Sanskrit University Book Series 139

The Indo European Problem: A New Paradigm, A Complete Re-look

(Vedic Chronology: The New Perspective: from early Rgveda to Mahabharata & later)

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Publisher:
Shri Lal Bahadur Shastri National Sanskrit University
B-4, Qutub Institutional Area, New Delhi-110016

Edition : 2025

ISBN : 978-81-986424-5-5

Price : 850.00

Printer:
D.V. Printers
97-U.B., Jawahar Nagar, Delhi-110007

Prarochana

'The Indo-European Problem: A New Paradigm, A Complete Re-look', authored by Dr. Mohan Gupta, D.Litt., IAS (Retd.) is a paradigm-shifting work of historical revision that challenges entrenched Eurocentric narratives with scholarly rigor and depth. It stands as a meticulously structured treatise on Vedic antiquity and a compelling re-examination of linguistic origins, offering a bold counter-narrative to the Aryan Invasion Theory. Synthesizing scientific evidence with scriptural tradition, the book emerges as a cornerstone for decolonizing Indological studies. Through a masterful integration of textual, archaeological, and astronomical data, it provides an authoritative voice in re-evaluating the antiquity of Indian civilization, making it a critical resource for scholars of ancient history and linguistics alike.

At the core of this magnum opus lies a bold and necessary proposition: to shift the scholarly lens from the speculative reconstruction of a hypothetical Proto-Indo-European (PIE) language to the concrete, textual, and cultural wealth of Vedic Sanskrit, the earliest known and preserved Indo-European language.

For centuries, Western scholarship has constructed grand narratives on the origins of Indo-European peoples and languages based largely on philological comparisons and linguistic reconstructions. These constructs, built on limited archaeological evidence and Euro-centric perspectives, not only diminished the agency of non-European civilizations but also perpetuated colonial-era frameworks that branded India as a recipient—rather than a source—of intellectual and civilizational wealth. The so-called

Aryan Invasion Theory (AIT) and its modern variant, the Aryan Migration Theory (AMT), though increasingly critiqued, continue to influence mainstream historiography. It is against this backdrop that Dr. Gupta's volume arrives as both an academic corrective and a civilizational assertion.

Dr. Gupta approaches the Indo-European debate with a breadth of knowledge that is both scholarly and interdisciplinary. He synthesizes archaeology, archaeo-astronomy, linguistic paleontology, glottochronology, cosmology, mythology, religious studies, philosophy, and literary history—a methodological convergence rarely seen in contemporary Indological research. This four-lane analytical framework—anchored in empirical evidence and traditional sources—allows the reader to traverse deep time and examine how Vedic civilization emerged, evolved, and influenced the ancient world.

At the heart of Dr. Gupta's argument is a powerful insight: why reconstruct an imaginary Proto-Indo-European language when a fully formed, grammatically complete, phonetically precise, and thematically rich language—Vedic Sanskrit—already exists? He reminds us that the Rigveda, the oldest known Indo-European text, is not merely a collection of hymns but a repository of philosophy, astronomy, mythology, governance, and cosmology. Its existence challenges the need to fabricate an artificial linguistic root when an authentic, traceable one lies before us.

Through meticulous study, Dr. Gupta places the earliest phases of the Vedic tradition as far back as the ninth millennium BCE, firmly rejecting the chronological constraints that have long bound Vedic literature to the second millennium BCE. He contextualizes this antiquity not only through scriptural analysis but also by drawing on the drying of the Sarasvati River—an event corroborated by satellite imagery, geological research, and textual references—as a chronological anchor. Furthermore, his discussion

of the Dâúarâjña Yuddha (the Battle of Ten Kings), placed around 7500 BCE, adds a historical dimension to Vedic narratives that are often dismissed as purely mythological.

One of the book's most valuable contributions is its rigorous examination of the convergence between the Indus-Sarasvati Civilization and the Vedic Civilization. By bridging the perceived gap between the archaeological record of Harappan cities and the literary record of the Vedas, Dr. Gupta deconstructs the myth of a dichotomous cultural history. He demonstrates how Vedic concepts, rituals, and social structures were not an imposition upon the subcontinent but rather a native evolution rooted in the soil and spirit of ancient India.

Dr. Gupta also critically evaluates the genealogies of ancient Indian dynasties—Iksavāku, Paurava, Anu, Turvasu, Yadu, Haihaya, and Videha—placing them within a broader global context, including Sumerian and Egyptian dynasties. This comparative historiography is not speculative; it is built upon a consistent pattern of linguistic, geographical, and archaeological correlation. His research suggests a reverse flow of civilization—from India to the West—through the dispersal of Indo-Aryan cultural and linguistic elements. This overturns the one-directional assumption of civilizational movement that has prevailed for over a century.

Another key pillar of Dr. Gupta's thesis is his rejection of the constructed Proto-Indo-European language as a legitimate academic tool. He shows that linguistic reconstructions using a narrow set of root words and overreliance on European phonetics result in arbitrary conclusions. The traditional method, according to him, relies on attempting to understand the unknown from the unknown—an epistemological fallacy. Instead, he urges scholars to begin from the known and verifiable—Vedic Sanskrit—which, in its grammatical complexity, structural sophistication, and

extensive literary corpus, far surpasses other ancient Indo-European languages like Latin or Greek. Indeed, as Sir William Jones remarked in 1786, Sanskrit is "more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either."

Furthermore, this volume dismantles persistent objections that have been levied against the identification of Vedic culture with the Harappan world—claims that the Vedic people were nomads, that they lacked urban sophistication, or that the horse and spoked wheel were unknown to them. Dr. Gupta cites dozens of textual and archaeological sources that show evidence of sophisticated metallurgy, astronomy, urban planning, and animal domestication, including the horse. He reveals the urbanism embedded within Vedic texts, from references to fortresses (pur), granaries, riverside settlements, to complex socio-political systems.

Importantly, the book is not a polemic. It is a deeply reasoned, evidence-rich volume that invites serious engagement from all quarters—historians, archaeologists, linguists, Indologists, and critical thinkers. Dr. Gupta acknowledges the contributions of scholars like Bal Gangadhar Tilak, , Ashok Aklujkar, Ram Vilas Sharma, and B.B. Lal, while extending their insights with new data and a more comprehensive framework. His vision is neither nostalgic nor chauvinistic—it is restorative, seeking balance in a discourse that has long been asymmetrical.

For students and scholars alike, this work opens new paths of inquiry and proposes a shift not only in how we approach Indo-European studies, but also in how we view the civilizational history of the Indian subcontinent. At a time when cultural identities are being reasserted and decolonized histories are being sought worldwide, this book offers a compelling Indian perspective supported by science, scripture, and scholarship.

I really applaud Dr. Gupta for his intellectual integrity, his courage in challenging orthodoxy, and his commitment to a civilizational renaissance grounded in truth. This work will likely become a cornerstone text for future researchers who are ready to move beyond outdated models and seek a more integrated, respectful, and accurate understanding of our shared human past.

I am confident that *The Indo-European Problem: A New Paradigm, A Complete Re-look* will serve as a beacon for a new generation of scholars who are unafraid to ask difficult questions and bold enough to search for answers rooted in authenticity. In re-centering Vedic Sanskrit as the foundational cornerstone of Indo-European heritage, this book not only reclaims the antiquity of Indian civilization but also repositions India's rightful place in the intellectual and cultural history of the world.

- Muralimanohar Pathak
Vice-Chancellor

Editorial

This is a matter of immense pride to have the publication of the brilliant book entitled "The Indo European Problem: A New Paradigm, a complete Re-look (Vedic Chronology: The New Perspective: from early Rigveda to Mahabharata & later) meticulously and copiously written by Dr. Mohan Gupta D.Litt. I.A.S. (Retired) (Formerly Vice Chancellor, Maharshi Panini Sanskrit University, Ujjain, M.P.) by the Department of Research and Publication, Shri Lal Bahadur Shastri National Sanskrit University, New Delhi. Dr Gupta's erudition and research aptitude is highly reflected in this book that bears testimony to his being deeply ingrained in Indian culture and belief system. His research bent of mind has superbly made him a competent seeker after excellence who reflects upon the various nuances of art, philosophy, linguistics and creative aesthetics.

The work under consideration is an exemplary attempt to relook the Indo European Issues from a new approach and take into account the issues pertaining to the Vedic chronology with a view to finding out an important study with a sense of understanding. Based on his thorough research, Dr. Gupta is of the considered view that the Vedic period extends from 9th millennium B.C., the end of the last glacial period to 2000 B.C., the period of the drying up of Saraswati River and the war of the Mahabharata, coinciding with the waning phase of Vedic Harappan civilization. There are reminiscences of earlier cycles, extending up to 27000 B.C. from 12800 B.C., the date from which the present cycle of Vedic civilization starts with the advent of Krta Yuga and first kings of Indian dynasties of the likes of Iksavaku, Pururva, etc. The author's deep deliberations and insightful findings

are based on the archaeological, philosophical, linguistic and literary evidences that seek to bring to the fore the Vedic chronology, the original homeland of the Indo-European language and the dispersal of Indo-Aryans from the *Sapta Sindhu* or *Brahmarshi Desha* to the West Asia, Egypt, Anatolia, Southern, Western and North-Western Europe. Enunciating Aryan invasion theory as baseless and lacking in merit, Dr. Gupta brings out the thesis that the ancient Rigvedic Aryans in 7th, 4th and 2nd millennium B.C. were the carriers of Proto Vedic Sanskrit in the far-off domain of Crete, Greece, Anatolia, Sumer, Egypt and Babylonia because they ruled these countries during various periods.

An erudite endeavour of its own type, this book is very inspiring for the learners of Indo Aryan issues in the context of Vedic chronology. The sagacious foreword to the book has been written by the veteran scholar of Sanskrit studies, Prof. Radhavallabh Tripathi who affirmed that Dr Gupta took his critical way of Lokmanya Tilak and Aklujkar, and placed the beginning of Vedic civilization prior to sixth millennium B.C. The Hon'ble Vice Chancellor of Shri Lal Bahadur Shastri National Sanskrit University, Prof. Muralimanohar Pathak, who himself is an scholar authority on Indian and Western knowledge tradition, has shown his keen interest in the publication of the book. It would not have been possible without his inspiration and guidance throughout the process. The author of this book, Dr. Mohan Gupta, deserves high applause and words of appreciation for having put forth the book in a highly comprehensive and coherent manner. It is believed that scholars interested in the vexed issues pertaining to the Oriental learning and the Occidental approaches to knowledge system, learned researchers in the relevant field, and of course the inquisitive readers of Indian knowledge system will be adequately benefited by this book.

Prof. Shivshankar Mishra

Foreword

Clash of Civilizations has been a mark of recent centuries. On one hand, the encounter of the East with West opened new vistas of cultural, social and linguistic studies; on the other, it created a plethora of misconstrued notions. With the advent of modern age, Oriental learning assumed new dimensions. The language and cultures of the people of the East were taken up by Western scholars under a Euro-centric discourse.

It is true that Oriental Learning as pursued by the Western scholars provided fresh insights during the eighteenth and the nineteenth centuries, but it is also true that the Western scholars were influenced by wrong notions, prejudices and narrow range of ethical, religious and moral considerations. Biblical Universe was always in the minds of great savants like William Jones, Max Muller and others.

The line of investigation adopted by early Indologists on the History of Sanskrit literature tended to create compartmentalization and dichotomy in a holistic tradition. Max Mòller proposed the division of Vedic literature into four categories - *Saṁhitā, Brahmaṇa, Āraṇyaka* and *Upaniṣad*, these also formed four successive ages of historical evolution of Vedic literature for him. With this sweeping generalization and over-simplified design, he tried to determine the chronology of the *Ṛgveda* and other Vedic texts fixing the period of the composition of *Ṛgveda* around 1200 BC. He was aware of the absurdity of the whole exercise also, and later on opined that the Vedic literature may be even older; and then he declared that no power on earth can determine

how old *Ṛgveda* is. However, the distorted picture of of Vedic chronology as given by Max Mòller earlier continued to be cited in the later works. Traditional view of Veda as a text comprised of Mantra and Brāhmaṇa jointly (*matra-brāhmaṇayor vedanāmadheyaü*) whereas some of the well-known *Upaniṣads* are in fact parts or section of different *Brāhmaṇa* texts, and some of the *Brāhmaṇa*-texts inseperably linked with the Vedic *saṁhitās*. Thus the famous *Īśāvāsyopaniṣad* is a part of *Yajurveda*, and *Aitareya Upaniṣad* comes in *Aitareya Brāhmaṇa*.

Even Basham, the author of 'The wonder That was India' finds *Ṛgveda* as "the result of an imperfect syncretism of many tribal beliefs and cults". He sees a refrain in the question *"Kasmai devāya haviṣā vidhema"* (whom then shall we honour with our oblations? (Basham:238).

The European Indologists and Orientalists created the myths of Aryan invasion, together with a prejudice for the superiority of Aryan race and biblical notion of language. Bloomfied in his *Language* reiterated that the Indo-Āryan language was brought in India by a migrant group, which sought to establish its sovereignty and to uproot the Dravidian language.

The proclamations of many of the western researchers were vitiated by the linguistic hegemony and malignant colonial biases, so that their treatment of languages is now called as 'Biblical Orientalism' by some critics. The East India Company also created a discourse under Oriental studies with a colonial bias. This has been termed as the 'Company Orientalism' by some critics.

On the other hand, the possibility of practicing Oriental Learning without the evils of 'Orientalism'. continued to be realized in India by the pundits and indigenous scholars. There

was a reversal of the process of viewing the Orient as 'other' by the Occident.

Bal Gangadhar Tilak (1856-1920) singularly known as '*Lokamānya*' (a man honored by the people) has been a renowned scholar, great political figure and a national hero. By his exegetical method, he joins the ranks of great *Bhāṣyakāras* like Śaṅkara and Rāmānuja; and as a researcher, he challenges Western scholars. Despite his involvement in national movement for freedom and being jailed for longed periods, Tilak cast an indelible mark on Indological studies through his publications The Orion or Researches into the antiquity of Vedas (1893), *The Arctic Home in the Vedas (1903), Chaldean and Indian Vedas (1917) as well as Vedic Chronology and Vedāṅga Jyotiṣa.*

Taking cue from the proclamation of Kṛṣṇa in *Gītā* proclaiming himself as the Māgaśīrṣa month amongst the months of calendar, Tilaka makes an inquiry into the nature of Vedic calendar and builds up his theory of the antiquity of *Ṛgveda* in his *The Orion or Researches into the antiquity of Vedas.* Accordingly, references from *Ṛgveda* point out that this Veda cannot be later than 4000 B.C. He also adjusted the oldest period of Āryan civilization roughly between 6000 BC to 4000 BC. He named it as the Aditi period. The next period falling between 4000 BC to 2500 BC was adjusted as the Orion period. The third period is *Kṛttikā* period extending from 2500 BC to 1400 BC. All the *saṁhitās* had been completed during this period.

In his The *Arctic Home in the Vedas*, Tilak provides references from *Ṛgveda* and *Avestā* to prove that Vedic poets were acquainted with the climatic conditions as prevailing in the arctic region. Tilak could correctly interpret some very abstruse passages from *Vedāṇga Jyotiṣa* also.

After Tilak, some other Indian scholars have been challenging the very foundations of the so-called school of Indo-European Linguistics which was cultivated during the colonial period. Jai Shankar Prasad and Ram Vilas Sharma have emphatically challenged the Euro-centric discourse in Oriental Studies and the colonial Orientalism, deconstructing the idea of Indo-European family of Languages and the theory of Aryanization.

Ram Vilas Sharma, a renowned critic in Hindi, has produced several volumes forming his studies on the Euro-centric Oriental Studies and its impact on Indian mind. He demolished the theory of Aryan invasion and Aryanization in his *Paścim Asia aur Ṛgveda. (1944)*. He also tried to prove that the great centres of Ancient civilization in West Asia (2000-150 BC), Sumer (2150-300 BC) were closely connected to India by cultural and commercial relations. He finds a chain of supply and export from India to Sumer on the basis of references to Indian goods in the old records from West Asia. He also holds that the period of *Ṛgveda* preceded Harappan Civilization. (*Paścim Asia aur Ṛgveda*, 1994, p. 85) and that Harappan civilization is a development of Vedic culture.

At the backdrop of this, Ashok Aklujkar in his *Sarasvatī Drowned: Rescuing Her from Scholarly Whirlpools* is a remarkable study. As suggested by the highly metaphorical title, Aklujkar has made an attempt to rescue Sarasvatī, the river, from being drowned in the whirlpool of modern scholarship, it is also an at rescuing Sarasvatī, the goddess of learning, from the whirlpools of our age, fraught with conflicts and contradictions.

Aklujkar has considered at least 75 passages from the *Ṛgveda* where Sarasvatī is mentioned and several references from later texts; -- especially the *Pañca-viiśa-brāhmaṇa* and

the *Mahābhārata*. He has tried to read the messages out of the absence of the references to Sarasvatī in the IV and IX books of the *Ṛgveda*. References in the other *maṇḍalas* are sufficient to prove how the river Sarasvatī functioned as a part of the geographical and cultural landscape providing impetus to the creativity of the Vedic seers. With the available data, Aklujkar determines the process of the deification of Sarasvatī the river on the basis of the oldest *maṇḍalas* of the *Ṛgveda*. Drawing a distinction between the descriptions of its earthly form and its abstractions with the help of commentators like Sāyaṇa, Skanda Veṅkaṭa-Mādhava and Udgītha, he does not 'find it justifiable to give priority to the divinity reading'. He considers various options suggested by modern researches for locating or identifying the lost Sarasvatī. His interpretation rests on the notion of seven sisters or seven streams mentioned right from the time of *Ṛgveda*. It is not one single stream of Sarasvatī, the course of which is being sought after here, it is the Sarasvati with its at least six streams known to the Vedic *ṛṣis* for their force and speed, that has been focused on. He suggests that æall the streams originated in approximately the same area and united with what came to be thought of as the main stream in various ways, at various points and to various extents,' and referred by a collective name were the "Sarasvatī". Setting aside the earlier assumption that the Sarasvatī had a wide or impressively broad bed and that it was glacier-fed, Aklujkar locates the origin of Sarasvati as perceived by the *Ṛgvedic* seers, in the Shivalik range. It is different from the Gagghar and was majestic (*mahas*) rather than unusually wide. The expositions of Ramvilas Sharma[1] and Bhagwan singh[2], support the implications of his research work.

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1. *Paścimī Eśiyā aura Ṛgveda*, Ram Vilas Sharma, Hindi Madhya Karyanvayan Nideshalaya, Delhi University, 1994
2. *Harappa Sabhyatā aura Vedic Sahitya* : Bhagwan Singh, IV Edition, Delhi.

The fact that the description of Sarasvatī as a river in the *Ṛgveda* is pre-Harappan is corroborated by modern scientific researches through satellite as well. Aklujkar gives substantial evidence to prove that older parts of the *Ṛgveda* cannot be later than 1900 B.C. There are increasing number of evidences pointing towards greater antiquity of Ṛgvedic age. A revisit to Indian History and reconsideration of many chronologies has now become imperative.

The present work by Dr Mohan Gupta revisits the Indo European Problem and makes an attempt to settle the problems of Vedic Chronology on the basis of scientific investigation. He has explored all the available resources to reach a logical conclusion.

Dr. Gupta has has challenged the Euro-centric discourse with further literary and archeological evidence. He shows that the very concept of a Proto-Indo-European Language was presumptuous and that the whole exercise tended to discover the homeland of Aryan people on the basis of this fictitious construct of proto-Indo-European is like trying discover the unknown from unknown.

Falling in line with Tilak and Aklujkar, Dr. Gupta rightly places the beginning of Vedic civilization prior to sixth millennium BC. But he convincingly brings it even earlier and traces it back to the ninth millennium BC. The Vedic age continues till the mighty river Sarasvatī dried up around 2000 BC. Proto-Indo-European Language was a fictitious construct created out of an unjustified notion of Western superiority and a prejudice. Dr. Gupta rightly suggests that the Proto Indo-European Language is *ipso-facto* Proto Vedic Sanskrit. Analyzing historical references from the Ṛgveda he places the war between ten kings (Dāśarāja-Yuddha) around 7500 BC. This war led to dispersal of Aryans towards North - west.

These researches by Dr. Gupta have also changed the whole notion of Aryan-migration, establishing that the Aryans migrated to western countries during the second and the first millenniums BC. His studies have re-confirmed the convergence of Indus-Saraswati Civilization with Vedic Civilization and they have also presented a correct picture of the flow of civilizations from India to Sumer and Egypt. Dr. Gupta has adopted a four-lane reconstruction involving Archaeology, Archeo-astronomy, Linguistic Paleontology, Glotto-chronology as well as Cosmology. He also considers Mythology, Religion, Theology, and Philosophy. Finally he adjusts the development of Vedic civilization through various periods in an ascending order. The first Period beginning from Pre-12800 BC and extending up to 27450 BC; the second period from 12800 BC to 8500 BC, the third period from 8500 BC to 7500 BC and the fourth Period from 7500 BC to 5000 BC, the fifth Period from 5000 BC to 3500 BC, the sixth period from 3500 to 1900. The Seventh period beginning from 1900 BC and continuing till 1400 BC is actually Mature Harappan Period and the close of Kṛttika Period.

Dr. Gupta has traced the history of various dynasties - Ikṣvāku, Paurava, Anu, Turvasu and Dhruyu, Yxviidava, Haihaya, Mithila (Videha) etc. tallying them with Pargiter's List of dynasties. Indic Names in West Asia have been cited in attestation of the process of the flow of migration from East to West, and the history of Sumerian or Early Aryan Kings has been justifiably re-constructed.

The Conclusions of Dr Gupta are justified by authentic researches in the field of Archeology and they stand in tune with the finding of Dr. B.B. Lal in his *"Identifying the Ṛgvedic People : An Archeological Approach"*. The excavations in various places at Turkey where ramnants of Vedic culture have been discovered further corroborate these findings.

Earlier, Dr. Gupta has produced an authentic study in the chronology of the Mahābhārata. With his expertise in Astrology and a sound knowledge of Indic studies, he has fruitfully extended the frontiers of our knowledge about the chronology of Ṛgveda and the Mahābhārata. I am confident that this volume will settle many contentious issues in Indological studies.

Dated 31.12.2024

-Radhavallabh Tripathi
National Fellow, ICPR,
Former Professor and Head,
Sanskrit Department,
Dr. HSG University, Sagar.
Former Fellow, IIAS,
Former Karnatak Chair of Indology, BORI.

CONTENTS

Section-1

Section-2

Section-3

Section-4

SECTION - 1

Chapter-1 : Introduction

Though the title of the research work is Vedic Chronology, yet in this work the sub-title has been given as the Indo-European problem : A paradigm shift and new multidisciplinary approach. Naturally, one would ask how Vedic Chronology is associated with the Indo-European problem. The answer is not difficult. Vedic Sanskrit is the oldest Indo-European language present in its entire majesty with a very rich and divergent literature, complete grammar, a treatise on phonetics and a huge vocabulary. Besides, the Rgveda is the oldest work of any Indo-European language. Naturally, Vedic Sanskrit and Rgveda are closest to any conceived proto Indo-European language which is non-existent at present. Therefore, in dealing with the question of Indo-European problem both historically and linguistically, Rgveda and Vedic Sanskrit and thereby the entire Vedic literature acquire great importance. That is why it is quite imperative first to look into the issues related to the Indo-European problem and in the process attempt at the chronology of the Vedic literature historically.

2. Colin Renfrew in his famous work "Archaeology and Language" (1987) has dealt with in details the Puzzle of Indo-European Origins. He has very honestly without falling into the trap of racial superiority or imperialistic hang over tackled the issue stage-by-stage and has come to a plausible conclusion, tracing the stages of Indo-European languages and archeological findings and making a very intelligent synthesis of them.

But like earlier scholars such as Gustav Kossinna, V. Gordon Childe, Marija Gimbutas and such other scholars he has also taken the route to find out the 'unknown' from the 'unknown'. What I mean is that all these scholars have attempted to find out the homeland, the so called *Urheimat* of the Indo-European languages by first conjuring-up the non-existent conceptual proto Indo-European language through the process of taking up some common words in these languages - generally termed as proto lexicon - and then with the help of these few words imagining the culture of the people who might have spoken that language and then finding out the location of those people. One can understand how much farfetched and unscientific this process is? Thus, earlier scholars by finding out some common words relating to professions, trees and vegetations and animals came to the conclusion that the people who spoke proto Indo-European were pastoral kind of people. Hence, they concluded that their habitat or the homeland of this language could be northern Europe or the steppes of Russia etc. No doubt, Renfrew has decried this process and has termed the construction of a language in such a way as not legitimate but with regard to archaeological processes combined with the linguistic processes, he has almost followed the same route. While dealing with the problem he complained there is very little in the early histories or literature of the languages concerned to explain the links between them. Here, then, is one of the most notable and enduring problems in the prehistory of the Old World.[1] In the next breath, he realizes that there is one exception to the lack of historical information and mentions the hymns of the Rgveda as remarkable source in India. But because of a very unclear or rather confused picture of the date of Rgveda till then putting it as late as 1200 B.C. he did not opt to examine the Vedic Sanskrit as the oldest language of the Indo-European family or to examine the culture of the Rgvedic people to

tackle the puzzle of Indo-European origins. The latest researches by various scholars both indigenous and foreign have placed the date of Rgveda (which will be dealt with in great details later in this book) before 3000 B.C. or even earlier, by examining the state of mighty Saraswati river mentioned several times in Rgveda, the urban nature of the people of Rgveda and discarding the very unfounded dichotomy between the Vedic civilization and indus-valley civilization. Therefore, with the new horizons opened due to new researches on the culture of Rgveda and the status of Indus-Valley civilizations vis-à-vis Vedic civilization, it calls for a paradigm shift to consider the Indo-European problem afresh in a rather hitherto untreaded way inasmuch as to try to know the unknown from the known basis i.e. from known very ancient Indo-European Language called Vedic Sanskrit instead of attempting to create the non-existent Proto Indo-European language by collecting some common vocabulary of the ancient Indo-European languages which is certainly an unknown factor and not quite legitimate. Renfrew himself questions this process. 'One important question is the extent to which it is legitimate to reconstruct a Proto Indo-European language, drawing upon the cognate forms of the words in the various Indo-European languages that are known. Certainly it is questionable whether the nouns (for linguistic paleontologists make little use of verbs or adjectives) can legitimately be used in the way advocated by Pictet and by Schrader to create an inventory, as it were, of the *Urheimat*, the original homeland of these Proto Indo-Europeans.[2] This was therefore an unknown and invalid factor to embark upon a research. Instead, I propose to examine an existing fully developed ancient Indo-European language i.e. Vedic Sanskrit and its vast literature to understand the type of culture and civilization which the people of Rgvedic times followed to embark upon the question of the homeland of

the Indo-European languages and their dispersal as it were in the world.

3. For creating the conceptual Proto Indo-European language, scholars have generally considered Sanskrit, Greek, Latin, Germanic and Slavonic languages. Now the question is why Sanskrit and not Greek, Latin, Germanic and Slavonic. The answer is because Sanskrit and particularly Vedic Sanskrit is certainly oldest of all these languages because of the perfection it enjoys in terms of its refinement, its grammar, its phonetics and its morphology and its rich vocabulary. Besides, admittedly the oldest work in any of these ancient languages is in Vedic Sanskrit i.e. Rgveda. This is not because of any Indigenism of an Indian scholar but because of worldwide acceptance of the fact echoed brilliantly by the immortal worlds of an English judge and a great orientalist Sir William Jones in 1786 which I cannot resist the temptation of quoting in spite of its being quoted so often.

The Sanskrit language, whatever may be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong indeed that no philologer could examine them all three, without believing them to have sprung from some common source, which perhaps no longer exists; there is a similar reason, though not quite so forcible, for supposing that both the Gothic and the Celtic, though blended with a very different idiom, had the same origin with the Sanskrit; and the old Persian might be added to the same family, if this were the place for discussing any question concerning the antiquities of Persia.[3]

And Colin Renfrew observes "This brilliant observation has been further developed and analyzed by

generations of scholars in many major works, and there is little doubt that Sir William Jones was right."

Chapter-2 : The nature of Indo-European problem & the paradigm shift : why not start with the earliest existing Indo-European language i.e. Vedic Sanskrit rather than with conceptual Proto-Indo-European

4. In fact, European scholarship by comparing the ancient languages of the Europe with Sanskrit initially held that "the European languages were derived from Sanskrit". The logic lay in the words of Sir William Jones only because more perfection than the Greek, greater vocabulary than Latin and more refinement than both, certainly requires more time and hold Vedic Sanskrit must be oldest of these languages. But probably due to racial superiority or national considerations, this opinion soon gave way to the explanation that Sanskrit, Latin, Greek and so on were divergent later forms of someone pre-historic language.[4] But surely, the first opinion of the scholars was right. Because, when you consider the structure of all these ancient languages, Sanskrit emerges as the oldest. To take an example, the English word *birch*, the German *birke*, the Lithuanian *berzas*, the Old Slavonic *breza* and the Sanskrit *Bhurja* - all these words were taken by the scholars to have been derived from the conceptual Proto Indo-European word ***bhergh* (the asterisk being used by convention to indicate reconstructed parent words which were not directly attested in any actual language known). Now, the question is which of these words is closest to the reconstructed word ***bhergh,*** obviously the Sanskrit word *bhurja* and the reason is the voiced aspirate sound of *bh* which is there in Sanskrit word *bhurja* has been retained in ***bhergh*. It is well known that the voiced aspirate sounds 'gh', 'jh', 'dh', 'dh', 'bh' were there in the conceptual Proto Indo-European language and they are there in Sanskrit and all Indian

languages but not in other ancient European languages. This observation alone makes Sanskrit closest to the conceptual Proto Indo-European. In fact, noted scholar Ram Vilas Sharma has very categorically stated that these voiced aspirate sounds are not available in the Iranian or European languages. These are available only in the Indian languages. This factor alone demolishes the theory of Aryan invasion on India.[5] Hence, Vedic Sanskrit and the oldest literary work of the world in any Indo-European language i.e. Rgveda first, deserve to be examined linguistically, culturally and historically to come to a scientific plausible conclusion about the homeland of Indo-European languages rather than to grope in the darkness from unknown to the unknown.

This is the paradigm shift adopted in this work and for tackling the problem, a multidisciplinary approach has been adopted. Apart from linguistics and archaeology, philosophical, paleontology, cosmogony and cosmology, theogony and theology, religious beliefs and mythology and archaeo-astronomy etc. have been used as tools to come to a scientific conclusion.

5. Looking for the homeland or *Urheimat* of the Proto Indo-Europeans, the scholars of the world have moved a complete circle of 360^0 during last two centuries. Immediately after the remarks of William Jones regarding the affinity of various Indo-European languages, for the very simple reason that the earliest known text amidst these Indo-European languages was the Rgveda, it was a natural corollary thought by many Indian as well as foreign scholars that India must have been the original home for the Indo-European people. But for various reasons which may also have had some political overtones, the India-hypothesis was soon abandoned and European pride came to the fore. 'The European rat race was so profound that almost every part thereof-Scandinavia, south-west Russia,

Finland, Germany, Hungary, etc. - advanced its own claims for the *Urheimat*. However, in the end the Europeans themselves became so much disenchanted that a renowned scholar, Jean-Paul Demoule (1980), was led to make a very sarcastic remark: 'We have seen that one primarily places the IEs (Indo-Europeans) in the north, if one is German.... in the east if one is Russian, and in the middle if, being Italian or Spanish, one has no chance of competing for the privilege.'[6]

From the above remark one can understand the confusion among the scholars in advancing their own theories to find out the *Urheimat* for the Proto Indo-European language. Needless to say that this was because of their fundamentally wrong approach of either conjectures, presuming the Proto Indo-European speakers to be a nomadic or pastoral lot from the archaeological point of view or from reconstruct on of the conceptual Proto Indo-European by collecting some common words from them. The absence of any reliable data led to great subjectivity in their conclusions.

6. After this European rat race there have been many sober attempts by archaeologists like Colin Renfrew, Edwin Bryant, N. Kazanas, B.B. Lal, Dayanath Tripathi etc. to tackle the issue. "Holding that at the 'Proto-Indo-European' stage these people were no longer nomads but had become settled agriculturists, some scholars, with Colin Renfrew (1987) in the forefront, look to Anatolia as the 'homeland', the date for identification being around 7000 BCE."

With this as the homeland, he held that one branch moved west wards entering Europe. Another branch moved east ward and moving along the southern side of the Black and Caspian Seas, entered Afghanistan and thence the Indian sub-continent. Howsoever well thought and well argued this thesis of Collin Renfrew may be, scholars have

found out some inherent flaws in this thesis. Firstly, if these Anatolian Proto Indo-Europeans had reached the agricultural economy one expects that the agricultural related terms would have been shared by the various subsequent branches. But this is not the case. In fact, Lamberg Karlovsky[7] comments "The whole issue has been simplified by Prof. Renfrew to the ludicrous formula 7000 BC Anatolia = farming = Indo-Europeans. Another objection to this theory of Prof. Renfrew is the fact that the language used in the well known Boghaz Koi treaty and other allied documents on the basis of which the presence of the Indo-Europeans in Anatolia have been perceived was only a super stratum language in the region used by the rulers and elites, and not the substratum which was Hurrian. This would at once imply that Indo-Europeans were not the sons of the soil in Anatolia. Subsequent theses by scholars like Maria Gimbutas proposing the Russian steppes located to the north of Black Sea and Caspian Sea on the basis of her Kurgan culture theory and that of Nicholas proposing Bacteria Sogdiana also did not find favour with the scholars and were refuted with valid reasons. Under such a scenario B.B. Lal, a noted archaeologist now proposes "*And may we dare once again to put on trial the 'Indian Homeland' thesis which was advanced by many a scholar at the very beginning of the debate a couple of centuries ago, but which was overruled in favour of other areas like Europe, Anatolia, Black Sea-Caspian Sea, littoral, Central Asia, etc.*"[8] So we are back to square one after moving the whole circle. Prof. Lal further remarks that the reopening of the India Homeland issue, may it be absolutely clear, is not because of any chauvinistic reasons as some perennial critiques would like to imagine, but because where as two centuries ago there was no archaeological data to back up this theory, there is plentiful of it now which makes it obligatory on the part of the scholars at least to rethink.'

Chapter-3 Convergence of Indus-Saraswati Civilization with Vedic Civilization

Identifying Rgvedic People

7. Before we embark upon identifying Rgvedic people, let us turn back to the Rgveda itself to know in broad outlines of its geography. The famous *Nadi Sukta* of the 10th *Mandal* of Rgveda runs as under :

be e x³x ;eu ljLofr
'krfn Lrke lprk i#".;kA
vflDU;k e#}/k forLr;k
··thdh;s 'k.kák l"kke;kA
r"Vke;k iFke ;kro lt
lRok jl;k 'oR;k R;kA
Ro flU/kk dHk;k xkerh
Øe egRUok ljFk ;kfHk jh;lA[9]

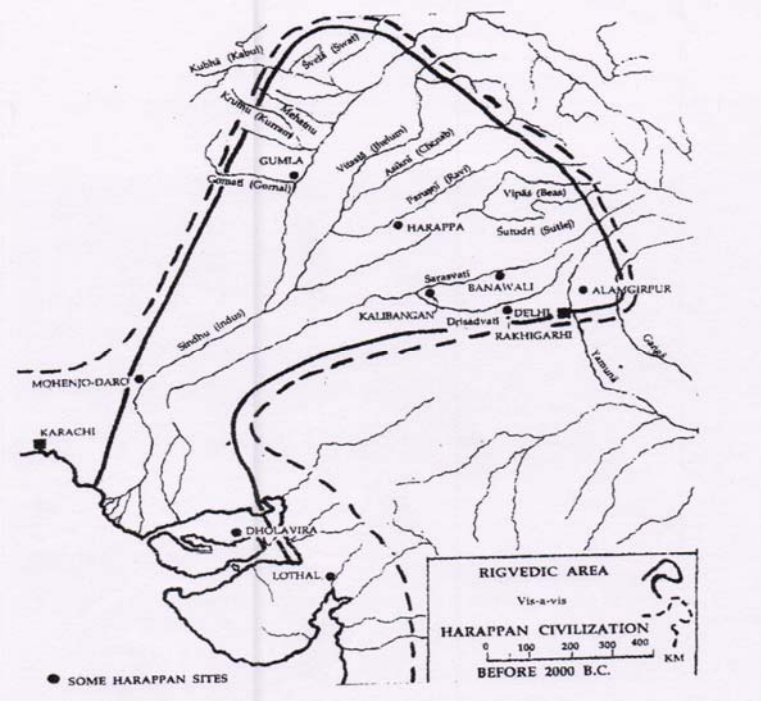
(ऋग्वेद, 10.75.5–6)

imam me Gange Yamune Saraswati
Sutudri stomam sachata Parusnya
Asiknya Marudvrydhe Vitastaa
Arjikiye srnuhya Susomaya |5|
Tristamaya prathamam yatave sajuh
Susartva Rasaya Svetya tya
Tvam Sindho Kubhaya Gomatim
Krumum Mehatnva saratham yabhiriyase|6|

O Ganga Yamuna Saraswati, Sutudri (Sutlej) and Parusni (Ravi), O Marudvrdha with Asikni (Chenab), O Arijikiya with Vitasta (Jnelum) and Susoma (Sohan), please listen to and accept this hymn of mine.

O Sindhu (Indus), flowing, you first meet the Tristama (and then) the Susartu, the Rasa and the Sveta (Swat) and thereafter the Kubha (Kabul), the Gomati (Gomal), the Krumu (Kurram) with Mehatnu; and finally you move on in

the same chariot with them (i.e. carry their waters with you). (See Map-1)



Map-1 : Map showing a correlation between the Rgvedic area and the spread of the Harappan Civilization before 2000 BCE

The region thus defined is from the upper reaches of the Ganga-Yamuna on the east, via Haryana, Rajasthan and Punjab in India and thence Pakistan, all the way to Afghanistan on the west. During those ancient days these regions were not politically apart as they are now, as is testified to even by the inscriptions of Ashoka as late as the third century BCE.

8. Having once found out the homeland of Vedic Aryans generally known as the land of seven rivers or *Saptasindhu*, we are on a solid ground to move further towards tracing

out the cultural evolution of this area. B.B. Lal in his article 'Identifying the Rgvedic people, an Archaeological Approach' quoted above has gone step by step in tracing the evolutionary stages of this region. He starts :-

> We shall now try to ascertain the truth of the matter, and proceed step by step. In north-eastern Afghanistan there lies the site of Aq Kupruk. Over there we have a good sequence of habitation from the epi-Paleolithic times, dating back to ca.15th millennium BCE (Dupree 1972; Shaffer 1978). This was followed by a Neolithic stage which produced evidence of domestication of animals, but there was no pottery yet. On the basis of two radiocarbon dates, viz. 8565±240 and 6960±105 BCE (uncorrected; half-life 5730), these levels clearly go back to 8th-7th millennia BCE. In the succeeding period there turned up the pottery and for these pottery-bearing levels there are four Carbon-14 dates, viz. 5806 BCE, 5638 BCE, 5292/5286/5241 BCE (Possehl 1990: 3-4). It would thus be seen that a Neolithic economy, with domestication of animals and production of pottery, had come into being in north-eastern Afghanistan by the beginning of the sixth millennium BCE.
>
> But Afghanistan did not stand in isolation. Even before the discoveries at Aq Kupruk, Kile Ghul Mohammad near Quetta in Baluchistan had yielded to the spade of Walter A. Fairservis (1956) a very useful sequence of cultures. (See map-2)

Map-2 : Area covered by Indus-Sarasvati Civilization and its overlap with the area covered by Early Vedic Civilization

From bottom upwards, Period I yielded evidence of domestication of the cattle, sheep and goat and of microliths some of which were used for hunting but some others, like blades may have been used for harvesting, though in the limited area excavated no cereals were found; and, of course, there was no pottery. This last named

industry made its appearance in Period II which was characterized by hand-made pottery bearing basket-impressions. There were also a few pots with painted, simple or wavy lines. The still next Period (III) produced another remarkable development: it was in terms of metal, ushering in what may be called a transition towards the 'Copper Age'. In Period IV there was a further proliferation of designs and colours in the paintings on the pottery.

From the chronological point of view, it is important to note that the upper levels of Period I yielded three radiocarbon dates, viz., 4352 BCE, 4346 BCE and 4210 BCE (Possehl 1990:29). Below these upper levels there were still as many as four metres of occupational deposits, from which no carbon sample is reported to have been collected. Be that as it may, it stands to reason that these four metres of regular occupation would have required at least half a millennium. Thus, the beginning of the Neolithic occupation at Kile Ghul Mohammad cannot be dated later than ca. 5000 BCE.[10]

Thus, till 5000 BC itself, this area had acquired these stages of cultural evolution.

Period	Location	Archaeological stage	Cultural trades	Pottery
15th mille. BC	Aq Kupruk	epi-Paleolithic	Wild animals	No Pottery
8-7th mille. BC	Aq Kupruk	Neolithic	Domestic of animals	No Pottery
5806 BCE	Aq Kupruk (four levels from hand-made pottery to metals Kile Gul Mohammad)	Neolithic	Domestic of animals	Production of pottery

5000 BCE	Near Quetta	Neolithic	Domestic of cattle, sheep and goat	Microliths, used for harvesting and blades for harvesting, no cereals were found.

9. The next stage of cultural evolution was discovered in the excavation of a site called Mehargarh about 200 kms south-east of Kile Ghul Mohammad. Unlike Kile Ghul Mohammad, Mehargarh is situated on a hilly terrain and on a fertile river valley. Radiocarbon dates indicate that Mehargarh was first inhabited around the beginning of 7th millennium BCE. The cultural level was Neolithic in which polished stone axes, adzes and chisels comprised the heavy-duty tools and microliths, such as parallel-sided retouched blades, triangles, trapezes, borers and scrapers, the lighter ones. The excavation of Mehargarh is important in one more aspect also. Because this provides a contrast between the Neolithic culture of Western Asia and the Neolithic culture of Mehargarh i.e. the north-western part of the Indian sub-continent. When the Indus Valley civilization was first discovered, the quick reaction of the western scholars was this should be civilization of West Asia i.e. Mesopotamia. In that context, it is important to note that whereas sheep and goat were the main domesticated animals of the Western Neolithic complex, it is the cattle that predominated in the Indian context, especially the humped bull which is typically Indian having little to do with the West Asia. Similarly, among the edibles, the Mehargarh people laid greater emphasis on barley than did their west Asian counterparts. Mehargarh economy appeared to be a surplus economy because there were some structures which seem to be some small scale granaries. The Mehagarh society appears to be a

hierarchical one which is evident from the examination of some burials There appears to be a an organized trade which is indicated by the occurrence of beads of lapis lazuli and turquoise and of ornaments of sea-shell because raw material for none of these was locally available. The shell must have been imported from Arabian coast while lapis lazuli could have been obtained from Afghanistan. For turquoise, the people of Mehargarh would have approached central Asian and Iranian towns.

10. It would thus be clear that even in the seventh-sixth millennia BCE, people inhabiting the north-western parts of the Indian subcontinent were not nomads. And the evidence from Mehargarh itself and from other sites to be referred to shortly clearly shows how the mighty Harappan Civilization grew up pace by pace, from the chalcolithic levels which constitute Period II at Mehargarh. In fact, even in the Neolithic levels of Mehargarh we come across a specific proportion of mud bricks, viz. 4:2:1, which became the distinctive ratio of the Harappan bricks, whether sun-dried or kiln-fired.

The Chalcolithic Period (II) of Mehargarh, whose beginning is datable to about the middle of the fifth millennium BCE, is characterized by painted pottery: buffish red ware with designs in black pigment. Sometimes the effect of biochromy was obtained by painting the black design over a red band. This pottery is similar in many ways to that from Period II of Kile Ghul Mohammad and further away to that from Mundigak in Afghanistan, indicative of a common cultural zone in this region.[11]

Among the finds of Chalcolithic Period II of Mehargarh were sickles indicated by two specimens of wooden handles, a mud brick structure which seems to be a granary, impression of wheat and barley and, at one spot about 100 bone awls were discovered suggesting a bone tool industry. An elephant tusk bearing groove mark was

also found giving earliest evidence of ivory making. Evidence of irrigated fields, cotton seeds, textile is also available in this period.

11. In Period III, there is advancement of technology quantitatively and spatially. The pottery is now scattered over an area of about 50 hect. Ornamentation on the pottery is now visible and one favourite ornamentation is rows of birds and animals. Bread making industry, meteorology are also indicated in this Period III. Metal objects with traces of copper as well as bun shaped ingots are of the same type as found in mature Harappan context not only at a near place like Mohenjo-daro but also as far of as Lothal in Gujarat.

The structures of this period are oriented along the cardinal directions, these are squarish in plan. The characteristic feature of both is that these have long north south-corridor on each side of which there is a series of rectangular cells. Because there are no doors in these cells, they must be obviously granaries.

"All these date back to the first half of the 4th millennium BCE and is an harbinger of what was to come up by the middle of next millennium in the form of the Mature Harappan civilization.

12. By about this time there is ample evidence of an explosion of settlements all over the plains extending from Sindh in the south to NWFP in the northwest, both in Pakistan, and to Haryana in India on the east. Culturally, this is a stage which in the evolutionary sequence has come to be known as the Early Harappan, as against the Mature Harappan which emerged from it around the middle of the third millennium BCE. Some of the more noteworthy sites where the elements of this Early Harappan stage have been met with are : Amri and Kot Diji in Sindh, Harappa in Punjab and Rahman Dheri in NWFP - all in Pakistan; and Kalibangan in Rajasthan, Banawali, Rakhi Garhi and Kunal

in Haryana and Dholavira in Gujarat - all in India. And may it be added, in order to make the picture more vivid, that the distance from Kot Diji in the southwest to Banawali in the northeast is about 750 kilometers and that from Kot Diji to Rehman Dheri in the northwest is approximately 550 km and that from Rehman Dheri to Banawali, again about 550 km."[12]

13. To sum up the Pre Harappan cultural evolution of this area, S.P. Gupta has suggested a very nice periodization[13] -

In the light of the fact that the river-valley civilization of the Indus-Saraswati started in the Hakra-Ravi Phase (3700 BC-3000 BC) at sites like Harappa, we are proposing a revised periodization of the entire course of the Indus-Saraswati civilization as we get in the valleys of the Indus and the Saraswati and beyond. Here we have also integrated the 'Era' based terminology of Kenoyer (1998).

