Camps are organized as a regular feature for the rural youths.

#### **NATURAL RESOURCE DEVELOPMENT PROGRAM**

Under this project, 4 types of activities are undertaken by Kendra:

1. Water shed management
2. Rural Housing
3. Indigenous Medicines
4. Farming

Technological Resource Centre set up at Kanyakumari trains the workers, village officers, Panchayat members and NGOs under these four activities. Gramodaya Darshan Park and exhibition on the above four topics is also established in Vivekanandapuram campus.

#### **ARUNJYOTI**

Arunjyoti – A programme for the multidimensional development of the Arunachali society is a part of the Rural Development Project organized by the Vivekananda Kendra in Arunachal Pradesh. Through this programme Kendra works to organize the Arunachali people and awaken their dormant spirit. Programs are organised in different forums namely – Yuva Manch, Mahila Manch, Swasthya Seva Manch, Sanskritik Manch and Anopupacharik Shiksha Manch.

#### **VK MEDICAL RESEARCH FOUNDATION**

Vivekananda Kendra Medical Research Foundation is running a hospital in the Numaligarh Refinery Township complex. This 40 bedded well equipped hospital not only caters to the needs of the 4000 members of staff and family of the refinery, but also attends to peoples of 13 surrounding villages. Another hospital is being started at Bina in Madhya Pradesh in the township complex of Bharat Oman Refineries Ltd.

#### **VIVEKANANDA KENDRA INTERNATIONAL**

In order to take Swami Vivekananda's message abroad and also engage in civilisational and religious dialogues. Kendra has set up Vivekananda Kendra International. This was inaugurated by the then Prime Minister of India Shri Atal Behari Vajpayee on 23<sup>rd</sup> May 2003. A befitting suitable building is completed on a plot allotted by the Government of India at Chanakyapuri. Regular monthly lectures with



dignitaries on specific subjects are regular feature at present.

subjects in various languages have been brought out by Kendra.

### **VIVEKANANDA KENDRA INSTITUTE OF CULTURE – GUWAHATI, ASSAM**

The Vivekananda Kendra Institute of Culture, Guwahati, Assam is established with the purpose of focusing and promoting the cultural continuity of the North Eastern communities with each other and also with the rest of India. Also to focus on how development takes through cultural norms VKIC is conducting various seminars, study circles and research works in all the seven states of North East Region. Some of the seminar papers have been published in the form of books and CDs and are available for general public who are interested to know the colourful, cultural life of North East.

### **KENDRA PUBLICATIONS**

As part of the it's various activities Kendra has been bringing out number of books and periodicals based on India's cultural ethos. During the year Kendra has published its second edition of the book "India's Contribution to World Thought and Culture" which was released by the Vice-President Sri Bhairon Singh Shekhawat on 22<sup>nd</sup> February 2004. The biggest biography of Swami Vivekananda biggest biography of Swami Vivekananda "Comprehensive Biography of Swami Vivekananda" authored by Prof. S.N.Dhar has already entered into third edition. Kendra has brought out books authored by Mananeeya P.Parameswaranji, President Vivekananda Kendra – "Marx and Swami Vivekananda", "Heart Beats of Hindu Nation", "Gita and its Social Impact". Many books on various

### **VIVEKANANDA KENDRA'S PERIODICALS ARE**

1. Yuva Bharati – English monthly;
2. Vivekananda Kendra Patrika – English thematic half-yearly;
3. Kendra Bharati – Hindi monthly;
4. Vivek Vani - Tamil monthly;
5. Vivek Vichar – Marathi monthly;
6. Jagriti – Assamese-English quarterly;
7. Vivek Sudha – Gujarati quarterly
8. Vishwa Bhanu – Malayalam bi-monthly

All these periodicals are meant for the general public and particularly for the youth.

Besides the above mentioned service activities, number of regular activities are organised in Vivekananda Kendra campus. There are four exhibition mentioned by Kendra:

1. Arise! Awake! – The exhibition depicting the vision, life and message of Swamiji.
2. Wandering Monk – Depicts Parivrajaka phase of Swamiji.
3. Gangotri – An Exhibition highlighting Mananeeya Eknathji's life and the Kendra work.
4. Bharat Gramodaya Darshan Park – The pictorial and live demonstration in ideal management of water, housing, health and herbal medicine.

Vivekanandapuram Campus also provides accommodation for one thousand people at a time visiting Kanyakumari at considerably lower tariff. Visitors can stay here in a "Home away

from home” atmosphere amidst serene surroundings close to the sea.

### **CAMPS AT VIVEKANANDAPURAM, KANYAKUMARI**

For the people all over the country following residential camps are conducted in the serene atmosphere of Vivekanandapuram.

Yoga Shiksha Shibir – for 15 days - In English and Hindi

Spiritual Retreat – for 7 days – In English and Hindi

Acharya Prashikshan Shibir – for 25 days – In English.

### **LIVING WITH A PURPOSE**

“They alone live who live for others the rest are more dead than alive” Said Swami Vivekananda. How true! Today when the modern science tells us that existence is interrelated, interconnected and interdependent. For living meaningful life, we have to contribute and work for the good of the society.

Vivekananda Kendra invites all to contribute their time, energy and money for the actualizing the dream of Swami Vivekananda of Vibrant Bharat working for good of humanity.

Sri A. Balakrishnan  
Vice-President  
Vivekananda Kendra, Kanyakumari.

Donations to Vivekananda Kendra are entitled to Income Tax Exemption under Section 80-G of Income Tax Act.

The amount can be paid by Cash or Cheque / Money Order / Demand Draft in favour of Vivekananda Kendra payable at State Bank of India, Vivekanandapuram Branch, Vivekanandapuram, Kanyakumari or by directly depositing in our State Bank of India Core Banking Account Number 11305877361 (Bank Code No.03780)

For further details contact:

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