It may be noted that there is an overlap between one tradition and the other; older traditions continue for long periods of time even after the emergence of new traditions. This concept underlines the fact that there was perfect continuation in the cultural matrix of the Indian civilization from at least the seventh millennium BC.

Periodization

Pre-Indus-Saraswati Civilization (called 'Baluchi' culture-tradition)

7000 BC-3000 BC

from Mehargarh I to Mehargarh VI: 'Food Producing Era'

Early Indus-Saraswati Civilization : Phase I (Called 'Hakra-Ravi' culture - tradition)

< ----- 3700 BC-2600 BC

From Harappa Ia to Jajilpur I; 'Regionalization Era' I

Early Indus-Saraswati Civilization : Phase II (Called 'Kot Diji-Sothi' culture-tradition or early urban culture)

3200 BC-2500 BC

From Harappa II to Kalibangan I; 'Regionalization Era' II

Mature Indus-Saraswati Civilization (Called 'Harappan' culture-Tradition or mature urban culture)

2600 BC-1900 BC

From 'Transition' (2700 BC-2600 BC) to mature Harappa (2600 BC-1900 BC)'

(III a, b, c) Integrated Era

Late Indus-Saraswati Civilization (called 'non-urban Late Harappan' culture-tradition)

2000 BC-1500 BC

From Late Harappa to the beginning of Iron Age : 'Localization Era'

14. Thus, in retrospect, we can recognize some clear linkages between the forerunners of Harappan civilization, commonly known as pre-Harappan culture and early to mature Harappan culture in order to understand the continuity between the earliest cultures of this area and the mature Harappan culture. These linkages are :

1. It has been persistently observed that the town planning was with the streets laid out along with cardinal directions i.e. east, west and north, south - an important feature of Vastu for a coherent synthesis with nature.

2. It has been normally observed that the settlements were enclosed with a peripheral wall to protect it possibly from the inimical forces and natural calamities. Kalibangan is an excellent example of this trend.

3. Another important feature of town planning in these cultures is two separate parts of a town - i. citadel i.e. the area used for the novelty and elite of the town and ii. the Lower Town meant for the commoners and businessmen. This feature of town planning can be seen right up to Chanakya as is testified in his Arthashastra. Banawali is a good example of this feature.

4. Even in the ratio of brick sizes 4:2:1 has been maintained right from 6th millennium BC in Mehargarh. It can be seen in Kotdiji culture and subsequent culture also.

5. There was a public system of storage of surplus grains. Granaries have been discovered as early as first half of 4th millennium BC at Mehargarh.

6. Many pottery designs have been found, flanged vessels, tall cylindrical vases, perforated vessels, dishes and cups on stand, ring stands, painted designs like peeple leaf, banana leaf, intersecting circles, fish scales, peacock etc. have been found persistently in the entire area. The public storage system indicates that theirs was a surplus economy and they enjoyed an affluent life which is indicative of a large scale trade also. Precious ornaments like marine shells, lapiz lazuli and turquoise have been found which were definitely not locally available. Marine shells should have been brought from Arabian sea, lapiz lazuli from Afghanistan and turquoise from Iran or Central Asia. This large scale trade suggests that there must have been an organizational set-up for the regulatory purpose, weights and measures, means for stamping and packaging, writing for maintaining records. This is confirmed by the seals from Kunal and Rehman Dheri.

7. There must have been sudden spurt of trade in third millennium BC with Mesopotamia, Persian Gulf and Central Asia.

Noting all these linkages, B.B. Lal has observed - "It would appear that we have given a rather long description of the cultural remains that antedated the Mature Harappan Civilization. But this had to be done, in order to make it explicit that the Harappan Civilization was not born one fine morning but was the outcome of a prolonged experimentation, from the 5th millennium BCE onwards. In other words, this civilization was neither a physical off-shoot transplanted from Western Asia, as had been thought by some scholars long back, nor was even the 'idea of civilization' borrowed from that region, as has recently been suggested by the neo-versionists. By now it must have

become abundantly clear that the *Harappans were very much 'the sons of the soil' who witnessed their birth, childhood, adolescence and adulhood - all on the Indian sub-continent*."[14]

The Aryan Invasion / Migration Theory

15. With this background, we now proceed to examine the much touted Aryan invasion theory. When the cities of Mohenjo-daro and Harappa were discovered, the problem was to co-relate this civilization. Since India was a subject country in those times, the first analysts of this civilization being English people could not imagine that this could be an indigenous civilization. The immediate reaction was that this could be somehow linked with civilizations of Mesopotamia and Egypt which were already in light for that period at that time. It may be noted that Marshall had dated the Harappan civilization in the 3rd millennium BC. By then Max Muller's casual remark about the antiquity of Vedas as 1200 BC were in the air. Though, subsequently Max Muller had back tracked his observations about the antiquity of Vedas in no uncertain terms, but somehow his words were taken as gospel truth by many scholars in that field. Max Muller had written in 1890 -

> 'If now we ask how we can fix the dates for these periods, it is quite clear that we cannot hope to fix a *terminum a qua [sic]. Whether the Vedic hymns were composed [in] 1000 or 1500 or 2000 or 3000 BC, no power on earth will ever determine*.'

In spite of this clear retrograde confession of Max Muller in 1890, even today after more than a century some hard liners cling onto 1200 BC theory (though there has been a mounting scientific evidence, archaeological, literary, astronomical and ecological to place Rgveda prior to 3000 BC). In 1947, Mortimer Wheeler carried out some excavations at the Harappan site and found some skeletons

in the area and co-relating it with the name of Indra as Purandar (destroyer of town) in Rgveda, he jumped to the conclusion that Aryans came from outside and they invaded the towns of Mohenjo-daro and Harappa and thus destroyed this civilization. Like a judge and a clergy, he declared '*on circumstantial evidence Indra stands accused*.'

Thus, Aryan invasion theory is a creation of Max Muller, Marshall and Wheeler trio.

16. We shall now examine the validity of this Aryan invasion theory. Regarding the skeletons that were found in Mohenjo-daro, B.B. Lal observes -

> Nine years of large-scale excavations at Mohenjo-daro brought to light only thirty-seven skeletons, some complete, but many fragmentary. While the small number may not be of much importance, it is the find-spots of these skeletons that matter. In the first place, all the skeletons were found in the Lower Town, which was inhabited by the common folks and not in the Citadel area, the seat of the elites. One normally expects an attack on the Citadel since that was the seat of the government. But that was not at all the case. Secondly, and this is a more vital point, even in the Lower Town, these skeletons came from different levels some from the intermediate ones, some from the Late and yet some from deposits that got accumulated after the abandonment of the site. Had there been an invasion, one expects that the skeletons would have been found at one level and that too would have been the uppermost since after that the site is believed to have been given up. Besides their very divergent stratigraphic horizons, it needs to be added that some of the skeletons bore cut-marks which had healed. Had the persons concerned died on the spot in a warfare then there would not have been the healing for which, needless to add, some time-lag

> was necessary. As an evidence of the invasion one normally expects the occurrence of some weapons at the site but nothing like that was found. Considering all these factors, one is fully inclined to endorse the view of a distinguished American archaeologist, George F. Dales (1964), that it was a '*mythical massacre*'.[15]

17. Similarly, at Harappan sites also, there is absolutely no evidence for an invasion. On the contrary, there is ample evidence of continuity of occupation. B.B. Lal has given very cogent reasons to show the hollowness of the Aryan invasion theory. But he his not alone. Now, almost the entire indigenous scholarship with few exceptions and some noted foreign scholars do not only agree with the conclusions of Mr. Lal but even are more emphatic about the absurdity of the theory and have discarded it. Here are some of the high priests of archaeology in history, pronouncing their opinion on this so called Aryan invasion theory. Lord Collin Renfrew has to say the following in the matter -

> When Wheeler speaks of 'the Aryan invasion of the Land of Seven Rivers, the Panjab' he has no warranty at all, so far as I can see. If one checks the dozen references in the Rgveda to the Seven Rivers, there is nothing in any of them that to me implies invasion : the land of the Seven Rivers is the land of the Rgveda, the scene of the action. Nothing implies that the Aryas were strangers there. .... Despite Wheeler's comments, it is difficult to see what is particularly non-Aryan about the Indus Valley civilization, which on this hypothesis would be speaking the Indo-European ancestor of Vedic Sanskrit. Certainly there are elements of continuity from the Indus civilization on to its aftermath.[16]

Similarly, Shaffer and Lichtenstein are even more emphatic about their pronouncement - "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 interpretations, which date back to the eighteenth century, that continue to be imposed on South Asian cultural history. These still prevailing interpretations are significantly diminished by European ethnocentrism, colonialism, racism, and anti-Semitism. Surely, as South Asian studies [sic] 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.[17]

This is what Kazanas concludes - "The Aryan invasion theory, despite its 150-year-long life, has no real support anywhere except continued prejudice. It has now been substituted, in a similar shameless frame of mind, by 'migration' of an alleged complex and to the archaeologists or anthropologists incomprehensible nature; this is a deception, since the Aryanization of north India on so enormous a scale could not possibly have been effected without conquest and coercion - for which there is no testimony of any sort. Why this preposterous proposition should have acquired the status of historical fact among serious Indologists is for me a mystery. There may have been racist prejudice as many writers aver (Shaffer 1984; Leach 1990; Frawley 1991, 1994; Feuerstein 1995; Trautmann 1997; Bryant (2001 chs 1-2) and many Indian writers like Talgeri (2000) and Indian-American Kak (2000); this was perpetuated by mechanical repetition rather than logical consideration."[18]

18. Kazanas is emphatic that Indo-Aryans are indigenous to Sapta Sindhu. The traditions affirm that the Indo-Aryans

have been in Sapta Sindhu since at least the 4th millennium BC. Similarly, the Aryan migration theory also cannot hold any water because of the cultural continuity in the area. The genetic analyses have also proved that no large scale migration from Central Asia to Indian has occurred. Looking to this overwhelming evidence against the Aryan invasion/migration theory, B.B. Lal rightly concludes that 'these theories be given a ceremonial burial with the dawn of the new century unless the proponents regard it as a matter of prestige not to do so.

From what has been stated so far two things are very clear viz. (1) the Harappan civilization was not an offshoot of the Mesopotamia civilization but was an Indian product from the very grass root level (2) there was no Aryan invasion or even migration. Then the great question is who actually were the authors of this great civilization of the Indian sub-continent?

Authors of Harappan (Indus-Saraswati) Civilization

19. The demolination of Aryan invasion/migration theory only means that Aryans were indigenous to the Sapta Sindhu. It does not ipso facto mean that Vedic Aryans were the authors of this great civilization. The Aryavarta by definition meant the northern portion of the Indian peninsula from Himalayas to Vindhyas. But there were other inhabitants also of the Indian sub-continent and they were the Dravidians of the Deccan region i.e. the area below Vindhyachal. They could also be the authors of this civilization. In fact, initially, it was propounded that Dravidians were the authors of this great civilization and they were pushed down by the invading Aryans to the southern part of the sub-continent. Off course, this was an offshoot of Aryan invasion theory but nevertheless this probability has to be examined before we come back to the authorship of Vedic Aryans for this civilization. The theory of Dravidians being the authors of this civilization can not

stand because of two very strong objections to it. Firstly, had Dravidians colonized that area, one expects to find at least a few Harappan settlement in that region. But let it be emphasized that not even a single site of the Harappan civilization has been found in any of the Dravidian speaking states - Tamil Nadu, Andhra Pradesh, Karnataka or Kerela. The only cultural remains of a comparable antiquity found in these regions are those of the southern Neolithic culture. It would certainly be naive to believe that the urban Harappans made a drastic cultural back jump and took to a Neolithic way of life. The other and equally forceful objection to the Dravidian theory is that even if the Dravidians moved to south some proper names of Dravidian language should have been retained in the Harappan area. It has been observed that in all parts of the world even after a new set of culturally different people over take an area, the earlier names of many sites rivers and mountains continue to stay on, though the new people will certainly give new names to their old settlements. A case in point is that of United States of America. One can still find names of such rivers as Mississippi and Missouri or places and regions such as Chicago and Massachusetts which are indicative of pre-European culture in the area. But in the entire region of Indus-Saraswati civilization not even a single name of either a settlement or a river or even a mountain is of Dravidian origin. "This clearly shows that the Dravidian speaking people never occupied this area." (B.B. Lal).

20. Now, by the process of elimination the only candidate left for the authorship of the Harappan civilization are the Vedic Aryans. But before we conclude anything final about the authorship about the Vedic Aryans, there are four very strong objections to this premise. They are to be met before a final verdict is reached about the authorship of this civilization. These objections are :

(1) The Harappans were highly urbanized whereas Vedic people were just nomads. That is to say there is an urban-rural divide between the Harappan and Vedic civilizations.

(2) The Harappans did not use the spoked wheel whereas Vedic people used the spoked wheel.

(3) The Harappans did not know the horse whereas there is ample evidence to show that Vedic people used it freely.

(4) There is chronological mismatch between the two civilizations inasmuch as the Harappan civilization is dated in the 3rd millennium BC and Vedas were dated by some scholars in about 1200 BC.

21. We shall deal with these objections one-by-one.

(1) The urban-rural divide

This objection is based on casual observations of some earlier scholars about the Vedas who had not closely understood their content. For one thing, there was racial and imperial prejudice against India being their subject race, and for another they had studied Vedas only cursorily. This led to highly prejudiced judgment about Vedic civilization being nomadic. Only few quotations from the Rgveda itself, not to talk off later Vedic literature which is replete with references pertaining to urban life, the situation would be clear.

};k·Xu jfFkuk fo'kfr xk o/kerk e?kok eá lekV~A
vH;korh pk;ekuk nnkfr n.kk'k; nf{k.kk ikFkokukeAA

(Rgveda, 6/27/8)[19]

dvyam Agne rathino vimsatim ga
vadhumato maghava mahyam samrat
Abhyavarti Chayamano dadati
dunaseyam daksina parthavanam.

'Two wagon-teams, with damsels, twenty oxen, O Agni, Abhyavartin Chayamana, the liberal Sovran, giveth me. This guerdon of Prithu seed is hard to win from others.'

v/kk egh u vk;L;uk/k"Vk uihr;A
iHkkok 'krHkkft%A

(Rgveda, 7/15/14)[20]

Adha mahi na ayasya nadhrashto nrpitaye
purvabha shatbhujih

Thou Fire God ! protect us like a fort built of metal and protected by men with hundred hands so that enemies can never overcome us.

fp=·bn· jktk jktdk·bnU;d; ;d ljLorheuA
itU; bo rruf) o"VÓk lglsa;rk nnr·AA

(Rgveda, 8/21/18)[21]

Chitra id raja rajaka idanyake
yake Saraswatimanu
parjanya iva tatanaddhi vrstya
sahasramayuta dadat

Chitra is King, and only kinglings are the rest who dwell beside Saraswati. He, like Parjanya with his rain, hath spread himself with thousand, yea, with myriad gifts.

jk;% lenk'prjk·LeH;k lke fo'or%A
vk ioLo lgfL=.k%A

(Rgveda, 9/33/6)[22]

rayah Samudranchaturo asmabhyam
Soma visvatah A pavasva sahasrinah

O soma, from every side pour forth four seas filled with a thousand-fold riches.

ifj lneo i'kefUr gkrk
jktk u lR;% lferhfj;ku%A

lkse% iquku% dy'kkq v;klhr~
lhnu~ e`xks u efg"kks ous"kqAA

(Rgveda, 9/92/6)[23]

pari sadmeva pasumanti hota
raja na satyah samitiriyanah
somah punanah kalasam ayasit
sidan mrgo na mahiso vanesu

As the priest seeks the station rich in cattle, like a true king who goes to assemblies, Soma hath sought the beakers while they cleansed him, and like a wild bull, in the wood hath settled.

Lo'ok flU/kq% lqjFkk lqoklk
fgj.;;h lqd`rk okftuhorhA
Å.kkZorh ;qofr% lhyekoR;qrkf/k
oLrs lqHkxk e/kqo`/keAA
lq[ka jFka ;q;qts flU/kqjf'oua
rsu okta lfu"kn~fLeUuktkA

(Rgveda, 10/75/8-9)[24]

svasva sindhuh suratha suvasa
hiranyayi sukrita vajinivati
urnavati yuvatih silmava tyutandhim
vaste subhaga mathuvradham
sukham ratham yuyuje sindhurashvinam
tenam vajam sanishadasminnojau

That river Sindhu looks like possessing best horses, beautiful chariot, charming clothes and golden ornaments. She is virtuous and provides food and cattle, ever young and with pleasant hair. She is majestic and covered with virtuous trees which ever provide sweet and energetic secretions. Sindhu yoked comfortable chariot of horses. Let her bestow food etc. from it. In this battle her greatness has been extolled.

ozta d`.kq/oa l fg oks u`ik.kks
oeZ lhO;/oa cgqyk i`FkqfuA
iqj% d`.kq/oek;lhj/k`"Vk ek
o% lqlzksPpelks n`grk reAA

(Rgveda, 10/101/8)[25]

vrijam kranudhvam sa hi vo nripano
varma sivyadhvam bahula prithuni
purah kranudhvamayasirdhrishtha
ma vah susrochchmaso drihata tam

Construct proper abodes for our cows and men, capable of storing food and water for you and for men etc. Stitch ye (O Gods) the coats of armor wide and many, make strong towns as of metal, save from all assailants and your sacrificial spoon should be strong without any leakage.

vukjEHk.ks rnohj;sFkk
eukLFkkus vxzHk.ks leqnzsA
;nf'oukÅgFkqHkqZT;qeLra
'krkfj=ka ukoekrfLFkoka le~AA

(Rgveda, 1/116/5)[26]

anarambhane tadavirayetha
manasthane agrabhane samudre
yadasvina uthathurbhujyumastam
sataritram navamatasthivansam

Ye wrought that hero exploit in the ocean which giveth no support, or hold or station, what time ye carried Bhujyu to his dwelling, borne in a ship with hundred oars, O Asvins.

pRokfja'kn~ n'kjFkL; 'kks.kk%
lglzL;kxzs Jsf.ka u;fUrA
enP;qr% d`'kukorks vR;ku~
d{khoUr mne{kUr itzk%AA

(Rgveda, 1/126/4)[27]

chatvarinsad dasarathasya sonah
sahasrasyagre srenim nayanti
madachyutah krsanavato atyan
Kaksivanta udamrksanta pajrah

'Forty bay horses of the ten cars master before a thousand lead the long procession. Reeling in joy Kaksivan s sons and Pajra s have grounded the coursers decked with pearly trappings.'

22. These verses speak about : -

(1) Cities (*Pura*) or forts, abodes well built with metals and otherwise

(2) Carts damsels abode for cattle and provisions.

(3) Emperor (*Samrat*) King (*raja*) and Chieftains (*Rajakas*), assemblies, majestic processions

(4) Horses, Chariots, coats of armor, battle.

(5) Ocean and ships with hundred oars and ship wreck.

(6) Charming clothes, golden ornaments, pearly trappings.

(7) Riches from four ocean

(8) Sacrificial spoon, big donations (*dakshina*), two wagon full of damsels and twenty oxen.

All these mean that there were well built towns with *pakka* houses, abodes for cattle and men, houses for provisions. People used to wear beautiful clothes, golden ornaments. There were pearly trappings in the houses. Business community used to trade to distant places by big ships with hundred oars. Horses and chariot were very common among the elite. There used to be battle and soldiers used to wear coats of armor which were obviously stitched there. People used to earn riches by land and sea trade. There was governmental hierarchy in the form of

emperor, kings and chieftains. Also there were assemblies (*samities* and *sabhas*. There used to be sacrificial rituals with big donations and gifts.

23. S.P. Gupta a noted archaeologist and historian has observed regarding urban nature of Vedic people that "primarily due to the writings of Bhagwan Singh, R.S. Bisht, G.C. Pande, B.B. Lal and others like Shivaji Singh besides mine, it is more than clear that the Rigvedic rishis were fully aware of the 'urban' way of life : Samrata, Rajana, Sabha, Samiti (RV VI.278; VIII. 21.8); Lal, like many others has also drawn our attention to the Satpatha Brahmana (V.1. 1.12-13) which says "By offering the Rajasuya he becomes Raja and by Vajapeya he becomes *Samrata*". It clearly reflects the political hierarchy in the society and not nomadism of the people.

Warfare, such as the War of Ten Kings mentioned in the Rigveda, as well as long-distance trade through sea, rivers and land, coupled with piracy, metals and metallurgy, roads and lanes, multi-storey houses, fortifications, writing, etc., are also mentioned in the Vedic literature which clearly prove, according to Bhagwan Singh (1996), that the Rigvedic *rishis* were far from being 'nomadic'. Obviously, even though the Rigvedic *rishis* were living a frugal life, some as *'munis'* and *'tapasvis'*, most of them knew that beyond their hutments and villages there lay a host of cities in which the people were engaged in activities connected with the 'city economy'."[28]

24. Shivaji Singh while comparing the cultural contents of the Rgvedic and early to mature Harappans is very clear in his assertion that the perception that the former is rural and illiterate and later urban literate is wrong. "First, the rural-urban dichotomy itself is incorrect for in every culture and especially 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. Second

evidence now at hand shows that the Rigvedic Cutlure too had reached the stage of urbanization. The earlier notion popularized by scholarly publications like UNESCO's History of Mankind that they were 'non-urbanized people and semi-barbarous' who destroyed cities (Hawkes and Wooley 1963: 406) has been brushed aside. 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 centres and carried on long distance land and sea rade. Undoubtedly the Rigvedic Aryans destroyed their enemy purs (strongholds or fortified towns), but they also built purs, and lived in them. They are seen involing and praying their deities Agni, Maruts, Visvedevah and o thers not only for granting purs but also for helping in the construction and protection of their purs that have been described variously as metal-strong (ayasi), multi-sides (satabhuji), spacious (vipula), broad (urvi), protected (patri), impregnable (adhrishta), good looking (subhra), auspicious (bhadra), etc. In fact, Bisht (2000: 412-13) has gleaned from the Rigveda as many as twenty-seven such adjectives qualifying purs and most of these have been used in the context of Aryans' own purs. A large number of architectural terms and descriptions found in the text, especially references to covered (surmi) and clear (susira), drains (RV, 8.69.12) leading discharge water to pits (kakuda) immediately bring to our mind the Harappan architecture.

25. Descriptions at several places in the Rigveda refer to business activities. The word vanij denoting a businessman or merchant is known and so are the words expressing the concepts used in the business community such as avyaya (capital investment), bhaga (share in investment and profit), rina (loan), sulka (tax), bali (tribute tax), samvidana (contract), vasna (value, cost), etc. (Bisht 1988:12). Trading was done both by roadways as well as by waterways. Various kinds of land routes or roads (pathas) are referred

to in the Rigveda. Bhagwan Singh (1996: 3-4) enumerates over two dozen words used for difficult and easy routes such as extremely dark roads (atidhvasan patha), underground roads (antas patha), toilsome roas (vrijin patha), deviant roads (vipatha), waterlogged roads (varna patha) and good roads (supatha), comfortable roads (rajishtha patha), straight roads (rijupatha), illuminated roads (jyotishman patha), etc. Important in this connection are also the references he gives to roads leading to distant places (prapatha, mahaspath) and points from where roads offshoot in various directions (vishuchi). Trade by waterways (i.e. by rivers and sea) was well known. Bisht (1988: 13) gives the various words used in the text for denoting a boat or ship though nau is the general term. He provides the references to marine ships fitted with oars (aritra), masts (bandhura, skambha or stambha) and sails usually compared to wings of swans. I have mentioned above the event of Bhujyu's shipwreck. This as the description shows, must have occurred while going on a sea journey for trade. Bhagwan Singh (1996: 5) provides the references to sea journeys undertaken for wealth. He quotes the Rigvedic verse (RV, 10.142.7) -

vikfen U;;u leæL; fuo'kueA
vU; Ñ.k"or% iUFkk r ;kfg o'kkvuAA

(Rgveda, 10/142/7)

'This is the reservoir of water, the home of all the waters. O Agni, now you can change your route and reach any destination you like'."[29]

26. There are references to big sacrificial rituals in Rgveda. The case of famous rishi Kakshivan may be quoted here to give an idea of the gifts received by distinguished priests for supervising sacrifices. In Rgveda, 1.126.2 he himself has informed

'kra jkKks uk/kekuL; fu"dku
Nre'oku ç;rku Rl| vkneA
'kra d{khokj vl|jL; xkuka
fnfo Jok·tjek rrkuAA[30]

(Rgveda, 1/126/2)

'I (Kakshivan) have received from a King who is religious and benevolent a hundred niscks (a currency of Gold), a hundred vigorous horses, hundred bulls, a thousand and sixty cattle and ten horse drawn chariots, each caring a bride.' That King has spread his ever-lasting fame in the heavens.

From this one can imagine the enormous wealth and riches that Rgvedic people enjoyed. Therefore, as B.B. Lal has observed 'there cannot be greater travesty of truth then to say that the Vedic people were nomads. It should also be born in mind that there is no contradiction between a rural agriculture culture and the urban culture at the same space and time. Because even now, both of them have been coexisting and interacting with each other simultaneously. The argument of urban-rural divide, therefore, is groundless.

(2) Harappans did not use spoked wheel

27. Coming to the second objection, the problem of the spoked wheel which has been used to put spoke in the wheel of the Harappan Vedic equation, the latest archaeological findings are clearly discounting this theory of no spoked wheel. B.B. Lal has rightly observed that those who say that the Harappans used only solid wheels and not spoked ones are either deliberately ignoring the evidence or have not kept themselves abreast of recent discoveries. Not one, but at least three sites have provided evidence of the use of spoked wheels in the Mature Harappan levels. The sites concerned are : Kalibanga, Rakhigarhi and Banawali. The wheels are duly illustrated

in 'The Saraswati Flows On'. While the specimens from Kalibangan and Rakhigarhi (Pl. 1.1) delineate the spokes by means of a series of painted lines radiating from a central hub, in the case of Banawali examples of the spokes are shown in low relief (Pl. 1.2). This latter technique, continued to be used for depicting spokes on terracotta wheels right up to the historical times. This evidence takes care of the second objection raised.[31]

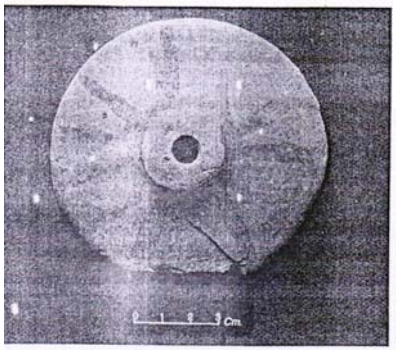


Fig. 1 : Rakhigarh : Terracotta wheel. The painted lines represent the spokes. Mature Harappan

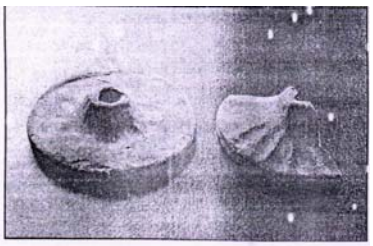


Fig. 2 : Banawali : Terracotta wheels, showing spokes in low relief. Mature Harappan

(3) The issue of Horse

28. Similarly, the objection that the Aryan used horse and there is no evidence of horse in Harappan culture is also groundless in view of the latest archaeological findings. Even as far back in 1938, E. Mackay had categorically stated that this animal was associated with the Harappan Civilization : 'Perhaps the most interesting of the model animals is one that I personally take to represent a horse' (Mackay 1938, Vol. I, p. 289; Vol. II, pl. LXXVIII, 11). Dealing with this very topic in 1968, Wheeler affirmed: 'One terracotta from a late level of Mohenjo-daro seems to represent a horse, reminding us that the jaw-bone of a horse is also recorded from the site, and that the horse was known

at a considerably earlier period in northern Baluchistan,' (Wheeler 1968: 92).

Since then a lot of new evidence has poured in. For example, Lothal in Gujarat has yielded not only a terracotta figurine of the horse (Pl. 1.3) but also it faunal remains (Rao 1985). Another site in Gujarat, namely Surkotada, has also yielded horse bones (Joshi 1990).[32]

There are other sites also were horse remains found such as Kalibangan in Rajasthan and Roopnagar in Punjab. Besides, a terracotta figurine of this animal in the Harappan levels at Nausharo excavated by Jarriage and his colleagues has been found. Therefore, there is no doubt that the Harappans domesticated the horse. This objection about the horse therefore also falls flat.

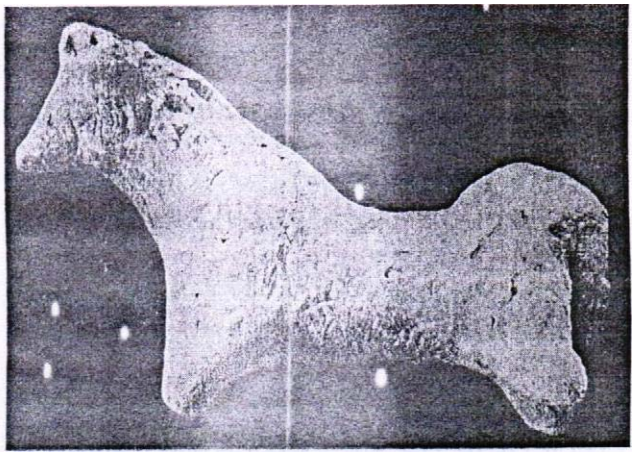
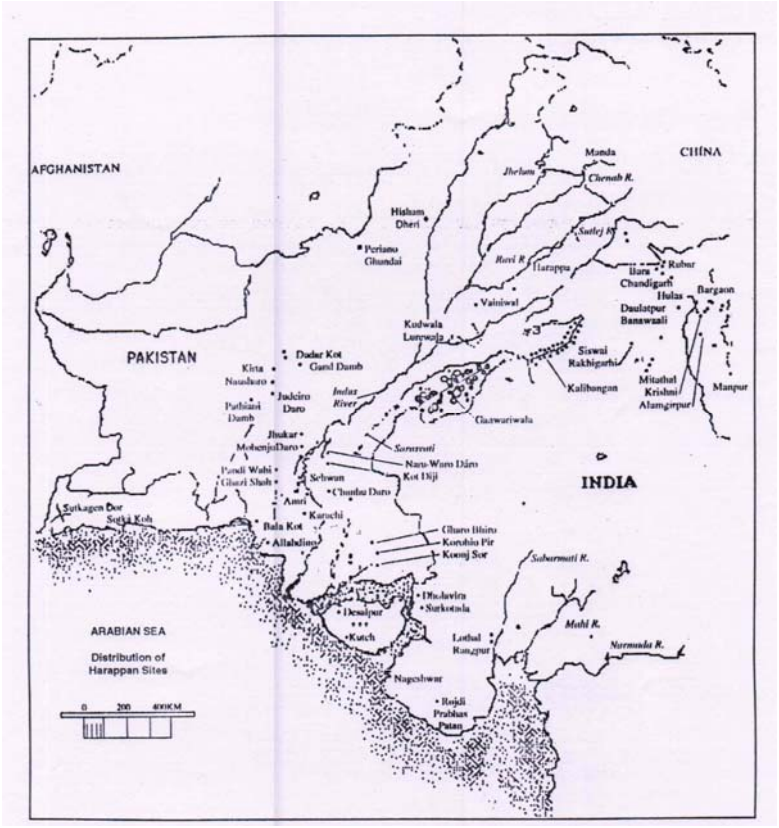


Fig. 3 : Lothal : Terracotta horse. Mature Harappan



Map-3 : Archaeological Map of Harappan Sites

(4) The chronological mis-match

29. Admittedly the date of mature Harappan civilization is middle of 3rd millennium BC as first pointed out by Marshall and subsequently attested by many other scholars. But due to a very casual remark of Max Muller which he subsequently back-tracked also, the mis-conception about the date of Rgveda as 1200 BC still continues among many scholars. It is because of this 1200 BC date of the Rgveda that there appears to be a chronological mis-match between the Vedic culture and early to mature Harappan culture inasmuch as whereas the Harappan period dates back to

middle of 3rd millennium BC, the Rgveda was composed in 1200 BC i.e. much later than the Harappan civilization. Therefore, according to this mis-match, Vedic civilization could not have been the Harappan civilization. To find out a solution for this problem, we have to look to the date of Rgveda for which overwhelming evidence has now come up and a whole galaxy of scholars has now come to the conclusion that Vedas are not later than 3000 BC, the lower limit ranging upto 7th to 9th millennium BC. We shall examine this issue of the date of Rgveda briefly (because a detailed discussion on the date of Rgveda will be undertaken later in connection with stages of Vedic chronology) on following five counts :

1. The existence of Vedic Saraswati as the mighty river.
2. The archaeo-astronomical references in Rgveda and other Vedic literature.
3. The linguistic considerations.
4. Contacts with the west Asian countries and
5. The archaeological contours of Rgveda and other Vedic literature.

(1) The existence of Vedic Saraswati as the mighty river

30. The evidence of Saraswati is very clinching peace of evidence regarding the date of Rgveda. Let us examine the following *mantras* of Rgveda pertaining to Saraswati -

i {kkn lk /kk; lk ll ·,"kk ljLorh /k#.kek; lh i%A
ickc/kkuk jF;o ;kfr fo'ok vik efguk flU/kjU;k%AA
,dkpr r ljLorh unhuk 'kfp;rh fxfjH; vk leækr A
jk;'prUrh Hkqou L; Hkj /kr i ;k nqng ukg"kk;AA[33]

(Rgveda, 7/95/1-2)

Pra kshodasa dhayasa sasra esha
Saraswati dharunamayasi puh
prababadhana rathyeva yati
visva apo mahina sindhuranyah ||1||
ekachetat Saraswati nadi nam suchir
yati giribhya a samudrat
rayaschetanti bhuvanasya bhure
ghritam payo duduhe Nahushaya||2||

"The Saraswati gushes forward with her water and protects all like a metal fortress; with her might, like a charioteer, she surpasses (lit. obstructs) all other waters (rivers)[1]. Purest among all the rivers and vibrant, the Saraswati moves from the mountains to the ocean; manifesting immense riches of the world, she has provided milk and *ghee* (clarified butter) to the progeny of Nahusha.[2]

b; 'k"efHkfcl [kk bok# t r
lku fxjh.kk rfo"kfHk#fefHk%A
ikjkor?uheo l lofDrfHk%
ljLorhek fookle /khfrfHk%AA
;L;k vuUrk vàr LRo"k'pfj".kj.ko%A
ve'pjfr jk#orA
i ;k efgEuk efgukl pfdr
|EufHkjU;k vilkeiLrekA
jFk bo cgrh foHou Ñrk
iLrR;k fpfdr"kk ljLorhAA[34]

(Rgveda, 6/61/2,8,13)

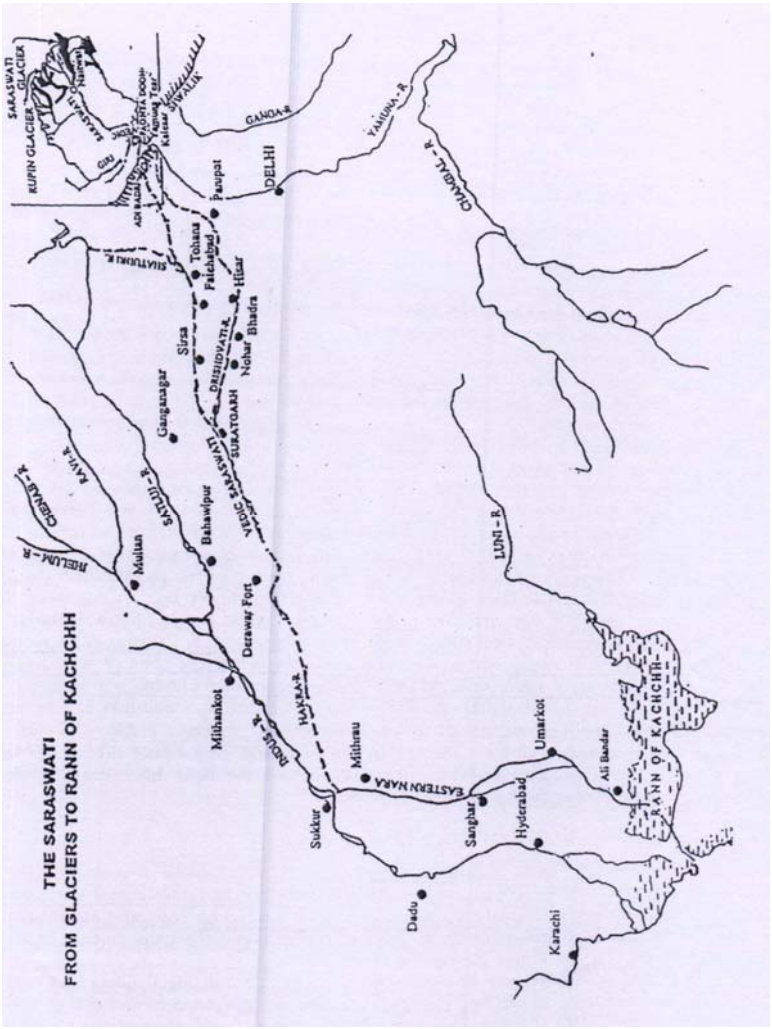
iyam sushmebhirvisakha ivarujat
sanu girinam tavishebhirumirbhih
paravataghnimavase suvaktibhih
Saraswatima vivasema dhitibhih
yasya ananto anhuta stveshaschrish-
nurarnavah. amashcharati roruvat

pra ya mahimna mahinashu chekite
dyumnebhiranya apasamapastama
ratha iva brahati vibhvane krto
pastutya chikithusha Saraswati.

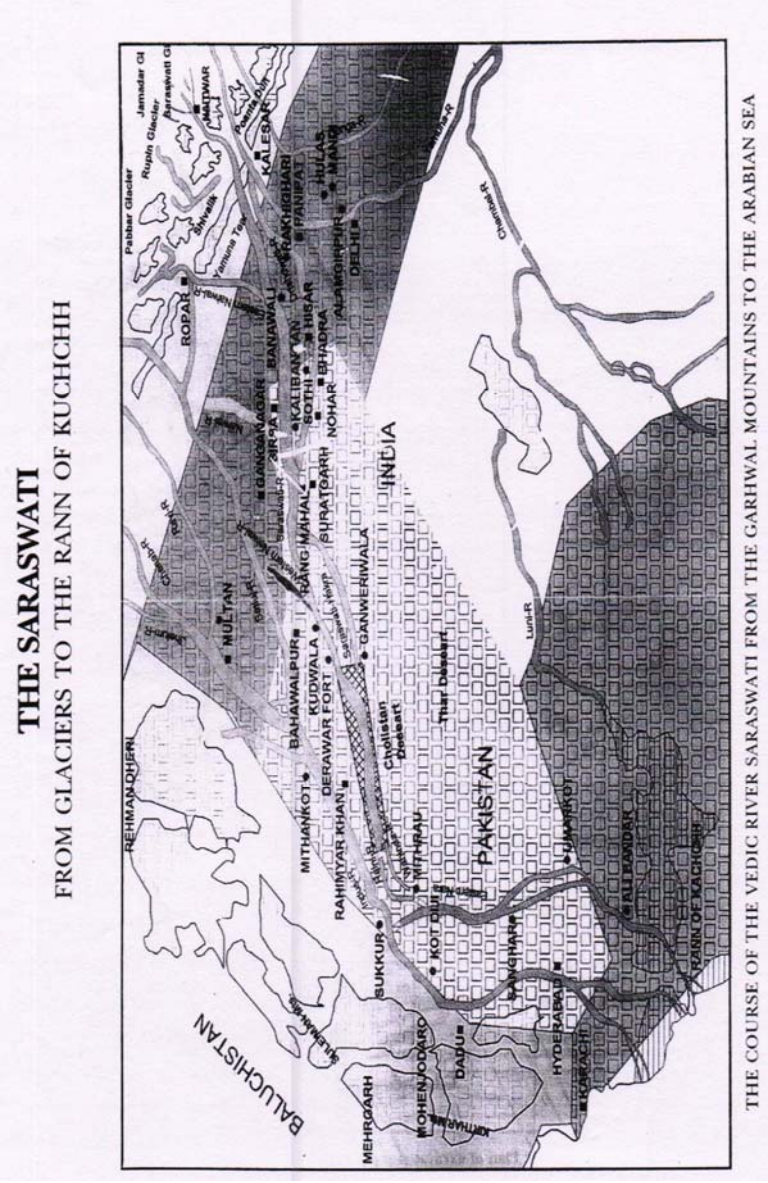
"This Saraswati demolishes the ridges of high mountains by her powerful flow like the roots of a lotus stem. We serve and pray this Saraswati, the destroyer of all her obstacles, with great devotion.

(We bow to Saraswati) whose limitless sweft and ever moving water moves on and on roaring.

This Saraswati is best among the rivers owing to her greatness, her influence and her power whose flow is faster and swifter than the flow of others. Who is majestic like a chariot. Who has been created by all pervading Lord and who is knowledgeable, such Goddess Saraswati deserves our adorations."


THE SARASWATI
FROM GLACIERS TO RANN OF KACHCHH
SARASWATI GLACIER
KUPIN GLACIER
GANGA-R.
DELHI
Panipat
Tohana
Fatehabad
Hisar
Sirsa
Bhadra
Nohar
Ganganagar
Bahawlpur
Derawar Fort
Multan
Mithankot
Sukkur
Mithrau
Umarkot
Sanghar
Hyderabad
Dadu
Karachi
Ali Bander
LUNI-R.
RANN OF KACHCHH

Map-4



Map-5 : The Indus and the Saraswati from Glaciers to Rann of Kuchcch

The Aryans worshipped Saraswati as the greatest of the mothers, the greatest of the rivers and the greatest of the Goddesses -

vfEcre unhre nfore ljLofrA
vç'kLrk bo Lefl ç'kfLreEc uLÑf/kAA
Ro fo'ok ljLofr fJrk;f"k n0;keA
'kugk=r"k eRLo çtk nfo fnfnMf< u%AA[35]

(Rgveda, 2/41/16-17)

ambitame naditame devitame Saraswati
aprashasta iva smsi prashastimamba naskridhi
tve visva Saraswati shritayunshi devyam
shunahotreshu matsva praja devi dididhi nah

"O Goddess Saraswati, you are greatest of the mothers, greatest of the rivers and the greatest of the Goddesses. We are bereft of fame and riches. You enjoin us with power and fame.

O Saraswati, in you, the powerful one, lives of all beings are dependent. You be pleased with purifying sacrifices. O Goddess Saraswati bestow us with progeny."

31. When we go through these *mantras*, we find that the mighty river Saraswati was a very powerful river emanating from the Himalayas, flowing through the entire sapta-sindhu area upto the Arabian Sea where it terminated. Its flow was very powerful and it flowed with terrible speed demolishing even the ridges of the mountains. It was majestic one and its width was almost un-measurable. On its banks the sages of yore performed the penances, engaged in great intellectual activities and were very happy due to its perennial water. It gave life to all beings. The Aryans considered it as the greatest of the mothers, the greatest of the rivers and the greatest of the Goddesses. They held it in great esteem, worshiped it like heavenly

Goddesses and performed sacrifices (*yajnas*) for it on its banks.

32. As against this scenario Panchvimsa Brahman (XXV.10.16) clearly refers to the Saraswati having dried up. Prof. Yashpal and his associates conducted scientific investigations on Saraswati in order to find out the facts about history, archaeology, geology, paleo-climatology, and the results of land set imagery produced by them are international now. A leading member of Prof. Yashpal's team Shri Baldev Sahai has observed - "There is overwhelming evidence from satellite imagery as well as hundreds of archaeological finds made during the last 7-8 decades that the Vedic Saraswati flowed from the Himalayas through the present Ghaggar-Hakra bed in Punjab, Haryana, Rajasthan, Bahawalpur (Pakistan) and then through the Nara bed in Sind (Pakistan), finally to debouch itself into the present Rann of Kachchh (Kutch). During the proto-historic period, the Sutlej flowed into the Ghaggar-Hakra bed in Punjab at one time, abandoning it in response to tectonic movements in the region and joining it again at other points in time in Bahawalpur State. The high concentration of Early Harappan, Harappan and Late Harappan sites along the Hakra palaeo-channels in Bahawalpur region confirms observations made by Stein (1942) that the Sutlej joined the Hakra at different times. It is highly probable that the Yamuna also was a tributary at the same time as the Sutluj or continued to be so even when vagaries of Sutlej led to abandonment of this bed. The Saraswati was finally abandoned by both the Sutlej and the Yamuna, the main perennial sources and literally left 'high and dry'."[36]

At a later date due to the neo-tectonic movements, a huge landmass between Bata and Markanda river got uplifted due to which the water in the channel ran backwards till it reached the Yamuna tear and made new

entry. Explorations conducted for more than a hundred years show that this Saraswati-Ghaggar channel (the Sangam or confluence took place near Rasula) passed through the deserts of Suratgarh and Hanumangarh in India and Marot and Derawar Fort in Bahawalpur region of Pakistan where it is generally called Hakra, Wahind, etc. Beyond that, for more than 150 km, this channel is presently completely covered under the shifting sands of Cholistan, a part of the Thar Desert. After this it is again found, through which now the Eastern Nara Canal, made by the Britishers, passes, almost parallel to the Indus. Finally, it fell into the sea near the Rann of Kachchh.

33. This drying of the Saraswati is echoed in later literature also. Thus, Mahabharata mentions -

fLuX/kRoknk"k/khuk p Hkse 'p tue t ;A
tkufUr fl)k jkt Uæ u"Vkefi ljLorhe AA
,"kk ljLorh i.;k unhuke Ùkek unhA
iFkek lo lfjrk unh lkxjxkfeuhAA

(Mahabharata, Van Parva, 84,6)

"O King though river Saraswati is lost. Yet on account of glistening herbs and a particular type of land, the experts understand the presence of Saraswati. This is the Saraswati river very pious and best among the rivers. It is also the first among the rivers and goes towards the sea."

34. So far as the archaeology and dating of this Saraswati river is concerned, Shivaji Singh quotes M. Rafique Mughal and Shaffer and holds - "In the Saraswati Valley, the earliest culture of the horizon is the Hakra Ware Culture of about 3500-3000 BC. M. Rafique Mughal (1982/93: 85-95), the first to recognize it, has mapped as many as 99 sites of this culture in the Cholistan area comprising the Bahawalnagar and Bahawalpur districts of Pakistan. None of these sites have been excavated. However, the antiquities

collected from the surface of the sites, mostly single culture ones, clearly indicate that the authors of this culture were at a level of social formation which was more advanced than the Neolithic stage but had still not fully acquired a Bronze Age status. More than half of the sites (52.5 per cent) are camp sites indicating their predominantly nomadic pastoral character. Nevertheless, they have produced a good quality of red pottery both handmade and wheel-turned. Some of the pottery features, specially the tradition of coating the exterior with mud intermixed with small bits of pottery, link the culture with Amri IA levels in Sindh dated to the early part of the fourth millennium BC."[37]

Thus, the very existence of the mighty Saraswati river in the Rgveda places the antiquity of Rgveda to the middle of 4th millennium BC.

(2) The archaeo-astronomical references in Rgveda and other Vedic literature.

35. Astronomy is the science of time as the time has direct correlation with the movements of heavenly bodies – the planets, stars and galaxies. Hence by no other science time can be read so precisely as by astronomy. Before the advent of watches and clocks, people used to read time during the day by watching the course of the sun from east to west by measuring the shadow, and during the night by observing the passage of the stars. The phases of the moon enabled them to understand the passage of the month and the turn of seasons, the passage of the year. Similarly if one closely observes the stars immediately before sun-rise, he can understand the passage of the sun through the year and if one observes the change of star at the time of every vernal equinox, one can read an epoch. Vedic Aryans performed sacrifices which symbolized the self (the yajamana) on the one hand and the universe on the other. To this was added the samvatsara – the prajapati – the time. So that there was a complete homogeneity between the

universe, the time and the self. They believed that the all-round prosperity of the world individually and collectively and of society depended upon a complete homogeneous living in perfect consonance with nature and time. Therefore for every ritual 'time' was of utmost importance – time the अणोरणीयान् (minuter than the minutest) and महतो महीयान् (bigger than the biggest). No wonder therefore, that there are specific terms for the biggest time as Parardha, equal to half the life of Brahma i.e. matter (life of matter according to this calculation is 3.1104×10^{14} solar years) and of smallest unit of time such as Nimesh, Asu, Asiyan and Java etc. in Vedic literature itself. Nimesa (the period of a blinking) is 16/75 second and the Java is three stages below. This very small unit of time later on came to be known as truti which equals $1/32,40000^{th}$ part of a second. With their eyes on such a precision both for time and space, they used to observe the movement of stars, the change of seasons, the phases of moon, the stars on eastern horizon and the stars immediately before sun rise every day but specially on the equinox day because that was the day when they had to lay fire for the samvatsara satra (the yearly sacrificial ritual). For their Darsa, Paurnamasa (New moon, full-moon) rituals they were required to know the exact moments of their beginning and end.

36. Initially, there were reservations amounting to almost discredit of astronomical evidence. The reasons are not far to seek. Firstly conclusions were based on such references from Vedic texts whose meaning was ambiguous : i.e. it admitted of more than one meaning on interpretation. The references quoted by B.G. Tilak in his orion from Taittiriya samhita and Tandya Brahmana fall in this category. There is nothing specific in these reference which may indicate a year beginning at winter solstice or on Magh-shukla Purnima for that matter. Yet the entire calculation of Tilak depends on these two presumptions. Secondly astronomical

evidence was handled by some persons who were otherwise great scholars but had no requisite grounding in astronomy; and thirdly there was wide divergence of conclusions even amidst astronomers regarding a particular event which made the astronomical evidence, in fact the entire process – suspect in the eyes of non-astronomical fraternity of historians. But now among the new generation archeo-astronomers, sufficient precaution has been taken to avoid these causes of 'discredit' so that historians have now started taking astronomical evidence not only seriously but have placed their credence on it. K.C. Verma very well echoes this positive note about credence on astronomy- "All attempts to date the Vedic literature on linguistic grounds have failed miserably for the simple reason that (a) the conclusions of comparative philology are often speculative and (b) no-one has yet succeeded in showing how much change should take place in a language in a given period. The only safe method is astronomical."[38]

37. For the purpose of our present discussion, I shall quote here only three stages of Vedic chronology which take its antiquity to 8500 BC. The references I have culled are very clear and unambiguous, and admit of clear astronomical, mathematical interpretation towards a point in time.

Stage I : The Krttika period : The evidence of krttikas being always in the east as available in Manava sulba-sutra and Baudhayan sulba-sutra is very prominent one and its period found is 3016 B.C. For the corroboration in the Brahmanas, the most glaring reference, often quoted by the scholars, is the one in Satapatha Brahmana (II.1.2/3)

*,d }s =hf.k pRokjhfr ok vU;kfu u{k=kf.k
vFkrk ,o Hkkf;"Bk ;R—fÙkdkLrn
—fÙkdkLokn/kh rA ,rk g o çkP;s fn'kk
u P;oUrA lokf.k g ok vU;kfu

u{k=kf.k çkP; fn'kÜP;oUr & rRçkP;keokL;
rfÌ';kfgrk HkorLrLekr —fÙkdkLokn/khr[277]AA3AA

'There are asterisms with one, two, three or four stars; but Krttikas contain a multitude of them, hence lay (annual sacrificial) fire in krttikas. These do not deviate from the east; all other stars do deviate from the east. Hence in the east, sitting attentive towards their direction, lay fire in the krttikas'.

There cant be a more explicit, direct and emphatic statement than this. This needs no explanation. Its astronomical significance and period have already been worked out. This is an absolute unambiguous mathematical argument which unmistakably places the antiquity of Satapatha Brahmana at 3000 B.C. along with all that Sutra-literature (Baudhayana, Manava etc.) which speak of krttikas in the due east.

38. <u>Stage II : The Pusya period</u> : A very clear reference regarding Pusyas never deviating from the heaven, I could locate in the Rgveda itself in the fifth mandala :

;"eknÙkL; e:rk foprk
jk;% L;ke jF;k o;Lor%A
u ;k ;PNfr fr";k ;Fkk fnok
vLe jkjUr e:r% lgfL=.ke[278]AA13AA

[Rg. 5,54,13]

'You knowledgeable Maruts! (Gods of air) let us – the owners of chariots – be masters of riches in the form of grains given by you; you Maruts! Bestow us with a thousand riches that do not desert us just as Tisya (star) does not deviate from the heaven'.

Tisya in this hymn clearly means a star (nakstra) though Sayana takes it to mean the sun which is not at all convincing. According to Vedic index of Macdonnel and

Keith (P. 312 Vol. I 1982 reprint) 'Tisya occurs twice in Rgveda (here V-54-13 and X-64-8) apparently as the name of a star, though Sayan takes it to mean sun'. Besides, the sun deviates in the heaven many ways from north to south. Therefore the intended metaphor is that of a non-deviating star Tisya (δ cancri). And as we can see in the references of Manava sulba sutra and Baudhayana Srauts Sutra, that Tisya was once due east and did not deviate from the east just as krttikas did not deviate from the east during the times of Satapatha Brahmana or sulba-sutras. A star can be said not to deviate in the sky on two counts only – either it is at the position of pole-star or it is due east so that every night and with every samvatsara-satra before sun-rise, it is seen there exactly at the same place i.e. the east. As the first probability is ruled out, Tisya being very close to the ecliptic (its latitude is only 0°-4′-38″) the second probability obtains which also gets support from the statements of sulba-sutras. Its period has been worked out in connection with sulba-sutra statement as 7450 B.C.

39. There is yet another corroboratory statement for this phase of Vedic antiquity. It is in Taittiriya Brahmana :

*cgLifr% çFke% tk;eku%
fr";a u{k=efHk lEcHkw*

Sayana's commentary on this portion of Anuvak reads as under :

*v;a cgLifr% tk;eku ,o çFkekn
fr";a u{k= efHky{; çhfr;äå lu cHkokRié%*

'This Brhaspati (Jupiter) even as it was born was drawn towards the Tisya star in love'. Two eminent scholars of Astronomy viz V.B. Ketkar and Prof. S.D. Sharma[279] have worked out the periods of exact occultation as 4650 and 4350 B.C. respectively. But both these scholars concentrated on the second part of the anuvak only – 'तिष्यं

नक्षत्रमभिसम्बभूव' ('over – powered Tisya star') and have ignored the first part of it viz. 'बृहस्पतिः प्रथमं जायमानः' (when Jupiter was born first). A comprehensive, homogeneous interpretation has to be taken. It should also be born in mind that this is an observation made by ancient Risis by naked eyes and hence centre to centre or edge to edge occultation is not intended. What is intended is they were very close and as if Jupiter was in hot pursuit of it, his beloved star – both clearly visible. In any centre to centre or edge to edge occultation, Tisya – a 4^{th} magnitude star would be lost in the brilliance of Jupiter and thus would not be seen. Therefore their closeness is enough to indicate the metaphor. 'प्रथमं जायमानः' (being born first) means the planet Jupiter was seen for the first time at the beginning of the Samvatsara immediately before sun-rise on that date. This happens when a star is on Vernal equinox. Thus both Tisya and Jupiter were seen very close to each other at the time of Vernal equinox day which is the beginning of the Samvatsara. I have worked out in a research paper of mine[280] that in 7450 when Tisya (δ cancri) was on Vernal equinox Jupiter's south latitude was just 11′-41″. This when added to the north latitude of Pusya, the total distance between them was only 16′-17″, almost equal to half the diameter of the disc of t he sun or moon. So they were very close and justified the simile 'तिष्यं नक्षत्रमभिसम्बभूव'. Ever since then Pusya or another name Tara became the wife of Jupiter and when with latitude of Jupiter increasing, the Moon intervened between them, another myth was created that the Moon has cohabited with his preceptor's wife (i.e. Tara or Pusya) and the proximity of a small planet like Mercury made it that a child was born to Moon and Pusya out of this illicit relationship. Thus the metaphor and the legend were complete. We have seen in the discussion of sulba-sutra statements that Tisya or Pusya were in the east in 7450 B.C. Thus the two statements confirm each other.

40. Stage III : The Magha period : A very explicit time reference we come across in Maitrayani upanisad : सूर्यो योनिः कालस्य। तस्यैतद्रूपं यन्निमेषादि कालात्संभूतं द्वादषात्मकं वत्सरम्। एतस्याग्नेय मर्द्धमर्द्धं वारूणं मघाद्यं श्रतिष्ठार्धमाग्नेयं क्रमेण – उत्क्रमेण सार्पाद्यं श्रविष्ठार्धान्तं सौम्यम्'[281] (Mait. Up. 6.14).

'The sun is the cause of time. This is its form – the twelve-fold year, constituted of bits of time such as nimesa (16/75th of a second – a winking time) etc. Half of it is fiery and half cool; beginning with Magha and ending with half sravistha is the fiery half in order, conversely beginning with Aslesa and ending with half-sravistha is the cool half'.

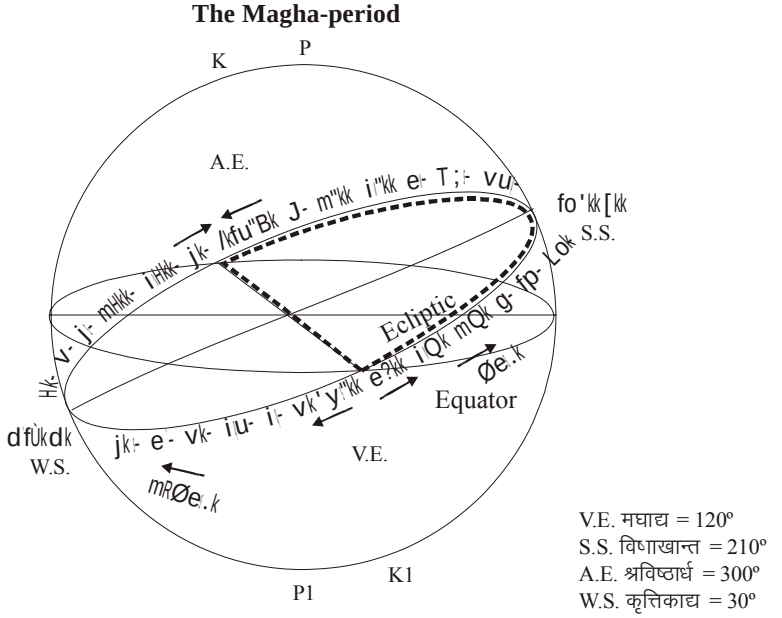


Fig. 4

With the above figure, the meaning of this anuvak of Maitrayani upanisad becomes clear. There are two halves of the year, one is fiery (आग्नेय) another is cool (वारूणम्). The fiery one is from Magha to half of Dhanistha – obviously when there is heat in the northern hemisphere i.e.

the portion enclosed by dots in the figure. The cool half is the when the sun is in the southern hemisphere when the northern hemisphere is cold. In the figure, the lower half is the cool-one. (वारूणम् or सौम्यम् = सोमस्य अयं सौम्यम्) Obviously this description does not fit well with the present meaning of Uttarayana and Daksinayana (vertical halves) because in that case neither half will be fully fiery or cool as both will have cold season for half period and hot season for another half. This confirms my interpretation that during Vedic times Udagayana or Uttarayana meant sun's north-hemisphere course above the celestial equator and Daksinayana meant its journey below the celestial equator in the southern hemisphere. Hence only the Uttarayana was called the day of the Gods (Sun V.E. to AE) and Daksinayana as the day of Asuras or Pitrs (Sun A.E. to V.E.) in Geeta, Smrtis and religious treatises which tripped even scholars like Varaha Mihira. So, Magha in this reference is neither at winter solstice as some scholars put it nor at summer solstice as some people think comparing with Vedanga Jyotisa, it is clealy and unmistakably at the Vernal equinox. Also, for the first time here, there is reference to divisional naksatras.

Computation of Time 120°/0-0-49″ = 8816-285

= 8531 B.C. or 8500 B.C.

41. There is another supporting statement for this reference of Maitrayani upanisad and it is in Taittiriya Brahmana which corroborates the above conclusion without any doubt :

देवग्रहा वै नक्षमाणि। .... कृतिकाः प्रथमम्। विषाखे उत्तमम्। तानि देव नक्षत्राणि। अनुराधाः प्रथमम्। अपभरणी रूत्तमम्। तानि यम नक्षत्राणि। यानि देव नक्षत्राणि तानि दक्षिणेन परियन्ति। यानि यम नक्षत्राणि तान्युत्तरेण[282]।

'Krttikas first; Visakhas ultimate; they are the stars of the Gods. Anuradha first, Apabharani ultimate; they are the stars of Yama (the God of manes). Those which are stars of Gods travel from south (दक्षिणेन) and those of Yama from north' (उतरेण). For the meaning of the words 'दक्षिणेन' and 'उतरेण' here, the commentary of Bhatta Bhaskar Misra helps :

nso u{k=kf.k nsoykd% nf{k.ku ifj;fUr ;e u{k=kf.k r% ;eykd e|Ùkjr% ifj;fUr ifjikV;k Øe.kkofr"BUr% xR;Hkkokr[283]A

'The stars of Gods approach Devaloka from south whereas the stars of Yama approach Yamaloka from north; Pariyanti means stay in order (in the course of the sun) as they have no motion'.

Thus the words दक्षिणेन or उतरेण here do not mean 'towards' south or north but 'from' south and north.

We know that Devaloka is northern hemisphere and yamaloka is southern hemisphere. Therefore the anuvak (statement) means that Krttikas move (Pl. sec. Fig. 1) from south (the point of winter solstice) to north (upto the point of S.S.) and Anuradha etc. move from north (the point of S.S.) to (upto the point of W.S.). This indicates a position when krttikas were on winter solstice or when end of Aslesa or beginning of Magha was on Vernal equinox (same position as in Fig. 1). The little difference is that in Fig. 1 Krttikas are at the end of first part (26°-40′ + 3°-20′). Here they purport to be in the beginning i.e. 26°-40′. Both the earlier quoted Magha-reference and now quoted krttika reference indicate the existence of divisional Naksatras in that period.

42. S.B. Dixit gives this meaning to this anuvak (that krttikas were on W.S.) and says that no other meaning of it is possible:

'The Godly stars cannot be taken as south of the ecliptic or the remaining towards north because Krttikas themselves are towards north of ecliptic. Three of Godly stars are in south and the remaining two are again in the north. The same argument applies with reference to celestial equator also because the northern latitude of Swati, Sravana, Dhanistha and Uttarabhadra being more than 24° north they can never come south of equator… from the earth with reference to an observer, no such situation can ever obtain when 13 stars are towards his one side and the remaining 13 on the other. Therefore, the meaning of this anuvak is they are in the path of sun as it travels from south to north and vice versa. This means the Uttarayana (in the present sense) or winter solstice was in the beginning of Krttikas (S.B. Dixit Bharatiya Jyotish, 1975, p.201-202. He calculated this period as 8750 B.C. We can also verify it :

If W.S. is the beginning of Krttika i.e. 26°-40′

The V.E. would be (26°-40′) + 90° = 116°-40′

@ 48″ per year this amounts to

$$\frac{116° - 40'}{0 - 0 - 48''} = 8750 \text{ B.C.}$$

But to be precise, the average is to be taken as 49″ and not 48″ and zero Ayanamsa year being 285 AD, this is to be deducted from the result. So that a more precise value would be

$$\frac{116° - 40'}{0 - 0 - 49''} = 8571 - 285 = 8286 \text{ or } 8300 \text{ B.C.}$$

Magha period is 8500 B.C. thus this anuvak confirms this same period.[39]

43. The archaeologists, linguists and scholars of allied sciences in this matter generally take recourse to the Krittka

period, when the Krittka or the Pleiades where due east as mentioned in Sathapatha Brahmana and almost all Sulba-sutras. This period is decidedly 3000 BC and all astronomers from Shankar Bal Krishna Dixit in his Bhartiya Jyotisha down to the present day agree with this conclusion. This period is therefore taken as the Sutra period and is commensurate with the mature Harappan period. That is why scholars like Shrikant Talageri, Subhash Kak, N. Rajaram and even Kazanas take Harappan period as contemporaneous with the Sutra period of Vedic culture and consider Rgveda as pre Harappan.[40] But we have seen above that the early Rgvedic period goes back to about 9th millennium B.C.

(3) The linguistic considerations.

44. It is true that periodization of history on the basis of linguistic evidence is very difficult as conclusions of comparative philology are often speculative and no one has yet succeeded in showing how much change should take place in a language in a given period. Even so, some attempts have been made by the scholars to date Rgveda on the basis of linguistic evidence. For example Satya Swarup Misra holds - "In all other aspects Sanskrit shows archaism and therefore, IE reconstruction is based on Sanskrit mainly. The linguistic changes found in India in the Middle Indo-Aryan stage are found amply, in Greek, Iranian and Hittite which are stamped as very old historical languages of IE.

45. Greek presents many linguistic changes comparable to Middle Indo-Aryan. Some of them may be taken up here.

(1) All voiced aspirates are devoiced in Greek, e.g. IE *bhrater* > GK *phrater* cp Skt *bhrata*. Similar change is found in Paisaci Prakrit, e.g. Skt *megha* > Paisaci *mekha*.

(2) All final consonants except *n, r, s* are lost in Greek, e.g. IE *ebheret* > Gk *ephere*. Similarly, all final consonants except *m* are dropped in MIA.

(3) Heterogenous conjunct consonants are often assimilated in Greek, e.g. Homeric *hoppos* < *hod-pos*, Gk *gramma* < **graphma*, Gk *eimi*/*emmi* < IE *esmi* etc. This is quite frequent in MIA.

(4) Greek shows syncretism like MIA. In Greek Dative, Locative and Instrumental have merged. In MIA Dative and Genetive have merged.

(5) Greek shows vowel sandhi like MIA, e.g. *stemmata+ekhon* > *stemmat'ekhon*. This type of sandhi is normal in MIA.

Thus, Sanskrit deserves a much more archaic status than Greek. Hittite is another IE Centum language discovered in the 20th Century, which claims archaism superceding Sanskrit and Greek. For this language, two new theories developed, viz. the Laryngeal theory and the Indo-Hittite theory. I have refuted both the theories elsewhere. Thus, Hittite no more enjoys the archaic status now-a-days, because it shows a lot of linguistic change. Now-a-days very few scholars believe in the Laryngeal Theory and no body believes in the Indo-Hittite theory.

Hittite also shows linguistic changes comparable to MIA. Some may be taken up here.

(1) All aspirates have been deaspirated in Hittite, e.g. IE dighos > Ht dalugas, Gk dolikhos cp Skt dirghah. Such changes are not attested in Saskrit. They start only from MIA stage.

(2) Ht also shows assimilation like MIA, e.g.

Ht *luttai* < **luktai*, Ht *apanna* < **apatna*,

Ht *gwemi* < **gwenmi* < IE $g^{w}henmi$ cp Skt *hanmi*.

(3) Ht also shows syncretism like MIA. The Dative and Locative have merged in Ht in singular. In plural Ht has lot most of the cases.

46. At the outset Sanskrit was the top ranking language for reconstruction of IE comparative grammar. And inspite of the effort of some scholars to pull down the position of Sanskrit, Sanskrit still enjoys the position of the most important language for comparison with the newly discovered IE languages like Hittite, Luwian, Palaic, Hieroglyphic Hittite etc. Even now scholars who attempt a comparison of IE with any other language family use Skt forms to represent IE.

Therefore, on the basis of linguistic archaism, Sanskrit deserves a much earlier date than 1500 BC, based on Max Muller's hypothesis and accepted by most of the linguists in Europe as well as India. But as we will see in subsequent chapters on the basis of fresh linguistic evidence Rgveda deserves a very early date like 5000 BC.[41]

47. Shrikant Talageri in his 'the Aryan Invasion Theory, a Reappraisal' discusses this issue at length. He compares the Archaisms of Sanskrit and Lithuanian, considered to be the oldest among the Indo-European languages of Europe on two counts - (1) Archaisms in vocabulary and (2) Archaisms in general linguistic structure.

His conclusions on both these points are -

(1) Archaisms in vocabulary - In respect of vocabulary, there is no doubt whatsoever that it is Sanskrit, and not Lithuanian, which has "kept closest to the basic idiom reconstructed by comparative philology."

Childe, at the end of his chapter on Primitive Aryan Culture Reconstructed by Linguistic Paleontology, gives a list of 72 basic cognate words in different Indo-European languages. Of the 72 words given, Sanskrit has 70

cognates, Greek 48, Teutonic (Germanic) 46, Latin 40, Lithuanian 39, Celtic 25, Armenian 15 and Tocharian 8. The position of Lithuanian vis-à-vis Sanskrit is self-evident; especially when it is considered that Childe has counted the entire Baltic and Slavonic branches under the heading "Lithuanian", and the actual Lithuanian words are only 20, old Slavonic words are 16, Old Prussian words are 2, and there is one Lettian word.

It must be noted that this criterion has been adopted and accepted, not by scholars who can be accused of being biased in favour of an Indian homeland, but by scholars, like Childe, who are staunch supporters of the South Russia homeland theory. The adoption of this criterion is itself tantamount to an open acceptance of the fact that Sanskrit has a greater number, than any other language, of what Brandenstein called "early Indo-European words", and that Sanskrit vocabulary is therefore the closest to that of proto-Indo-European.

48. The study of Sanskrit vocabulary is indeed a fascinating subject. The vocabulary is so rich that there are many different words for every single object or concept. Thus, for example, water is *udakaudan, vari, jala, ambhas/ambu, apa, salila, paniya, nira*, etc., to name just some of the commonest words. All the words are of obvious or demonstrable Indo-European etymology (the word *nira*, which is alleged to be borrowed from Dravidian, has its cognate in Greek *nero*, from *niron*).

A study of the Sanskrit lexicon shows that it contains the largest number of proto-Indo-European roots and words, in their primary sense as well as in the form of secondary derivatives. And an overwhelmingly greater number of words, in various Indo-European languages belonging to different branches, have cognates in Sanskrit roots and words than in the roots and words of any other branch - often the etymology of words in different

languages can be derived only from a consideration of Sanskrit roots and words.[42]

49. Mr. Talageri cites the example of various synonyms of water in Sanskrit and traces their etymology in Avestan, Old Norse, Lithuanian, German, Greek and Latin languages. He quotes K. Munshi saying - "The Vedic Sanskrit has the largest number of vocables in the Aryan languages. These are preserved in the languages of the Sanskritic family in different parts of India." Thus he concludes that it is Sanskrit which has kept closest to Proto-Indo European in vocabulary.

50. On the point of Archaisms in general linguistic structure. He quotes Lockwood pointing out that - "Vedic language, with its "three genders, three numbers and eight cases", presents "the fullest representation of the Indo-European system", and that "the abundance of its records and the archaic nature of the language give Vedic an unsurpassed importance."

On phonology Lockwood observed that - "Sanskrit is the only language which preserved all the four series of occlusive consonants in the same original form as in Proto-Indo-European. Ancient Greek preserved in the first two series, and Germanic preserved none of them in the original form. Again, it is obvious that Sanskrit is the most archaic Indo-European language."

On morphology Mr. Talageri quotes S.K. Chatterjee pointing out that "the morphology of Vedic is as luxuriant as it can be, and it retains most faithfully the inflections of primitive Indo-European."[43]

Sir M. Monier-Williams is even more specific. In the introduction to his Sanskrit dictionary, he explains the difference between the form of inflexion found in Semitic languages and the form of inflexion found in Indo-European languages, by comparing examples from Arabic

and Sanskrit, and declares : "Sanskrit, the faithful guardian of old Indo-European forms, exhibits these remarkable properties better than any other member of the Aryan line of speech."

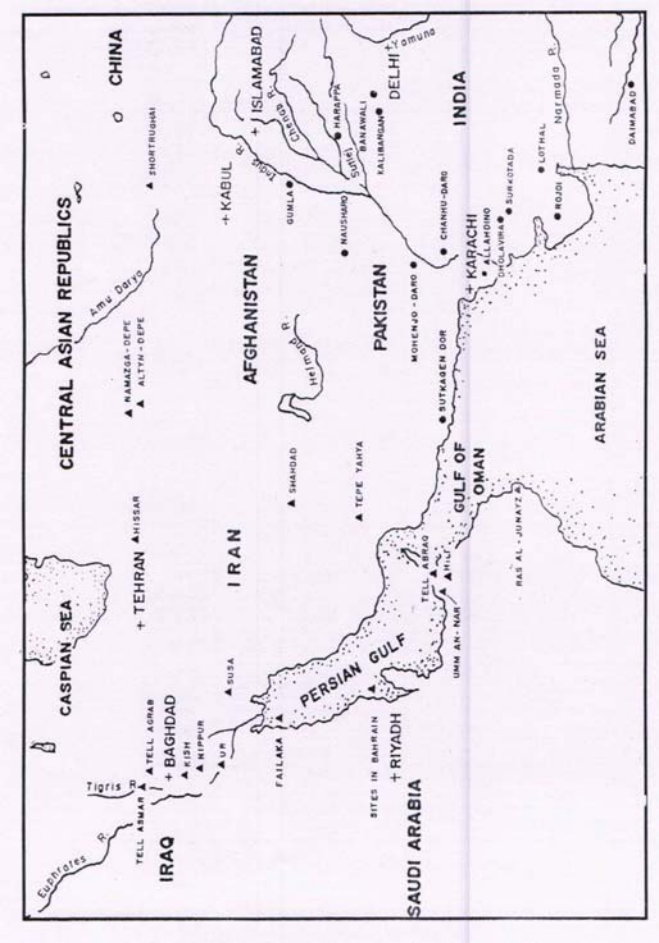
51. From all this, it is clear that it is Sanskrit, and not Lithuanian, which is closest to the reconstructed Proto-Indo-European in respect of both vocabulary as well as general linguistic form and structure. If archaism is a pointer to the original homeland, then India is undoubtedly the homeland indicated.[44]

Though, Mr. Talageri has not attempted any dating of the Vedic period on the basis of this linguistic evidence but if according to him India is the homeland of Indo-European languages, then Vedic Sanskrit, the language of the oldest work i.e. Rgveda has to be dated in 7000 BC because Collin Renfrew attests the presence of the Indo-European speaking farming community in Anatolia in 7th millennium BC.[45]

(4) Contacts with the west Asian countries.

Another way of looking at the date of Rgveda and Vedic culture in general is to examine the contacts of the Indo-Aryans with the west Asian countries, particularly Mesopotamia and Egypt. After the excavation of Boghaz-Koi in Turkey and the decipherment of its texts in 1970, the whole perception of the west Asian history and its relations with ancient Indian history has changed. Earlier, the Aryan Invasion theorists used to believe that Aryans came from a place close to Central Asia and most likely southern stepps, traveled through Middle East and Iran and finally settled in Punjab region in India around 1200 BC. But this theory has been completely exploded due to the discovery of Indus-Saraswati civilization in the north west of India and secondly, of the excavations of Boghaz-Koi in Turkey. As discussed above, because Indus-Saraswati civilization and

Vedic civilizations are converging, all arguments based on Aryan Invasion or migration theory have to be reversed. In the texts of Boghaz-Koi excavations, the presence of Rgvedic Gods like Maruts, Nasatya and Indra suggests the presence of Indo-Aryans in 1500 BC. Obviously, towards their westward movements. We shall examine in some details, these contacts of the Indo-Aryans with the West Asian countries.



Map-6 : Some sites with Harappan Artefacts (outside the Homeland)

53. The earliest recorded evidence of the existence of Indo-Europeans anywhere in the world is in West Asia. But the cuneiform texts which indicate the presence of Indo-European in West Asia also suggest that they were there outsiders, indicating that they had come in that region from countries outside the West Asia. Regarding their dating, Childe holds that "these first historic Aryans appear as late intruders in a region illumined by the light of written documents from the end of the 4th millennium BC." There were three distinct groups of West Asian Indo-Europeans, the Kassites, the Hittites and the Mitannis. The Kassites invaded and conquered Babylon in 1760 BC. Though after coming to the new region, they immediately abandoned their own language and adopted the language and culture of the Babylonians, yet from the records of the Gods that they worshipped, it is easy to find out their affinities with Vedic Aryans. They are recorded to have worshipped *Surias* and *Maruttas* (identified with *Surya* and *Maruta*) and having names like *Indabugas* (identified with *Indra* + *bhaga*), and are believed to have referred to their Gods as *bugas* (*bhaga*); and they are recorded as having introduced that "peculiarly Aryan quadruped", the horse, for driving chariots, into West Asia. These names of the Gods are all pure Rgvedic names of Gods - *Surya, Maruta, Indra* and *Bhaga.* Any clue that can be derived from these words can lead only and only towards India."[46]

54. In case of Hittites, though there are greater Indo-European elements in their language, yet the high admixture of vocabulary with the local language, makes it recognition difficult. Philologists HJ Houwinkten Cate in Encyclopedia Britannica, admits : "It has often been remarked - and not without reason - that although the grammar of the Anatolian languages would be recognizably Indo-European, the vocabulary would be less so. This is usually attributed to the deeply penetrating influences exercised by strange surroundings not only while the

Anatolians were 'en route', but also after their arrival in Anatolia."[47]

Thus, from linguistic point of view, it was difficult to discern their affinity with Vedic Aryans. But the clinching evidence in respect of the Hittites is the vary name of these people - *khatti* as they are called in the oldest document. The word *khatti* which means Hittites is clearly connected with Sanskrit *kshatriya* and *Pali khattiyo*.

Another very clear clue of their affinity with Vedic Aryans is their God *Inar* whom the Encyclopedia of mythology describes as a God who had come from India with the Indo-European Hittites. This *Inar* can be none else than the Rgvedic God Indra. The Hittites, therefore, were obviously emigrants from India, who appeared in Cappadocia from across the Caucasus mountains after centuries of wanderings in North Asia.

55. For Mittinis, there is ample evidence. For one thing, their language is clearly affiliated to a known and living branch of Indo-European languages - the Indo-Iranian branch. The Mittini also like the Kassites had abandoned their language and adopted the language and culture of the local Semitic people but they left distinct evidence in the form of their numerals and their divine and personal names. From the Boghaz-Koi excavation, a text has been found which is in the nature of a treaty between a Mittini king Tussarat (Dasharath) and Hittites in which the Vedic Gods Mitra, Varuna, Indra and Nasatya have been invoked. A text by Mittanian named Kikkuli uses words such as aika (eka, one), tera (tri, three), panza (pancha, five), satta (sapta, seven), na (nava, nine), vartana (vartana, round). Another text has babru (babhru, brown), parita (palita, grey), and pinkara (pingala, red). Their chief festival was the celebration of visuva (solstice) very much like in India. It is not only the kings who had Sanskrit names; a large number of other Sanskrit names have been unearthed in the

records from the area. These are sufficient indications to clearly establish the affinity of the Mittinis with the Vedic Aryans. Regarding these findings Childe points out : "These numerals and divine and personal names are the oldest specimens of any Aryan speech which we possess. The forms deserve special attention. They are already quite distinctly Satem forms; in fact they are very nearly pure Indic. Certainly they are much more nearly akin to Sanskrit than to any of the Iranian dialects that later constituted the western wing of the Indo-Iranian family. Thus among the deities Nasatya is the Sanskrit form as opposed to the Zend Naonhaitya, and all the four gods are prominent in the oldest Veda, while in the Iranian Avesta they have been degraded to secondary rank (Mithra), converted into demons (Indra) or renamed (Varuna = Ahura Mazda). The numerals are distinctly Indic, nor Iranian; *aika* is identical with the Sanskrit *eka*, while 'one' in Zend is aeva. So the 's' is preserved in Satta, where it became 'h' in Iranian (hapta), and the exact form is found, not indeed in Sanskrit, but in the Prakrits which were supposed to be post-Vedic. Even the personal names look Indic rather than Iranian. Thus Biridaswa* has been plausibly compared with the Sanskirt Brhadasva (owning a great horse). If this be right, the second element *aswa*, horse, is in contrast to the Iranian form *aspa* seen in Old Persian and Zend."

"Thus, all the numerals and all the divine names and almost all the personal names of the Mitanni are distinctly Indo-Aryan and equally distinctly non-Iranian. The word vartana (round) found attached to the Mitanni numerals in Kikkuli's Hittite manual of chariot-racing is also obviously the Sanskrit word avartana. The Mitanni people, or at any rate, the ruling warrior clans among them, were known as Maryanni, which, as Childe points out "has suggested comparison with the Sanskrit marya, young men, heroes" (Marya is found in the Rigveda), a meaning curiously akin

to that of the Hittite name Khatti, both suggesting the emigration of warrior groups from India.

56. To sum up, therefore, the evidence of all three groups of West Asian Indo-Europeans - whether the Surias, Maruttas and Bugas worshipping Kassites, the Khatti (Hittites), or the purely Vedic Mitanni - points inexorably away from South Russia and towards India. And the clinching evidence is that the only common factor in these three groups is the Vedic God Indra - Hittite Inar, Kassite Inda-bugas and Mitanni Indara."[48]

57. Regarding the history of Mittinis and their marriage relationship with the Egyptians, Subhash Kak provides very interesting information - "The Mitanni, who worshiped Vedic gods, were an Indic kingdom that had bonds of marriage across several generations with the Egyptian 18th dynasty to which Akhenaten belonged. The Mitannis were known to the Egytians as the Naharins, connected to the river (nahar), very probably referring to the Euphrates. At its peak, the Mitanni empire stretched from Kirkuk (ancient Arrapkha) and the Zagros mountains in western Iran in the east, through Assyria to the Mediterranean Sea in the west. Its centre was in the region of the Khabur River, where its capital, Wassukkani (Vasukhani, "a mine of wealth") was probably located.

The first Mitanni king was Sutarna I (good sun). He was followed by Baratarna I (Paratarna, great sun), Parasuksatra (ruler with axe), Saustatar (Saukshatra, son of Sukshatra, the good ruler), Paratarna II, Artadama (Ritadhaman, abinding in cosmic law), Sutarna II, Tushratta (Dasaratha), and finally Matiwazza (Mativaja, whose wealth is thought) during whose lifetime the Mitanni state appears to have become a vassal to Assyria.

The early years of the Mitanni empire were occupied in the struggle with Egypt for control of Syria. The greatest

Mitanni king was Saukshatra who reigned during the time of Tuthmose III. He was said to have looted the Assyrian palace at Ashur. Under the reign of Tuthmose IV, more friendly relations were established between the Egyptians and the Mitannis.

The daughter of King Artadama was married to Tuthmose IV, Akhenaten's grandfather, and the daughter of Sutarna II (Gilukhipa) was married to his father, Amenhotep III, the great builder of temples who ruled during 1390-1352 BC ("khipa" of these names is the Sanskrit kshipa, night). In his old age, Amenhotep wrote to Tushratta manyimes wishing to marry his daughter, Tadukhipa. It appears that by the time she arrived Amenhotep III was dead. Tadukhipa was now married to the new king Akhenaten, becoming famous as the queen Kiya (short for Khipa)."[49]

58. But this affinity between the Vedic Aryans and the West Asian people viz. the Kassites, the Hittites, the Mittannis and the Egyptians is of historic level i.e. when they were in West Asia and can take us back approximately to the end of 4th millennium BC. There is a deeper affinity between them suggested by the mythological details of these countries and their religious beliefs. Kazanas offers a very detailed study on this point -

"In a recent publication S.H. Levitt examines the development of the "early Indic tradition" and the development of religion in ancient Mesopotamia. After comparing several elements in the two religions, he concludes :

'We can date the early Indic tradition on the basis of comparable points in ancient Mesopotamia. By this, the Rgveda would date back to the beginning of the 3rd millennium BC, with some of the earliest hymns perhaps even dating to the end of the fourth millennium BC.'

59. Indeed, since the RV is the earliest text of the Indo-Aryans, its date of composition would help establish the beginnings of "the early Indic tradition". Having at this time made a comparative study of Vedic, Mesopotamian and Egyptian religion Kazanas concurs with Levitt's view. 'But I would like to draw the discussion farther taking into account much evidence (more Vedic and less Mesopotamian) which somehow escaped Levitt's attention. This evidence from comparisons between the RV and the ISC and between the Vedic and Mesopotamian traditions indicates that the bulk of the RV was composed before 3000 and probably before 3200, and is therefore older than the most ancient Mesopotamian religious texts. Any date prior to 3200 antedates the very early phases of the ISC, which matures in c. 2600-2200, declines thereafter and seems to collapse in large part and/or move eastward after c. 1900. The mature Harappan phase would seem to converge with post-Vedic texts, late Brahmanas and Upanishads, perhaps, and certainly the sutra literature."[50]

60. Primarily for the purpose of dating the Rgveda, Kazanas has compared many parallel themes and motifs between the two religions/mythologies. He indicates that there are some 20 affinities between the Mesopotamian and Vedic civilizations such as the Seven Sages, the Flood, the Sun Boat, the Eagle Flying to Heaven and so on. But for the purpose of this brief discussion, it will be sufficient to present two of the important themes i.e. the Horse sacrifice and the dismemberment of a divine being to create the worlds. In order to determine the anteriority or posteriority of the motif, he uses the argument that if a motif is Indo-European in nature that is, found elsewhere in the Indo-European countries, then it should be older.

For example, Horse mythology is attested in almost all the Indo-European traditions (except the Hittites) and some form of horse sacrifice was performed among the

Greeks, Roman, Celtic and Nordic peoples. Therefore, the theme of horse sacrifice being Indo-European, the Mesopotamia is the borrower and not vice versa. He clarifies "if a certain theme or element in the Vedic religion is found in other IE traditions then it is more likely that it is Proto-Indo-European and therefore inherited rather than a loan from Mesopotamia. This element then should be assigned to a date before the dispersal of the IEs in the 5th millennium or much earlier. It is, of course, possible that the element was inherited from a much earlier common culture now lost, or that it was developed independently by the Indo-Aryans and the Mesopotamians, but if there was influence then this ran from east westward."[51]

61. In Mesopotamia, a horse-sacrifice is documented in a liturgical text repeatedly mentioning god Marduk and belonging to the Babylonian ritual related to gods Shamash and Adad (Albright and Dupont 1934). One interesting detail of this ritual is that the priest whispers an incantation "into the left ear of the horse" before its immolation. The lowest terminus for this text is c. 800 B.C. and the upper c. 2000 B.C. Indeed, the horse came to Mesopotamia from Iran a little before 2000 but was put to common use c. 1600 (Saggs 1989). Before this, the Mesopotamians used asses for their carts and the text mentions the ass as well.

The corresponding Vedic ritual asvamedha is abundantly documented and much commented upon by ancient scholiasts and modern scholars. C. Watkins wrote "We may legitimately look upon the Asvamedha as the principal Indo-European kingship ritual." One of the minor features in the Vedic horse-sacrifice is the whispering by the priest to the horse's right ear. Full of varied descriptions of this lengthy and complex rite are found in the Satapatha Br Book XIII, in the Vajasneyi Samhita Bks XXII-SSV, in the Taittriya Samhita spread through Bks IV to VII, and in other texts. Evidence for a simpler, perhaps, ritual is found

in RV I 162 and 163, two hymns praising the horse, and in III 53, 11 in which king Sudas's horses are to be let loose to wander and thus win wealth for him.

62. Another frequent horse myth among others is that of a god taking on the form of a horse for various reasons. For example, in Vedic mythology Saranyu, the daughter of god Tvashtri marries Vivasvant, the Sungod. Then she disappears and takes the form of a mare; her husband becomes a stallion, mates with her and as a result the Asvins are born (RV X, 17, 1-2; Brihaddevata VI, 162 ff). We find a similar tale in Greece when Goddess Demeter became a mare to avoid the harassment of Poseidon, god of the sea, but he became a stallion and mated with her on the plains of Arcadia; as a result were born Aregion, a noble horse with black mane and a girl, and Demeter came to be worshipped in Arcadia as Demeter.

63. In India, the wild horse is present from c. 17000 B.C. and there is evidence for its domestication in the Ganges basin c. 5000 and in the ISC c. 2400 (Kazanas 2003; Chkrabarti 1999; Sharma 1980). Here, we have additional corroboration from the sun-chariot and the sun-boat. The sun-chariot, drawn by horses, is a common IE motif found in the Vedic religion, Iranian, Greek etc. It is absent in Mesopotamia, where the boat is the vehicle of the sungod (as in Egypt). The boat as a vehicle for the sun and other deities is found also in the Vedic tradition: in RV VII 88, 3-4 Vasishtha sails with god Varuna in the latter's boat; in VI, 58, 3 Pushan, the glowing figure of the sun, sails in the aerial ocean with his fleet of golden ships; and in Atharvaveda XVII 1, 25-26) the sun (aditya and surya) is on a boat of 100 oars. This too is found in the Greek lore having thus an IE pedigree. But the horse-drawn chariot is a very common IE image and therefore very old. Consequently, there is no question of the Veda being indebted to Babylon.

Albright and Dupont mention several Indo-Mesopotamian affinities, but above all, the whispering to the horse's ear is a detail strongly suggestive of borrowing by the Mesopotamians.

An additional detail is the presence of seven spots, like the Pleiades, on the forefront of the sacrificial animal. This is a rare image, but it is found in both Vedic texts (Satapatha Brahmana XIII, 4, 2, 1-4) and Mesopotamian ones (Albright and Dumount, 119-23).

64. Equally significant is the theme of creating the world's out of the dismemberment of a divine being. The Purusasukta (Rgveda X 90) deals at length with this theme. In this Purusasukta a cosmic personage (virat purusha) creates the worlds from various parts of his body. Thus, the moon has been created from his mind, the sun from his eyes, the air and the breathings from his ears and the fire from his mouth. This virat purusha represents social macrocosm also inasmuch as the intellectual class viz. Brahmanas have been born from his mouth, the warrior class i.e. Kshatriyas from his arms, the mercantile class i.e. Vaishyas from his thighs and the serving class i.e. Shudras from his feet. In this reference, it should be remembered that in Rgveda it is not the dismemberment of the cosmic personage but the various parts of the body are the causes for the creations of the worlds. The virat purusha remains intact and unlike the Mesopotamian theme, he is not dismembered. This is because of the ultimate philosophical outlook of India which is basically spiritual and subtle as against the purely material outlook of Mesopotamia. Coming to the Mesopotamian theme, in the Enuma Elish Marduk fights, defeats and kills Tiamat, the mother of the older generation of gods, a kind of Vedic Aditi. Here she has a gigantic, monstrous form with four eyes, a horn and a tail but she is not necessarily a dragon-serpent. Marduk sliced her in two, making the sky and earth; with her liver

he made the zenith and from her eyes the rivers Tigris and Euphrates. Tiamat was a primal Mothergoddess, consort of Apsu. So I think here too the Mesopotamians may have borrowed from the Vedic tradition.

65. Here it should be remembered that Marduk is a second generation god for Mesopotamians and earlier generation of gods is represented by Tiamat who is consort of Apsu. This Apsu is a Vedic word and a goddess resembling Tiamat finds mention in Atharveda. Therefore, this affinity leads us to the dating of this tradition in the Atharveda period i.e. about 5th millennium BC. The conclusion of Kazanas regarding these affinities is that "however, although a ritual like the horse-sacrifice is, I shall demonstrate, a loan by Mesopotamia from Saptasindhu, I do not disregard the very real possibility that there was c. 6000 or much earlier, a culture with many common features among the peoples of the eastern European plains, the Balkanas, the Pontic steppes, Anatolia, the Near East, Iran and Saptasindhu. I have elsewhere accepted the possibility that the IE homeland was a continuum spreading from Saptasindhu to the Pontic steppes."[52]

(5) History Archaeology

66. Regarding archaeology, S.P. Gupta observes "Radiocarbon dates of the latest levels of Kalibangan, etc., provide proof for one fact that almost all the urban settlements were deserted during this time. How far further back in time, from 2000 it goes is anybody's guess. However, since in 3000 BC Anatolia and West Asia also saw the Indo-European words appearing there, as has been shown by Mallory, it will not be surprising if this was the date in India too, if not earlier. Europe also seems to have acquired the Indo-European Culture, marked, as scholars feel, by horse and chariots. It happened in the Bronze Age of the 3rd millennium, if not earlier. As one can see, so far I

have confined myself to Saraswati, Rigveda and the Homeland of the Early Rigvedic rishis and their culture and the culture of their contemporaries, the Mature Indus-Saraswati Civilization, since this is the real issue in the present-day controversy.

67. It is now common knowledge that the sites of the Mature Indus-Saraswati Civilization were not confined to the Saraswati basin; it had spread over a very vast area covering Gujarat, Sindh, parts of eastern Baluchistan, Punjab, Haryana and northern Rajasthan. This was also the region of what we call the Early Indus-Saraswati Civilization, the date of which is now placed in the early to mid-4th millennium BC, for example, the Hakra-Ravi Phase as found at Harappa is dated to 3500-3300 BC while Amri and Balakotian cultures are dated to 3800 BC. These are also generically connected with the Mature phase of the Indus-Saraswati Civilization dated between 2600 BC and 2000 BC."[53]

All this above discussion shows that the date of Rgveda cannot be later than 3000 BC and its earlier antiquity goes back to 5th or 6th millennium BC.

67. Thus, all the objections viz. the urban-rural divide, the use of non-spoked wheels by Harappan, the non use of horse by Harappans and the chronological miss-match – between the Vedic and Harappan civilizations having been removed, the inescapable conclusion is that Harappan civilization is the culmination of Vedic civilization and that they are one. After recent researches and many findings, a number of scholars now subscribe to this theory. Budha Prakash (1964), and of course, many other scholars, believed that the Harappa culture or the Indus Valley Civilization represents the Vedic Civilization. The view has been reinforced by D.N. Tripathi (1988), K.D. Sethna (1992), S.R. Rao (1993), Bhagwan Singh (1995), George Feuerstein, Subhash Kak and David Frawley (1995), S.P.

Gupta (1996), etc. who believe the Vedic Civilization to be an indigenous phenomenon and the Indus Valley Civilization as representing the cultural remains of the Vedic people.

68. In retrospect, we observe that the Harappan civilization and the Vedic civilization flourished in the same area i.e. their geographical horizons are almost the same. These horizons have been clearly demonstrated by the distribution of its sites (Lal 1997: Maps). The cradle of the Harappan culture is the region falling between the rivers Sindhu (Indus) and Saraswati (The Ghaggar Hakra of the survey of India maps). This also was the core area of the Rigvedic Culture. The Rigvedic people themselves designated their land as the 'Land of Seven Rivers' (Sapta Sindhavah, RV, 8.24.27). Scholars agree that this denotes the land watered by Sindhu and Saraswati and the five rivers flowing in between them, viz. Jhelum (Vitasta), Chenab (Asikni), Ravi (Parushni), Beas (Vipasa) and Sutlej (Sutudri). Not only the core areas but also the areas of contact and colonization of the two cultures coincide. Both extended up to Afghanistan on the one hand and up to Gujarat on the other. Similarly, while the Harappan sites like Lothal, Surkotada, Dholavira etc., prove the presence of the Harappans in Gujarat, the legend of the shipwreck of Bhujyu, son of Tugra, described in the Rigveda (1.116.3-5) points to the Kutch area (Nandi 1994-95:31-33) as the south-western limit of the Early Vedic domain.

69. This is exactly the area indicated by the Nadi Sukta of Rgveda (RV X.75) where the two verses indicate the area between Sindhu in the West and the Saryu in the East with the Saraswati in the center. "This is the land of Seven Rivers called Sapta Sindhu. Its boundary kingdoms were Gandhara with the western affluents of the Sindhu to the north-west. Uttara Kuru or Kashmir and Ladakh into western Tibet and Kailasa along with the northern branches

of the Sindhu marked the north. Ariga and Videha with the lower reaches of the Ganga marked the east, Vidarbha across the Narmada in Maharashtra marked the south, perhaps extending as afar as Kalinga (Orissa)."[54]

David Frawley, here has extended some area of the Vedic culture relevant to the later Vedic period of Atharveda and Brahamanas. Manusmriti, an ancient text on Hindu dharma shastra elaborates four areas of ancient Aryans. They seem to be the extensions of Aryan civilizations in course of time. These areas are *Brahma-varta*, *Kurukshetra* or *Brahamarshadesha*, *Madhyadesha* and the *Aryavrata*. Their boundaries have been delineated by the Manusmriti as follows :

Brahmavarta -The land between two divine rivers, Saraswati and Drishadvati

Krukshetra or the land of Brahmarishis, includes the regions of the Kurus, Matsayas, Panchalas and Sursenakas. This would include the regions south to Mathura, the city of Suryasenas and east to the upper Ganga, the region of the Panchalas at that time.

Madhyadesha is the area between the Vinasana or place of disappearance of the Saraswati on the west and Prayag on the confluence of Ganga and Yamuna to the east between the Himalayas and Vindhya mountains.

The Aryavrata is the region between the eastern and western oceans and also between the Himalayas and Vindhya mountains. This would include Punjab and Sindh in the west and such regions Kashi, Kosala, Videha, Anga, Magadha the Vanga to the east.[55]

These Vedic horizons were acquired by the Vedic Aryans by the time of their mature period i.e. by the time of Upnishads and Sutra period.

70. Coming to the chronological horizons, we have seen above that the time span from the early to mature Harappan period is nearly 3200 BC to 2000 BC (Possehl 1996 : Lal 1997). So far as the date of Rgveda is concerned, the emerging consensus of the scholars is that Rgveda cannot be later than 3200 BC for the simple reason that the drying up of Saraswati in 2000 BC is a proven fact. This coincides with the mature Harappan culture as found in Kalibangan. A natural corolary is that when the river Saraswati was a mighty river appearing like a sea and flowing from mountain to the sea, that period should have been some thousands year earlier than this mature Harappan period and can be conveniently tagged with the early Harappan period of 3200 BC. Thus, there is a clear convergence of the chronological horizons of the two civilizations, though, as will be discussed later the Vedic civilization is much earlier than the Harappan civilization and the Harappan civilization represents its culminating urban phase.

71. Besides, geographical and chronological parities, there is cultural parity between the two civilizations. Apart from the urban nature of the Vedic civilization which has been discussed above, there are some clear affinities of religious thought. For example, a panel has been found in Harappa site with five Swastika. Swastika is a well known symbol of Vedic Hindu religion. N.S. Rajaram discovers in it the representation on the Pancaswastika mantra in Yajurveda (25.18-19). The famous Swasti mantra runs thus-

LofLr u bUæk o`)Jok%
LofLr u% i"kk fo'oa nk%A
LofLr uLrk{;k vfj"Vufe%
LofLr uk c`gLifrn/kkrkAA19AA

We invoke Him who may bring us welfare,
May the respected Indra guard our welfare,

May the omniscient Pushan guard our welfare,
May the Universal Creator guard our welfare,
May the Great Protector bring us welfare.

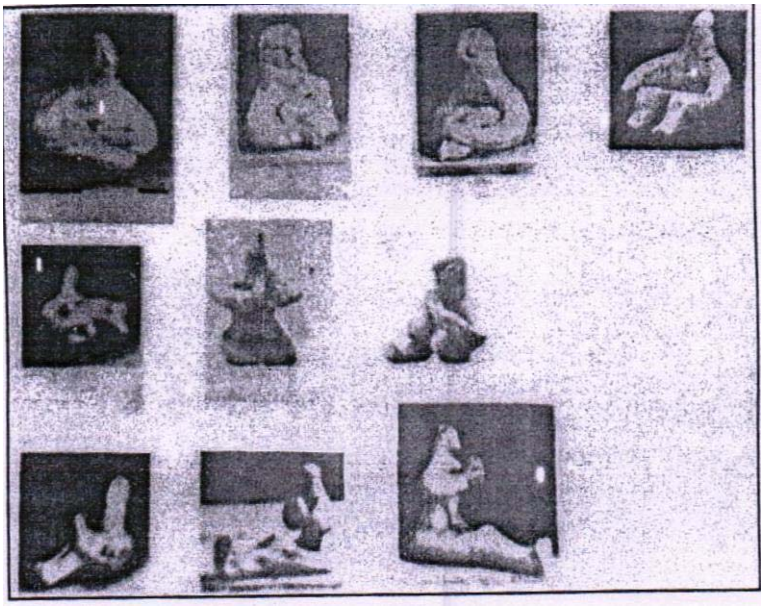


Fig. 5 : Examples of Yoga in the Harappan archaeology

Fig. 6 : A string of five svastikas

72. Similarly, many Terracotta figurines in Yogik postures have been found in Harappa and Mohenjo-daro sites. They are strong indicators of the practice of Yoga, obviously of Vedic origin. Besides, the town planning of Harappa and Mohenjo-daro where the houses were oriented along the cardinal directions and streets are straight and

laid at right angles, clearly bear the stamp of the precision of the geometry of the Sulba-sutras. After all, who taught Harappans to find out the east-west direction or who taught them to find out the exact right angles or other geometrical figures. This was obviously, the result of geometry found in the Sulba-sutras which teaches us to find out the praci or the eastern direction without the help of any compass and also to find out right angles with the help of Baudhayana triplets as found in the theorem of three squares (commonly known as Pythagoras theorem). All these factors indicate the cultural parity between both these civilizations. One should therefore have no doubt in agreeing with the conclusion of Shivaji Singh who holds that the Rigvedic and Early-to-Mature Harappan cultures are part and parcel of one and the same Indus-Saraswati cultural tradition.[56]

Section-2

Chapter-4 The Genealogies of the Kings : India, Sumer and Egypt and the flow of civilizations

India - Puranic Dynasties : An Interpretation

Mr. F.E. Pargiter broke new grounds towards assessing Ancient Indian Historical Tradition by seriously examining the genealogies of various dynasties of Ancient India. He prepared the tables of these dynasties on a fairly sound ground in his famous work entitled 'Ancient Indian Historical Tradition'. The earlier historians used to reject these genealogies mentioned in various Puranas outright, branding them contradictory to each other and thus excluded the most important source material for history of Ancient India. Mr. Pargiter through his critical methods and judicial approach found out consistency in these genealogies and thus prepared a ground for the future historians to take them seriously and recast ancient history accordingly. However, inspite of best efforts of Mr. Pargiter, there have been some gaps in these lists and in some cases the contemporary two dynasties differ by too many generations. Thus among the Iksvaku Kings of Ayodhya, according to Pargiter, Rama comes at 65th generation and Brahadbal a contemporary of Abhimanyu comes at 94th generation. Whereas, among the Pauravas if you count the names of kings ignoring the gaps, Abhimanyu comes at about 54th generation. Mr. Pargiter has left many gaps in the Paurava-dynasty to confirm to the established synchronisms between various important kings of these dynasties. Thus in Paurava dynasty the list is continuous upto 20th generation i.e. Tamsu. Thereafter from 21 to 42 these is gap. Again at 45th step there is no

king mentioned and from 54 to 62 again there is gap; 64 to 68 again no names have been given as also for the 70th generation. Needless to say that Iksvaku and Paurava dynasties particularly the latter, are the most important dynasties of ancient India and most of the celebrated kings and illustrious sages of ancient India have sprung from these dynasties.

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(Matsya, 50/88)

'This clan (dynasty) is the root of many Bhramanas and Ksatriyas and celebrated by Deva rishis.'

Their gaps or their brokenness would seriously hamper our efforts to recast history and construct its chronology with any reliability. My attempt in this work, therefore, has been to fill-up these gaps by colating various lists given in different Puranas as also Ramayana and the Mahabharata. I have referred to the original Sanskrit texts and with the help of close scrutiny of the words used in these texts, it has been possible to find out whether there are gaps at a particular stage of the genealogy, whether the Author is definite about it or whether he is just mentioning tradition handed down to him.

Words such as इत्यनुशुश्रुमः, इति नः श्रुतः, इत्याहुः पुराविदः 'It is heard', we hear thus; knowers of antiquity thus tell us - etc.; indicate that they are just mentioning what has been handed down to them by tradition and these are the places where critical intervention is called for. Other points are where improbable happenings have been brought about to justify an apparent inconsistency such as sixty thousand or ten thousand sons to a king, or a king or his queen performs penances for ten thousand years to beget a son or a king ruled for thousands of years etc. By carefully examining the texts, comparing the contemporariness of the kings with the back-ground of the concept of the Yugas it has been

possible to fill up these gaps to a great extent and also reduce gaps of generations between the various contemporary kings. As the Solar and the Lunar races have been most important among ancient India and later, the Magadha Kings, I have concentrated my efforts towards these three important dynasties, the Iksvaku Dynasty of Ayodhya, the Pauravas and the Magadha Kings because they help most in determining the chronology of ancient India. The Guruvansa Parampara or the tradition of the preceptor and the disciple has been borrowed verbatim from Chandogya Upanishad and the list of Videha Kings has been borrowed from the Bhagavata as such because not much material is available in the Puranas including the Harivansa Purana for filling up the gaps in the Videha Dynasty and in any case, it is of collateral value only.

2. The Solar Race

The Solar Race or Suryavansa is one of the most important dynasties of ancient India in as much as it did not only include the most celebrated kings of this country starting from Iksvaku down to Lord Rama, the son of Dasaratha but it is most intact of the genealogies and can serve as the basic scale for other dynasties. Another important feature of this dynasty is that in Puranic tradition, the kings of this dynasty are more or less the same. Mr. Pargiter observes that 13 Puranas give the whole list of kings more or less completely. Mahabharata mentions early part as far as Drdhasva and other portions elsewhere. The Raghuvansa of Kalidasa has much of later half from Dilipa II to Agnivarna. All these authorities are on the whole in general agreement so far as they extend except the Ramayana. Its two lists are practically the same but differ widely from the others. Most of its names occur in other lists but they are arranged in such absolutely different order that its lists can not be reconciled with the others. The Ramayana genealogy, no doubt, is different regarding the

total number and the order of kings from the Puranic genealogies. It is also true that there are many important omissions in Ramayana lists. It is also admitted that there may be contradictions in the relationship of kings which may be because many important kings have been left out in this list and there may be similarity in the names also. Mr. Pargiter has given in great details the omissions and the contradictions of the Ramayana lists and has, therefore, concluded that "Ramayana genealogy must be put aside as erroneous and the Puranic genealogy must be accepted." But it must be accepted that the Ramayana tradition is very old and hence the memories about its kings at the time of the composition of Ramayan is most likely to be vague and partially clear. Whatever important names of the kings were there in the memory of the people of this country at that time have been arranged as they were handed down to them. Then these lists were subsequently tallied with the Suta - tradition of Puranas, the gaps were filled and contradictions were removed. Srimad Bhagvata Purana is one of the latest Puranas and the lists of the Solar Kings provided by it appears to be most accurate. Next is the Harivansa Purana where the author has taken pains to recast the genealogies after giving critical thought to it and hence its list is also fairly reliable. This author has taken for its base the list of the Bhagavata Purana, tallied with the lists of Harivansa Visnu, Agni & Matsya Puranas and has also incorporated in it tradition of Ramayana without hurting the general order of Purana. It should be remembered that it is Ramayan which extols the glories of the kings of Iksvaku dynasty and complete exclusion of the Ramayana-list will be unfair in casting the genealogy of the Solar Race. Admittedly there are still certain gaps in it and it has been so observed by Pargiter himself while looking into the synchronisms of the Iksvaku and Paurava kings; the list of Paurava kings upto Pariksit-II the son of Abhimanyu includes 105 names whereas the list of Solar

kings upto Brahadbala i.e. the contemporary of Abhimanyu has 95 names only which means some inclusions are necessary in the solar list so as to tally it with the list of Paurava kings upto Mahabharata and these inclusions can be done with the help of amalgamating the Ramayana list and the Puranic list of the Solar Race. Thus Ramayana tradition give Kuksi as the son of Iksvaku and Vikuksi and Kuksi's son. This Kuksi has not been mentioned by Puranas. If we include Kuksi at the 2nd stage of this dynasty after Iksvaku and then we come to Vikuksi it does not hurt the order of the kings nor does it create any contradiction. Besides, the author of Ramayana clearly mentioned Vikuksi as the son of Kuksi and there is no scope for any doubt in the words used in the Ramayana.

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d{kjFkkRet% Jheku fodf{k:ni|rAA

(V.R.I. 70-22)

'Kuksi' was the famous son of Iksvaku and to Kuksi was born his illustrious son Vikuksi. Thereafter the list is intact upto Purukutsa the son of Mandhata which appears at Sl.No.22 in Pargiter's list and at Sl.No.23 in my list because of the inclusion of Kuksi at Sl.No.2. After Purukutsa the name of Vasuda and then his son Trsadasyu has been mentioned as 25th and 26th kings. The inclusion of Vasuda again does not hurt any order of kings nor does it create any contradiction, as a grand son or even a great grand son can be mentioned as son. At Sl.No.31 Mr. Pargiter has left a gap after Trayyaruna. I have filled up this on the basis of Bhagavata and the name at Sl.No.34 in my list is that of Tribandha as the son of Trayyaruna and Tribandha's son is Satyavrata Trisanku which is at Sl.No.32 of Pargiter's list. Again Sudeva has been added as the son of Campa or Cancu and his son is Vijaya. When we come to Sagara, he has been mentioned as the son of Asita and Kalindi in the

Ramayana tradition whereas in Puranic tradition he has been mentioned as son of Bahu or Bahuka. However, Bahu or Bahuka has been identified as Asita only, by Partgiter. But between Vrka and Asita there is one name in Ramayana tradition i.e. Bharata. It does not appear among descendants of Rama as is the case with Sudarsana and his four consecutive descendants. Hence the name of Bharata warrants inclusion in the list which appears at 45 of my list and the gap at Sl.No.40 of Pargiter's list thus gets filled. After Sruta the son of Bhagiratha two more names are there in the list of Bhagavata i.e. Kakutsa and Raghu which I marked Kakutsa-II and Raghu-I at Sl.No.52 and 53 of my list. His son is Nabh or Nabhaga. After Visvasah-I the Pargiter list mentions the name of Khatvanga or Dilip-II whereas in Harivansa Purana Nighna, Anamitra and Dululuha have been mentioned between Visvasah and Dilip-II. I have followed this tradition of Harivansa and given these names between Visvasah and Dilip-II. I have omitted Dirghabahu as the son of Dilip-II, mentioned by Pargiter and have taken it as the epithet of Raghu as is the tradition of epics and other Puranas including Harivansa Purana which have taken Raghu-II as the son of Dilip-II and then the tradition goes intact upto Devanika and Abhinaga at Sl.No.75 of Pargiter's list and Sl.No.87 of my list. Two names have been added between Ariha (Ahinaga) and Pariyatra from the Puranic traditions only. They are Rupa and Ruru at sl.No.88 and 89. Again between Amarsana (Sahasvant) and Brahadbala there are four names Mahasvan, Visvasahva, Prasenajit-I and Taksaka. Thus upto Mahabharata War there are 112 kings starting from Manu, and upto Pariksit S/o Abhimanyu of pauravas dynasty there are 110 kings. Thus two most important dynasties of ancient India almost tally because Brahadbala of Iksvaku dynasty was killed by Abhimanyu of Paurava dynasty and they are thus contemporary. But it must be remembered that these lists, particularly the Pre-

Mahabharata dynasties, are still not complete and many unimportant kings must have been omitted as the Puranakar clearly states :-

J;rk ekuok o'kk ikp;.k ijUriA
u 'kD;r foLrjrk oDrq o"k'krjfiAA
vij ;p ioi p Hkkjrk bfr foJrkA
HkjrL;kUook;fg nodYik egkt lAA
cHkocgedYik'p cgok jkt lÙkekA
;"kkeifje;kfu uke/k;kfu lo'kAA
r"kk r r ;Fkke[;dhrf;";kfe HkkjrA
egkHkkxkUnodYikUlR;kt oijk;.kkuAA

'O scorcher of enemies! Listen to the human dynasties in summary. It is not possible to describe them in details even in hundred years. Those kings, godly and very powerful who were earlier and who were later, known as Bharatas having been born in the clan of Bharata and many other illustrous kings who were like the Brahma Himself whose names in totality are uncountable (unlimited), of them, I shall deliberate on main kings, really great, like gods always committed to the truth and righteous behaviour.'

Chapter-5 The Paurava Dynasty and Human cycle of Yugas

3. The genealogy of Paurava-dynasty is most difficult to construct. Mr. Pagiter in spite of his great efforts has been able to construct it only in fragments. Thus, he constructed it in three parts – first part comprises of 20 kings starting from Manu down to Tamsu son of Matinara. From 21st to 43rd there is a gap of 22 kings and he places Dusyanta at Sr. No. 43. Second part begins with a gap after Bharata consisting of only 7 kings – Bhardvaja to Ajamidha – then there is a gap upto Sr. No. 62 and at Sr. No. 63 Riksa-I has been named. After a gap of 5 kings Samvarana finds place at Sr. No. 69 and Kuru at 71 and thereafter the third part goes almost unbroken upto Sr. No. 95 where Abhimanyu the son of Arjuna is there. This genealogy, therefore, suffers from many infirmities and is inconsistent obviously at many places, e.g. –

(1) Almost all puranas, the Harivansa and the Mahabharata place Dushyanta as the grand son of Tansu : Therefore there is *no justification whatsoever for a gap of 22 generations between Tansu and Dusyanta*, the father of Bharata. This gap can be explained and filled if there are two Dusyantas or Bharatas in the line.

(2) Ajamidha, Rksa, Samvarana and Kuru have been mentioned in almost all puranas and the Mahabharata as continuous progeny i.e. Rksa being the son of Ajamidha, Samvarana son of Rksa and Kuru son of Samvarana. Therefore, a gap of about 10 generations between Ajamidha and Rksa and 5 generations between Rksa and Samvarana is inexplicable.

(3) Pariksit-I an Janamejaya-II have been placed at Sr. No. 73 and 74 of Paurava list. They are the same Pariksit and Janamejaya who have been mentioned in the philosophical discussions of King Siradhvaja Janaka, the

father of Sita (Heroine of Ramayana). There is a mention about this fact in Satapath Brahmana and Chandogya Upnisad. Thus, this Pariksit and Janamejaya have to be anterior to Rama. But in the lists of the Kings of Ayodhaya Rama is at Sr. No. 65. Thus Pariksit-I of Mr. Pargiter becomes posterior to Rama which disturbs the established synchronism. It may be mentioned that the hallmark of the construction of genealogy by Mr. Pargiter is these synchronisms and in this case the two genealogies are inconsistent on a major synchronism. Therefore, these Pariksit-I and Janamejaya-II have to find a place before Rama and this gives a possibility of Kurus and Samvaranas being two in the line of Paurava kings.

(4) Almost all puranas are vague or give unconvincing explanation of the Kings immediately after Ajamidha. Then, Ajamidh has been mentioned in two ways – once as one among 3 brothers, Ajamidha, Sumidha and Purumidha and the other as one of two brothers Ajamidha and Dvimidha. There is no explanation for this duplicity. Besides there are two sets of queens to Ajamidha, one is Kaikeyi, Gandhari, Visala; the other set is Nalini, Kesini and Dhumini. These details lead us to conclude that there must be two Ajamidhas.

(5) Manyu or Bhuvamanyu son of Vitath or grandson or Bharata (Sakuntaleya) has two sets of sons –

(1) Diviratha, Suhotra, Suhota. Suhavi, Suyaju and Rcika (6) and

(2) Brhatksatra, Mahavira, Gaya, Nara and Garga (5)

Then, Bharata (Sakuntaleya) had no son of his own where as there is Bhumanyu who is own son of Bharata through Sunanda daughter of Sarvasen. Similar is the case with Kuru who, too, has two sets of sons – the namesand numbers being entirely different. This leads us to obvious conclusion that there are two sets of Bhumanyus

Ajamidhas, Kurus, Samvarnas, Rksas etc. with slight changes just as there are two sets of Dilipa, Raghu, Kakutsa etc. in Iksvaku dynasty. The powerful kings in the line have a tendency of repetition by the later generation as can be seen in almost all genealogies.

(6) The Harivansa Purana mentions that in the line of paurava kings there are two Purus, two Rksas, two Pariksits (I feel this is excluding Pariksit the father of Janamejaya whom story is being told in Harivansa or Pariksit son of Kuru who dies issueless and who did not rule) two Janmejayas (this again excludes Janamejaya, the listener) and 3 Bhimasenas (Harivanga Purana, XXXII-66). This was the situation when some critical thought was given to the genealogy of Paurava-Kings. Srimad Bhagavata Purana further edits this genealogy being the latest of the Puranas and now when the entire literature is before us, it needs further editing to remove the apparent inconsistencies and breaks in the line. This is possible by carefully collating various traditions. The Pargiter's list leaves these gaps as they are. In the list which I have prepared, these gaps have been filled and there are rational explanations to inconsistencies mentioned above.

4. The identity of ancient Janamejaya, the son of Pariksit

Before we set-forth for constructing the geneology of the Paurava kings, we must first establish the identity of the ancient Parikshit and Janmejaya who have been unfortunately identified by some historians like Hemchanda Roy Choudhary and Washam as the descendents of Pandavas rather than their ancestors. While it is very clear in Mahabharata that the old Parikshit was the son of Kuru and there is a clear description about him in chapters 150, 151 and 152 of Santi parvan wherein Bhisma mentions to Yudhisthir about Parikshit, his ancestor and Parikshit's son Janmejaya who was guilty of murder of a Brahmin.

Harivansa similarly mentions Parikshit as the son of Kuru and ancestor to the Pandavas. It also mentions in so many words that in the line of Paurava-kings there are twoParikshits and two Janmejayas but the problem remains as to whose son this ancient Parikshit was. Srimad Bhagvata Puarana gives a definite clue to the problem. It mentions that one Parikshit the son of Kuru died issue-less. But the Parikshit of whom we are talking had Janmejaya and others as his sons who was well known for his Asvamedha sacrifiess and who has been indicted as guilty of the murder of a Brahmana. Is there, then another Kuru whose son Parikshit was father of this illustratious Janmejaya? In Mahabharata two traditions regarding Paurava-kings have been given- one is in chapter 94 of Adi Parvan (Gorakhpur Edition). This is the ancient tradition and there is vaguaness in the description of this tradition because of the distance in time. The other one i.e. new tradition which has been given in chapter 95. If we carefully examine these two traditions, we find in the ancient tradition of chapter 94 there is one Kuru son of Samvarna whose son is Asvavan. This Asvavan has 8 sons Jitari Parikshit etc. and whose sons were Janmejaya, Kaksasen etc. This is that ancient Parikshit about whom there is a mention in the philosophical discussions of king Janaka. According to the geneology which I have prepared, he becomes anterior to Rama and thus his mention in the discussions of Janaka is justified. This Kuru being ancient to the Kuru, father of issue-less Parikshit, Jahnu and Sudahanava, has to be styled as Kuru-I and then the entire gap between Ajamidha Samvarana and Kuru could be explained and filled.

The theory put forth by Sri Hemacandra Roy Choudhary in his “Political History of Ancient India” can not stand for a moment on the face of the following arguments: As contended by Shri Roy Choudhary there is no similarity between the performance of Asvamedha

sacrifice by two Pariksht Janmejayas–the ancient (Vedic) parikshit Janmejaya and the great grand son of Arjuna- because the ancient Janmejaya had completed the Avamedha but Janmejaya the great grand son of Arjuna could not complete it because of the mis-doings of Indra. Secondly, Tura Kavaseya and Indra Daivapi were priests of ancient Janmejaya for the performance of the Asvamedha sacrifice whereas Chand Bhargava, Kautsa Jamini etc. were priests of Janmejaya, great grandson of Arjuna. Turkavseya being contemporary of Iksvaku at Sl.No.1 as per Pargiter's list given in his 'Ancient Indian Historical Tradition' and Janmejaya is at 110th as per my list appended at the end of this article. Thus, accepting this theory would mean blacking out of the entire tradition of about 110 kings from Iksvaku down to Parikshit's son of Abhimanyu. Mr. R.C. Majumdar of 'The Vedic Age' aptly discusses this problem in his work in chapter 14.

'On account the similarity of patronymic as also of the names of his brothers, the earlier Janmejaya is confused with the later Janmejaya and there has been transference of tradition.

The Aitareya and the Satapatha Brahamana enumerate Janmejaya as the performer of the Asvamedha sacrifice. The very fact that Bhisma narrates the story of Janmejaya's Avamedha to Yudhisthira as an ancient legend clearly shows that the Asvamedha referred to was performed by the ancestor of the Pandavas, and proves that Janmejaya Parikshita before the Pandavas time was a real person and not a shadowy figure as Dr. Ray Chaudhary would have us believe. The descendent of the Pandavas is credited with the performance of the Sapasatra and not an Asvamedha. The Asvamedha started by the later Janmejaya was not completed. The Brahmanas further mention Tura Kavaseya as the prist who anointed Janmejaya with Aindra Mahabhiseka, and Tura Kavaseya can be proved to be

contemporaneous with Janmejaya the ancestor of the Pandavas. Kavasa Ailusa, father or grandfather of Tura, was drowned in the Dasarajna, so that he was a senior contemporary of Kuru, son of Smavarna, who lived during the Dasarajna period. Janmejaya who was the grandson of Kuru (Kuru-I) was thus contemporaneous with Tura. This sacrifice, with Tura Kavaseya as prist, was performed for celebrating the attainment of imperial status by Janmejaya and not for atonement of any sin. The Satapatha Brahmana refers to another sacrifice performed by Janmejaya Parikshita with the aid of Indrota Daivapa Saunaka for ridding himself of a grievous sin which is described as Brahmahatya (killing of a Brahmana). The Puranas and the Mahabharata do not associate Janmejaya, the descendent of the Pandavas, with any guilt. That the ancestor was the person alluded is clear from the fact that the story of the sin of Janmejaya is told by Bhisma, and therein Janmejaya is accused of unwittingly killing a Brahmana. This also proves that Indrota Daivapa Saunaka flourished generations before the Bharata war. The Harivamsa refers to Janmejaya's killing the son of Gargya for insulting him, as the result of which Gargya cursed him. Harivamsa clearly indicates that the Asvamedha story relates to the earlier Janmejaya by making Janmejaya (the descendent of the Pandavas) the auditor of the story which is told by Vaisampayana, who adds that there were two Janmejayas and two Parikshts among the Pauravas.'

This Janmejaya the son of Parikshit, therefore, is ancient one and if we take into account the synchronism between the Avadha-Kings and the Paurava-kings, we find that he is to be the grandson of an ancient Kuru. We have, therefore to conclude a Kuru-I. While constructing the genealogy, I have given my reasons for such a conclusion.

5. Constructing genealogy of Paurava Kings

The list of Paurava-Kings, in fact, can be constructed in 4 parts and not in 3 parts as done by the historians so far. The first part starts from Pururavas the son of Budha and Ila and extends upto Matinar and Tansu, Dushyanta and Bharata. It is well-known that Bharata had three queens but he had no son from any of them or whatever sons were born to them were killed by the queens being unworthy of their celebrated father. This is a clear break in the tradition. It is also well established in Puranas that Matinar the great grandfather of Dushyanta had one daughter named Gauri who was the mother of King Mandhata of Iksvaku line. In the Iksvaku dynasty critically edited by Pargiter Mandhata is at Sr. No. 21 and in my critically edited list he is at Sl.No. 23. Thus Matinar has to be around that place from the beginning i.e. Manu Vaivasvata and Bharata some 5 generations below him. It is also known that Dushyanta ruled in Satyayuga. In fact according to the tradition, Satyayuga ended with King Sagara who is at Sl.No. 48 in my list and at Sl.No. 41 in the Pargiter's list. It means the Satyayuga continued till about 18 generations down Bharata the son of Dushyanta and Sakuntala. This is of immense help in constructing this part of the list. The ancient tradition of Chapter 94 of Adi Parvan of Mahabharata (Chap. 89 of Bhandarkar Edn.) extends upto Samvarana and then says during the times of Samvarana the population was destroyed and this last king ran away. It was also mentioned that a period of about one thousand years elapsed before the Bharatas could be re-established.

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r"kk fuolrk r= lgl ifjoRljkuAA

¼e-Hkk-vk-i- 94&41½

Then came Kuru, and his son's were Asvavan etc. and his son is Pariksit-I. This tradition thus takes us to almost

the same place as the Sagara of Iksvaku dynasty. Therefore, we can very safely, assume that this Pariksit-I & Janmejaya-II (Janmejaya-I is the son of Puru) are the same about whom there was mention in the philosophical discussions of king Janaka of Mithila and that they flourished at the end of Satyayuga so that they become ancestors to king Janaka of Mithila. But, for this identification, Rksa Samvarana and Kuru have to be read as Riksa-I, Samvarana-I and Kuru-I. Even Ajamidha has to be read as Ajamidha-I as one of the three brothers Ajamidha, Sumidha and Puramidha. With these ends the second part of the list.

For the third part, the ancient tradition after Janmejaya mentions about 20 kings which is a confusion of traditions. They have all been mentioned as descendants to Janmejaya but probably they are not the sons of a single king but they are the various generations jumbled up as sons of a single king. Because there was a gap of thousand years after Samvarana, I have put these kings as one after another not necessarily being the sons of each other but they are 25 generations which existed during this period which approximates about one thousand years at the average of forty years per generations which I have found as the most appropriate average for those ancient generations and which fits in the Yuga-traditions as well as Puranic references of various periods. Megasthenese the Greek ambassador to Chandragupta mentions a list of 153 kings from Dionysius to Kandra Gupso (Chandragupta) which is the most ancient known list of kings. The total period of these kings is 6451 years and the average on this basis comes to 42. Among these kings there is a king named Bhumanyu. I think this Bhumanyu is not the son of Bharata Dausyanti but a later one from whofm Brahatksatra Mahavira, Jai, Nara and Garga were born. This Bhumanyu is the son of another Bharata from his wife named Sunanda whereas Bharata the son of Dushyanta had no son of his

own. After him there is Ajamidha-II with only Dvimidha as his brother. After Ajamidha, there is a gap as is clear from various descriptions in the Puranas. Mahabharata tradition (new) says that Ajamidha had 124 sons. They appear to be some generations rather than sons. The Harivansa says Dhumini wife of Ajamidha performed penances for ten thousand years and then she got Rksa as her son. Thus there is a clear gap between this Ajamidha and this Rksa. With this Rksa the third part of the list ends and thereafter with Samvarana-II and Kuru-II the present tradition continues un-broken till Pandavas of Mahabharata. We also find that in the entire tradition there are four clearly identifiable gaps - one after Bharata Dausyanti, another of about thousand years after Samvarana I, the third after Janmejaya II and the fourth after Ajamidha II and before Rksa-III.

6. Suhotra Vaitathin and Suhotra Brahatksatra

Tradition hands down to us a list of sixteen great kings called Cakravartins i.e. sovereigns who conquered surrounding kingdoms or brought them under their authority and established paramount position over extensive region around their kingdom. This list includes one Suhotra Athithin which clearly indicates that the great Suhotra is son of Atithi or Vitatha - Atithin being a variant of Vaitathin. This Suhotra has been confused with later Suhotra who is also called Brhatksatra son of Bhumanyu or Bhuvamanyu or simply Manyu. The confusion is reflected in the very language of Mahabharata old tradtion while describing Bhumanyu and Vitatha and in various stands taken by various Puranas in this regard. The old Mahabharata tradition (of Chap. 94 Gorakhpur Edn. & 89 Bhandarkar Edn.) says that when the three queens of Bharata killed their sons being unworthy of Bharata, he begot a son through Bharadvaja named Bhumanyu and anointed him as Yuvaraja. This Bhumanyu then got Vitatha as his son. Then Bhumanyu's sons were Suhotra, Suhota,

Suhavi and Suyaju (M.Bh. B. 89, 18-21). It is not clear whether Bhumanyu and Vitatha are same or Bhumanu is son of Vitatha or vice versa as different Puranas take different stand. Thus Vayu, Matsya, Visnu and Bhagavata put Vitatha above Bhumanu and make Brhatkstra as Bhumanyu's of Manyu's son and then to him Suhotra has been shown as son, whereas as per Harivansa Suhotra is son of Vitatha, and Brhatksatra is Suhotra's son. As per new M.B. tradition Suhotra is Manyu's son. The inference is very clear. Bhumanyu, Sumanyu or Manyu or Amanyu or any one of them and his son Brhatksatra belong to a later period and are different whereas Vitatha and Suhotra is earlier pair of father and son. Because of similarity of names, there has been a transference and mixing of traditions and different Puranas take different stand. This confusion can be felt by the description of Harivansa :

vkteh<ks·ijksoa'k% Jq;rka iq:"k"kHk

(Listen to another tradition of Ajamidha)

lqgks=L; cgRiq=ks cgrLru;kL=;%A

vkteh<ks f}eh<'p iq:eh<'p oh;Zoku~AA

The 'Break' and 'joint' in the tradition is clearly visible here & vkteh<ks·ijksoa'k% (a different tradition of Ajamidha) and having earlier mentioned five sons to Suhotra, there is now a separate mention of a son (Brhatksatra). In fact, this confusion can be very easily explained by conceiving two Suhotras - one is the great Suhotra Vaitathi (or Atithin) one of the sixteen Cakravartins, clearly son of Vitatha and grandson of Bharata Sakuntelya. He may be styled as Suhotra-I or Vaitathi. He had three brothers Suhotra, Suhavi and Suyaju and three sons Ajamidha, Sumidha and Purumidha. The second Suhotra is later one-son of one Bhumanyu son of another Bharata who was one among unimportant kings. He is Suhotra-II or Brhatksatra Suhotra. He had only one

son Hasti to whom were born Ajamidha II and Dvimidha. He being son of Bhumanyu can be placed as brother of Mahavira, Jaya, Nara and Garga and can be identified as Brhatksatra as Matsya and Bhagavata have done or Suhotra II can be shown as father or Brhatksatra as Vayu, Visnu have done. I feel because the pair of Bhumanyu and Brhatksatra has been transferred from a later tradition Suhotra II should be identified with Brhatksatra. With two Suhotras, their brothers and sons have also been mingled with each other and Jaya and Garga have been added to ancient Suhavi and Suhotra and Dvimidha replaces Sumidha. The two traditions are clearly thus :

1. Bharata-I (Shakuntala) (Three wives from Vidarbha and their nine sons but all killed being unworthy)

Vitatha

Suhotra-I — Suhota — Suhavi — Suyaju

Ajamiha-I — Sumidha— Puramidha

2. Bharata-II (One wife from Kasi named Sunanda daughter of Sarvasena

Bhumanyu or Bhuvamanyu

Brhatksatra (Suhotra II) Mahavira Jaya Nara Garga

Hasti

Ajamidha II — Dvimidha

They are later kings and find place at Sl.No. 67 to 69 of my list Vikunthana has been added between Hasti and Ajamidha as per new M.B. tradition at Sl.No. 68.

7. The Ajamidhas, Rksas, Samvaranas and Kurus

If we study the tradition closely, we find that there are two Ajamidhas and the third one is Somaka Ajamidha. The various references to Ajamidha found in the Mahabharata in both the old and new traditions of Chapter 94 and 95 of Adiparavan, in various Puranas including the Bhagavata and Harivamsa can be summed up as under :

,s{okdh tu;kekl lqgk=kr~ i'fFkohirs
vteh<a lqeh<a p iq:eh<a p Hkkjr
vteh<ks cjLrs lka rfLeUoa'k% izfrf"Br%
"kV~ iq=kUlks·l; tu;fRrl`"kq L=h"kq Hkkjr
_{ka /kfeU;Fkk uhyh nq"kUr ijesf"Buk
dsf'kU; tu;r~ tgqueHkkSp tu:fi.kkS

(Adiparva Chap. 94 of Gorakhpur Edn.
Chap. 89 of Bhandarkar Edn.)

O King! The Iksvaku-Princess gave birth from Suhotra to (three sons) Ajamidha, Sumidha and Purumidha. Ajamidha was eldest among them and he, too, gave birth to six sons through his three queens - Rksa from Dhumini, Dusyanta and Paramesthi from Nili and Jahnu, Jana and Rupin from Kesini. According to this old tradition, the biodata of this Ajamidha emerges as under :-

Father	-	Suhotra
Brothers	-	Sumidha and Purumidha
Wives	-	Dhumini, Nili, Kesini
Sons	-	Rksa, Dushyant, Paramesthi, Jahnu, Jana and Rupin (6)

The bio-data of the Ajamidha of new tradition (Chap. 95 of MB and almost all Puranas) is -

Father	-	Hasti or Vikunthana (MB Adi-95-38)
Brother	-	Not mentioned in MB but in Puranas Dvimidha only, some Puranas mention Purumidha also as third brother due to confusion with Ajamidha-I.
Wives	-	Kaikeyie (Naga) Gandhari (Visala) and Rksa
Sons	-	24 and 100 or 2400

Some 14 generations below Ajamidha Vaikunthani (or Hastina), there is one Somaka son of Sudasa and grandson of Caidyavara. He also took or was given the name of Ajamidha -

vFk p|ojkr fo}ku lnkLrL; pkRet%
vteh<k iutkr% {kh.k o'k r| lked%

(M P 50-15)

He had one hundred sons from Dhumini and the youngest was Rksa. The last part of Paurava genealogy springs from this Rksa III whose son was Samvarana II and his son Kuru II respectively. This Rksa III was either adopted by main line of Ajamidha II or himself broke away from his brothers, the Panchalas. Because of similarity of names of father - Ajamidha (II) and Ajamidha (Somaka) he, has been taken as son of Ajamidha II but a gap of more than one thousand years indicates that he (Rksa III) is not directly the son of Ajamidha II.

There are thus three distinct Ajamidha's whom I style as Ajamidha Sauhitra or Ajamidha I, Ajamidha

Vaikunthani or Ajamidha II and Somaka Ajamidha or Ajamidha III.

8. Rksas - Rksa I is obviously Rceyu or Auceyu son of Ariha I (Sl. No. 23 of my list) Rksa II is the son of Ajamidha I or Sauhitra Ajamidha. Ajamidha II had no son like Rksa. Hence Rksa III was son of Somaka Ajamidha or Ajamidha III. M.B. tradition (new Chap. 95), puts Samvarana as Ajamidhas son without intervention of Rksa. Harivamsa says Ajamidhas wife Dhumini performed penances for ten thousand years and then begot Rksa as her son. This is probably to explain the gap between Ajamidha II and Ajamidha III who are intercepted by as many as about 14 generations.

9. Samvarana I and II - Samvarana I is obviously grandson of Sauhitra Ajamidha-I and Samvarana-II is son of Rksa III but not necessarily grandson of Somaka Ajamidha III. With patronyms they can be termed as Arksa Samvarana and Ajamidha Samvarana (taking new M.B. tradition mentioned above). The tradition puts a gap of about 1000 years after Samvarana I. Hence also a second Samvarana has to be conceived. Then, because there are two Rksas, two Samvaranas are also probable. In fact, in entire Puru-dynasty, there are four Rksas, Vyasasisya in his 'Purano Me Vamsanukramika Kalakrama' confirms it. (p. 522).

10. Kuru I and II - The biodata of two Kurus is clearly distinct :-

(1)	Father	-	Samvarana-I
	Wife	-	Vahini
	Sons	-	Asvavan, Abhisyanta, Citraratha, Muni and Janmejaya (5)

He established Kurujangala and Kuruksetra

	Grandsons	-	Pariksit, Shabalasva etc. eight in number.
(2)	Father	-	Samvarana II
	Wife	-	Subhangi
	Sons	-	Viduratha (M B new tradition) Sudhanva, Jahnu, Pariksit (issue-less)
	Grandson	-	Uruguan (M B - new tradition)
			Suratha (.P.)
			Suhotra (H.P.)
			Suratha (Bh.)

Janmejaya (V P, Vsn. P) - This is due to confusion with Kuru-I.

Thus Kuru-I and Kuru-II are clearly different persons in terms of the names of their wives, names and numbers of their sons and grandsons. Besides tradition unmistakably mentions that Samvarana of Pre-decadence period of Bharatas was vanquished by Pancalas, he ran away with his wife and children to Sindhu area where a period of about one thousand years elapsed before Bharatas were re-established through the agency of Sage Vasistha. Thus the progeny of Pre-decadence Samvaran or Samvarana I has to be conceived as different from the progeny of a post-decadence Samvarana or Samvarana-II.

In constructing this list, the kings whose names appear in Mahabharata tradition prior to Matinar viz. Sarvabhauma, Jayatsena, Mahabhauma, Ayutanami, Akrodhana, Devatithi and Ariha II have been omitted as they reappear after Suratha, grandson of Kuru II in Puranic

tradition. Agreeing with Pargiter for obvious synchronistic reasons, the Puranic tradition has been followed on this point. Besides when Bharatas were in doldrums after Samvarana-I names of some kings are missing in Puranic or Mahabharata tradition. They have been incorporated from Vedic references being clearly Bharata kings wandering near river Sindhu during their bad days.

They are : - Divasrava, Devavrata, Vitahavya, Mitravan, Kratavan, Sindhuksit Bharata and Asvamedha Bharata.

The list thus prepared is not only intact i.e. an attempt has been made to fill up all the gaps which remained in Pargiter, in Vyasa Sisya P.L. Bhargava and other historians who constructed Paurava or Aila dynasty, removes most of the inconsistencies and is also in conformity with Yuga tradition and confirms various established synchronisms between important personalities of different dynasties particularly Iksvaku dynasty.

11. The Yadav Dynasty

The Yadav dynasty is also in fragments and all attempts so far, have been to make a consistent rational genealogy. But the attempts made so far by Pargiter or Bhagavaddatta or Vyasa Sisya have not succeeded in providing a coherent and convincing genealogy; particularly after Satvat Bhima, there, is great confusion among these authors as also in various Puranas. The greatest paradox is that no Purana gives a clear genealogy of Krsna line itself, for whom this dynasty is studied, beyond his great grand father Devamidhusa. The link between Devamidhusa and Vrsni is not clear in any Purana because some make him a direct descendant of Vrsni which is improbable, others make him a successor of Krtavarma son of Hrdika which again is absurd as Krtavarma is Krsna's contemporary and an Andhaka whereas Krsna is Varsneya. I have carefully coalated all branches of

SatvataBhima and with suggestions available here and there particularly Bhagavata and Visnu Purana have been able to connect Devamidhusa with Vrsni line. The second problem with this dynasty was how these Andhakas and Vrsnis came to Mathura or Surasena and to explain the gap between Satvata a contemporary of Rama and progeny of Andhakas and Vrsnis. This could be done with the help of Harivamsa story in Visnu Parva Chap. 37 and 38 wherein during the time of Madhu (daitya), his daughter Madhumati married Haryasva, an Aiksvaka from whom Yadu was born and the Yadu - line was shifted to Mathura. There were, therefore, two Satvatas - one earlier Satvata son of Satva or Jantu and grand son of Purudvan which I have styled as Satavata-I and the other is Satvata Bhima grand son of Madhava and great grand son of Yadu-II born of Madhumati and Haryasva. The prejudice of Pargiter about this Harivansa story in his Indian Historical Tradition (p.122) where he called it 'an absurd mass of confusion' has been cleared by himself later at p.170 where he places reliance on it when the occasion so demands -- 'the material passage appear to contain genuine tradition because it is corroborated elsewhere' (p.170) Pargiter, has, at times given totally inexplicable gap in his predilection for synchronism. Thus there is a gap of 12 generations between Devamidhusa and Sura whereas all Puranas make them father and son, two generations between Sura and Vasudeva and shockingly a gap even between Vasudeva and Krsna. All these inconsistencies have been ironed out in my genealogy.

Even now there are four clear gaps in the tradition - one of about 9 generations between Rusadgu and Citrarath, the other between Jyamegh and Vidarbh then between Satvat I son of Satva and Satvat Bhima (again about 4 generations) and the fourth (about 8 generations) after Vrsni and Andhakas.

12. The dynasties of Druhyu and Turvasu

We find that in the Paurava line at sr.no. 6, there is Yayati, the famous king. He had five sons - Yadu, Turvasu, Druhyu, Anu and Puru. While detailed genealogies have been given in Puranas about the progeny of Yadu and Puru as the Yadavas and the Pauravas, the dynasty of Anu also goes to some extent. But the dynasties of Turvasu and Druhyu are completely lost after some generations. The reason has also been provided in the Puranas. The Bhagavata Purana mentions that after 9th generation, the sons of Pracheta became the overlords of Mlechha kingdoms -

EysPNkf/kir;ks·HkkoUuqnhpha fn'kekfJrk%

(B.P. IX-23-14-16)

'The sons of Pracheta became the overlords of Mlechha kingdoms (Afghanistan, Mesopotamia etc.) towards the northerly direction.'

Vishnu Purana also echoes the same sentiment -

çpsrl% iq='kre /keZcgqykuka
EysPNkukeqnhP;knhukekf/kiR;edjksr~

(V.P. XVII, 1-2)

'The hundred sons of Pracheta acquired suzerainty over the northerly territories of Mlechhas etc. who were not followers of *Sanatana Dharma*.'

Though there is mention of the ultimate fate the progeny of Druhyu, there is no such mention of the progeny of Turvasu which also, it appears were driven out of Sapta Sindhu and went to the north and the north western countries and established their suzerainty there.

According to the Puranas, particularly the Bhagavata, the Harivansha and Vishnu Purana, the dynasties of these

two kings Turvasu and Druhyu upto their termination in Aryavarta emerge as follows :

Turvasu	Druhyu
Vahni (H.Bha.Vi.)	Babhru (Bh. H. Vi.)
Bharga (Bh.) Gobhanu (H. Vi.)	Setu (Bh. H. Vi.)
Bhanumana (Bh.)	Arabdha (Bh.) Aradwan (Vi.) Angarsetu (Hi.)
Tribhanu (Bh.) Tresanu (H.) Treshambha (Vi.)	Gandhar (Bh. H. Vi.)
Karandham (Bh. H. Vi.)	Dharma (Bh. Vi.)
Maruta (Bh. H. Vi.)	Dhrata (Bh. Vi.)
(Without a son. He had the Daughter named Sammata who he gave to sage Samvart in daksina and the sage gave her to father of Dushyanta (Surodha)	Durmana (Bh.) Durgama (Vi.)
	Pracheta (Bh. Vi.) Putrashatam (Hundred sons who probably fought in Dasharajna battle).

The relative dynasties of these three brothers, Anu, Turvasu and Druhyu, sons of Yayati are of great importance with regard to the Indo-European problem because the progenies of these three brothers left Sapta-Sindhu on various occasions towards the north and the west, their bulk dispersal being after the Dasrajna battle of Rgveda. Therefore in later Vedic literature they are not seen as they had left for Gandhar, Iran, Mesopotamia, Egypt, Anatolia and even far of countries. Their progeny is now traceable in these foreign lands through Indo-European language. Their genealogies are given separately as appendix IIA collated from various Puranas.

13. Important Synchronisms

The two basic dynasties viz. that of Iksvaku and Puru are so to say like scales in the abyss of time. Hence it is of extreme importance that they are edited properly, mutual synchronisms established firmly so that they can serve as hall-marks in constructing ancient chronology and support for other fragmentary pre-Bharatawar genealogies. Therefore, my attempt has been to scrutinize synchronisms between these two genealogies. In any critical and judicial approach, any test to examine the validity of a set of conclusions should be applied throughout the extent i.e. at least in the beginning, in the middle and towards the end. Therefore, some five examples have been culled from the Puranas to establish the various synchronisms of the two genealogies which extend throughout their length.

(i) The earliest of these is that Yayati's eldest brother Yati married Go daughter of Kakutsa of Iksvaku dynasty. While Yati is at Sl. No. 6 from Manu, Kakutsa is also at Sl.No. 6 from Manu in Iksvaku line., They are thus clearly contemporaries.

(ii) The Aiksvaka genealogy states clearly that Yuvanasva son of Prasenajit married Gauri, daughter of Matinar of Puru dynasty and their son was Mandhata. Paurava genealogy also says Gauri was Mandhata's mother. Matinar is at Sl. No.24 of Paurava dynasty of my list, and Prasenajit is at Sl.No. 21 of Iksvaku list so that Gauri and Yuvnasva as their daughter an son respectively are contemporaries. Similarly, Sasabindus daughter Bindumati was married to Mandhata. Sasabindu is son of Citraratha in Yadav dynasty and is contemporary of Tamsu of Puru line and Mandhata of Iksvaku line. Tamsu is Sl.No. 25 and Mandhata at Sl.No. 23 of their respective dynasties and so is Sasabindu (Sl.No. 22) in Yadava-line. They are therefore clear contemporaries. Mandhata and daughter of Sasibindu are exactly at Sl.No. 23 of their lines.

(iii) Vidarbha of Yadava dynasty is contemporary of Sagara of Ayodhya as per Pargiter's observation (I.H.T.P. 160) their tenth successors respectively Bhimratha and Rituparna were contemporaries as per the story of Nala (M Bh. iii, 53, 2076; 69, 2706-8).

(iv) Ahalya, wife of Gautam who was blessed by Rama, is at Sl. No. 79 of Puru dynasty and Rama is at Sl. No. 78. They are thus contemporaries.

(v) It is clear from Valmiki Ramayana that Lavana son of Madhu was vanquished by Satrughn, brother of Rama and he occupied Mathura. Later, after the decline of Rama's influence there, Bhima Satwat of Yadava line took over that area. Bhimasatwata great grand son of Madhu's daughter is at Sl.No. 81 of Yadava Dynasty and Rama is at Sl. No. 78 of Iksvaku dynasty and Madhu II also No. 77. They are thus contemporaries, Satwat being little junior.

(vi) At the end of genealogy, there is that famous synchronism of Purava (Kuru) King Adhisimkrsna, Divakara of Ayodhya and Senajit of Magadha. As per my list Adhisimakrsna is at Sl. No. 114 of Puru-list and Senapati Divak or Divakara is at Sr.No. 113 of Iksvaku list. The Magadha list which I have prepared places Senajit at No. 7 below Somapi or Marjari - the contemporary of Pariksit II (son of Abhimanyu). This Pariksit is at Sl. No. 109 so that Senajit is at Sl.No. 109 + 6 = 115. Therefore, Adhisimakrsna (114) Senajit (115) and Diwakara (113) are clearly contemporaries.

These are some of the examples of synchronisms which have been gone into before finalizing these lists.

The Yuga Tradition

14. The hallmark of Indian chronology is our Yuga tradition because in all the Puranas and Mahabharata are scattered innumerable references which indicate as to

which Yuga (period) a king belonged to or a historical event occurred. This gives us a clear guide line regarding the relative position of kings in their line and also helps us in determining the synchronisms between various kings of different lines. Thus for example all Puranas mention that Rama Dasarathi flourished almost at the end of Treta Yuga, Sri Krsna Vasudeva at the close of Dwapara and beginning of Kali; kings like Mandhata, Harischandra or Puru, Dusanta flourished in Satya Yuga. Sagara was the last king of Satya Yuga or Krta Yuga. But unfortunately this Yuga-tradition has not been properly understood and the two different Yuga-traditions - one human and the other celestial have been confused. The celestial Yuga-tradition is meant for computation of the creation, position with reference to a particular time, of galaxies of stars and planets as also the creation and destruction of matter (Brhma) as a whole and hence its scale is astronomical running into lacs and crores of years. Its smallest unit is Kali-yuga which is 1200 celestial years or 1200 x 360 = 4,32,000 solar years extent. The Dwapara is double of it. The Treta is triple and Satya Yuga is four times of Kali-Yuga. Their total is 1200+2400+3600+4800 = 12000 celestial years or 43,20,000 solar years which is called one Chatur-Yuga or one Maha-Yuga or a Divya Yuga. Seventy-one such Maha Yugas make one Manvantara (period of a Patriarch) and 14 Manvantaras constitute a Kalpa which is equivalent to 1000 Maha Yugas or 4320 million years which is a day of Brhma. Equal is his night. There are twilights or sandhyas at the end of each Maha Yuga and the beginning of Kalpa. When Brhma (matter) attains the age of one hundred years constituted of such days and nights, he also dies which means the matter finishes and only the ultimate energy remains. This period has been completed as 3.1104×10^{14} solar years.

15. The other Yuga tradition is human Yuga tradition of 1200, 2400, 3600 and 4800 plain human years and this

tradition is only useful for historical purpose, the other one being useful for astronomical purposes only. The distinction between the two tradition is very clear in Manusmrti itself when we read the text, but the commentators because of their predeliction for celestial age- system have confused the two.

The Manusmrti in Chapter I clearly states :-

pRok;kg% lglkf.k o"kkZ.kka rRÑr ;qxe
rL; rkoR'krh lU/;k lU/;k'k'p r;kfo/k% ¼69½
brjs"kq lU/;klU/;k'k"kq p f=lq
,dkik;u orZUr lgL=kf.k 'krkfu p ¼70½
;nrRifjlU/;kreknkoo pr;qxe
,rn }kn'klkgL=a nokuka ;qx eP;r ¼71½

'The Krta Yuga consists of four thousand years; as many (i.e. four) hundred years constitute its twilight or sandhya of its beginning and equally long is its ending twilight or Sandhyansa.' (69)

'The other three Yugas consist of one less thousand years than the previous one and one-less hundred years as their beginning and ending twilights.' (70)

So that :-

	Duration		**Twilights**
Treta	3000	+	300+300=3600
Dwapara	2000	+	200+200=2400
Kali Yuga	1000	+	100+100=1200

The total is 12000 years.

'This then is the quadra-period (Chatur-Yuga) with its twilights, consisting of twelve thousand years. The same

consisting of 12000 celestial years constitutes on a celestial Yuga.' (71)

The commentary of Kaluka Bhatta says -

,rL; 'ykdL;knk ;nrUeku"k pr;qxa
ifjxf.krk ,rnnokuk ;qxeP;r*

These twelve thousand human years stated in the beginning of this sloka is called the yuga of Devas otherwise

,rn nokuk }kn'klkgL= nokuk ;qxeP;r
bR;Uo;%A v= nokukfefr 'kCnLrq
ngyh nhid U;k;qu
}kn'klkgL= ;qx p bR;Hk;q çdk'krA

The word Devanam here qualifies both 12000 years (द्वादश साहस्रं) and the Yuga. The verse that follows makes the meaning amply clear where thousand such yugas have been mentioned to constitute one day of Brahma. The context admits of no other meaning but the commentators have made simple human years of verse 69 and 70 as celestial years for which there is no justification in the text.

16. There are other very strong reasons for these two sets of Yuga traditions :-

(i) The celestial Yuga tradition consists of Kaliyuga units of 4,32,000 years. Thus Dwapara is equal to two Kali Yugas, Treta equal to three Kali Yugas and Satya Yuga equal to 4 Kali Yugas. This entire tradition starts on Caitra Sukla 1 at the time of sun-rise-

pq=fl rkn #n;kr Hkkukfnuekl o"k;qxdYik%
l"V;knk ydk;k leçoÙkk fnu·dL;

(Brahmasphuta Siddhanta I-4)

'The day, month, year, Yuga and Kalpa started simultaneously at the beginning of the creation on the sun-rise of the first day of Caitra-Sukla (bnright-half) on Sunday at the equator (in Lanka)'.

It is also clear astronomically that at the end of Kali Yuga all planets except the nodes and the apogees arrive at the first point of Aswini which means it is the new-Moon prior to Caitra-Sukla. Therefore, the yugas of celestial tradition start on first day of Caitra Sukla only and on no other day whereas our Pancanga tradition and shastras give following different dates of the beginning of different Yugas -

Satya Yuga	-	Kartika Sukla 9 Wednesday Sravana nakstra
Treta Yuga	-	Vaisakha Sukla 3 Monday, Rohini
Dwapara	-	Magha Krsna 30 Friday Dhanistha
Kali Yuga	-	Bhadrapada Krsna 13 Sunday Aslesa

This also indicates that the cause of the beginning of these Yugas is not any event connected with Sun and Moon which shows there is a third element which marks the start of these Yugas. It is therefore clear that human Yuga-tradition is distinct from celestial (Divya) Yuga tradition. In fact the human yuga system is based on the precession of equinoxes.

(ii) The incarnation of Rama occurred in Treta Yuga is a well settled tradition mentioned in all Puranas, the Mahabharata and the Ramayana. But in Valmiki Ramayana chapter 75 of Uttarkand there is a verse which indicates it was Dwapara, then -

v/ke% ijekjk tu }kij 'kæ tUeu%
l o fo"k;i;Ur ro jk tu egkrik%
vFk rifr nc f)Lru ckyo/kk á;eA (28)

This means during the time of Rama, there was Treta as well as Dwapara.

(iii) There is yet another important verse on this point by Bhasa in his Balcharitam. -

'k[k{kh joi% ijk d r;x ukEuk r ukjk;.k&
L=rk;k f=inkfirf=Hkouk fo".k% lo.kçHk%A
nok';kefuHk% l jko.ko/k jkek ;x }kij
fuR; ;k·´tulfUuHk% dfy;x o% ikr nkeknj%AA

This verse mentions the existence of Rama in Dwapara as against the well known tradition of Treta and existence of Krishna in Kaliyuga as against the tradition of Dwapara. The apparent contradiction can be explained by taking the celestial Dwapara and human Treta for Rama and the celestial Kali and human Dwapara for Krishna.

About the beginning of Krta or Satya Yuga almost all Puranas indicate that :-

;nk l;'p pUæ'p ;nk fr"; cgLifr%
,djk'kk leL;fUr Hkfo";fr rnk Ñre (Bh. XII)

'When the Sun, the Moon, the Jupiter in Pusya (δ Cancri) constellation start their journey simultaneously, then will be Krta. According to celestial tradition, at the beginning of Krta the Sun, the Moon, the Jupiter and all other planets have to be on the first point of Aswini and no other constellation. Such an astronomical event occurs in the past around 12800 B.C. when the Sun, the Moon and the Jupiter rose together in Pusya. (Vernal Equinox or Vasanta Sampata in Citra or Spica).

(iv) Shri Yukteswar Giri, the Preceptor or Swami Paramahansa Yogananda the famous author of 'An Autobiography of a Yogi' in his book 'Kaivalya Darsanam' has given a long preface in which the clearly states that the present Yuga-tradition started nearly 11501 B.C. when autumnal equinox (sarat sampat) was on the first point of Mesa. (or vernsla equinox was at first point of Chitra. I have calculated this period and it comes in 12790 B.C.) There are two rounds of Chatur-Yugas of 12000 human years during the period of one circle of equinox which equal approx 25600 years. First the yugas are in ascending order and then in descending order. In 1700 A.D. he tells, it was Dwapara. (Actually two rounds of Chaturyuga with a sandhya equal to kalyuga will sum up to 26400 years which is approx. the time of one revolution of equinoxes).

(v) Dr. Kunwarlal Jain Vyasasisya in his 'Purano Me Vamsanukramika Kalakrama' and Pt. Bhagawaddat in his 'Bharata Varsa ka Vrhat Itihasa' accepts the theory of human years of the Yugas (Purano Me Vamsanukramika Kalakarma, Itihasa Vidya Prakashan Delhi 1989 p. 106, 107) take 14000 B.C. as the period of deluge when the series of Krta, Treta, Dwapara and Kali each consisting of respectively 4800, 3600, 2400 and 1200 years started.

In Regveda there is a clear reference to two cycles of Yugas -

fo'oa ;s ekuq"kk ;qxk ikfUr eR;s fj"kA

(RV. 52.4)

'Ye Aswins, in human Yuga you move in the other wheel of the Chariot.'

17. There was thus an inner cycle of human Yugas which started around 12800 B.C. Based on it I have divided these four periods as follows :-

Celestial Dwapara upto 3102 BC	Satya Yuga	12800 BC to 8000 BC Iksvaku to Sagara
	Treta Yuga	8000 BC to 4400 BC Bhagiratha to Pundarika
Celestial Kaliyuga after 3102 BC	Dwapara	4400 BC to 2000 BC Kshemdhanva to Pariksit (Mahabharata War 1952 BC)
	Kali Yuga	2000 BC to 800 BC Janamejaya to Brhadraj)
	Kali Yuga Sandhi	800 BC to 400 AD

It is noteworthy that vernal equinox coincided with first point of Aswini in 499 AD according to astronomical tradition.

18. The genealogies which I have prepared are in conformity with the above Yuga tradition. An average of 30 years per generation with identifiable gaps satisfies all puranic as well as astronomical traditions mentioned in Puranas and puts our chronology on sound footing.

It must be mentioned that my time structure (chronology) is based on pillars (of Yuga tradition) and beams (of astronomical references accessible to mathematical interpretation) and not on bricks (Kings) of uncertain number and uncertain thickness (average period). Hence, average period is not very material for this methodology. With the consciousness that these genealogies are not complete and there are clear identifiable gaps of thousands of years, if you reduce the average, you have to conceive greater number of kings in

these genealogies. Mr. U.N. Ghoshal in his 'Indian History and Culture' quotes one Dr. Girindra Shekhar Bose and his work Purana Pravesh which mentions :-

The Chronology of the Ikswaku kings is traced with the help of a table through 210 generations from Ikswaku, the reputed son of Vaivaswata down to Sumitra (637 BC) with all dates of intermediate reigns (p.62). My list has only 136 names upto Sumitra and Pargiter's still less. This means about one third of the names are missing according to Bose's discovery only. Hence while computing time periods of kings, with every number of kings, half of the number is to be added to make it commensurate with possible complete list and in more ancient times even equal the number of listed kings has tobe added as missing links. The method of building the structure with bricks of any average thickness an absolutely uncertain number is certainly un-scientific and may result in appalling errors.

Chapter-6 : The Sumerian, Mesopotamian Dynasties

A number of names of the kings who reigned Mesopotamia i.e. Sumer and Babolonia and in earlier times Anatolia have been recognized of the Indo-Aryan origin. After the excavation of Bogaz-koi in East Turkey where a treaty between the Mittani and Hittite kings was discovered and where the Mittani king was named as Dashratha and where the Vedic Gods Indra, Varuna, Nasatya etc. were invoked, it has been almost a settled opinion of the scholars that the Indo-Aryan Kings ruled in middle east from about 2nd millennium BC to about 4th millennium BC. Further research has also gone deep into the territories of Europe with the trail of Indo-European languages spoken there and the Indo-Aryan influence in those areas could still go further deep into the antiquity upto 7th-8th millennium BC.

A very important discovery was made by L.A. Waddell in his epoch making book "The Makers of

Civilization". This book was published in 1929 i.e. shortly after the discovery of Indus-Valley civilization and hence some of his notions are guided by the theories current at that time. Thus, he believes in the Aryan entry into India from outside and considered Sumer as the cradle of world civilization albeit he takes this civilization to be an Aryan civilization. He believes that the *Aryans are the originators and chief developers and propagators of the world's civilization and civilization may thus be broadly termed as 'Aryanization'*.[57]

Thus, keeping aside, his views about the Aryan migration to India and Sumer being the cradle of civilization because these theories were current at that time, his important contribution is identification of many Sumerian kings with those contained in the Indian list of Puranas. He holds "this identity of these kings, Sumerian and Aryan, is complete, not only in respect of their names and titles, but also as regards their exact chronological position and order of succession and in the achievements of the leading kings throughout this very long period of over two millenniums of years - an overwhelming proof of identity unparalled perhaps elsewhere in the annals of History." His identification of the first pharaoh of the first dynasty of Egypt 'Menes' and 'Minos' of Crete civilization as Manus of Indo-Aryan dynasty and of Sargon the Great, the first Sumerian king as Dur or Tur resembling the Turvasu dynasty of Puru line are very important. "Most of the leading kings of the Early Sumerian dynasties, including "Sargon-the-Great" and Menes the first Pharaoh of the First Dynasty of Egypt repeatedly call themselves in their official documents and seals Gut (pronounced Goot) or Got. And one of the more progressive Early Sumerian Dynasties in Mesopotamia called themselves Gudi or Goti; and "Goti" was the regular title of the Goths in Europe - the aspirated form "Goth" having been coined merely by the Romans and never used by these people themselves. And

significantly the princes of this Gothic Dynasty over forty-three centuries ago already used, as we shall see, the especially Gothic titles of "Duke" and "Earl".

His personal name in Sumerian is Dar, Dur or Tur which latterly aspirated as Thur or Thor has given us our modern weekday name of "Thursday", the "Thor's day" of the Anglo-Saxons and "Jupiter's day" of the Romans and Latin nations. And of his titles of Pur or Bur and Mit, the former is now disclosed as the Sumerian source of his Indian title of "Puru of the Sun", for the first Aryan king, the bringer of Fire to the home-hearths of men."[58]

"Altogether, our new evidence identifies Menes, the founder of the First Dynasty of Egypt with King Manis-the-Warrior, the Sumerian emperor of Mesopotamia and son of the world-monarch Sargon, with the Aryan King Manasyu, "The royal Eye of Gopta and of the four Quarters of the World", and with King Minos of Crete, and discovers the hitherto wholly unknown origin of Menes or Minos, his antecedents, ancestry, race and his tragic death on a sea-voyage in the West; and fixes with relative certainty for the first time his actual date."[59]

Regarding the Sumerian or Aryan kings especially the first few of them, the views of Mr. Waddell are very clear and unambiguous. "The first "Sumerian" or Aryan king, a Sun-worshipper, and traditionally pictured in Gothic dress, was the historical original of the legendary culture hero, afterwards canonized or deified, and variously styled by his different titles and personal name Thor, Ar-Thur, Dur, In-Dur, Indra, Sagg or Siz, Zeus, Prometheus, Bil or Bel, St George of Cappadocia, Odinn, Ad or "Adam", who in the Copper Age built in Asia Minor the first city, used "Sumerian" Writing, established Agriculture, monogamous Marriage, improved Fire-Production, Industrial Life and the first Civilization, properly co-called, about 3378 BC - all the alleged vastly earlier dates for Civilization and kings

before this epoch being merely imaginary speculations, with no foundation whatsoever in fact. And he captured the famous magic Stone-Bowl fetish of the Semitic Chaldean Serpent-worshippers of "The Garden of Eden" at Carchemish on the Upper Euphrates, who opposed his great uplifting Reformation of Mankind, which famous trophy bowl still exists, with its contemporary historical and genealogical inscription of his great grandson as "Udu's Bowl", now disclosed as the original "Holy Grail" of the original King Arthur.

The Second "Sumerian" or Aryan King, the son and successor of the first, was the historical original of the legendary culture hero, variously styled by his different titles and personal name, Bakus (Bacchus or Dionysos), Nimrod, Ayus, Marduk, St Michael, Tascio (of the Ancient pre-Roman Briton coins and prehistoric Briton inscriptions), Gan or Conn, Sir Gawain or "Cain". Greatly extending agriculture and inventing the plough, he vastly increased the food-supply of the ancient world and made industrial town-life possible, so that he was latterly deified as Bacchus and Tascio by grateful humanity. He descended from Cappadocia into Mesopotamia, in the thirteenth year of his reign of Cappadocia, and established there the first Mesopotamian kingdom and empire over the aboriginal Chaldee "black-headed people", with his chief capitals at Kish and Enoch (Erech), which he built; and his advent there, along with his aristocratic ruling Aryan or Gothic clan, forms "The Advent of the Sumerians" of modern writers.

The "Sumerian" stock of these ruling Aryans, already in "The Copper Age" or "The Bronze Age", if not to some extent in "The Iron Age" (as their king at least used a weapon made of meteoric Iron) in their Mesopotamian empire continued rapidly developing Civilization, and became adventurous seamen on the Persian Gulf. The

fifteenth king or emperor formed the First (Aryan) Phoenician Dynasty of merchant-princes who established thriving colonies in Elam and the Indus Valley and first spread Civilization there.

The official title of *Gut* or *Got* used by most of these kings and their governors, as also the title used by their governors of *Khatti-Sig* or "Prince or Priest king of the *Khatti*", indicates their Khatti, "Catti" or "Hitt-ite" or Gothic Nordic race, as rulers."[60]

The final list of Sumerian kings from the rise of civilization to Kassi dynasty with his (Waddel's) chronology is appended herewith as annexure-8. The resembling Indo-Aryan names have also been given along some clearly identifiable kings of Indo-Aryan origin. (P.482-485)

Genealogies of Other West Asian Countries

20. We have not been able to locate the complete genealogy of the Egyptian kings. But in relation to Mittani kings, Subhash Kak in his article "Akhenaten Surya and the Rgveda"[61] has given a good number of Mittani and Egyptian kings which are clearly recogniziable as being of Sanskrit origin. His account of Mittani kings and their relations with Egyptian successive kings is as follows :

THE MITANNI

"The Mitanni, who worshipped Vedic gods, were an Indic kingdom that had bonds of marriage across several generations with the Egyptian 18th dynasty to which Akhenaten belonged. The Mittani were known to the Egyptians as the Naharin (N'h'ryn'), connected to the river (Nahar), very probably referringto the Euphrates. At its peak, the Mitanni empire stretched from Kirkuk (ancient Arrapkha) and the Zagros mountains in western Iran in the east, through Assyria to the Mediterranean sea in the west.

Its centre was in the region of the Khabur River, where its capital Wassukhani was probably located.

The first Mitanni king was Sutarna I (good sun) (tarna = tarani = sun). He was followed by Baratarna I (Paratarna, great sun), Parasuksatra (ruler with axe), Saustatar (Sauksatra son of Suksatra, the good ruler). Paratarna II, Artadama (Rtadhaman, abiding in cosmic law), Sutarna II, Tushratta (Dasaratha), and finally Matiwazza (Mativaja, whose wealth is thought) during whose lifetime the Mitanni state appears to have become a vassal to Assyria.

The early years of the Mitanni empire were occupied in the struggle with Egypt for control of Syria. The greatest Mitanni king was Sauksatra who reigned during the time of Tuthmose III. He was said to have looted the Assyrian palace at Ashur. Under the reign of Tuthmose IV, more friendly relations were established between the Egyptians and the Mitanni.

The daughter of King Artadama was married to Tuthmose IV, Akhenaten's grandfather, and the daughter of Sutarna II (Gilukhipa) was married to his father. Amenhotep III, the great builder of temples who ruled during 1390-1352 BC ("khipa" of these names is the Sanskrit Ksipa, night). In his old age, Amenhotep wrote to Tashratta many times, wishing to marry his daughter, Tadukhipa. It appears that by the time she arrived, Amenhotep III was dead. Tadukhipa was now married to the new King Akhenaten, becoming famous as the Queen Kiya (Short for Khipa).

The Egyptian kings had other wives as well. Akhenaten's mother, Tiye was the daughter of Yuya, who was a Mitanni married to a Nubian. It appears that Nefertiti was the daughter of Tiye's brother Ay, who was to become king himself. The 18th dynasty had a liberal dose of Indic blood.

21. But how could an Indic kingdom be so far from India, near Egypt? A plausible scenario is that after catastrophic earthquakes dried up the Saraswati river around 1900 BC, many groups of Indic people started moving West. This idea of westward movement of Indic people is preserved in the Vedic and Puranic texts.

22. We see Kassites, a somewhat shadowy aristocracy with Indic names and worshipping Surya and the Maruts, in western Iran about 1800 BC. They captured power in Babylon in 1600 BC, which they were to rule for over 500 years. The Mitanni, another group that originated thus, ruled northern Mesopotamia (including Syria for about 300 years, starting 1600 BC, out of their capital of Vasukhani. For Mitanni names, I give standard Sanskrit spellings rather than the form that we find in inscriptions in the inadequate cuneiform script, such as Wassukhani for Vasukhani, 'a mine of wealth'.) Their warriors were called *marya*, which is the proper Sanskrit term for it."

INDIC NAMES IN WEST ASIA

23. "Over fifty years ago, Roger T. O'Callaghan and W.F. Albright published in Analecta Orientalia of Rome a list of 81 names (13 from the Mitanni, 23 from the Nuzi and 45 from the Syrian documents) with Indic etymologies. Out of the list, Dumont provided the etymology of 45 names in the much more readily available journal of the American Oriental Society of 1947. A few of these names with the Sanskrit cognates are appended as annexure-9.

Analysing the names, Dumont concludes that the names are clearly Indic and not Iranian. The initials is maintained and the group *'sv* is represented by the similar sounding *sw* and not the Avestan *aspo*. Also, most of the names are bahuvrihi or tatpurusa compounds.

Considering the language, it is clearly an Indic dialect because the initial v is replaced by b, while medial v

becomes the semivowel w. Like Middle Indic (Prakrit) dialects, the medial pt transforms into tt, as in sapta becoming satta.

Dumont stresses its relationship to Sanskrit in the characteristic patronymic names with the vrddhi-strengthening of the first syllable, like a Saumati (the son of Sumati) or Sausapti (the son of Susapti). The worship of the Vedic gods like Indra, Vayu, Svar, Soma, Rta, Vasus has already been noted.

The fact the Mitanni names suggest a Middle Indic dialect supportive of the thesis that the emigration of the various groups from India took place after the early Vedic period had come to an end."

Chapter-7 The flow of Indo-Aryan Civilization : East to West & Periodization of these dispersals

24. Much against the majority opinion of historians till the end of the last century, the recent researches throughout the world now indicate that the Aryans were indigenous to India particularly to the Sapta Sindhu Pradesh and from there they spread towards the west. After the demolition of the Aryan invasion/Aryan migration theory, it was but a natural corollary to find out the cause for the existence of Vedic Aryans and Vedic Gods in mid second millennium BC in Mesopotamia, Egypt and Anatolia. The only reason could be their dispersal from their original homeland in Sapta Sindhu to these westerly regions.

The question is whether our traditional history contained in Vedas and Puranas does give any indication towards this dispersal. The reply is in great affirmative according to a number of scholars and by even a plain reading of the Rgveda and the Puranas. Pargiter was possibly the first person who spoke about the dispersal of Indo-Aryans towards Western Asia. He did not subscribe to

the theory of Aryan Invasion. In his book "The Ancient Historical Tradition of India" published in 1922, he wrote that the Indian Sages considered only mid Himalaya as the sacred land and not the North West region. He reminded that the order of the rivers in the Rgveda (X:75) is from East to West whereas much professed opinion till the end of the last century was that when the hymns of Rgveda were composed, the Aryans entered the Saraswati-Yamuna region through Punjab from the North West. Hence, its really surprising that the order of the rivers is not found from West to East but in a reverse way from East to West i.e. from river Ganges - where according to them the Aryans had not even reached yet - towards Indus. Pargiter has also emphasized that whereas in the entire historical tradition of India there is not even an indication towards Aryan Invasion of India but there is specific mention of the their dispersal outside India.[62]

25. Recently, Shrikant Talageri in his book "The Aryan Invasion Theory : Reappraisal" first published in 1993, echoes and confirms the views of Pargiter. "The basic point which needs to be noted is that the Puranas do not contain even the faintest inkling or the slightest consciousness of any foreign connections which could be ascribed to its heroes (the Gods, kings and sages), or to the ancestors, however remote, of these heroes. The Puranas know only India; and it is only at later stages that mention is made of Greeks, Romans, and other foreigners. They could, indeed, be accused of having an Indocentric view of the universe."[63] Mr. Talageri has done a very minute analysis of historical material in the Vedas and the Puranas with an eye to extract the hardcore historical material from them. He believes that traditional history all over the world has usually a hardcore of actual historical material when all the mythological trappings are cleared away.

While churning the vast ocean of the traditional literature of India, the Vedas, the Brahmanas, the 18 Puranas and similar number of Up-Puranas, the epics Ramayana and Mahabharata, we find very startling and unambiguous statement about the Druhyus having gone out of India, made their kingdoms in north of Sapta Sindhu and in Western Asia. "The Puranas make the most amazing and clear declaration of the emigration of major sections of these Druhyus from Afghanistan to strange and distant lands in the north. The evidence provided by this unique statement is so absolute that no honest scholar can deny that it constitutes evidence of the migration of Indo-Europeans from India to Europe via Central Asia."[64]

P.L. Bhargava accepts this : "Five Puranas add that Pracetas' descendants spread out into the mleccha countries to the north beyond India and founded kingdoms there.[65] Pargiter has quoted specific statements in this regard from Vayu Purana, Brahamand Purana, Mastsya Purana, Vishnu Purana and Bhagavata. Here are first hand statements from these Puranas.

Bhagavat Purana (Book 9, Chapter XXIII)

nkák'p ru;k cHk% lrLrL;kRetLrr%A
vkjC/kLrL; xkU/kkjLrL; /keLrrk /kr%A
/krL; neukLrLekr çprk% çkprl 'kreA
EyPNkf/kir;k·HkoUunhph fn'kekfJrk%A

"Babhru was the son of Druhyu and Babhru's son was Setu. Of him was born Arabdha, whose son was Gandhara and Gandhara's son was Dharma. From him followed Dhrta and Dhrta's son was Durmana. From (the loins of) the latter appeared Pracheta The hundred sons of Pracheta became the rulers of Mlecchas (barbarians) and settled in the northern quarter."

Vishnu Purana (Chapter 17, 1-2)

n|ákLr| ru;k cHk%AA1AA
rr% l|r%] l|r|i= vkj}ku uke] rnkRet k
xkU/kkj%] rrk /kEe%] /kEekn /k r%] /k rkn n|x|e%]
rr% çp|rk%] i|p|r l% i|='kre/kEe|cg|ykuk
Ey|PNkukemnhP;knhukekf/kiR;edjkr AA2AA

The son of Durhyu was Babhru, then Setu, his son was Aradwan, his son Gandhara then Dharma from him Dhrta, from Dhrta Durgama then Pracheta. The hundred sons of Pracheta established their kingdoms in the northerly etc.directions of people who were Mleccha and were bereft of Dharma in majority.

The Vayu Purana (99, 11-12), Brahamanda Purana (III 74-11-12), Matsya Purana (48-9) echo this same sentiment in almost these words. प्रचेतसः पुत्र शतम् राजानः सर्व एव ते म्लेच्छराष्ट्राधिपाः सर्वे ह्युदीचीं दिशमाश्रिताः

'The hundred sons of Pracheta were all kings. They became the over lords of Mlechcha kingdoms in the north direction.'

This evidence of the Puranas clearly and unambiguously shows that a major section of Durhyus spread out north wards from Afghanistan thence moving out into strange and distant lands.

26. So far as the timing of dispersal is concerned, in all probability this was the result of the defeat of the Durhyus in the battle of ten kings mentioned in Rgveda in two hymns (VII-18:83 and VII-19:33). In this battle the king of the Puru line was clearly Tristu Sudash. He seems to be parallel to Sr.No. 39 of the Paurava list. This is almost the end of the Satya Yuga i.e. 8000 BC. Therefore this dispersal along with other simultaneous dispersal as a result

of this battle of ten kings which will be discussed later must have been the earliest dispersal from the Sapta Sindhu in about 7000-8000 BC i.e. the period when according to the Renfrew the presence of Indo-European speaking agriculture community is testified in Anatolia.

27. In order to understand the countries where the progeny of Anu, Turvasu and Druhyu would have gone in order to establish their new kingdoms, it will be proper to understand what curse their father Yayati gave to each one of them when they refused to part with their youth to their father.

Yayati, the father of Yadu, Turvasu, Druhyu, Anu and Puru lost his youth due to some curse. He felt that he has not been able to enjoy his life fully due to his premature old age, hence he asked his sons one by one to give him their youth for some time so that he could enjoy life and after the stipulated period he would return the youth to them and accept the old age himself. All his sons excepting Puru refused the proposal of their father Yayati and said almost in same terms that they can not accept old age which destroys physical enjoyments of all kinds. There upon Yayati cursed them one by one. His curse to each one of Yadu, Turvasu, Druhyu and Anu has been detailed in Vayu Purana[66] which is as follows :-

1. To Yadu -

rLekUu jkT;Hkkd e< çtk r o Hkfo";frA

(Vayu Purana, Chapter 31, Verse 39)

Oh fool your progeny will not be able to acquire kingship.

2. To Turvasu -

;LRo e ân;kTtkrk o;% LoUu ç;PNfl

rLekr çtk lePNn rolk ro ;kL;fr

vl³dh.kk p /ke.k çfrykeoj"k p
fif'krkfn"k pkU;"k e< jktk Hkfo";frA
x:nkj çlDr"k fr;X;kfuxr"k ok
i'k /ke"k EyPNl Hkfo";fr u l'k;A

'Yayati replied because, though born of my heart, you are not ready to give your youth to me, hence Turvasu, your progeny will face termination. [or] your progeny will be king of those people not disciplined by dharma, practicing a retrograde faith, meat-eaters and such others (heathens). Else among those cohabiting with their teachers wives or among birds and animals or those Mlecchhas (irreligious people) who follow an animal dharma. There is no doubt in it.' (41, 42, 43).

3. To Druhyu -

;LRo e ân;kTtkrk o;% LoUu ç;PNfr
rLeknnkák fç;dkek u r lEiRL;r Dofpr
ukIyokÙkj lpkjLro fuR; Hkfo";fr
vjktHkkto'kLRo r= fuR; Hkfo";frA

Yayati spoke : Because, though born of my heart, you are not ready to give your youth to me, hence Druhyu you will never achieve your desired objectives. You shall always wander in the northern direction plying your boat. There without any kingship to your progeny they shall wander for ever (48, 49).

4. To Anu -

tjknk"kLRo;kDrk·; rLekÙk çfriRL;r
çtk p ;kou çkIrk fouf'k";R;rLro
vfXuçLdUnuijLRo pkI;o Hkfo";flA

Whatever blemishes of old-age you have told (I don't want that old-age which always gives un-pious children, does not offer fire at proper time etc.) will befall on you. Your progeny, having acquired youth, will die. Also you shall become a worshiper of fire (53).

28. The Harivansha Purana gives a very specific reference regarding the fight between Mandhata, the son of Yuvnasva of Iksavaku dynasty with Angarsetu, son of Setu of Druhyu dynasty. In this fight Angarsetu was killed and his son Gandhar fled to the northern countries and establish there a country named Gandhar.

æqák'p ru;k jktu~ cHkzq% lsrq'p ikfFkZo%A
vaxkjlsrqLrRiq=ks e#rka ifr#P;rsAA 86AA
;kSouk'osu lejs ÑPNs.k fugrks cyhA
;q)a lqegnL;klhUekIkkUifj prqnZ'kAA87AA
vaxkjL; rq nk;knks xkU/kkjks uke HkkjrA
[;k;rs rL; ukEuk osxkU/kkjfo"k;ks egku~AA88AA[67]

O King! the son of Druhyu was Babhru and his son was Setu. The son of Setu was Angarsetu. He is called Marutpati also. This Angarsetu was killed in a fierce fight with Mandhata, the son of Yuvnasva of Iksavaku dynasty. This battle lasted for fourteen months and king Angarsetu fell along with his army. His son Gandhar ran away to the northern territories where he established a country by his own name i.e. Gandhar (modern Afghanistan).

Shrikant Talgiri has taken note of this battle between Mandhata and Druhyu king Angar. He points out "The Druhyus occupied the Punjab, and Mandhata of Ayodhya had a long war with the Druhyu king Aruddha or Angara so that the next Druhyu king Gandhara retired to the north-west and gave his name to the Gandhara country."[68]

Some 25 generations after Mandhata who had vanquished Angarsetu of Druhyu dynasty and made his son Gandhar to flee to the northern country which later on named after Gandhar, king Bahu father of Sagar was defeated by non-religious people like Shaka, Yavana, Kamboj, Paradh and Pallava with the help of Haihayas and Taaljungas and the king Bahuk was dethroned. His son Sagara took a revenge against this onslaught on non-religious persons Shaka, Kamboj etc. and conquered them and also sacrileged them. Due to the intervention of sage Vashistha their complete devastation was stopped and by way of acceptance of their defeat, king Sagar caused their heads to be shaved partly or fully. This is a stage where these non-religious persons who might earlier fled to Afghanistan and neighbouring countries staged a come back and were defeated by king Sagar of Iksavaku dynasty. His son Asmanjas being found unworthy was exiled by king Sagara. Thereafter, no details of this Asmanjas are available in our Puranas. It is quite probable he might have met the enemies of his father in neighboring countries and would have established his own kingdoms there. L.A. Waddell has taken a note of this situation of the Puranas and he observes "Indian Epic chronicles emphasize that Prince Asa Manja or Manjas revolted from his father in his early youth." He tries to connect this event with the enthronement of Menes, the first emperor of Egypt.[69]

30. Another junction in the Puranic historical tradition is when the Iksavaku line was facing extinction due to the depravity of king Agnivarna, some 24 generations after Rama. Agnivarna's son was Shighrak and his son was Manu. This Manu had performed great penances and it is quite likely that this Manu went to Egypt as the first king Menas of Egyptian dynasty or king Minos of Crete in the meditarian ocean.

vfXuo.kL; 'kh?kLr| 'kh?kdL; eu% Le`rA
euLr| ;kxekLFkk; dykixkeekfLFkr%A
,dkufo'kç;|x| {k=çkoÙkd% çHk%AA

(वा.पु. उत्तरार्द्ध, अध्याय 26, श्लोक 209)

'The son of Agnivarna was Shighrak and the son of Shighrak was Manu who performed Yogik penances in a place known as Kalapagrama. It has been ordained in the Puranas that in the 19st epoch, he will reestablish the souverenity of Kshatriyas.'[70]

31. Ram Vilas Sharma has observed that after the victory of the Bharatas in the Sapta-Sindhu area, many groups of Aryas went outside the country. This may be termed as first dispersal of the Aryas outside the territory of India. The affinities which are observed in the cultures of Sumer and India can be attributed to this first campaign of the Aryans outside Aryavarta. Then there was Mahabharata War. This involved many north western and eastern principalities. After the defeat of Kauravas, it is quiote probable that many of these vanquished princes had to leave India. This can be termed as the second campaign of dispersal by the Aryans outside Aryavarta. This may have co-relation with the expansion of Hittite and Mitanni civilizations.[71]

This observation of Ram Vilas Sharma contains a clear suggestion that the latest dispersal by a section of Aryans to the west was after the Mahabharata War and the reason of this dispersal could also be the deliberate stoppage of Indra-worship by Krishna, the Yadava chief. It appears that by deliberately stopping the worship of Indra, Krishna, in a way started a revolution against Vedic pantheon and in its place wanted to establish a supremacy of the Almighty God (the Bhagavata Dharma). When he asked about the propriety of worshiping Indra to his fellow Gopa (cow-boy), the reply was

nokukeh'oj% 'kØk e?kkuk pkfjlnuA
rL; pk;a egs% Ñ".k ykdukFkL; 'kk'or%AA

(हरिवंशपुराण, 15/5)

'The Gopa replied O Krishna! Shakra or Indra is the chief of Gods as also of the clouds. This is the function of Indra who is the lord of the people and we have been celebrating it from times immemorial.'

On hearing the reply of fellow Gopa, Krishna said we are the cow boys living in forests and our life depends on the cows. Hence the cows and the mountains are our Gods. Therefore, there is no need to worship any other God. Later on Shri Krishna sort of exercised his influence on his fellow cow boys not to worship Indra and in place worship the cows in the mountains. This must have annoyed the traditional Indra worshippers but because of the overwhelming influence of Shri Krishna, after the defeat of Kaurvas in the Mahabharata, they might have thought proper to leave India and establish their fortunes outside the country. After all, a group of Aryans who were annoyed due to the worship of Indra, went to Iran and adopted a religion which was in a way anti-Indra inasmuch as in their religion Asura or demon became Ahura Mazda or the God and Indra became a demon. Initially, in Vedic times, Asura and Deva both had the same meaning of God.

Periodization of these dispersals

1. Mandhata-Angarsetu Battle

Mandhata is at Sl. No. 23 of Ikswaku dynasty. Rama is at 78 i.e. Mandhanta is 55 generations above Rama. Rama's time calculated astronomically is 5115 B.C. In Treta average one missing for one generation is fair & hence generation difference is 55x2=110. Taking an average of 30, this comes to 3300. Adding 5115 to it the period comes at 8415 B.C. (Well in Krta Yuga).

ekU/kkrk p egh ifr% Ñr;qxs·yqdkjHkkrk xr%

testifies Mandhatas' presence in Krta Yuga (12800 to 8000 B.C.) Gandhara must have fled some 8400 B.C.

2. The Dashrajna Battle

Pracheta of Druhyu dynasty is at Sl.No. 28. His sons fought this battle i.e. = 50 generations above Rama

100 x 30 = 3000

+ 5115 = 8115 B.C.

is the date of Dashrajna battle. The battle tendency shows treta could have started by then (8000 B.C.) Sudasa son of Pijvana must have flourished at the same time. Though, the name of this Paijvana Sudasa is not found in Puranas.

3. Sagara-Asmanjas Episode

Sagara is at Sl.No. 48 i.e. 30 generations above Rama.

96 x 30 = 2880 + 5115 = 7995 B.C.

4. Agnivarna / Manu

Agnivarna of Iksavaku dynasty is at Sl.No.102 and Manu at 104 i.e. 26 generations below Rama. 26 x 50 = 1300

5115 - 1300 = 3815 B.C. (Advent of Dwapara)

5. Shrikrsna Period

Stoppage of Indra worship 2045 B.C. is the date of birth of Shrikrsna as calculated in the book The Date of Mahabharata War (discussed later in next section). Shrikrsna performed all his childhood feats before he completed the age of twelve. His Leela of lifting the Gowardhana mountain is associated with his childhood feats and with it is associated the stoppage of the worship of Indra. Thus, the period when the Indra worship was

stopped is 2045 - 12 = 2033 B.C. Also, the Mahabharata War was fought in 1952 B.C. (as per The Date of Mahabharata War (discussed later in next section).

In this way the three streams of dispersal of Vedic Aryans towards the Western countries emerge as follows :

First stream	:	After Dashrajna battle 8115 B.C. to 7995 B.C. End of Krta Yuga
Second stream	:	3815 B.C. Waning Ikswaku Dynasty. Manu = Menes = Minos End of Treta
Third stream	:	1952-2000 B.C. After Mahabharata War end of Dwapara.

All these three campaigns indicated in the Puranas have been taken note of not only by Indian scholars like Shrikant Talageri, Ram Vilas Sharma, Rajaram etc. but also foreign scholars like F.E. Pargiter, O.R. Gurney and David Frawley etc.

Section-3

Chapter - 8 Vedic Chronology : A four-lane reconstruction

Lane 1 – Archaeology

Lane 2 – Archaeo-astronomy

Lane 3 – Linguistic Paleontology,
Glotto-chronology
Cosmology, Mythology, Religion,
Theology and Philosophy etc.

Lane 4 – Literary History

The four-lane reconstruction of Vedic Chronology
An overall view

Period	Archaeology	Archaeo-astronomy	Linguistic Paleontology etc.	Literary History
1. Pre 12800 B.C.	Earlier inter-glacial period Pleistocene and Post Pleistocene epoch as per land and water distribution of Sapta Sindhu (A.C. Das 'Rigvedic India') Reminiscences of that period. A grey area. May be termed as non-history as of now.	Four astronomical periods 1. The Asvini period (Srona in the East) V.E. in Asvini - earliest recorded period. (27450 to 25600 B.C.) 2. The Prosthapada period (V.E. in Magha Amavasya	Earliest cosmo mythological thoughts of Vedic people that migrated to other Indo-European countries.	Sources of astronomical derivations 1. (a) Rgveda (b) Sulba Sutras (c) Astronomical traditions 2. (a) Rgveda (b) Ait. Br. (c) Kaus. Br. 3. (a) Yajurveda

		(24500 to 23300) 3. The Ekastaka period Krttika Saptarsi wedding, Krttikas in S.S. (23300 to 22700) 4. The Vedanga (Rg) Jyotisa period V.E. Dhanistha (21600)		(b) Taitt. Sam. (c) Kathak Sam. (d) Atharvaveda 4. (a) Rk Jyotisa (b) Paitamaha Siddhanta
2. 12800 to 8500 B.C. Early Vedic Period	Aq Kurup epi-Paleolithic period	Two astronomical periods 1. The Citra period (V.E. in Citra and in the East) (12790) 2. The Magha period (V.E. in Magha W.S. at Krttika) (8500)		Sources of astronomical derivations Sulba Sutras especially Katyayana Sulba Sutra with Karkacharya's commentary (a) Tait. Br. (b) Maitra. Up.
3. 8500 to 7500 B.C. Middle Regvedic Period	Pre-ceramic Neolithic cultures Mehargarh, Kile Gul Mohammad etc.	The Pusya period (7450)	Mythological motifs of Egypt, Anatolia and Russia.	Sources of astronomical derivations (a) Rgveda (b) Sulba Sutras

				(c) Taitt. Br. End of Krta Yuga. First dispersals of Vedic Aryans to the West. The Mandhata Druhyu battle.
4. 7500 to 5000 B.C. Late Rgvedic and Samhita Period	Ceramic Neolithic cultures	Aditi and Orion periods of Tilaka (4500 to 7000)	Egypt and Anatolia Linguistic findings of Glotto Chronology and some linguists.	Dash Rajna battle, Yajurveda, Ramayana, Atharvaveda, Puranic History. Chronology of Ancient Indian Literature.
5. 5000 to 3500 B.C.	Chalcolothic cultures Mehargarh, Nagwada, Koteshwara, Padri etc.	Date of Rama	Early Kingdoms of Egypt (Menes) Minos of Crete & Greece	Late Vedic period Puranic History of late Treta and early Dwapara. Manu grandson of Agnivarna, second dispersal to the West.
6. 3500 to 1900 B.C.	Early Bronze age cultures Mehargarh, Nausharo, Harappa, Mohenjodero,	1. The Sutra period All Sulba Sutras. 2. The	Egypt, Sumer, Babylonia, Greece, Crete, Anatolia, Western	Shatapatha Brahmana, Date of Mahabharata War, third dispersal to

	Lathal, Kot Diji, Dholavira, Banawali, Kunal, Surkotda, Kalibangan etc.	Krttikas in the East (3016) 3. The Mahabharata War (1952)	Europe.	the West after Mahabharata War & Drying up of a Saraswati.
7. 1900 to 1400 B.C.	Late Bronze Age cultures Hulas, Bhagwanpura etc.	Close of Krttika period (1660)	Babylonia, Egypt, Greece	Vishnupurana, Post Mahabharata Kings

Chapter-9 Period-I Pre 12800 B.C. extending upto 27450 B.C. : The earlier inter glacial period

Lane-I : Archaeology

This distant antiquity for the Rgveda has been primarily based on the Indian literary tradition and gained credibility due to the famous book of A.C. Das viz. "The Rigvedic India". A.C. Das in this book puts this antiquity at Pleistocene or at any rate post-Pleistocene epoch, because of geological distribution of land and water the evidence of which is available in Rigveda. 'I am afraid', he says, 'The Vedic Scholars will accuse me of romancing wildly. But if Geological deductions are found to be correct, my calculations, which are based on them, cannot be wrong.... The Rigvedic civilization had its beginning in Sapta Sindhu about 25000 years ago and was at its height probably in the Seventh Millennium BC when most of hymns were composed and when there still existed a sea or an arm of Arabian Sea in Rajputana.'[72]

This conclusion of A.C. Das finds support in clear archaeo-astronomical findings which shall be discussed in the next lane. Frankly speaking there are no archaeological finds of this period, and until such time the hardcore scientific material, such as the archaeological findings or the findings of other allied sciences are available, this period can not be termed as history. This can at best we called the grey area of world history.

Lane-II : Archaeo-astronomy

There are ample astronomical evidences indicative of this period by way of star references in Rgveda and other Vedic literature. Four such periods have been clearly identified viz. The Asvini Period, The Prosthapada period, The Ekastaka period and the Vedanga Jyotisha period. These periods have been dealt with great details in an article of this author appearing in "A Golden Chain of Civilization : Indic, Iranic, Semitic and Hellenic upto c. 600 BC", an PHISPC volume edited by G.C. Pande.[73] The relevant portion of these details is reproduced hereunder :

Stage-I : The Asvini Period

The visible rock-bottom of Vedic culture : The most clinching and reliable evidence of this period is in the sulba-sutras- Srona being in the east. These are only reminiscences of this period as nowhere in the Vedic literature 'a reference' talks of it in present tense as if the described configuration is current at that time as in the case of Krttikas, or Magha or even Ekastaka. With the later tradition, it is talked about as an earlier tradition of year beginning. Thus in the Ekastaka sukta of Taittiriya Samhita, there is discussion about alternative year beginnings as tradition subsisting during Ekastaka times :

QYxuhi.kekl% nh{kjUe[k ok ,rr lkoRljL;

;RQYxuhi.kekl e[kr ,o lkoRljekjH; nh{kUr%

rL;kdko fu;k ;RlkEe/;s fo"kkoku lEi|rs fp=ki.kk&
ekls nh{kkjU e[k ok ,rr lkoRljL; ;fPp=ki.kekl k
e[kr ,o loRljekjH; nh{kUrs rL; u dkpu fu;k HkofrA

(Tait. Sam. VII.4.8)

'They should consecrate themselves for the sacrifice on the Phalguni full-moon. The Phalguni full-moon is the mouth of the year. They sacrifice by beginning the year from the very mouth. It has only one fault viz. that the Visuvan (i.e. the equator or central day falls in the rains. They should consecrate themselves on the Chitra full-moon. The Chitra full-moon is the mouth of the year. They sacrifice by beginning the year from the very mouth. It has no fault whatsoever'.

This anuvak talks of the year-beginning on 1. Phalguna Purnima and 2. Chaitra Purnima. Obviously this would have happened at two different epochs but the tradition subsists even during Ekastaka times. Another indicator is that if they begin their satra in Phalguna Purnima, the central day would fall in rains. Now, can see in connection with Prosthapada period and while discussing the references of Aitereya and Kausitaki Brahmanas that Asadha-amavasya (after Asadha Purnima) was the middle of the rains and at that time it was Punarvasu naksatra. During Ekastaka times, the position would not be much different. So the rains would continue for at least another month i.e. upto Sravana-amavasya (or the Bhadrapada-amavasya of Purnimanta). If they start the satra on Phalguna Purnima, the central day would fall in Bhadrapada i.e. the rainy season. So year-beginning here means Vasant or Vernal Equinox time and not the winter solstice as some scholars have persistently held albeit erroneously. The mouth of the year, as has been talked about here is Vasant only and not Hemanta.

e[k ok ,rn`rwuka ;} lUr%

(Tait. Br. 1/1/2/6-7)

'Vasanta is the mouth of the seasons'.

rL; r ¼loRljL;½ olUr% f'kjk xh"ek nf{k.ki{k%
o"kk iPN 'kjnqRrji{k% gseUrk e/;eA

(Tait. Br.3/10/4/1)

'Vasanta' is the head of the year etc. Besides, apart from Taitt. Samhita, there are many references in later Vedic literature describing Phalguni Purnimasi as the mouth of the year or the first day of the year :

¼1½ ,"kk oS çFkek jkf=% loRljL; ;nqRrjs QYxquh

Uttara-Phalguni is the first-night of the Samvatsara - the year.

¼2½ ,"kkg loRljL; iFkek jkf=;k QkYxquhi.kZekl h

(Sat. Br. 6/2/2/18)

'This Phalguni full-moon is the first night of the year'.

¼3½ e[k ok ,rRloRljL; ;r QkYxquh i.kZekl h

(Gopatha Brahmana 6/19)

Phalguni full-moon is the mouth of the year.

This shows some time in the past the Vernal Equinox fell on Phalguni full-moon and earlier is Chaitra full-moon. The former means V.E. in Uttarabhadra and the later means V.E. in Asvini. In terms of time

1. Uttarabhadra (γ Pegasi) = 345º-17'-56" / 0 - 0 - 48" = 25600 B.C.

2. Asvini (β Arietes) = 370º-06'-47" / 0 - 0 - 48" = 27450 B.C.

By 'Sravana in the East' calculation, we have reached 27000 B.C. - the same destination.

Thus, by two different routs - by tracing the stars in the east as mentioned in the sulba-sutras and by following various time-references that we come across in Samhitas and Brahmanas, we reach the same destination 27000 B.C., we start with the same epoch 3000 B.C. and in the middle We come-across stages of Pusya and Chitra where the two routs meet. This is therefore a very consistent and coherent picture of the vast Vedic chronology, which extends upto thousands of years. Any fragmentary approach presuming Vedic period, a small times-lot of few centuries or presuming the entire gamut of Vedic literature from Samhitas to Sutras as contemporaneous is bound to result in failure or in extraneous results and consequent despair.

Stage-II : The Prosthapada Period

According to Aitareya and Kausitaki Brahmanas, the middle of the rainy season was in Punarvasu on the amavasya after Asadhi Purnima and the Visuva was on Magha-Amavasya (Amanta). Besides, if the middle of the rainy season is in Punarvasu (89º-2'-28") the start of rains or summer solstice would be at Mrgasira (59º-50'-59"). According to tithis, there is shift of 8 tithis from Ekastaka (Magha Krsna 8) to Magha-amavasya. Hence 8x75 = 600 years to be added to 23200 which makes 23800 B.C. as the beginning of this period and as per Punarvasu calculations, V.E. would be at (59º-50'-59") -90º i.e. at 329º-50'-59" (Purva Bhadra). At the rate of 48" per year, this amounts to 24738-285 = 24453 or 24450 B.C. Earlier, this period was worked out as 24500 B.C. Because V.E. is in Prosthapada, it has been named as Prosthapada period.

Stage-III : The Ekastaka Period

In the Yajurveda and Atharvaveda period, this Ekastaka has been much talked about as the wife of the

Samvatsara which heralds the new year. This is a clear distinguishing line between the Rgvedic period and the period of Yajurveda and its Brahmanas. The famous sukta of Taittiriya samhita quoted by Tilak in his Orion talks of this Ekastaka as also of the previous year-beginnings current in their memory and the discussion is about the choice of the right-day for initiation.

संवत्सराय दीक्षिष्यमाणा एकाष्टकायां दीक्षेरन्नेषा वै संवत्सरस्य पत्नी यदेकाष्टकैतस्यां रात्रिं वसति साक्षादेव संवत्सर-मारभ्य दीक्षन्त आर्तंवाएते संवत्सरस्याभिदीक्षन्ते य एकाष्टकायां दीक्षन्तेंन्तनामानावृतू भवतो व्यस्तं वा एते संवत्सरस्याभिदीक्षन्ते य एकाष्टकायां दीक्षन्ते ।[2]

(Tait. Sam. VII-4.8)

With little difference, this same Sukta is there in Tandya Brahmana (V.9).

'Those who are about to consecrate themselves for the year (sacrifice) should do so on the Ekastaka (day). The Ekastaka is the wife of the year, and he (i.e. the year-samvatsara) lives in her for that night. (Therefore they) practically sacrifice (by) beginning the year. Those who sacrifice on the Ekastaka sacrifice to the distressed (period) of the year. It is the season whose name comes last. Those that sacrifice on Ekastaka sacrifice to the reversed (period) (according to Tandya Brahmana 'विच्छिन्न' - broken, incomplete year) of the year; it is the season whose name comes last'.

So far as 'Ekastaka' is concerned, according to Asvalayana Grhya sutra - (II 4.1)

gseUr f'kf'kj;k'pr|.kkeiji{kk.kke"VehLo"Vdk%A

Thus by the time of Grhya Sutras all the four Krsna Astamis of Kartika, Agrahayana, Pausa and Magha (Amanta) came to be known as Astakas. But during the time of Taitt. Samhita, the Krsna Astami of Magha after

Magha Purnima being senior came to be known as Ekastaka.

> या माध्या पौर्णमास्या उपरिष्टात् व्यष्टका तस्याष्टमी
> ज्येष्ठ्या सम्पद्यते। तामेकाष्टकेत्याक्षते।

(Apastamba Grhya Sutra quoted by Sayana).

Thus both Jaimini and Apastamba considered Ekastaka to mean 8th day of the dark half of Magha.

The implication is clear. The Vernal Equinox fell on Magha Astami. Yet the lunar year was to complete on Magha Amavasya and thus the new year and the new season Vasanta would start on Phalguna Shukla 1. Hence the incomplete (विच्छिन्न or व्यस्त) year and last season. This is a clear months shift from Rg. Jyotisa period when the new year started on Magha Shukla 1 (upto Phalguna Shukla 1). But upto Ekastaka it is 15+7 = 22 days. In terms of time 22 lunar days equal approx 21.6 civil days which when multiplied by 75 (=1º shift @ 48" per year) would mean 1600 years added to the Vedanga Jyotisa period of 21600 i.e. 23200 B.C. (the lower limit of Yajurveda period). Tilak's presumption of the year beginning on winter solstice is not warranted by any statement in any Vedic text and hence cannot be sustained.

In Atharvaveda Ekastaka has been extolled in following glowing words :-

> ;k nsok% çfruUnfUr jkf=a /kuqeqik;rhe~
> laoRljL; ;k iRuh lk uks vLrq lqeaxyh ¼2½
> vk;exUR laoRlj% ifrjsdk"Vds ro
> lk u vk;q"erha çtka jk;Lik"ks.k lal`t ¼8½

'The night (of Ekastaka) which the gods hail (rejoice to meet) as a milch cow coming unto them, which is the spouse of the year - let her be very auspicious to us (2). Hither hath come the year, thy spouse, O sole Astaka; do

thou unite our long-lived progeny with abundance of wealth (8).

But while the discussion of Taittiriya Samhita indicates a present position of Ekastaka, with Atharvaveda, it could be the carry-over of a tradition as is the practice among the Indians - once an auspicious day due to certain celestial configurations, remains the auspicious day forever, even if the celestial elements might have departed from it. We still celebrate Magha-Shukla 5 as Vasanta Panchami though Vasanta has deserted it thousands of years ago. Similarly the Ekastaka tradition must have continued for a very long time for ritualistic purposes. That is why the passage about Ekastaka (Tait. Sam.) has formed the subject of learned discussion amongst the Mimansakas.

Another landmark of this period is the marriage of seven stars of Krttika with seven sages - the Saptarsis, because they were quite north being at the summer solstice point. The names of seven stars are clear indicators that they were harbingers of rains :-

vEck;\ Lokgk nyk;\ LokgkA furRU;\ Lokgk·Hk;UR;\ Lokgk e?kk;UR;\ Lokgk o"k;UR;\ LokgkA pi.khdk;\LokgkA

(Tait. Br. 3/1/4)

These names are Amba, Dula, Nitatni, Abhrayanti (causing clouds) Maghayanti (causing rainy clouds) Varsayanti (causing rains) and Chupunika. A star which is on summer solstice heralds rains just as Ardra (21st June) these days. When at summer solstice their maximum north declination would be 24º+(4º-3'-5") = 28º-3'-5". They are thus quite close to the eastern-most star among the seven seers (the Great-bear). They used to rise together at the time of rainy season. Therefore seven in number, all in feminine gender, they were visualized as the wives of seven sages - the Saptarsis by the imaginative poetic Aryans. Satapatha Brahmana recalls this event nostalgically -

*u ÑfÙkdkLokn?khrA _{kk.kka g ok ,rk vxz iRU; vklu~A lIr"khu~ g Le oS iqjk{kk bR;kp{krA rk feFkqukn~ O;k/;UrA veh g;qÙkjk fg lIr"k;% m|fUr iqj ,rk%A v'kfeo oS rr~ & ;ks feFkqukn~ O;`)%A l uksfUeFkqukn~ O;`)Ók bfrA rLekUu ÑfÙkdkLokn?khr*A

(Sat.Bra. II-1-4)

'One should not consecrate in Krittikas. They were earlier wives of Bears. (Rksa = bear = star). The Saptarsis (the Great Bear) were earlier known as bears. They separated from conjugation. These seven sages (Saptarsi) rise there in the north, these (krttikas) rise here in the east. This is not proper - that they separated from conjugality. Hence no consecration as it may cause separation from conjugality. Therefore, one should not consecrate in Krttikas'.

This is a clear picture of past and present traditions and positions of Krttikas. For Krttikas (ηTauri or Pleiades) to be at summer solstice, the V.E. has to be at (36º-8'-7") - 90º = (-) 53º-51'-53" or 306º-8'-7" i.e. almost beginning of divisional Satabhisa. In terms of time this means 306º-8'-7" / 0 - 0 - 48" = 22960 - 285 = 22675 or 22700 B.C. Therefore, 22700 B.C. to 23300 B.C. is this Ekastaka phase of Vedic chronology.

Stage-IV : The Rgjyotisa period : The main *sloka* indicating the time is :

Lojkdzekrs lksekdkS ;nk lkda loklokS
L;krnkfn;qxa ek?kLri% 'kqDyks fnua R;t%AA

(Rj. 5)

'When the sun and the moon together with the star Dhanistha (α or β Delphini) ascend the heavens, then is the beginning of the yuga, the month of Magha, the season of

Tapa (hot) the bright fortnight and the time when a day is shredded'.

Because of the mis-concept about the Vedic udagayana and Daksinayana the Vedanga period is generally taken by scholars as 1410 B.C. taking the above and other similar slokas of yajus jyotisa to mean the beginning of uttarayana in the modern sense i.e. winter solstice whereas it actually means the Vernal equinox day when Dhanistha was at V.E. Garga's commentary below a similar sloka of yajus jyotis makes it abundantly clear :

'नक्षत्राणां सर्वेषां षड़राषीनामादिः श्रविष्ठा। एवं पञ्चवर्षस्य युगस्यादिः संवत्सरः। बसन्तः ऋतूनाम् माघो मासानां। पक्षाणां शुक्लः। अयनयोरूतरम्। दिवसानां शुक्ल–प्रतिपत्'।

'The beginning of all asterisms, of six rasis, is Sravistha. Similarly the first year of the five-year yuga is Samvatsara; spring the first season; Magha, the month, shukla of fortnights, northern of Ayanas, and 1st tithi of the bright half'.

The very fact that the year was 366 days long at that time and that there is a gap of 5 nakstras as mentioned in Vedanga Jyotisa makes it imperative to conclude that this is a remote antiquity when the year was really that long (365.5 + days) and that when the Ayanamsa was equal to 5 naksatras [(-) 66°-40′] which means exactly Dhanishtha at V.E. Dhanistha has been identified as β Delphini. The Sayan longitude of β Delphini for AD 2000 is 316°-20′-52.33″. Ignoring the negligible proper motion and taking an average of 48″ per year for that distant antiquity, the period of this Rgjyotisa comes as –

$$\frac{316° - 20' - 52''}{0° - 00' - 48''} = 23726 - 2000$$

= 21726 or 21700 B.C. @ 48.5, it is 21500 B.C.

The Vernal equinox at that time was on Magha shukla 1. In the Margasirsa period, it was on Margasirsa Poornima, thus shifting 15 days from the stage of Rgjyotisa.

Chapter-10 Lane-III : Linguistic Paleontology, Mythology etc.

The Vivasvan-Saranyu Myth

The myth where the god takes form of a horse for various reasons appears to be the oldest myth because the gods in the myth are Tvastr and Vivasvan, the Sungod and this myth has crossed over to many Indo-European countries including the Greeks, Roman, Celtic and the Nordic peoples. While comparing the mythological elements of Vedic culture with the cultures of the North East N. Kazanas observes :

"Unlike the NE cultures, a rich horse mythology is attested in almost all the IE traditions (except the Hittites) and some form of horse-sacrifice was performed among the Greek, Roman, Celtic and Nordic peoples (Anderson 1999). One frequent myth, among others, is that of a god taking on the form of a horse for various reasons. For example, in Vedic mythology Saranyu, the daughter of god Tvastr, marries Vivasvan the Sungod, then disappears and takes the form of a mare; her husband becomes a stallion, mates with her and as a result the Asvins are born (RV X, 17, 1-2; Brhaddevata VI, 162 ff). We find a similar tale in Greece when goddess Demeter became a mare to avoid the harassment of Poseidon, god of the sea, but he became a stallion and mated with her on the plains of Arcadia; as a result were born Areion, a noble horse with black mane, and a girl, and Demeter came to be worshipped in Arcadia as Demeter 'Erinus (=saranyu). The story is in Pausanias VIII 25, 5). A slightly different myth appears among the Scandinavians when Loki, the god of tricks and

transformations, becomes a mare to attract from work the giant-mas on's stallion Svadilfari; as a result is born Sleipnir, a horse with eight legs, the swiftest animal in the world, which is given to Odin, king of the gods (Edda p. 35-6; Crossley Holland 1993 : 11-14). Surely, it would be absurd to claim that the horse-sacrifice spread from Mesopotamia to all these IE-speaking regions and that, then, each one of them developed almost identical horse-mythologems. "[74] The clear indication is that it originated in India & spread to all I.E. countries & Mesopotamia.

This is the period when the Aryans and Iranians were living together and the Gods were also called Asuras and there was no difference between an Asura or a God. The chief of these gods was Varuna and not Indra who subsequently became the chief of the Gods when the Asuras came to be known as the demons against the Gods and this transformation of Asuras into the demons appears to be the time when Iranians separated from the Aryans.

Another important observation of this period has been made by A.C. Das in his "Rigvedic India" when he says : Panis normally recognized as the merchant class of Vedic period could have migrated to Phoenicia in this period. He observes "We should, in this connection recall to mind the tradition current among the Phoenicians who told Julius Africanus that they had been in Phoenicia for nearly 30,000 years."[75]

Lane-IV : Literary History

According to Indian literary tradition and Yuga tradition, from the earliest kings i.e. Iksvaku or Pururava, we are now in the Vaivasvata manvantara. Whatever literary history or traditional history, we have been dealing with starts from Vaivasvata Manu, the seventh Manu. But the tradition says that in a Kalpa, a day of Brahma, there are fourteen manvantaras. Similarly, in the human kalpa,

there are fourteen manvantaras, each manvantara consists of 71 Yugas of 12000 human years, and for the celestial manvantara 12000 celestial years (4320000 solar years). In the present Vaivasvata manvantara also, 27 yugas of 12000 years have elapsed and the 28th Yuga is now current. So our traditional history which we are dealing now, is the history which starts from Iksvaku in the Krta Yuga of 28th Yuga of Vaivasvata manvantara. Before Vaivasvata, there have been six more manvantaras which are indicative of the earlier cycles of generations before the great flood. These six manvantaras are :

Lok;EHkqok euq% iwokZ euq% Lokjkfp"kLrFkkA
mÙkeeLrkel'pSo jSor'pk{kq"kLrFkkAA
"kMsrs euok·rhrk% lkEçrUrq jo% lqr%A
oSoLorks·;a ;L;Srr~ lIre orZrs·UrjeAA

¼fo-iq- 3@1@6&7½

1. Svayambhuva 2. Svarochisha 3. Uttama 4. Tamasa 5. Raivata 6. Chakshush - These are the six manvantaras which have elapsed and 7th manvantara Vaivasvata is now current. Vaivasvata Manu, the patriarch ruling the current age is the son of the sun (Vivasvan). This shows that a long tradition existed before the current Vaivasvata Manu. Even the advent of Vaivasvata Manu indicates the advent of a perfect man on earth and its time from present is about 3.5 lac years. This should be borne in mind by those scholars who take the time of Vaivasvata Manu as 3100 or so on the basis of the 95 generations of Iksvaku taking an average of about 30 years. Iksvaku might have been called the son of Vaivasvata, but so are the first kings for all 27 Yugas which have elapsed after Vaivasvata Manu. The age of Vaivasvata Manu has co-relation with the existence of a perfect man on earth. The human skulls which have been found in India near Narmada basin date about 1.25 lac years and yet much research has to be done in this regard. Our tradition pushes

the existence of perfect man on earth around 3.5 lac years back and the existence of man on earth about 55 lac (5.5 million) years i.e. co-relating with the first Manu or the Svayambhuva Manu. This tradition may give some guidance to the researchers of anthropology.

Among the illustrious kings of this Antediluvian period are Prathu, the illustrious king of the Dhruva line of first Manu Svayambhuva on whose name this earth has been called Prthvi. He ruled the entire Jambu Dweepa i.e. approximately the present Asia Continent and he was the king who first exploited earth for minerals, vegetation and crops. As the tradition goes, the institution of kingship started from him. The other illustrious kings of this period are Rishabha and his son Bharata in the Priyavrata line of the first Manu. This Rishabha was a great king and a great ascetic. He is the first Tirthankara of Jain sect and a great Avatara of Shri Hari according to the Vaishnava sect. His son Bharata was equally illustrious king who also turned ascetic subsequently. This country Bharatavarsha has been named after him. Shrimadbhagvata Purana extols Rishabha in the following words - 'The Lord, who was (rightly) called Rsabha (the foremost), was God Himself - (altogether) independent, eternally free from all evils by His very nature and (ever) enjoying absolute bliss (which constitutes His very essence).' About Bharata it says

;s"kka [ky| egk;ksxh Hkjrks T;s"B% Js"Bx|.k vklhn~
;suna o"kZ Hkkjrfefr O;ifn'kfUrAA

'Of them the eldest and the one possessed of the highest attributes was Bharata, who was indeed a great adept in Yoga and after whom they speak of this land as Bharatavarsa (the land of Bharata).' (Shrimadbhagvata Purana, V/4/9, 14).[76]

It may be noted that these kings of Antediluvian dynasty as some of the kings of Post Diluvian dynasty have

been shown to rule for thousands of years in Indian tradition as well as Mesopotamian tradition. The idea of making these sort of mythological kings to make them rule for thousands of years might have been borrowed by Mesopotamians from the Indian tradition. According to Waddell some 38 kings ruled ranging from 18600 years to 241200. [77] Thus, there is ample material in the traditional accounts of Puranas about this earlier inter-glacial period or other inter-glacial periods of India and the world.

Chapter-11 Period-II 12800 to 8500 B.C. : The early Vedic period

Lane-I : Archaeology - Aq Kurup epi-Paleolithic period

B.B. Lal in his article "Identifying the Rgvedic people : An Archaeological Approach" reports : In north-eastern Afghanistan there lies the site of Aq Kupruk. Over there we have a good sequence of habitation from the epi-Paleolithic times, dating back to ca.15th millennium BCE (Dupree 1972; Shaffer 1978). This was followed by a Neolithic stage which produced evidence of domestication of animals, but there was no pottery yet. On the basis of two radiocarbon dates, viz. 8565±240 and 6960±105 BCE (uncorrected; half-life 5730), these levels clearly go back to 8th-7th millennia BCE. In the succeeding period there turned up the pottery and for these pottery-bearing levels there are four Carbon-14 dates, viz. 5806 BCE, 5638 BCE, 5292/5286/5241 BCE. It would thus be seen that a Neolithic economy, with domestication of animals and production of pottery, had come into being in north-eastern Afghanistan by the beginning of the sixth millennium BCE.

But Afghanistan did not stand in isolation. Even before the discoveries at Aq Kupruk, Kile Ghul Mohammad near Quetta in Baluchistan had yielded to the spade of Walter A. Fairservis (1956) a very useful sequence of cultures. From bottom upwards, Period I yielded

evidence of domestication of the cattle, sheep and goat and of microliths some of which were used for hunting but some others, like blades may have been used for harvesting, though in the limited area excavated no cereals were found; and, of course, there was no pottery.

Besides this not much archaeological material is available for this antiquity. Though, further excavations in the related areas holds scope for findings belonging to this distant antiquity.

Lane-II : Archaeo-astronomy

Step V : The Chitra period : In Katyayana sulb-sutra, the second sutra is :

*le 'kdq fujok; 'kdqlfEer;k jTTok e.Myq ifjfy[; ;= yq[k;kW 'kDoxPNk;k fuirfr r= 'kdq fugfUr lk çkph] ¼dk-'k-l- I.2½

'Having fixed a gnomon (pole) on a level piece of ground and having described a circle by a chord equal in length to the gnomon and attached to it, one should mark the points with pegs where the shadow of the top of the gnomon touches the circle (in the pre noon and after noon) the line joining these pegs is the east-west line'.

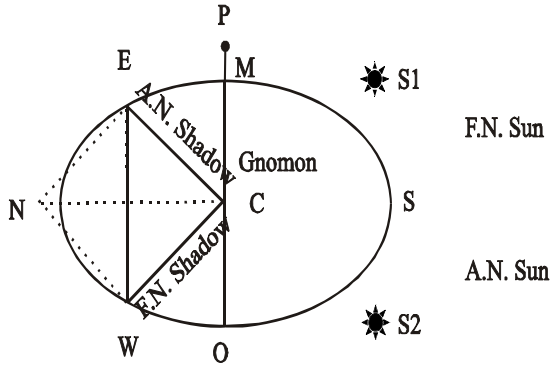


Fig. 7

In the above figure, CP is the gnomon, C is the center of the level ground on which the gnomon stands. MEWOS is the circle described by a rope equal to gnomon CP. Suppose the sun is in southern hemisphere, then s_1 is its position and CW its shadow in the pre-noon; in the after-noon s_2 is its position and CE its shadow. As shadow is equal to the gnomon, this shows the altitude of the sun as 45° - a position mid-way between sun-rise and noon and noon and sun set. Thus, the line joining points EW is the east-west line. A rope double the length of EW, held in middle and stretched towards N gives the north point similarity. C is the southern point. To find out the east west line w.r.t. shanku (gnomon) a line parallel to EW can be drawn. Now MO is the east-west line. This is the method of finding out the east-west line.

Karkacharya, in order to find out the east at night , gave his famous commentary on this sutra establishing that the east-point was between chitra and svati.

*nf{k.kk;u r| fp=k ;konkfnR; mi li frA
mnx;u Lokfre fr fo"kqorh;s Rogfu
fp=kLokR;ke/;s ,okn;%*

'In the southern hemisphere, the sun reaches upto chitra, whereas in the northern hemisphere it arrives at svati; on the equinox day, the sun-rise is between chitra and svati'.

Time of this period works out as 12790 B.C. Long. Chitra 180º-7'-57" Swati 181º-31'-38" mid way = 180º-49'47" @ 49"/yr = 13285-285 = 13000 B.C. with latitude correction 12790 B.C.

In the Tattiriya Brahmana, there is a metaphorical corroboratory evidence regarding chitra being the head of the year :

यो वै नक्षत्रियं प्रजापतिं वेद। उभयोरेनं लोकयोर्विदुः। हस्त एवास्य हस्तः। चित्रा शिरः निष्ट्या हदयं। ऊरू विशारवे। प्रत्तिष्ठानूराधाः। एष वै नक्षत्रियं प्रजापतिः। (तै.ब्रा. 1/2/2/2)

'The one who knows the stellar Prajapati (the samvatsara) knows both the worlds. Star Hasta is its hand; Chitra is head; Svati, the heart; Visakhas, the thighs and Anuradha, its feet. This is that stellar Prajapati'. Also

i|ok/ke|Ùkjxkyekfp=kn/kekfn'kr·
fp=kU rk/ki çâR;|o ifÜpek/k p nf{k.ke·

(Vyasa Tantra 2.5)

The first half of the year i.e. the northern hemisphere should be taken as the half starting from Chitra and the remaining half deducing upto end of Chitra is the second half, the southern hemisphere.

Similarly in Rgveda also, there is a hymn which indicates the position of chitra in the east and never deviating from its –

'अस्थरू चित्रा उषसः पुरस्तान्मिता इव स्वर वो ऽ ध्वरेषु'

'The chitras stand stable before the dawn just as the sacrificial poles in sacrifices' (Rg.IV-51-2)

Stage VI : The Magha period : A very explicit time reference we come across in Maitrayani upanisad : सूर्यो योनिः कालस्य। तस्यैतद्रूपं यन्निमेषादि कालात्संभूतं द्वादषात्मकं वत्सरम्। एतस्याग्नेय मर्द्धमर्द्धं वारूणं मघाद्यं श्रतिष्ठार्धमाग्नेयं क्रमेण – उत्क्रमेण सार्पाद्यं श्रविष्ठार्धान्तं सौम्यम' (Mait. Up. 6.14).

'The sun is the cause of time. This is its form – the twelve-fold year, constituted of bits of time such as nimesa ($16/75^{th}$ of a second – a winking time) etc. Half of it is fiery and half cool; beginning with Magha and ending with half sravistha is the fiery half in order, conversely beginning with Aslesa and ending with half-sravistha is the cool half'.

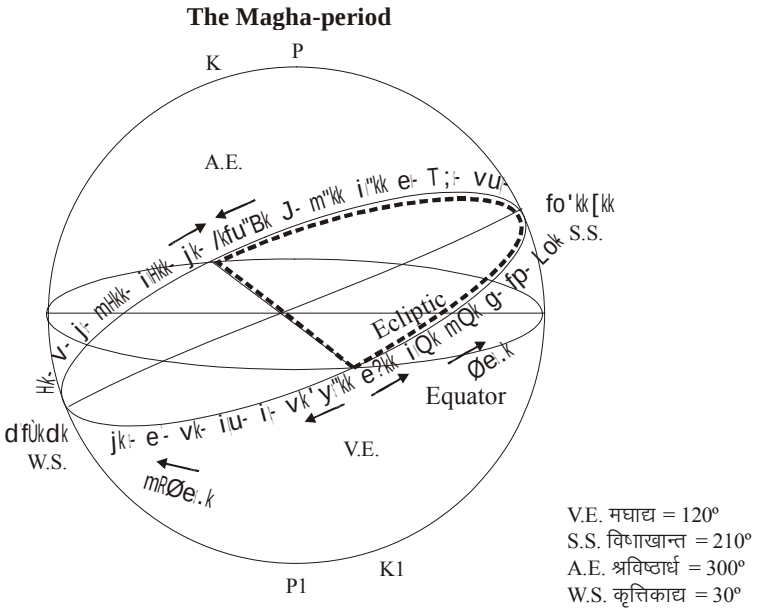


Fig. 8

With the above figure, the meaning of this anuvak of Maitrayani upanisad becomes clear. There are two halves of the year, one is fiery (आग्नेय) another is cool (वारूणम्). The fiery one is from Magha to half of Dhanistha – obviously when there is heat in the northern hemisphere i.e. the portion enclosed by dots in the figure. The cool half is the when the sun is in the southern hemisphere when the northern hemisphere is cold. In the figure, the lower half is the cool-one. From Aslesha to half of Dhanistha in reverse order (shown by arrows as continuous line) (वारूणम् or सौम्यम् = सोमस्य अयं सौम्यम्) Obviously this description does not fit well with the present meaning of Uttarayana and Daksinayana (vertical halves) because in that case neither half will be fully fiery or cool as both will have cold season for half period and hot season for another half. This confirms my interpretation given earlier that during Vedic

times Udagayana or Uttarayana meant sun's north-hemisphere course above the celestial equator and Daksinayana meant its journey below the celestial equator in the southern hemisphere. Hence only the Uttarayana was called the day of the Gods (Sun V.E. to AE) and Daksinayana as the day of Asuras or Pitrs (Sun A.E. to V.E.) in Geeta, Smrtis and religious treatises which tripped even scholars like Varaha Mihira. So, Magha in this reference is neither at winter solstice as some scholars put it nor at summer solstice as some people think comparing with Vedanga Jyotisa, it is clealy and unmistakably at the Vernal equinox. Also, for the first time here, there is reference to divisional naksatras.

Computation of Time 120°/0-0-49″ = 8816-285

= 8531 B.C. or 8500 B.C.

There is another supporting statement for this reference of Maitrayani upanisad and it is in Taittiriya Brahmana which corroborates the above conclusion without any doubt :

देवग्रहा वै नक्षमाणि। .... कृतिकाः प्रथमम्। विषाखे उत्तमम्। तानि देव नक्षत्राणि। अनुराधाः प्रथमम्। अपभरणी रुत्तमम्। तानि यम नक्षत्राणि। यानि देव नक्षत्राणि तानि दक्षिणेन परियन्ति। यानि यम नक्षत्राणि तान्युत्तरेण।

'Krttikas first; Visakhas ultimate; they are the stars of the Gods. Anuradha first, Apabharani ultimate; they are the stars of Yama (the God of manes). Those which are stars of Gods travel from south (दक्षिणेन) and those of Yama from north' (उतरेण). For the meaning of the words ′दक्षिणेन′ and ′उतरेण′ here, the commentary of Bhatta Bhaskar Misra helps :

'देव नक्षत्राणि देवलोकं दक्षिणेन परियन्ति
यम नक्षत्राणि तु यमलोक मुत्तरतः परियन्ति

परिपाट्या क्रमेणावतिष्ठन्ते गत्यभावात्।'

'The stars of Gods approach Devaloka from south whereas the stars of Yama approach Yamaloka from north; Pariyanti means stay in order (in the course of the sun) as they have no motion'.

Thus the words दक्षिणेन or उतरेण here do not mean 'towards' south or north but 'from' south and north.

We know that Devaloka is northern hemisphere and yamaloka is southern hemisphere. Therefore the anuvak (statement) means that Krttikas move (Pl. see above fig.) from south (the point of winter solstice) to north (upto the point of S.S.) and Anuradha etc. move from north (the point of S.S.) to (upto the point of W.S.). This indicates a position when krttikas were on winter solstice or when end of Aslesa or beginning of Magha was on Vernal equinox (same position as in Fig.). The little difference is that in the above fig. Krttikas are at the end of first part (26°-40′ + 3°-20′). Here they purport to be in the beginning i.e. 26°-40′. Both the earlier quoted Magha-reference and now quoted krttika reference indicate the existence of divisional Naksatras in that period.

S.B. Dixit gives this meaning to this anuvak (that krttikas were on W.S.) and says that no other meaning of it is possible :

'The Godly stars cannot be taken as south of the ecliptic or the remaining towards north because Krttikas themselves are towards north of ecliptic. Three of Godly stars are in south and the remaining two are again in the north. The same argument applies with reference to celestial equator also because the northern latitude of Swati, Sravana, Dhanistha and Uttarabhadra being more than 24° north they can never come south of equator… from the earth with reference to an observer, no such situation can ever obtain when 13 stars are towards his one

side and the remaining 13 on the other. Therefore, the meaning of this anuvak is they are in the path of sun as it travels from south to north and vice versa. This means the Uttarayana (in the present sense) or winter solstice was in the beginning of Krttikas. He calculated this period as 8750 B.C. We can also verify it :

If W.S. is the beginning of Krttika i.e. 26°-40′

The V.E. would be (26°-40′) + 90° = 116°-40′

@ 48″ per year this amounts to

$$\frac{116° - 40'}{0 - 0 - 48''} = 8750 \text{B.C.}$$

But to be precise, the average is to be taken as 49″ and not 48″ and zero Ayanamsa year being 285 AD, this is to be deducted from the result. So that a more precise value would be

$$\frac{116° - 40'}{0 - 0 - 49''} = 8571 - 285 = 8286 \text{ or } 8300 \text{B.C.}$$

Magha period is 8500 B.C. thus this anuvak confirms this same period.[78]

Lane-III : Linguistic Paleontology, Mythology etc.

The legend of the flood or the Pralaya as found in Shathapath Brahmana as also Mahabharata with slight variation is decidedly a very ancient legend and this legend has migrated to the Near East in Mesopotamia in particular. The analysis of Mr. N. Kazanas in this matter in his "Indo Aryan Origins and Other Vedic Issues" (2011) is very relevant to the issue as he hints at the dating of the flood also.

"The Vedic legend of the deluge is first related in SB I 8, 1, 1-10 (or *Kanva*-text II 7, 3, 1-8). A small fish sought Manu's protection, then warned him of the impending flood

augha and later actually pulled his boat to safety; afterwards Manu made a sacrificial oblation from which arose IIa and through her he engendered the new generation of men. The spot on the mountain where Manu got off is called "Manu's descent" *manor-avasarpanam*. The legend itself is not found in the RV but some related elements can be traced there. One *Atharvaveda* hymn mentions "the spot where the boat glided down, on the peak of the Himalayas" (AV XX 39, 8). In the RV several hymns call Manu "our father" (I 80, 16; II 33, 13; etc.) and regard him as the prototype of sacrificers : eg "like Manu we shall establish the sacrificial fire" I 44, 11; "as with priestly Manu's oblations" I 76, 5; also V 21, 1; etc. In X 63, 7 Manu with 7 priests is said to offer the very first oblation. All these elements, except IIa, are drawn together (even the horn of the fish) in the MB Bk III 185, 1-54: this is still a simple, brief narrative with the additional information that the fish-saviour was god Brahma, that it pulled the boat through the flood for many years, that Manu was saved together with the Seven Seers and that he carried on the boat "the seeds of all creatures" so that he could create the worlds anew. (The legend is found of course in the Puranas also, the fish being Visnu's first *avatara* 'incarnation in this world'.)

All this suggests a simple and very old legend which at some stage divided into two and appeared with small variations: one version with IIa in the SB, the other with the 7 Seers and the seeds in the MB. There may well have been floods of varied magnitude in India and other places with the melting of the ice after c 16000 which produced heavy rainfall, swollen rivers and rise of the sea-level. But it is most improbable that these floods, however severe, caused the total annihilation of mankind and other creatures as is said in the legend. Consequently we must take it that the legend comes from a much earlier era or at least refers to a much earlier cataclysm that indeed destroyed mankind completely and a new start had to be made.

When we turn to the Near East we find two very similar yet very different legends. One is the story of Noah in the Judaic *Old Testament* (*Genesis* 6-8). The other is that of Atrahasis in the Old Babylonian version of c1700 (MM 3ff) and that of Utnapishtim (or Uta-naish-tim = Atrahasis) in the epic *Gilgamesh* of about the same period (MM 109-114: Tablet XI, i-iv) : the two Mesopotamian stories are but for some minor variants quite similar. The Vedic and the NE legends differ in several respects. One important difference is that in the Vedic tale the deluge comes in the natural order of things as one big cycle of world-history ends and another begins, while in the NE ones the cataclysm is a means deliberately chosen by God(s) to punish bothersome/iniquitous mankind.[79] If we complete the period of Vivaswata Manu as per Human Yuga tradition, the results are as under -

14 pairs of yugas upto Saka 421

When Ayanamsa was zero

= 14 x 26400 = 369600

\+ 1935-421 = 1514

371114 years

Obviously, this legend must have travelled to Europe in quite ancient times with the spread of Indo-European language there. Thereafter from Europe or directly from India it might have reached Mesopotamia and Babylon.

Lane-IV : Literary History

This is the period of what is called Krta Yuga or Satya Yuga in the Yuga tradition. The Human Yuga tradition depends on revolution of equinoxes inasmuch as one complete revolution of equinox takes about 27000 years and during this period, one ascending series of four Yugas and one descending series of four Yugas consisting of 4800, 3600, 2400 and 1200 (12000 years) is completed.

In between the ascending and the descending series there is one recess (sandhya) equivalent to a Kaliyuga i.e. 1200 years. Thus, the total period of two series becomes 26400 years, almost equivalent to one revolution equinoxes. The ascending series of the Yugas starts when the vernal equinoxes are on first point of Asvini and the descending series starts when the vernal equinoxes are at the first point of Chitra (Spica). The current series started as a descending series and hence the starting point is when the vernal equinox was in Chitra. As has been shown in Lane III, vernal equinox was in Chitra in 12790 BC. There is yet another symptom of the start of the Krta Yuga mentioned in the Shastras -

;nk l;'p pUæ'p ;nk fr"; cgLifr%
,d jk'kkS le";fUr L;kRrnkfnÑr ;xeA

(Bhagavata Purana XII.1.24)

'When the Sun, the Moon and the Jupiter in Pusya Star, fall in line and rise simultaneously, then is the beginning of Krta Yuga.'

I have calculated this period also and in 12787 BC i.e. very close to 12790 when the vernal equinox was in Chitra, this configuration was there in the sky i.e. the Sun, Moon and the Jupiter, alltogether were in Tisya or the Pusya Star. Hence, we have taken the start of Krta Yuga in 12800 BC. This is the start of the present series of Yugas and we can presume the existence of the first kings of dynasties from this period. Thus, this period can be the beginning of King Iksvaku in the Iksvaku dynasty, King Pururava in the Paurava dynasty and similarly, Nahusa, Yayati, Yadu, Krostu in other dynasties. About 8000 BC is the close of Krta Yuga. In Iksvaku dynasty, King Sagara is at serial no. 48 of my list when the Krta yuga ends.

Leaving last 500 years, this period covers the entire Krta Yuga. When we compare the names of the kings

found in the Rgveda, we observe that none of them is beyond serial no. 40 i.e. much before king Sagara, who is at serial no. 48 of my list when the Krta Yuga ends.

The names of kings which find place in Rgveda are - Devashrava son of Bharata, Trishdasyu son of Purukutsa, Puramida son of Suhotra as also Ajamida, Ashvamedha son of Bharata, Pratiratha, Suhotra, Pratardana son of Divodasa, Yayati son of Nahusha, Nahusha son of Manu, Triyyaruna, Sindhudwipa son of Ambarisha, Nabhanedistha son of Manu, Pururava, Sudasa son of Pijavana, Mandhata son of Yuvnashva, Prathu son of Vena. Of these when we compare with the names which are available in the Puranas, we find that Yuvanashva is at serial no. 22, Trishdasyu is at serial no. 26 of Iksavaku dynasty and Purukutsa at serial no. 24. Purumeda and Ajamidha sons of Suhotra are at serial no. 32 and 33. Pratikshatra, Pratiratha and Suhotra are at serial no. 25, 26 and 27 of Paurava dynasty. Devodasa and Pratardan are at serial no. 20 and 21 of Kashi dynasty. Nahusha and Yayati are at serial no. 3 and 4 of Paurava dynasty. Triyyaruna is at serial no. 33 of Iksavaku dynasty while Nabhanedistha is at 2nd place only. Pururava himself is the 1st king of Puru dynasty. Pijuvana and Sudasa are not available in the Puranas but it is estimated that they should be contemporary to the sons of Pracheta of Druhyu dynasty with whom he fought in the Dasrajna battle. Pracheta is at serial no. 28 of Druhyu dynasty. Thus, all the kings mentioned in the Rgveda are under serial no. 48 and therefore they can all be placed in Krta Yuga or Satya Yuga. This also leads up to the conclusion that the early Rgvedic society and culture is set in Satya Yuga i.e. between 12800 BC to 800 BC.

Shrikant Talageri in his "The Aryan Invasion Theory : A Reappraisal" has given some more names from Rgveda. They are also under serial no. 40. Their names with their serial number in the brackets as given by Talageri himself

from the list of P.L. Bhargava are as under : Iksavaku (1), Vithatha (24), Janhu (28), Riksa (30), Tristu (33), Mudgal (35), Shrutarvan (36), Vadhryasva (36), Pijvana (38), Sudas (39), Sahdeva (40). He has mentioned Shantanu and Devapi also which is a mistake of interpretation. The word Shantanu and Devapi used in Rgveda (X/98) are not the kings who are immediate predecessors to Kaurava and Pandavas. Either they are allegorical expressions or they represent some divine elements or they are some other kings. Because between serial no. 40 and 98 at which king Shantanu finds place, there are no other kings in the Rgveda. Thus, this traditional history of Rgveda is squarely set in the Krta Yuga.

The society then must have been really ideal, living a righteous life as the ruling characteristic of Krta is Satva Guna (the temperament of knowledge and light). People must have been living a life in complete accordance with nature and consequently they must have been living a long disease less quite happy life.

Chapter-12 Period-III 8500 to 7500 B.C. : Pre Ceramic Neolithic Cultures : Middle Vedic Period

Lane-I : Archaeology

This is the period of the finds of Mehargarh, Kile Gul Mohammad etc. Recently, there have been excavations at Lohradewa Dist. Sant Kabir Nagar in U.P. and the findings of these excavations presented by five eminent archaeologists in the Journal of U.P. Archaeology Department indicates the availability of the cultivation of rice at a period 6-5th millennium B.C. The archaeologists observe - "the appearance of cultivated type of rice is the culmination of the effects of manipulations of wild rices by hunter-gatherers for thousands of years and the conscious human selection, prior to the emergence of early farming

communities. There is a strong possibility that people have been living in Ganga Plain since late Paleolithic and interacted with the communities living in Vindhyas, Himalayas and other areas."[80] This observation suggests that a rice cultivation is available in 6th millennium BC. The crude practices of agriculture must have started some 2000 years back i.e. in this middle Vedic period. We observe from Vedic studies that there is mention of Gangetic plain in Rgveda itself and other northern and eastern territories of India up to Magadha and Utkal in Yajurveda. Thus developed farming must have started in India in 6th-7th millennium B.C. itself.

Excavations at Nevali Cori and Gobekle tepe

About the excavations at both these places in Turkey, B.G. Siddharth vide an article "The Astronomy, Chronology and Geography of the Vedas" has observed "The excavations at Nevali Cori and Gobekle tepe (both within a few kilometers of each other) near Urfa (in Turkey) have turned the history books upside down. Here, most amazingly is revealed amongst many other sculpted artefacts, the head of a Vedic priest, complete with the shikha or pigtail. There are also several pillars and structures with all the astronomical motifs that could be found in the Rgveda and indicative of a high degree of artistry. ..... Another striking motif on the Gobekli tepe pillars is that of a bird with a circular disc - they represent Garuda the bird which carries Vishnu, the Sun and the Sun itself. So also images of the bird Garuda carrying a snake as described in the Puranas." Though, we do not agree with the dating of these excavations by B.G. Siddharth on the basis of Star, Aja Eka Padh rising in the east which he places at 10000 B.C. because the correct period of the rising of Aja Ek Pada in the east is 7200 B.C. We also do not agree with his other finding that Anatolia was the homeland of Rgvedic Aryans. The findings simply suggest

the presence of Indo-Aryans in Anatolia in 7-8th millennium B.C. which means they were there during their westward journey to Anatolia and Greece.

Lane- II : The Archaeo-Astronomy

Stage VII : The Pusya period : A very clear reference regarding Pusyas never deviating from the heaven, I could locate in the Rgveda itself in the fifth mandala :

;"eknÙkL; e#rks fopirlk
jk;% L;ke jF;k o;Lor%A
u ;k ;PNfr fr";k ;Fkk fnok
vLeq jkjir e#r% lgfL=.keAA13AA

[Rg. 5-54-13]

'You knowledgeable Maruts! (Gods of air) let us – the owners of chariots – be masters of riches in the form of grains given by you; you Maruts! Bestow us with a thousand riches that do not desert us just as Tisya (star) does not deviate from the heaven'.

Tisya in this hymn clearly means a star (nakstra) though Sayana takes it to mean the sun which is not at all convincing. According to Vedic index of Macdonnel and Keith (P. 312 Vol. I 1982 reprint) 'Tisya occurs twice in Rgveda (here V-54-13 and X-64-8) apparently as the name of a star, though Sayan takes it to mean sun'. Besides, the sun deviates in the heaven many ways from north to south. Therefore the intended metaphor is that of a non-deviating star Tisya (δ cancri). And as we see in the references of Manava sulba sutra and Baudhayana Srauts Sutra, that Tisya was once due east and did not deviate from the east just as krttikas did not deviate from the east during the times of Satapatha Brahmana or sulba-sutras. A star can be said not to deviate in the sky on two counts only – either it is at the position of pole-star or it is due east so that every night and with every samvatsara-satra before sun-rise, it is

seen there exactly at the same place i.e. the east. As the first probability is ruled out, Tisya being very close to the ecliptic (its latitude is only 0°-4′-38″) the second probability obtains which also gets support from the statements of sulba-sutras. Its period has already been worked out in connection with sulba-sutra statement as 7450 B.C.

There is yet another corroboratory statement for this phase of Vedic antiquity. It is in Taittiriya Brahmana :

*cgLifr% çFke tk;eku%
fr";u{k=efHkl EcHko*

Sayana's commentary on this portion of Anuvak reads as under :

*v;cgLifr% tk;eku ,o çFkeknk
fr";u{k= efHky{; çhfr;ä% lu cHkokRié%*

'This Brhaspati (Jupiter) even as it was born was drawn towards the Tisya star in love'. Two eminent scholars of Astronomy viz V.B. Kethar and Prof. S.D. Sharma have worked out the periods of exact occultation as 4650 and 4350 B.C. respectively. But both these scholars concentrated on the second part of the anuvak only – 'तिष्यं नक्षत्रमभिसम्बभूव' ('over – powered Tisya star') and have ignored the first part of it viz. 'बृहस्पतिः प्रथमं जायमानः' (when Jupiter was born first). A comprehensive, homogeneous interpretation has to be taken. It should also be born in mind that this is an observation made by ancient Risis by naked eyes and hence centre to centre or edge to edge occultation is not intended. What is intended is they were very close and as if Jupiter was in hot pursuit of, his beloved star – both clearly visible. In any centre to centre or edge to edge occultation, Tisya – a 4^{th} magnitude star would be lost in the brilliance of Jupiter and thus would not be seen. Therefore their closeness is enough to indicate the

metaphor. 'प्रथमं जायमानः' (being born first) means the planet Jupiter was seen for the first time at the beginning of the Samvatsara immediately before sun-rise on that date. This happens when a star is on Vernal equinox. Thus both Tisya and Jupiter were seen very close to each other at the time of Vernal equinox day which is the beginning of the Samvatsara. I have worked out in a research paper of mine that in 7450 when Tisya (δ cancri) was on Vernal equinox Jupiter's south latitude was just 11′-41″. This when added to the north latitude of Pusya, the total distance between them was only 16′-17″, almost equal to half the diameter of the disc of t he sun or moon. So they were very close and justified the simile 'तिष्यं नक्षत्रमभिसम्बभूव'. Ever since then Pusya or another name Tara became the wife of Jupiter and when with latitude of Jupiter increasing, the Moon intervened between them, another myth was created that the Moon has cohabited with his preceptor's wife (i.e. Tara or Pusya) and the proximity of a small planet like Mercury made it that a child was born to Moon and Pusya out of this illicit relationship. Thus the metaphor and the legend were complete. We see in the sulba-sutra statements that Tisya or Pusya were in the east in 7450 B.C. Thus the two statements confirm each other.

Another supporting mantra in this Taittriya Brahman itself is about the rising of Aja Eka Pada (Purvabhadra Star) in the sky which runs thus :

vt ,dikn~nxkRi~jLrkr~A
fo'ok Hkrkfu çfrekneku%A
rL; nok% çlo ;fUr lo~A
çk"Binklk verL; xkik%A ¼r-czk- 3-1-28½

'This Purvabhadra star is rising in the sky, pleasing people of the entire world. All Gods enjoy the light of it. This Prostaprada is the protector of virtuous actions.'

The time when this Purvabhadra will be rising in the east is 7200 B.C. or earlier 28130 B.C. For our purpose, the period closest to Pusya period is 7200 B.C. and thus this anuvak supports the earlier anuvak about the Jupiter and the Pusya. The calculation of time is like this -

Aja Ek Pad (Purva Bhadrapada)

α Pegasi (Markab)	
Nirayan Longitude (2010)	329^0-36'-50"
Ayanamsa	23^0-59'-49"
Sayan Longitude =	353^0-36'-39"
Latitude =	$+19^0$-24'-21"
Declination =	$+15^0$-15'-53"

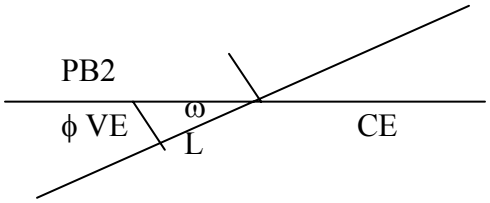
(a) The star will be on vernal equinox when its Sayan Longitude is zero. This will happen either when Ayanamsa increases by 6^0-23'-21" i.e. in the year 2010+457 = 2467 AD or when in the past its Sayan Longitude was 0 i.e. 353^0-36'-39"

0^0-0'-48"

= 26520 - 2010 = 24510 BC

(b) But to be on the east it has to go further south to set off the Latitude 19^0-24'-21" ($\varnothing$)

PB-1



Ecliptic

PB-1 the star on the V.E.

PB-2 the star is on C.E. i.e. due east

The equation

$$\frac{\text{ज्या } \phi}{\text{ज्या L}} = \tan \omega \qquad \omega = 24$$

$$\therefore \quad \frac{R \sin \phi}{R \sin L} = \tan \omega$$

$$\therefore \quad \frac{\sin (19^0\text{-}24'\text{-}21'')}{\tan 24^0} = \sin L$$

$$\therefore \quad \frac{0.332257}{0.445228} = .74626 \quad \therefore L = 48^0\text{-}16'$$

This equal 3620 @ 48" per year.

$\therefore$ The star will be in the east in 24510 + 3620 = 28130 BC

when the V.E. was in Aries

$(329^0\text{-}36'\text{-}50'') + (48^0\text{-}16') = 17^0\text{-}52'\text{-}50''$

(c) The star was in the east also in the year 2467-3546 = 1079 BC.

(d) With reference to Autumnal Equinox , the star would be at A.E. at Sayan Longitude 180^0 i.e. $(329^0\text{-}36'\text{-}50'') - 180 = 149^0\text{-}36'\text{-}50''$ reduction in nirayan Longitude or $173^0\text{-}36'\text{-}39''$ in Sayan.

= 12755 - 2010 = 10745 BC @ 49" / year

In east 10745 - 3546 = 7199 or 7200 BC

This result agrees with earlier anuvak of T.B. in this vary kanda (chapter) when Pusya was in V.E. बृहस्पतिः प्रथमं जायमानः तिष्यं नक्षत्रमभिसंबभूव (T.B. 3.1.5)

Here also V.E. is in Pusya and A.E. in Sravana.

Purva bhadra at A.E. Nir. Long. 329^0-37'

when it recedes to be on east (-) $\underline{48^0\text{-}16'}$

281^0-21'

means A.E. in Sravana

(-) $\underline{180^0\text{-}00'}$

101^0-21'

this means V.E. in Pusya.

Lane- III : Cosmogony, mythology and Philosophy of Indo-Europeans

Dayanath Tripathi a noted scholar of archaeology and Ancient History has done an excellent study of cosmogonic myths of Indo-Europeans. This period was the age when the cosmogonic myths of India took some concrete shape. These have been described in details by Mr. Tripathi comparing them with the cosmogonical myths of the other European countries. He observes - "Ancient Indian cosmogonies may be divided into three categories : those beginning with the material principles like water, earth, fire, ether, etc.; those beginning with the abstract principles like chaos, time, night, desire, non-being, etc.; and those beginning with the divine principles like Prajapati, Brahman, Visvakarman, etc. This holds good in the cosmogonical speculations of other countries also. Of these three categories, the first is probably the most primitive. It appears that the conception of a divine principle as the creator of the universe marks the latest stage in the development of cosmogonic ideas, though not in all cases.

It seems perfectly reasonable to the primitive peoples who saw land growing from the accumulations of river-borne silt and desert wastes rendered cultivable by irrigation, to conclude, for instance, that water was the primary element and the source of all that existed. In the famous creation hymn of the Rgveda (X.129) the question is raised whether the fathomless waters existed before the formation of the world and the answer is given in the affirmative. The conception of the cosmic ocean recurs in other mythologies as well, notably in some Greek cosmogonies and in the Egyptian and Babylonian legends of creation. Among the Greeks a number of cosmogonies were devised, the prime component of the universe being ocean according to Homer; water and earth, according to Athenagoras; and water, according to Thales. The ancient Egyptians believed that at the beginning of the world was a waste of water called Nu or Nun, and it was the abode of the great father."[81]

Mr. Tripathi has quoted Marija Gimbutas and Mallory profusely to explain his point. "Gimbutas has described in detail various conventionalized and abstract ideograms, recurring on figurines, stamp seals, dishes, cult vessels, and as part of the pictorial decoration of vases and house walls, which explain the cosmogony and cosmology of the people of that period as well the functions of the deities it sustained. She has divided the symbols into two basic categories: those related to water or rain, the snake and the bird; and those associated with the moon, the vegeta life-cycle, the rotation of seasons, the birth and growth essential to the perpetuation of life. The first category, according to her, consists of meanders, and spirals. The second group includes the cross, the encircled cross and more complex derivations of the basic motif, which symbolically connects the four corners of the world, the crescent, horn, caterpillar, egg and fish.

The cosmogonic myths of the Indo-European speaking peoples may be varied, but there are also a sufficient number of common elements to suggest the existence of an underlying Proto-Indo-European myth or myths whose general structure can be at least partially recovered. Mallory has divided creation myths of the Indo-Europeans into two broad types : a cosmogonic myth that explains the origin of both the physical and social worlds, and a 'foundation' myth that is more directly associated with the origins of mankind (anthropogonic) or the establishment of specific people.

The most important cosmogonic myth of the Indo-Europeans is centered on the dismemberment of a divine being - either anthropomorphic or bovine - and the creation of the universe out of its various elements. Such myths are there in the Old Norse, Old Irish, Old Russian, Celtic and Germanic sources, Greco-Roman traditions offer us Ovid's account of Atlas in the *Metamorphoses* (4.655-662), which relates how giant's beard and hair become forests, his bones become stone, his hand the ridges of mountains, etc. Some such myths are to be seen in the Middle Persian *Sken Gumanig Wizar* (16.8-20) of the ninth century AD. But the earliest comes from the *Purusasukta* of the Rgveda (X.90), which describes how Purusa, the (primeval)' man', was divided so that his eyes became the sun, his mouth the fire, his breath became the wind, his feet the earth, etc."[82]

Indian cosmogonic myths are particularly important for understanding myths of the Indo-European world, because they have a long tradition of many millennia (from Rgveda to Puranas) and are varied. Mythology is a unique subject. It fascinates and generates interest, which remain unabated even in the face of all sorts of progress in civilization. It goes on exerting unnoticed on the mind of man an influence, which leaves indelible marks on his life and thoughts. Mythology is in fact the most natural

language of religion and philosophy. In India, the Vedic myths and legends faithfully portray the stages of developments in religious conviction and philosophical speculations. They are the fountain-heads of an extraordinarily rich cultural tradition.

In this period the philosophical concepts of the Vedic rishis must have formulated into concrete conceptions. The very first curiosity of any civilized people is about the secrete of creation called *Sristi vidya*. Rgveda has a very rich conceptual framework for this *Sristi Vidya*. "The Vedic Srstvidya offers a very rich fare of cosmological thinking as compared to cosmogonical stories prevalent in other cultures. Needless to say that the process of the One becoming the Many is the process of creation. In this connection, certain questions need to be satisfactorily answered. For instance, What does the term 'creation' signify? What are the elements that go into the making of the cosmos? In speaking about cosmos, one must take into account the elements that do, in fact, or promise to, maintain order. One must therefore ask: What are these elements? Are they engendered in the process of creation itself that help maintain order at the macro-cosmic plane and keep alive the possibility of gaining or regaining order in the human world?

The source or the maker of this Universe is universally acclaimed to be an entity that is all-pervasive but avyaya (inexhaustible), anirukta (inexplicable or undeclared), aparimit (immesurable, aperon in Greek), etc. The process of creation begins when aperon, as Plato puts it, is boundred by peras (limits). The process of the One turning into the Many raises four inter-related questions. First, what is the nature of this Boundless? Second, what is the process through which the One turns into the Many? Third, does the One exhausts itself fully by turning into the Many? And, lastly, if the whole process of creation is

invisible even though occurring every moment before or beyond our eyes, what could be the most likely account of creation that can be rendered?

The Boundless, the avyaya, Idea (Eidos) (tatva) to use the Platonic term, assumes many names (nama) and forms (rupa) and becomes embodied idea (enhylon eidos). This can happen in two alternate ways. First, the Boundless is a creator who makes use of materials that are already available but only in an incompletely fashioned form for creating this universe himself standing outside it; he is a Demiurge or a deus ex machina. Alternatively, the creator is not outside this creation; the Boundless is the one substance which transforms himself into many modes of being. These many modes constituting the universe are considered to be either a parinama (transformation) or a vivarta (transfiguration) of the One. In either case, the universe is pervaded by the One."[83]

This later concept of the transformation and transfiguration of the creator later culminated into the advaita philosophy of *Upnishads* which was further crystallized by Adi Shankaracharya.

"In the Neolithic art the fish assumes the shape of an egg and is anthropomorphized. This is exemplified by the sculptures recently discovered a t Lepenski Vir near the Iron Gates in northern Yugoslavia. There, in the late seventh and early sixth millennium BC, fishing and hunting people had dug their houses into the bank of the Danube, houses which had trapezoidal floor plans provided with rectangular hearths sunk below the floor level, lines with stones, and outlined with thin slabs of stone set vertically in a pattern of continuous triangles."[84] This indicates a clear connection with the elaborate knowledge of geometry contained in the Taittiriya Samhita or Black Yajurveda. After the detailed studies of the cosmogonic myths and motifs of Indo-Europeans Mr. Tripathi concludes : "On the

basis of a detailed study of the representation of Primeval Water, Primordial Egg, Snake and Fish in the Proto-Indo-European and Indo-European art forms of circa 7000 BC to 4000 BC, Marija Gimbutas has rightly concluded that these representations are definitely associated with the cosmological myths of the Indo-European people. The parallels drawn from the Vedic literature and Avesta regarding the creation of the universe simply confirms the cosmogonic and cosmological associations of the above art motifs in the Indo-European contexts. A further study of the animals, plants and trees, both in the Indo-European art and Vedic literature, reconfirms the above parallelisms. It would, therefore, be not a mere fancy to conclude that the antiquity of the Vedas would go further in the past. Since no artistic representations similar to those found in the Old Europe of seventh and fifth millennium BC is available in India, the Vedic cosmogony and cosmology could not be archaeologically attested. But in the light of the proto-Indo-European and Indo-European art representations discussed above it would not be unfair to rethink about the antiquity and geographical expanse of the Vedic literature.[85]"

Philosophy of Rgvedic Times

This is the middle Rgvedic period. The society started grouping into vocational classifications and the intellectuals among them started inquiries about this universe, its cause and its end and also its relationship with the mankind. This appears to be the stage when the great philosophical questions about the creation were asked. N. Kazanas has summed up the philosophical mood of the Rgvedic society of this period. The 164th Sukta of Mandal 1 of Rgveda gives an idea about the curiosity of the first intellectuals of the world.

dk nn'k çFke tk;eku
eLFkkUoUr ;nuLFkk fcHkfr'A

HkE;k vlj l xkRek Do fLor
dk fo}k le i xkr ç"V e rr AA4AA

ikd% iPNkfe eu lkfo tkuu
nokuke uk fufgrk inkfuA
oRl c"d; f/k llr rUru
fo rfRuj do; vkrok mAA5AA

vfpfdRokfpfdr"kf'pn= dohu
iPNkfe foneu u fo}kuA
fo ;LrLrEHk "kfGek j tk
L; tL; :i fdefi fLonde AA6AA

;=k l i.kk ve rL; Hkkx
efue"k fonFkkfHkLojfUrA
buk fo'oL; HkouL; xkik% l
ek /kh% ikde=k foo'kAA21AA

b; ofn% ijk vUr% ifFk0;k
v; ;Kk HkouL; ukfHk%A
v;lkek o".kk v'oL; jrk
cãk; okp% ije 0;keAA35AA

(Rgveda, 1/166/4,5,6,21,35)

Who has seen the primeval (being) at the time of his being born : what is that endowed with substance which the unsubstantial sustains : from earth are the breath and blood, but where is the soul : who may repair to the sage to ask this ? (4)

Immature (in understanding), undiscerning in mind, I inquire of those things which are hidden (even) from the gods : (what are) the seven threads which the sages have spread to envelop the sun, in whom all abide ? (5)

Ignorant, I inquire of the sages who know (the truth); not as one knowing (do I inquire), for the sake of (gaining)

knowledge : what is that ONE alone, who has upheld these six spheres in the form of the unborn ? (6)

Where the smooth-gliding (rays), cognizant (of their duty), distil the perpetual portion of ambrosial (water); there has the lord and steadfast protector of all beings consigned me (though) immature (in wisdom). (21)

This altar is the uttermost end of the earth : this sacrifice is the navel of the world : this Soma juice is the fecundating power of the rain-shedding steed : this Brahma is the supreme heaven of (holy) speech. (35)

"In fact, philosophy in Ancient India does not start with the schools or systems such as Nyaya, Mimamsa, etc., with their epistemological, ontological and similar problems, nor with the Upanisads, but with the RV. Calling the hymn 'the most famous Rgvedic speculative symposium', W. Johnson examined at length the questions posed in the brahmodya hymn of RV I, 164 : 'who witnessed Agni, the first-born? (4a); 'Who created space and hence all phenomenal manifestation?' (6c); 'what really is the source of everything, that mysterious one?' (6d); and so on. He wrote, not without a note of condescension (a common feature in many other writings), 'Despite their archaic age, these questions should not be dismissed'. (Who dismisses them?) Then he added, 'As the first formulations of serious pre-philosophical inquiry, these questions present remarkably sophisticated concepts even while using images and mythological themes, as Plato did, for their articulation' (1980: 106-9). Such questions are not pre-philosophical formulations since they enquire after the first or highest causes; they present indeed remarkably sophisticated concepts. Stanza 21 ('the mighty herdsman of the whole universe, he the wise one has entered into me') and 35 ('this holy *brahma*-power is Vak's highest heaven') indicate that they are closely linked with Plato, one of the greatest philosophers of the West, Johnson did not examine

stanzas 21 and 35 and their implications. Before we do so, we should deal with some general concepts of the Rgvedic Cosmos.

The picture of the Cosmos that emerges in a general broad outline is a primary one of two levels, sky and earth (the dual deity *Dyavaprthivi*, often called *rodasi* and presented as two bowls dhisane 'full of intelligence (?)' I, 160, 1, or *camva* III, 55, 20); but also a cosmoner tripartite one of sky, midspace *antariksa*, and earth. The three are said to have three levels each, giving a total of nine.

..... The Cosmos is characterized and maintained by *rta* 'order, course-of-Nature'. This force is not defied but it is very powerful. Everything flows from the Seat of *rta* (I, 164, 47: *sadanad rtasya*) and the year is its wheel with 12 spokes (st 11). Generated out of *tapas* (X, 190) it may never be infringed. Usas never deviates from *rta* (I, 123,9); Varuna and Mitra have their great powers through *rta*, which they uphold and promote (I, 2, 8; V, 63, 7); Agni is repeatedly called *rtavan* 'observer of, true to, *rta'*; and so on: in fact, all 'the gods have ever followed the laws, *vratah* of *rta* (I, 65, 2). The term has religious significance as the order-of-sacrifice 'rite, ritual' (II, 24, 8; X, 16, 4) and also a moral connotation 'right, truth, reality' and *anrta* the opposite; the latter acquires prominence in later texts.

... The gods in the RV are supposed to be 33 (I, 34¸11), though, certainly, several more appear. There are 8 Vasus, 11 Rudras and 12 Adityas but the first two differ in number in the lists of (later) texts; there are also the Vasus associated with Indra (and later Agni). Although the gods abide in heaven (as do the Fathers *pitr*, the 7 *rsis* and heroes, in stellar form, in X, 68, 11, in 107, 2 and 154, 2), they are connected in three groups of 11, with the three regions of earth, midspace and heaven.

... Apart from the Sungod *Surya/Savitr*, celestial gods are Varuna, Mitra and Aryaman (all three of the moral order, law, regulation, harmony), Dyaus 'Skygod' (but only a name, really), Bhaga 'the bountiful provider' (again, only a name), Visnu 'the active/expansive one' of the three strides, whose abode is highest heaven (VIII, 52, 2; X, 1, 3); here too are Pusan and Vivasvan (aspects of the Sun), Usas the dawn goddess (to whom are addressed some of the loveliest hymn: I 48; 92; IV, 52; etc) and the Asvins 'twin horse-deities' who succour and cure; also the Moon, Candramas or Soma, connected with the mind (X, 90, 13).

.....However the Rgvedic gods differed in some very important respects. First, it is very obvious that there was no king of gods the way Anu initially and later Marduk was in the Mesopotamian pantheon, or Zeus on Olympus. In the Vedic pantheon the gods have extraordinary fludity. Thus, to take the example of Agni, this god, without losing his character or chief function of 'blazing', is said to be or have the attributes of Wargod Indra and of the Law-and-Order Varuna; he knows the doings of men and gods (VII, 46, 2) and, like the Asvins, has healing remedies (II, 33, 7). This is due to the fact - and this is another and the most important difference - that all these deities are appearances/expressions of That One (*tadekam*: X, 129), an otherwise unnamed Being (which I shall call Godhead), the source of all divine and mundane manifestations: as VIII 58, 2 says *ekam va idam vi babhuva sarvam* 'It being One has variously become this All [and Everything]'. This aspect we shall examine below together with the third, equally important difference that these divinities are also functions within man's total organism, i.e. mind and body, constituting and underlying doctrine of unity of Being that fused together cosmic and human powers."[86] This indicates that the Vedic mythology, cosmogony and philosophy contains the seeds of all the mythologies, cosmologies and philosophies of the world developed at later stages.

Lane-IV : Literary History

This was a period when the Krta Yuga was coming to a close. The pious, straight-forward and righteous man functioning perfectly within the obits of *rta* (dharma or righteousness) which was the hallmark of the entire Krta Yuga and because of which there was neither violence nor aggressiveness nor infringement upon the rights or property of others and hence there were no quarrels. This state of society has been very aptly described in Mahabharata in the Shanti Parva.

> u o jkT; u jktk·· lhUu p n.Mks u nkf.Md%A
> /ke.kso itk% lok j{kfUr Le ijLije AA
> ¼egkHkkjr] 'kkfrio] 59@14½

> '*There was neither the state nor a king; neither there was punishment or an authority imparting such punishment. The whole society was protecting each other on the basis of dharma i.e. righteousness*.'

Like when the stars and the planets move in the respective orbits, there is no collision among them, similarly when people act according to their rights and duties perfectly under their orbit of dharma, there is no quarrel or animosity among them.

But with the laps of time this situation of extreme piousness started changing and the transition from the piousness to crookedness, from straightforwardness to deceit from satisfaction from ones own possession to the greed was being witnessed, necessitating the need of a ruler. This mental metamorphosis resulting in the changed behaviour of the human beings has also been aptly described in this Shanti Parva of Mahabharata.

Constantly functioning under the rigors of *rta* people started feeling uneasy and as is the nature of human beings

they wanted to have more than the others which caused a veil of ignorance in their minds. Due to this ignorance they started the feeling of greed as also the covetousness. Due to these vices they did not no what is worthy of their action and what is not. With the result, the violence and the offences started.

rkLr dkeo'k çkIrku jkxk uke leLi'krA
jDrk'p ukH;tkuUr dk;kdk; ;f/kf"BjAA
¼egkHkkjr] 'kkfrio] 59@19½

Thus possessed of covetousness, the greed came in them and because of this greed they did not know what is worthy of doing and what is not.

The first result of this brewing uneasiness and growing adharma was the battle between the progeny of Druhyu, Angarsetu and Mandhata, the Iksavaku king - a battle which lasted for fourteen months and thus must have devastated many people. Harivansha Purana gives a glimpse of it :

æák'p ru;k jktu cHkq% lr'p ikfFkZo%A
vxkjlrLrRi=k e#rk ifr#P;rAA 86AA
;kouk'ou lej ÑPN.k fugrk cyhA
;) legnL;k lhUek lkUifj prn'kAA87AA
vxkjL; r nk;knk xkU/kkjk uke HkkjrA
[;k;r rL; ukEuk oxkU/kkjfo"k;k egkuAA88AA[87]

O King! the son of Druhyu was Babhru and his son was Setu. The son of Setu was Angarsetu. He is called Marutpati also. This Angarsetu was killed in a fierce fight with Mandhata, the son of Yuvnasva of Iksavaku dynasty. This battle lasted for fourteen months and king Angarsetu fell along with his army. His son Gandhar ran away to the

northern territories where he established a country by his own name i.e. Gandhar (modern Afghanistan).

This is the first movement from the main land Sapta Sindhu to outer territories.

Because of the feeling of possessiveness among the people of the society of this time, ethnic groups were formed and according to their capacity and power, they occupied various areas of Sapta Sindhu. Shivaji Singh has recognized these various ethnic groups of Rgvedic times very aptly "The 'Five Peoples' called Pancha-janah (RV, 1.89.10; 3.37.9; 59.8' etc.) are the most frequently mentioned group of ethnic units in the Rgveda. They are designated also as Pancha-jata (RV, 6.61.12), Pancha-manushah (RV, 8.9.2), Pancha-charshanyah (RV, 5.86.2; 7.15.2; 9.101.9), Pancha-krishtayah (RV, 2.2.10; 3.53.16; 4.38.10; etc.) and Pancha-kshitayah (RV, 1.7.9; 176.3; 5.35.2; etc). Some of these nomenclatures seem to refer to the developing stages of their social formation. Thus, while Charshanyah, from root char (to move), may point to their predominantly nomadic pastroal condition, krishtayah, from root krish (to cultivate), may indicate their settled agricultural situation. Similarly, kshitayah, from root kshi (to possess, to have power over), may express their still more developed status when these peoples had acquired territorial consciousness about the areas they occupied (Nandi 1986-87 : 156-57). The names of the ethnic units constituting this group of five peoples is not explictly stated in the Rgveda resulting in certain wild speculations by some ancient and medieval authorities (Cf. Aitareya Brahmana, 3.31; Yaska, Nirukta, 3.8; Sayana on RV, 1.7.9; etc.). However, on circumstantial evidence, modern scholars in general agree that the Anus, Druhyus, Purus, Yadus and Turvasas are the Rgvedic 'Five Peoples'. They are clearly mentioned together in one verse (RV, 1.108.8) and, substituing Yakshu for Yadu, in another hymn too

(RV, 7.18). It is also clear that initially all these five peoples lived on the banks of the Saraswati (RV, 6.61.12) though later on in the Rgvedic period itself several of them moved to other areas.

The Bharatas have received maximum notice in the Rgveda though they are not included in the group of the 'Five Peoples' mentioned above. Though pitted against these 'Five Peoples', they were themselves a branch of the most important among them, the Purus. Their relationship with the Tritsus is not very certain. However, the data at hand suggests that the Tritsus were the royal family of the Bharatas. The Kusikas constituted another family of the Bharatas to which belonged Visvamitra, the former priest of the Bharata chief Sudas later replaced by Vasistha. The Bharatas are depicted as performing sacrifices on the banks of Saraswati, Apaya and Drishadvati (RV, 3.23.4) showing that they were living in the region between the rivers Saraswati and Yamuna, that is, in the Kurukshetra area."[88]

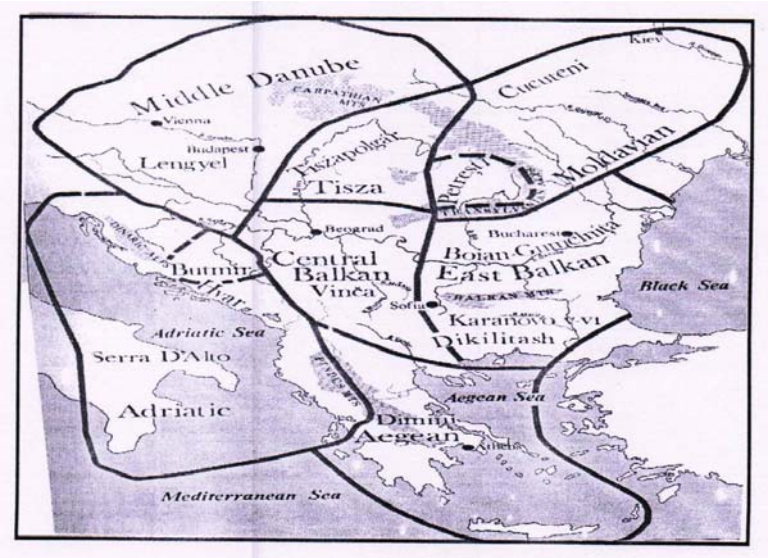
Chapter-13 Period-IV 7500 to 5000 B.C. : Late Rgvedic Period, Yajurveda, Ramayana and Atharvaveda Period

Lane-I : Archaeology : Ceramic Neolithic Cultures

As far as archaeology of this period is concerned, S.P. Gupta observes that the Indus Saraswati civilization was preceded by a series of cultures from almost about 8000 BC. Broadly, these cultures are Pre-ceramic Neolithic cultures (8000-6000 BC) and Ceramic Neolithic cultures (6000-5000 BC)[89], where the settlements were found (site : Mehargarh) nuclear agricultural villages as well as extended villages with intensive agricultural pursuits, and long distance exchanges of commodities. According to S.P. Gupta, the earliest period of Mehargarh find[90] dates back to 8215-7215 BC.

Vedic Texts and Proto-Indo-European Archaeology

D.N. Tripathi observes that "more than 30,000 miniature sculptures of clay, marble, bone, copper and gold from some 3000 sites of the Neolithic and Chalcolithic era in South Eastern Europe along with enormous models of temples and actual temples have been reported in recent years. Marija Gimbutas of California has identified various cosmogonical and cosmological images of moon, bull, snake, fish and primordial Egg in them.



Map-7 : Chalcolithic Europe in the fifth millennium BC

These archaeological images are well dated on the basis of the radio-carbon analysis and their calibration with dendrochronology in circa 6500 to 3500 BC. The cosmogonical and cosmological images could be better explained and appreciated on the basis of the study of Vedic literature and Puranas which have a long tradition. Much has been written on the date of various works of the Vedic literature. While some scholars have attached a label

of high antiquity to them, others have placed them not much farther from the historical period of written records. H. Jacobi and Shankar Balakrishna Dixit have fixed the date of the 'Satapatha Brahmana in 3000 BC on the basis of the astrological calculation of a verse in it. Winternitz too agreed with them when he placed the beginning of the Brahman tradition in 2000 or 3000 BC. On the basis of the date of the Brahmanas, the date of Samhitas may be placed in the tenth to sixth millennium BC.

I would like to draw the attention of scholars to the fact that the well-dated proto-Indo-European images of southeast Europe are really the material manifestations of the Vedic mythological concepts and legendary ideographs. None will doubt the fact that the Vedic literature is the first written record of the human race consisting the best thinking regarding the origin of universe, religion and philosophy carrying traditions of thousands of years.

The exact parallels of the Vedic legendary concepts are found in these archaeological records and, as such, it would not be incorrect to place the beginnings of the Vedic tradition in the sixth millennium BC rather than in the third millennium BC. The following parallels drawn from the Proto-Indo-Europeans art motifs, the Vedic ideograms and mythological concepts will certainly justify such an assumption.

Stories regarding the creation of the universe found in the Indo-European and non-Indo-European mythologies represent stages of a long process of development. Because of their primeval character they are considered to be very old. Ethnological parallels from the fishing and hunting societies indirectly prove the Paleolithic origin of the cosmological ideas centering around water, water-bird, egg. etc. During the Neolithic and the following Chalcolithic periods, stories of creation became quite complex as are seen in the vase paintings and frescoes of these periods.

In one of the abstract vase-paintings of Cucuteni the idea of the formation of the world and the beginning of life from egg, in the midst of which a germ resided, is quite clear. In the painting, a plant within an egg is painted over the vase. The egg is enveloped in water shown by encircled lines. The snake winds across or around the cosmic egg. The idea of a primordial egg or vulva is likewise expressed in sculptures. The Lepenski Vir (Northern Yugoslavia) stone sculpture is in the shape of an egg with a engraved vulva design dating around 6000 BC.

In the Vedic cosmogony the creation of the universe is said to have taken place from the Hiranyagarbha or the 'Golden Egg'. Mahidhara explains the concept of Hiranyagarbha as Prajapati existing in the embryo of Brahma in the form of an egg, which was golden in colour from which a male (Praja) sprang into being before all living creatures came into existence.

'Prajapati' is 'Hiranyagarbha', says the 'Satapatha Brahmana' and we have seen in the legend already discussed that the mundane egg forms an important stage in the cosmogony of the Brahmanas Hiranya, i.e., the pulsating life of the impregnated egg is called the seed of Agni who meditated upon water and, united with them, cast seed into them. Satapatha Brahmana says that Prajapati completed the span of one year in this form and then stood up and broke open the golden egg. This narration is enough to prove that the Proto-Indo-European images and Vedic ideograms are quite compatible with each other in form, concept as well as the date."[91]

Lane-II : Archaeo-astronomy :

Stage-VIII : The Orion and Aditi periods of Tilak

For Mrgsira to be on the vernal equinox, we need not go to the argument provided by Tilak in his 'Orion' based on a reference from Taittiriya Samhita, because the

reference is ambiguous, and it admits of another equally powerful meaning. In Paraskar Grahyasutra, there is a direct evidence to the effect, viz. - मार्गशीर्ष्याः पौर्णमास्यामाग्रहायणीकर्म [The annual ritual should be performed on the full-moon day of Margasirsa]. Besides, the word 'Agrahayani' has been used variously and at many stages to denote the constellation of Mrgasira, which harbingers the new year (hayana). Etymologically, it means अग्रे हायनम् यस्य [The one ahead of which there is the (new) year.] If we take Orion as the junction star, this takes our antiquity to 4027 BC. Similarly, for Punarvasu or Aditi period, there is enough evidence in Taittiriya Samhita.

eR;çk;.kk ,o ok% ;Kk enqn;uk vlfUufr
rLekknkfnR;% çk;.kh;k ;KkukekfnR; mn;uh;%

[Your sacrifice (Yajnas) must start with me and end with me. Hence, the Aditya star, i.e., Punarvasu is the beginner of sacrifice and it is the one with which they end.]

Besides, the other argument of Tilak on this point is very sound inasmuch as the existence of the Abhijit day is four days before Visuvan. According to Aitareya Brahmana, the fourth day before the Visuvan was called the Abhijit day. The classical longitude of Abhijit as per Surya Siddhanta is 264^0 - 10'. On the fourth day, the longitude of the Sun would be 268^0 - 10' + 180^0 = 88^0 - 10'. The modern longitude of Punarvasu or Pollux is 89^0 - 21' - 31' which is quite close to 88^0 - 10'. It relates to a period around 6200 BC.[92]

Lane-III : Linguistic Paleontology, Mythology : Parallels and Cross Influences

Nicholas Kazanas has examined in great details the parallels and cross influences between the religious rituals and the motifs of Sapta Sindhu, Mesopotamia and Egypt.

His findings are of great importance not only regarding the cross influences of the three cultures but also regarding the dating of these motifs and rituals. I hereby produce some of his findings in this matter :

"Here I examine systematically affinities first between the Vedic and Mesopotamian cultures and possible cross-influences and then between Vedic and Egyptian. There are many similar elements, themes and motifs in the religious texts of all three. 'Some are found in other cultures the world over : e.g. the worhsip of Sun, Moon, Wind, Fire, etc.; search for immortality, god'hero kills dragon/monster/ serpent; tree of life; and so on. Such universal motifs will be ignored. But if the Sungod travels in a boat, as happens in the three cultures of our concern, rather than on a horse-drawn carriage, as we find in Greece and elsewhere, then the motif deserves comment. Other common themes in the three cultures are the separation of heaven and earth by a god of wind (and light); the cosmic cow of plenty; the virile bull; the divine bird which is a messenger of, or symbolizes, a deity. Then, some elements are common to Sapta Sindhu and Mesopotamia but exclusive of Egypt: the horse-sacrifice, creation through the dismemberment of a divine being, the flood, the turtle/tortoise, etc. Other elements are common to Sapta Sindhu and Egypt but exclusive of Mesopotamia; semen-spilling; the Creator's eye running away, the cosmic egg; the lotus-born one; a group of 8 deities, etc. Surprisingly, the Mesopotamian-Egyptian affinities exclusive of Sapta Sindhu are few and rather secondary: man's creation out of clay by potter-God Khnum in Egypt and by goddess Belet-ili in Atrahasis; the Scorpion king in Egypt and the scorpion people in Gilgamesh. The Egyptian-Mesopotamian affinities will not be examined except incidentally.

Until now it has been generally assumed (e.g. Dalley 1998; Bottero et al. 2000; McEvilley 2002) that the Vedic

Tradition is the borrower in all cases (brick-building, certain rituals, astronomy and mathematics, writing, mythological motifs, etc.) The assumption has been based on the widespread belief that the Fertile Crescent in the Near East is the cradle of all civilization and, with regard to India, on the AIT, which should have been dismissed as soon as the ISC came into the light of day in the 1920s. I shall show that, apart from the anteriority of the Vedic texts (the bulk of the RV being dated at c 3200 and before), which may be doubted, the internal evidence "in the documents and other types of evidence indicate that India is not the borrower; if anything, Mesopotamia and Egypt probably borrow from Sapta Sindhu. I do not hide the fact that I am in a way prejudiced. I am now convinced, as I have argued elsewhere (Kazanas 1999, 2002a, 2003b etc.) that the Indo-Aryans are fully indigenous having come to Sapta Sindhu at the very latest in the early 5th millennium and that much of the RV was composed before 3100.

A seal impression shows a 'Gilgamesh figure holding two lions" (and p. 274: 'The Nude Hero... like the Gilgamesh icon grasping lions in a conquered position") but while he gives the well-known Mohenjodaro seal of the Nude figure holding off two tigers, this being similar to the Mesopotamian "Gilgamesh figure", he does not give the rockpainting of the Nude hero from india c 4000 or before (kak 2001b), which shows that the Mohenjodaro seal belongs to the Indic native tradition.

One yardstick in the comparisons that folow is the IE nature of some of the motifs examined. If a motif in the Veda is also Indo-European. i.e, it is found in the ancient culture of Greek, Slavonic, Baltic, Germanic or Celtic peoples, then we must take it that it is inherited in (or native to) India and not borrowed from the Near East. In the absence of the definite IE character of a motif, a second criterion will be the inner constitution of the motif: if this

comprises native traditional elements and has no exclusively NE elements, then it must be native to India and not borrowed. The IE criterion is fairly sound and secure. It is certain that there were no contacts between India and Greece, Gaul and Germania before the 6th century. McEvilley (following others) claims that there were channels of transmission from India to Greece through the Persian court in the 6th century. This is highly imporobable because the philosophical or mythological ideas that are supposed to have travelled via this route (monism, reincarnation, the 5 elements, the Orpheus figure, etc.) are not found in Persian or other, NE texts. This issue is examined in detail in Kazanas 2003c. Therefore if a legend or a mythological motif is found in the Veda and in any of the IE traditions in the West (Greek, Celtic, Germanic, etc.) then this item is PIE and belongs to the early 6th millennium at the very latest; and I take this period as the lower limit because it is the latest date by which the Aryans might have entered Sapta Sindhu, if that. All such themes and motifs in the Veda are inherited, not created and developed under foreign influences. In all such cases, if we insist on postulating influences, the influence would run from Sapta Sindhu westward to the NE.

However, although a ritual like the horse-sacrifice is, I shall demonstrate, a loan by Mesopotamia from Sapta Sindhu, I do not disregard the very real possibility that there was c 6000 or much earlier, a culture with many common features among the peoples of the eastern European plains the Balkans, the Pontic steppes, Anatolia, the Near East, Iran and Sapta Sindhu. I have elsewhere (Kazanas 2003b) accepted the possibility that the IE homeland was a continuum spreading from Sapta Sindhu to the Pontic steppes. Even if we assume that in the beginning of the 6th millennium or earlier; the IE and NE cultures were substantially different in language, religion and social customs, it is not impossible that they shared some motifs

and themes, inherited from an earlier culture we can no longer reconstruct fully but can detect in elements found here and there in different later cultures."[93]

Linguistics Paleontology and Glottochronology

(a) Most Archaic Structure of Vedic Sanskrit

In this connection, I would like to begin with the observation of Dr. Govind Chandra Pande[94] in his recent work 'Vedic Sanskriti' :

In fact, the vary identity of the Aryas is their language. Without language by merely physical culture they can not be identified, otherwise their indicators are found from Neolithic period to the iron age. The original Aryan race their original home land, the original Aryan culture and pre history of Aryas can be discovered with the help of linguistic evidence only. Without linguistic evidence, this discovery is like horns on the head of a hare (which means it is impossible because a hare has no horns).

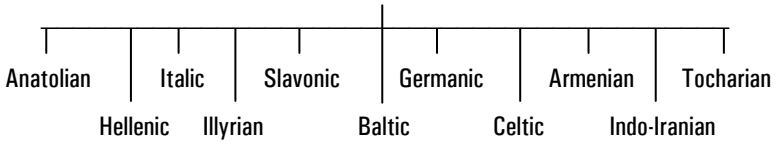
Based on certain morphological and phonological similarities between various Indo-European languages, it has been conceived that there must have been an original language from which all these languages such as Sanskrit, Greek, Latin, Avestan, etc. and their modern derivatives have emerged. Their original vowel and consonant sounds have been worked out and an Indo-European comparative grammar has been attempted.

A comparison of the verb 'to bear' or 'to carry' in five different Indo-European languages would indicate that they are kins not only in terms of phonetics but also morphology.

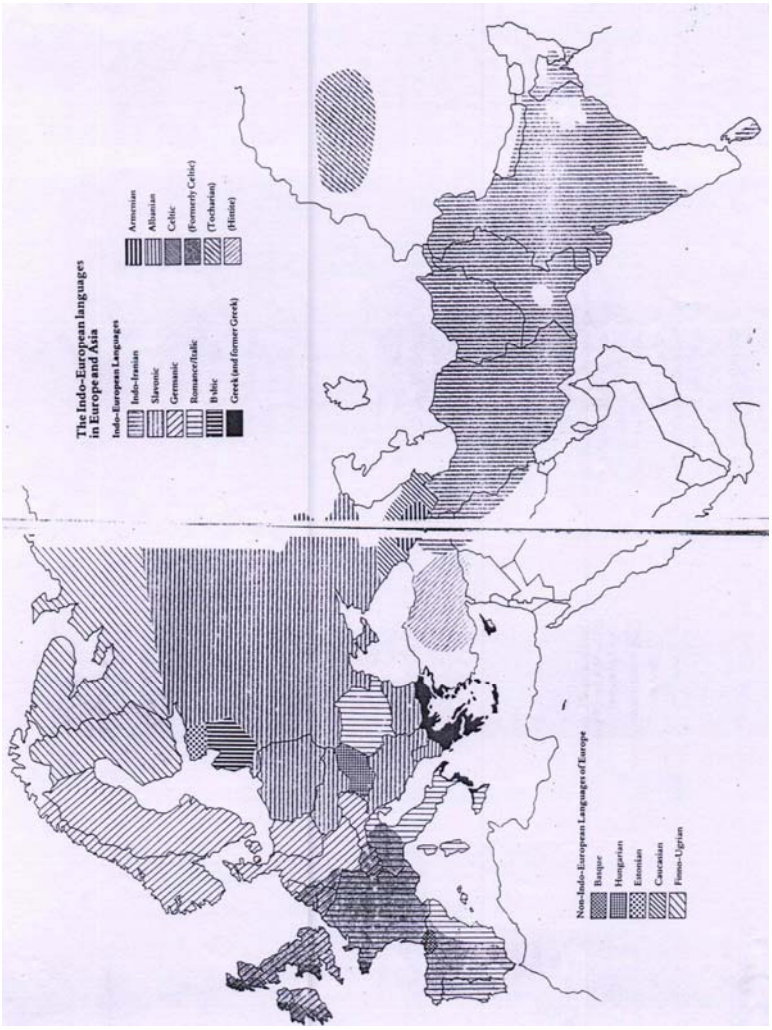
English	Sanskrit	Greek (Doric)	Latin	Old High German	Old Slavonic
I bear	bharami	phero	fero	biru	bera
(thou bearest)	bharasi	phereis	fers	biris	berasi
he bears	bharati	pherei	fert	birit	beretu
we bear	bharamas	pheromes	ferimus	berames	beremu
you bear	bharata	pherete	fertis	beret	berete
they bear	bharanti	pheronti	ferunt	berant	beratu

Thus not only there are striking resemblances between words for six basic relations of a family i.e. father, mother, brother, sister, daughter and son or the numerals or the names of the trees and animals but in verb forms also there are striking similarities and the above examples indicate the three persons - first person, second person and third person, the singular and plural numbers of the verbs in all these five languages. They seem to be following the phonetic rules of Panini because in third person plural number, the '*anti*' sound is there in Greek, Latin and Old High German. Only in old Slavic this sound is not there as of course in Sanskrit also, there are some plural verb forms without *anti* sound. Observing such similarities, the English Judge Sir William Jones in 1786 gave his famous utterance which was the foundation stone of modern linguistics. In 1813, the English scholar Thomas Young coined the term Indo-European for this widely spread group of related languages and Indo Germanic is occasionally used in the same sense. As per Collin Renfrew following are the languages of Indo-European family :

Indo-European language family



The attached map shows their spread in the world



Map-8 : The Indo-Eruopean languages in Eruope and Asia

The branching of these languages at various stages of history is shown in the following diagram.

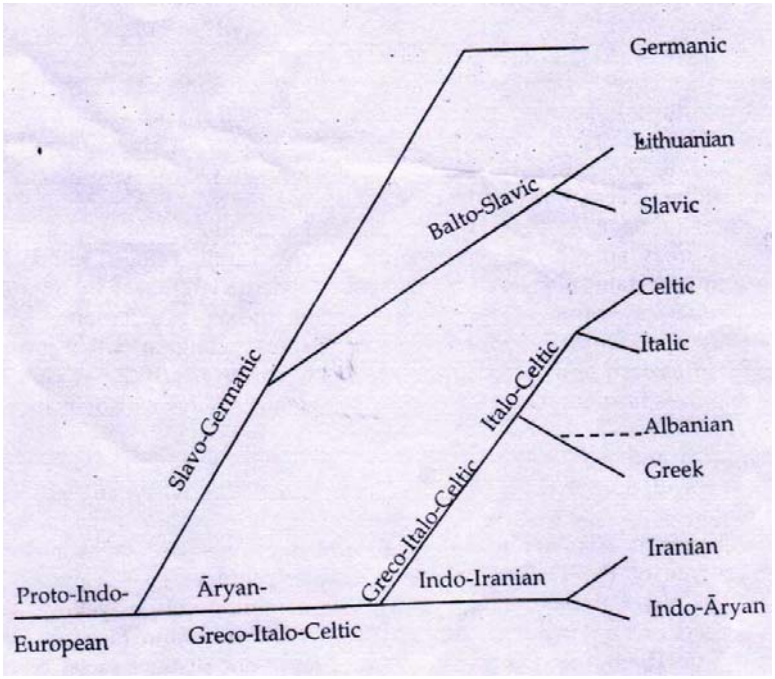


Fig. 9 : Schleicher's family tree of Indo-European languages

Collin Renfrew observes - "This table indicates the remarkably close forms in the conjugation of the verb, as well as in the word form itself. It also reflects one of the fundamental principles of linguistics, that of sound shift, where the consonants (and vowels) of one language differ in a consistent way from those of another. Thus the *f* sound in many Latin words corresponds to the *b* in Germanic languages - for instance in the Latin frater and the English brother."[95] (Sanskrit *bhratr*)

But, students of linguistics know that the basis of Indo-European Grammar is Sanskrit only, as also for the original sounds. As S.S. Misra says :

"Frankly speaking, Indo-European Comparative Grammar is nothing but a slightly remodeled Sanskrit Grammar. In morphology it depends on Sanskrit Grammar hundred percent and in phonology it depends on Sanskrit Grammar ninety percent. For example in morphology Indo-European has eight cases (Nominative, Accusative, Instrumental, Dative, Ablative, Genitive, Locative and Vocative), three numbers, three genders, three tenses (present, aorist and perfect) like Sanskrit. They are better retained in Sanskrit than even in Greek and Avestan. In phonology the voiced aspirates (झ भ घ ढ ध) are retained in Sanskrit only; the voiceless aspirates (ज ब ग ड द) are more fully retained in Sanskrit than in Greek and other languages where they show linguistic changes."[96]

According to Dr. Ramvilas Sharma, this fact alone is sufficient to prove that the original home of Aryans was India because in no other language or the world these sounds have been fully retained. This also proves that phonologically, Sanskrit is the oldest and most archaic of all. Recent researches on the Gypsy languages show that Indo-Aryan a remains a in Asiatic Gypsy but it becomes a e o in European Gypsy. This confirms that in original IE a was the same as Sanskrit a and remained a in Indo-Iranian languages but changed to a e o in their sister languages. The IE palatal k has become s' (श) in Sanskrit is also questionable because in Sanskrit itself S' (श) (दिश्) दिक् दिशौ दिशः, etc. becomes k before s. Thus, the k which was allophonic to S' in Sanskrit might have been generalized in the kentum languages.[97] Now, no difference remains between imaginary IE language and real Sanskrit. The logic inescapably leads us to the conclusion that Vedic Sanskrit, mutatis mutandis, is in fact, the Indo-European language available to the world. The antiquity of Rgveda therefore should be very high.

(b) Evidence of the Uralic Languages for the Date of Rigveda

The Uralic languages contain many loan words from Indo-Aryan beginning from the Rigvedic stage. J. Harmatta has given their chronological estimate also. He has classified the loan words into eleven stages and calculates about 300 years for each stage. In conclusion, Harmatta has shown that the 11th period of borrowing was in 1500 BC and the first period belongs to 5000 BC.[98] Among his examples at first stage (5000 BC) is the word अज (Aja) 'to drive' of Funio Ugric = Uralic which is clearly Rigvedic अज् = to drive'. It is 'Aja' in Proto-Iranian also. At second stage is 'Pakas' 'a God' bhagas = Skt bhagah. Though according to this classification the second stage comes around 4700 BC, but one can clearly understand that there must be much bigger gap between stage II and I as in Pakas. From Bhagah, the 'Bha' has been devoiced and de-aspirated and 'ga' has been de-aspirated, which require two stages of deviation; this God is called Baga (बग) also. Thus the period of Rigveda according to this classification goes much beyond 5000 BC. S.S. Misra on this basis concludes 'The date of Rigveda must be beyond or much beyond 5000 BC.'[99]

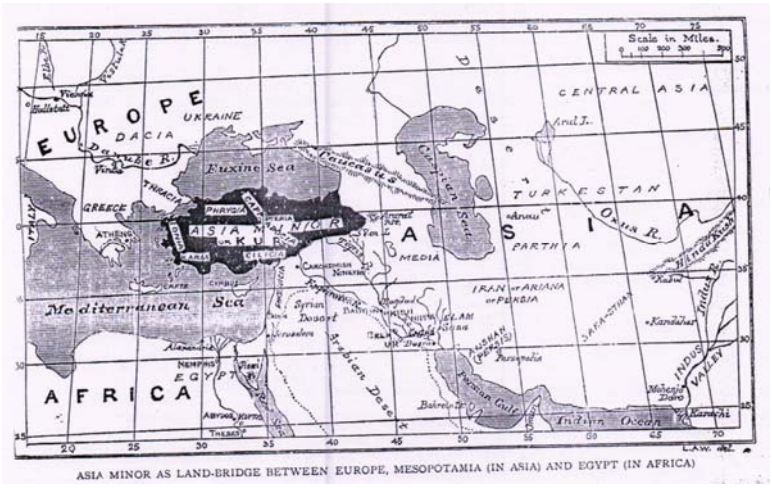
(c) Sanskrit 'loans' in Sumerian, Akkadian and Greek Languages

The oldest written language of the world is known to be Sumerian whose oldest remains (recovered from Iraq) belong to fourth millennium BC. In English, there is one Sumerian word 'Abja' that means the water below the earth. The word came to English via Greek wherein it is 'abbussas'. The successors of Sumerian culture, Babylonians used the word as 'Abyss'. Here two words have been used together : 'You surpass in knowledge Apsu (the abyss) and all craftsman'. In Rigveda, this word 'Apsu' has been used several times as plural of 'Ap' meaning water. It

is always used in plural (locative) to maintain its 'Apsu' form :

अप्सु अन्तः समुद्रे (X.125.7) अप्सु मे सोमो अवतीत् (X.9.6)

There is no word root either in Sumerian or Akkadian to form 'Apsu' or 'Abju'. Hence, this world 'Apsu' is patently Rigvedic or Indo-Aryan.[100] Ramvilas Sharma writes :



ASIA MINOR AS LAND-BRIDGE BETWEEN EUROPE, MESOPOTAMIA (IN ASIA) AND EGYPT (IN AFRICA)

Map-9

After the archaeological researches of over a century, what has become very clear is that from India upto the Egypt and from India and Egypt upto Greece this great stretch of land is a well organized, well connected and internally constituted cultural unit.[101]

This cultural entity in that hoary past could be none else except the Aryan-cultural entity speaking what is now conceived as Indo-European language or old Vedic Sanskrit. That is why there is striking morphological and phonological similarities in Indo-European languages and many loans of that old Indo-Aryan language can be traced even in modern variations of those languages. 'Ur' and

'Nippur', 'enki' or 'en' (lord), 'engar' (cultivator), nangar (carpenter) with 'gar' as a variation 'kar' are examples of Indo-Aryan loans in Sumerian. People from Asia established the famous minoan-mycenaean civilization. They include Hyksos from Egypt. Toynbee calls them Aryans.[102] 'Numerous inscriptions in non-Greek languages prove beyond every doubt the existence of an older civilization in the Aegean world',[103] says B.K. Ghose. The Hyksos of Egypt to my mind are none other than Iksvakus of India. Minos (Manu), Danaus (Danu), Ionus (Yavana), Minotaurus (Manujarsabha), तॅख्ने (तक्ष) takhne (taksa), aplhano (अल्पफनो) (अर्घ), Polis (पुर), Sprain (स्फय - an insturment of Yajna), इपफस् (इभ- elephant) and कॉपफॅन् (कुभा) are some of the words, which are clear cognates. Ramvilas Sharma concludes :

The Indians speaking the Aryan languages were the originators of Minoan and Myceanian civilizations in the same way as they were the originators of the Mitanni and Hittite kingdoms.[104]

A branch of the Indo-Aryan language group known as kentum reached Greece Via Mitanni and Hitteite kingdoms. Before that the Satem branch of Indo Aryan languages reached Crete and in the other direction went to the East Europe via Iran. The basic elements in the Indo-European language family are not European but Indian. Not only India, but the greater India is an internally organized linguistic area. The Indo European family was constituted by the constant interaction between Aryan languages and non Aryan language groups.[105]

Regarding chronology, he hints :

From the Paleolithic period up to the period of historical civilizations Asian people had been going and settling in Greece. According to Sinclair Hood the farming community which used the stone tools reached banks of

Aegian Sea in 7th millennium BC. They had probably come from Anatolia or Silicea on the banks of Southern Anatolia or from further east Syria and Palestine.[106]

This indicates continuous flow of Asians to Aegean region. As the oldest civilization during that time was that of Indo-Aryans, there is very strong probability that these settlers were from Vedic India either directly or through their civilizations - Harappan, Iranian, Egyptian, Mitannian or Hittite. The recent satellite imagery of the subterranean course of the once mighty Saraswati so often extolled in Rigveda, and excavated settlement sites, clearly establish that the Vedas are pre-Harappan and push our civilization to 7000 years plus.[107]

Collin Renfrew has analyzed in great details, the Indo European problem on the grounds of linguistic evidence as well as archaeological evidence in his famous book "Archaeology and Language".[108] His conclusions which also indicate the depth of time for the dispersal of various branches of Indo-European languages and their date of separation are of paramount importance. For this purpose, he has used what is now called the socio-linguistics, the glottochronology and the archaeological evidence of the dispersal of faming community. We shall deal with each one these issues one-by-one.

1. Socio-linguistics

The study of the relationship between language variation and social difference. The distinction is often made by linguists between the upper or dominant language, spoken by a conquering or otherwise more privileged group, and the lower language spoken by the subject people, or by immigrants of low status. Bloomfield makes the important generalization that : In all cases, *it is the lower language which borrows* predominantly from the upper.

Accordingly, if the upper language survives, it remains as it was except for a few cultural loans, such as it might take from any neighbour. The Roman languages contain only a few cultural loan-words from the languages that were spoken in their territory before the Roman conquest; English has only a few cultural loan-words from the Celtic languages of Britain ..... In the case of conquest, the cultural loans which remains in the surviving upper language are chiefly place names....

On the other hand, if the lower language survives, it bears the marks of the struggle in the shape of copious borrowings. English, with its loan-words from Norman-French and its enormous layer of semi-learned (Latin-French) vocabulary is the classical instance of this.

This social linguistics is the main plank on the basis of which we can understand the dispersal of the Vedic Sanskrit i.e. the earliest Indo-European language existing in a literary form as Rgveda dispersed to the west via Iran, Mesopotamia, Egypt, Anatolia, Crete, Greece and then west Europe. According to the literary history available in India, the Rgvedic Aryans conquered the western territories of Mesopotamia, Egypt, Anatolia, Crete and Greece on their strength of chariot and horse. Hence, wherever the symbols of horse, chariot and rising sun are seen, they are the areas of the spread of the Indo-Aryan rulers. Because they were the rulers, their language being the upper language, it gained ground in the conquered areas and the local languages became a substrata to them. A case in point is that of English language which has now covered almost the entire globe. The reason is not the trade contacts of the Great Britain but their rule over the entire globe. Conversely, though the north Indians speak the Indo-European languages have been in trade and social contact for thousands of years with Dravidians yet the Indo-European language could not gain ground in Dravid area.

Because no Indo-European language speaking person ruled them. Those who ruled there followed the Sanatana culture but their language was Dravidian. As an exception, Hyderabad, a Dravidian state, because it was ruled by an Indo-European speaking Nawab, the Indo-European language Urdu prevailed there and the Telugu serves as substrata in urban areas and main language only in the rural areas.

Glottochronology

One other recent development in the field of historical linguistics is of great potential relevance to the historical understanding of particular languages and language groups. This is the approach known as glottochronology. The basic idea is a very simple one. It begins with the general observation that the greater the time-depth which separates the members of a language family from the point of separation from their common ancestor, the greater the degree of differentiation between them.

Percentages of shared cognates :

A-B 40

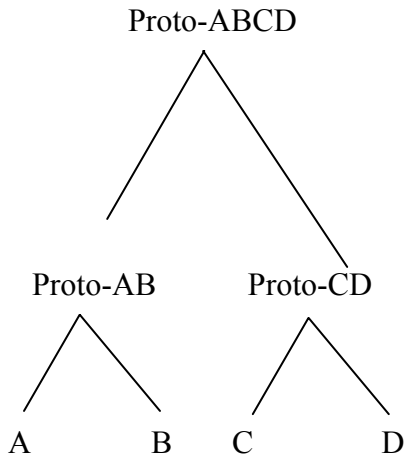
A-C 20

A-D 20

B-C 20

B-D 20

C-D 65



The use of lexicostatistical data to infer history of linguistic descent : a high percentage of cognate words implies closeness of family relationship (after Clark).

The exponents of glottochronology, notably Morris Swadesh, claimed that, for the core of essential words in a language, this process took place at a constant rate.

Swadesh set out a basic core vocabulary of two hundred words, later using only a hundred words.

The procedure followed by the glottochronologists, when the time of splitting of two related languages is to be determined, is to list the equivalent words from the languages under consideration, and note the pairs which, on the grounds of their similarity (taking into account the known laws of sound shift) appear to be or are known to be cognates. These are then assumed to be retained from the common ancestor language, while the words which have different forms in the two languages under consideration are assumed to differ because the original word has been lost in one or other (or indeed in both) of the languages. /the number of word pairs which are cognate, out of the original list of a hundred, is thus a measure of the closeness (of the retention of the basic core vocabulary) of the two languages conversely the number of pairs that are now different are an indication of the extent to which words have been lost, and hence a measure of the time since the two languages originally separated.

It was concluded that the average retention rate was 81 per cent per millennium. When the original word list was shortened to the hundred words listed above, the rate was adjusted to 86 per cent per millennium.

Based on this procedure, the glotto-chronologists Escalante and Swadesh have prepared the following diagram indicating the time of separation between various languages in centuries before 13th century BC.

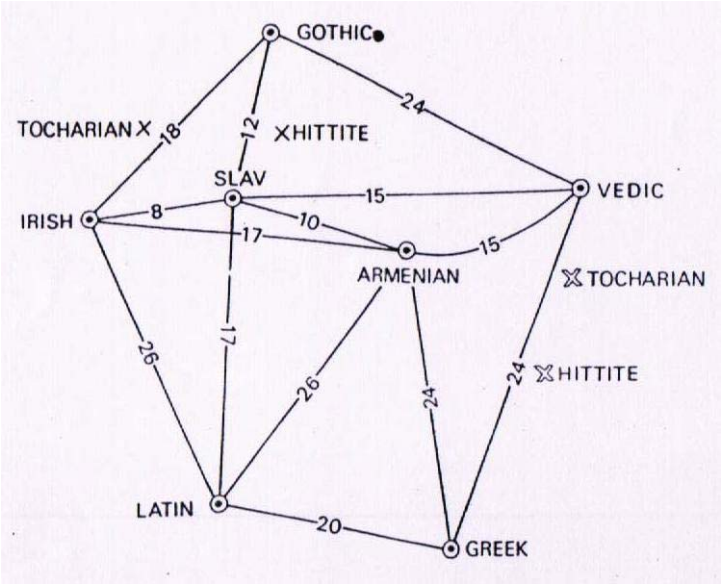


Fig. 10 : Relationships between different Indo-European languages based on glotto-chronological correlations. The numbers indicate the notional time in centuries prior to the 13th century BC when divergence between the pairs of languages took place

From the above diagram it would be seen that Gothic and Greek have separated from the Vedic Sanskrit some 2400 years before 13th Century which means Vedic is 2400 years older than the Greek and Gothic.

Chapter-14 Dispersal of Indo-European languages to Europe

Renfrew has equated the first farmers of Europe with the Indo-European speaking people and as first points of settlements of these farmers and thus of Indo-European speakers, he takes as the Greece and Anatolia. He is convinced that "the equation between mixed cereal and livestock farming and the Indo-European languages is striking one."[109] He holds that the Indo-European languages of Europe can be traceable back to the first farmers of Greece who themselves have spoken an early form of Indo-European and the language of these first farmers in Greece around 6500 BC would be carried across the whole Europe.

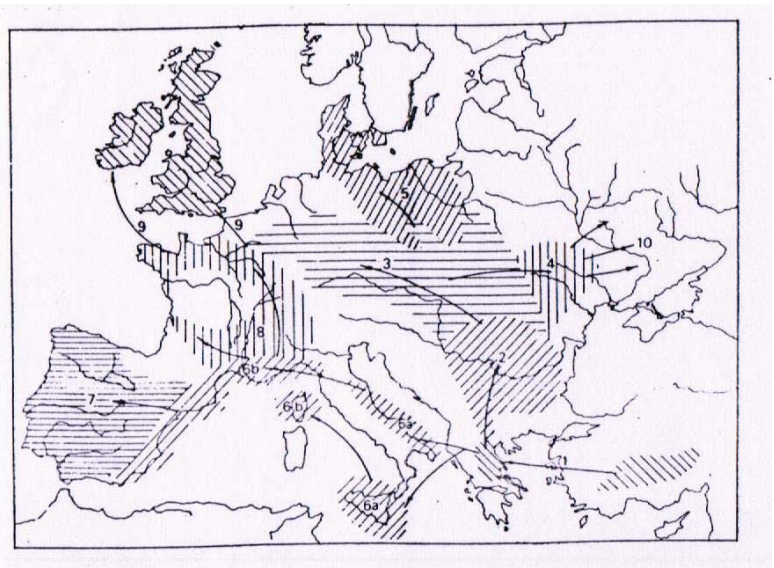
The process of bringing a farming economy to Europe began somewhere shortly before 6000 BC in Crete and Greece. We should say that farming reached Greece sometime before 6500 BC. It had reached the Orkney Islands, at the northern tip of Scotland, and the rest of Europe also by about 3500 BC.

Based on this thesis he has been able to locate the ancestral languages of Europe, their spatial distribution and the processes of transformation. He holds that if the spread of farming was indeed responsible for the initial dispersal of the Indo-European languages in Europe, we should be able to make certain inferences about the relationships between the early languages in each area. He lists the transformations schematically as follows :

1. Anatolia to Greece (Thessaly and West Macedonia)
2. North Greece to First Temperate (Starcevo/Koros/ Karanovo)
3. First Temperate (Koros) to Linear Pottery
4. Linear Pottery to Proto-Cucuteni and Proto-Tripolye

5. Linear Pottery to Scandinavia (TRB), and westwards into North France
6. West Greece to Impressed Wares (Mediterranean Coasts)
7. Impressed Wares to Iberian Neolithic
8. Impressed Wares to Central and North France
9. North France and Low Countries (Linear Pottery) to Britain and Ireland.

These relationships can be seen in map.



Map-10 : Hypothetical sequence of cultural and linguistic transformations during the early spread of farming in Europe. The initial transformations during the early spread of farming in Europe. The initial transformation (I) is from the early Neolithic of Anatolia to that of central Greece where the language was ancestral to the Greek language. Transformation (IO) indicates the change from the East European settled farming to the first pastoral-nomad economy of the steppe lands.

For the purposes of analysis, it may be interesting to see what linguistic patterns would emerge if we made the probably unwarranted assumption, that the languages of Europe as we know them from around the beginning of the Christian era derived from those the first farmers in each of the regions under consideration. The experiment at least has the merit of maximal simplicity.

Transformation 1 would lead ultimately to the Proto-Greek language.

Transformation 2 would lead to Proto-Illyrian, and perhaps Proto-Thracian and Proto-Dacian in the east.

Transformation 3 would lead to a language of Central Europe relevant perhaps to Proto-Celtic and Proto-Germanic.

Transformation 4 would lead to languages in those lands where the Slav languages are now spoken.

Transformation 5 would lead to the early, presumably Proto-Germanic, languages of Scandinavia.

Transformation 6 would lead to the Proto-Italic languages (but not non-Indo-European Etruscan).

Transformation 7 would lead to the early languages of Spain and Portugal (but not non-Indo-European Basque and Iberian).

Transformation 8 would lead to the early Proto-Celtic (or pre-Celtic) languages of France (to which Transformation 5 would contribute).

Transformation 9 would lead to the early languages of Britain and Ireland, including Proto-Celtic (or pre-Celtic) and perhaps Pictish, if this is an Indo-European language.

Transformation IO would lead to the first Proto-Indo-European languages of the steppe lands.[110]

When one observes this process closely, one can not but feel that there is some missing link here. Renfrew starts with Anatolia. Because in a way he feels Anatolia could be the homeland of Indo-European. But Indo-European language can not spring from heaven. The farming community can evolve from hunter gatherers but Indo-European can not evolve from any local dialect. Therefore, this farming community which Renfrew is talking about must have come from somewhere. This somewhere leads us to another laps in this process. Renfrew is talking of Indo-European all through but there is no 'Indo' (India) here in the entire process? The reply is very simple. The picture can not be complete without its being connected to India i.e. Vedic Sanskrit. Renfrew deals with the problem taking Anatolia as the centre and then traces the spread of the Indo-European, westward in Europe and then eastward upto India via Mesopotamia and Iran. The visualization of Renfrew again appears to be very unconvincing here. Because there is no record of earliest Indo-European literature in Anatolia nor Rgveda, the earliest Indo-European text has any memory of Anatolia whatsoever. So the only course left is the farming community which Renfrew is talking about came to Anatolia from Indian sub-continent and with them came the Vedic Sanskrit as the proto Indo-European in those places where the Indo-Aryans ruled and then spread in western Europe as suggested by Renfrew.

Now the question is whether there was any farming community of the type Renfrew is talking about in Indian sub-continent around 7000 BC. Renfrew himself confirms "recent archaeological work in Pakistan (then India) has given very early evidence for farming there of a kind simply not previously available. The French archaeologist, Jean-Francois Jarrige, has conducted an outstandingly successful excavation at the site of Mehargarh in Baluchistan (west Pakistan), and there is now evidence for

the cultivation of cereal crops (six row barley, einkorn, emmer and bread wheat) preceding 6000 B.C." S.P. Gupta and some other scholars hold the earliest Mehargarh findings to 7000 B.C. The picture is complete now. There is farming community of the type Renfrew is talking about and there also is the most ancient form of Indo-European language viz. Vedic Sanskrit in Sapta Sindhu. What else could be the homeland of Anatolian farmers present there in 7000 B.C. as per Renfrew. The difficulty of long distance as he envisages is nothing more than a hitch to travel to India.

Since the development of the civilization can quite plausibly be traced right back to early roots in the finds at Mehargarh, the origin of the Neolithic there is of the greatest relevance. The difficulty, of course, is that the area in question is a long way south and east of the recognized early farming centres in the Zagros.[111]

On the other hand there seems to be no alternative but to link this early faming community of Anatolia with Mehargarh culture because the ancient flourishing civilizations of Mesopotamia and Egypt do not date back earlier than the 4th millennium BC. Our concern is about 7th millennium BC. Thus, Anatolian faming community in 7th millennium BC and the Mehargarh culture of Indian sub-continent of 7th millennium BC perfectly match. So far as the question of distance is concerned, this can be answered by visualizing gradual waves of dispersal from Mehargarh to middle east, Egypt and then to Anatolia. Besides, there are many scholars who hold that this entire area from Sapta Sindhu to Anatolia was in those ancient times is single cultural unit. Dr. Ramvilas Sharma holds "as a result of the archaeological researches of over a century, what has become very clear is that from India to Egypt and from Egypt and India upto Greece, this vast tract of land was a well organized internally connected cultural unit.

From the cultural point of view, ancient Greece is a part of Afro-Asian continent and the remaining Europe is separate from it..... Greece is an inseparable part of the ancient civilized world. In this world are Egypt, Eastern Meditarian and Asia Minor. But there is no Europe neither Eastern Europe nor Northern nor Western Europe (see map). The wonderful feet of historical linguistics is that eliminating the difference between the civilized and the barbaric societies on the basis of linguistics similarities between the languages of both, it proved on the basis of common similarities that both are the daughters of an original Indo-European language. The journey of Indian chariot from Sanskrit *ratha* to Latin *roth*, Celtic *rot*, German *rath* and Lithvanian *ratas* is indicative of the journey of civilization from India to Greece. As has been already been quoted from the Paleolithic period up to the period of historical civilizations Asian people had been going and settling in Greece. According to Sinclair Hood the farming community which used the stone tools reached banks of Aegean Sea in 7th millennium BC. They had probably come along the borders of Anatolia or Southern Anatolia from Syria or further east from Palestine. .... According to Greek tradition, the first king of Knossos City the capital of Crete was Minos and after the name of this king Minos, its civilization was known Minoan. This civilization was spread in the entire of Aegean region. Waddell has held that this king Minos was a king of Indian origin derived from Manu. Many scholars hold that ancestors of Hyksos rulers of Egypt, who were Aryans as per Toynbee could be the builders of Minoan and Mycenaean civilization. This link connects the Indian Aryans with the Greek civilization. Dr. Sharma has further very clearly held that Indians speaking in the Aryan languages were the creators of Minoan and Mycenaean civilizations in the same way as they were the creators of Mitanni, Hittite kingdoms."[112]

Map-11 : Proposed alternative origins for the Indo-Aryan languages. Hypothesis A (indicated bycontinuous line)

But these linkages between the Indo-Aryan culture, Anatolia and Greece have been hinted by Renfrew himself. "In the case of Crete we can be sure that the techniques of farming were indeed introduced by new settlers, since there are at present very few indications there of an earlier, hunter-gatherer population. Precisely where these small groups of immigrants came from is not yet known, but one presumes it was from early farming settlements yet to be discovered, on the southern coasts of Aegean Anatolia." Further he adds "most workers agree that the first farming practices of mainland Greece were also introduced by small groups of immigrants. We can imagine people who were

already traveling by boat. It is likely that the first farmers of west Anatolia did not develop farming there, on the spot, from wild prototype species, and we should imagine the wave of advance beginning rather further to the east, perhaps in the Konya Plain, where the site of Catal Hyyuk is located, **or further east still**."[113] (See map) This further east can not be other than the Fertile Crescent and the Sapta Sindhu of Indian sub-continent.

The Two Hypotheses of Renfrew

After a detailed discussion, Renfrew arrives at two hypotheses regarding the question of the origin of farming communities of Anatolia. His basic premise is "however the logic of the model identifies east Anatolia as part, although not necessarily all, of the early 'homeland' of people speaking a very early form of Indo-European, around 7000 BC.

Hypothesis A : Neolithic Aryas

Referring to the Mehargarh findings, he argues "In this way it might be argued that, from the very earliest farming times, as represented by Mehargarh and by other sites later, an early Indo-European language was spoken in the Indus Valley and in areas to the north and west..... there is no inherent reason why the people of the Indus Valley civilization should not already have been speaking an Indo-European language, the ancestor of the Rigveda. The arguments of Raymond and Bridget Allchin in favour of Indo-Aryan features back in the Harappan period could certainly be taken in support of Hypothesis A. Since the development of the civilization can quite plausibly be traced right back to early roots in the finds at Mehargarh, the origin of the Neolithic there is of the greatest relevance.

Hypothesis A, then, would carry the history of the Indo-European languages in north India and Iran back to the early Neolithic period in those areas. .... There are

indications of settlements of the Indus Valley culture on the banks of the Amu Darya river in northern Afghanistan, and graves of bronze age Turkmenian type have been reported from near the site of Mehargarh in Baluchistan... Certainly the assumption that the Aryas were recent 'immigrants' to India, and their enemies were 'aborigines', has done much to distort our understanding of the archaeology of India and Pakistan. Finally, after a detailed discussion comes the important pronouncement of this famous linguist archaeologist Renfrew –

"This hypothesis that early Indo-European languages were spoken in north India with Pakistan and on the Iranian plateau at the sixth millennium BC has the merit of harmonizing symmetrically with the theory for the origin of the Indo-European languages of Europe. It also emphasizes the continuity in the Indus valley and adjacent areas from the early Neolithic through to the floruit of the Indus Valley civilization - a point which Jarrige has recently stressed. Moreover the continuity is seen to follow unbroken from that time across the Dark Age succeeding the collapse of the urban centres of the Indus Valley so that features of that urban civilization persist, across a series of transformations, to form the basis for later Indian civilization."[114]

Hypothesis B : Mounted Nomads of the Steppe

After discussing the stages of Central Asian Nomad Pastoralism and the primary pastoral economy, Renfrew concludes that - "One of the main ideas constituting Hypothesis B is that, with the development of chariotry and then of military horse riding, a new possibility for elite dominance emerged."

The Choice of Hypotheses : A Versus B

"At present it is not easy to see how one should choose between these two hypotheses. Both accept the major premise of this book that central and eastern Anatolia

was the key area where an early form of Indo-European language was spoken before 6500 BC., From there the distribution of the language and its successors into Europe was associated with the spread of farming.

Hypothesis A suggests that the zone of early farmers speaking Proto-Indo-European extended east to northern Iran and even to Turkmenia at the outset. The spread of Indo-European speech to the south, to the Iranian plateau and to north India and Pakistan, can then be seen as part of an analogous dispersal, related to the demographic changes associated with the adoption of farming.

Hypothesis B does not take this view. It suggests instead that the crucial development for the eastern area was the development in the Eurasian steppes of nomad pastoralism, and that this took place first at the western end of the steppes. In this way, it was argued, the nomad pastoralists of the steppes spoke an Indo-European language at the outset. Their later dominance in Iran and in the Indus is then ascribed to their military effectiveness, based largely upon the use of the horse.

It is of course possible to blend these two hypotheses. Even if we accept Hypothesis A, it is still likely that the first steppe nomads did indeed speak Indo-European languages, and that their adaptation to the steppes first took place in the Ukraine."[115]

While the evidence advanced by Renfrew himself weighs in favour of hypothesis A i.e. Neolithic Aryas being the farming community present in Anatolia in 7th millennium BC, it can further we confirmed by the fact that there is ample evidence in Rgveda and Atharvaveda regarding the farming practices, the cultivation of rice, barley and wheat as we have discussed in connection with the Indus Valley civilization. There is also evidence of voyages and navigation by the Aryas to match perfectly

with the requirement of the farming community that Renfrew is speaking about. Besides, neither the pastoral nomads of steppe nor the people of Anatolia can be conceived to speak Indo-European language at the outset. It is surprising why Renfrew has not taken into account the fact that no where in the world the Indo-European language can be spoken at the outset without first taking Indian element in it. Therefore, with the linkages so well established between the Neolithic Aryas of India and the farming community of Anatolia, the clear picture that emerges is that the Indo European language originated in Sapta Sindhu area of Rgveda and the first archaeological signs of this culture are seen in Mehargarh findings. From there the civilizational wave dispersed further west to Mesopotamia and then to Egypt, Anatolia and the Greece. The conjecture of Renfrew taking Anatolia as the centre and conceiving the dispersal of Indo-European speaking people first to the west Europe from Anatolia and then to the east upto India via Mesopotamia and Iran is not sustainable, for the simple reason that the Indo-European language can not originate in Anatolia and that the qualities that Renfrew prescribes to the farming community of Anatolia are all available in the same antiquity in the Rgvedic Aryans.

Besides, there can be blend of two hypothesis also as suggested by Renfrew himself. Inasmuch as there was an element of elite dominance, not of the pastoral nomads of steppe, but of warring Aryan princes who moved to the west with their knowledge of chariotry and horse riding. The evidence of a number of kings from Indian origin in Babylonia, Sumer and Egypt as also the names like Minos and Menes as the first kings of Crete and Egypt suggests that the princes from the Sapta Sindhu from India, moved to the west in different streams from time to time and carried with them the proto Vedic Sanskrit which is equivalent to the proto Indo-European. As we shall see, our

literary history supports this premise. With them went the elite people in charge of administration and religious practices. Because the proto Vedic Sanskrit was the language of the ruling class and the elite, it established its roots in their western lands and gave birth to what is today called the Indo-European language. (see map page 206).

Origin of Language

It is undisputed that Vedic Sanskrit is the oldest existing Indo-European language of the world. From Glottochronology, we have seen that Greek language is some 2400 years junior to Vedic Sanskrit. But where is the origin of language? In other words which is the homeland of Indo-European language ? No other country in the world claims that language descended there. But India does. In Rgveda itself, it has been declared देवीं वाचमजनयंत देवाः स्तां विश्वरूपाः पशवो वदन्ति (Rgveda 8.100.11) *The Gods gave birth to divine language and all beings with different shreds speak it.*

rk ek nok 0;n/k% i#=kA
HkfjLFkk=ke Hk;ko'k;Urhe AA

(Rgveda 10.125.3)

I have many forms and am found in many places. Such a one I have been spread by the Gods throughout the world.

Thus, Rgveda clearly declares that like many sciences, language also descended on this earth in Indian sub-continent. This view regarding the descent of language has been echoed as the traditional view by the Mahabharata-

vukfnfu/kuk fuR;k okxqRl"Vk Lo;EHkqokA
vknk one;h fn0;k ;r% lok% çoÙk;%AA

(महा.भा. शान्तिपर्व, 231 / 56)

The speech which has neither a beginning nor an end and is thus eternal was first emanated by the Creator himself. It was a divine Vedic language in the beginning and from it sprang all streams of languages.

In this way the first language that was known by the human beings was the proto Vedic Sanskrit, also known as the divine or the godly language. From here it assumed many forms and was spread throughout the world. In his book, the story of civilizations Will Durot after having analyzed many language of the world has come to the conclusion that elements of Vedic Sanskrit are available in most of the language of the world. Hence, it is proved as the mother of all the languages of the world. In the same way, Thomas Morris in his book 'Indian Antiquities' has quoted a famous linguist Hallhead stating that the Vedic Sanskrit is the original language of the world.[116]

Even by broadly analyzing the elements of Sanskrit, we find that there are 36 elements in Vedic Sanskrit and no other language of the world contains so many elements. These elements are -

1. Un analyzed speech (*Avyakrta Vak)*

2. *Nama* (Nouns)	3. *Akhyata* (Verbs)
4. *Nipata* (Particles)	5. *Upsarga* (Prepositions)
8. Case endings (*Vibhakti)* + 3 Genders (*Linga*)	11. *Lakara* (Tenses and Moods) + 3 Numbers + 3 Voices (Active, Passive, Abstract) + 3 Persons = Total 36

Sanskrit language thus, is like the greatest common multiple (GSM) of all the languages of the world. Hence, also it can claim to be the proto Indo-European or the original language (*Ursprasch*) of the world. In matters of morphology also no language of the world can match Sanskrit. A verb has 1080 different forms depending on the person, number, voice, causal etc. It is therefore, logically a natural conclusion that proto Vedic Sanskrit is the Proto Indo-European language and the first Indo-European language of the world.

Lane-IV : Literary History

This is the period of great upheaval in the Rgvedic society. The famous battle of 10 kings was fought here with the result there was great dispersal of the Rgvedic people to the west and the north. It is therefore imperative to examine this famous battle of 10 kings known as the Dasrajna battle. In Sukta 18 of the 7th Mandal of Rgveda and Sukta 83 of this same Mandal there are elaborate references of this battle of 10 kings. It was fought between Sudasa, a Puru king and a confederacy of 10 kings on the banks of river *Parushni*. The relevant verses pertaining to this great battle, I quote here from Rgveda :

पुरोळा इत् तुर्वशो यक्षुरासीद् राये मत्स्यासो निशिता अपीव।
श्रुष्टिं चक्रुर्भृगवो द्रुह्यवश्च सखा सखायमतरद् विषूचोः।।
(ऋग्वेद, 7/18/6)

आ पक्थासो भलानसो भनन्ताऽलिनासो विषाणिनः शिवासः।
आ योऽनयत् सधमा आर्यस्य गव्या तृत्सुभ्यो अजगन् युधा नॄन्।।
(ऋग्वेद, 7/18/7)

Turvasha, who was preceding (at solemn rites), diligent in sacrifice, (went to Sudas) for wealth; but like fishes restricted (to the element of water), the Bhrigus and Druhyus quickly assailed them : of these two everywhere going, the friend (of Sudas, Indra) rescued his friend.

Pakthas (those who dress the oblation), Bhalanas (those who pronounce auspicious words), Alinas (those who abstain from penance), Visanins (those who bear horns in the hands)), Shivas (those who bestow happiness on the world by sacrifice)), glorify that Indra, who recovered the cattle of the Arya from the plunderers, who slew the enemies in battle.

njk/;k vfnÇr lio;Urk ·pir lk fo txHk i#".kheA
eàkfo0;d i'fFkoh iR;eku% i'k"dfoj'k;Ppk;eku%AA

(ऋग्वेद, 7/18/8)

The evil-disposed and stupid (enemies of Sudas), crossing the humble Parushni river, have broken down its banks; but he by his greatness pervades the earth, and Kavi, the son of Chayamana, like a falling victim, sleeps (in death).

,d p ;k Ço'kfr p JoL;k od.k;k tuku jktk U;Lr%A
nLek u lneu fu f'k'kkfr cfg% 'kj% lxed.kkfnUæ
,"kkeAA

(ऋग्वेद, 7/18/11)

v/k Jr do"k o)elLo u nLá fu o.kXo tckg%A
o.kkuk v= l[;k; l[;; Rok;Urk ; venUuu RokAA

(ऋग्वेद, 7/18/12)

The hero Indra created the Maruts (for the assistance of the Raja), who, ambitious of fame, slew one-and-twenty of the men on the two banks (of the Parushni), as a well-looking priest lops the sacred grass in the chamber of sacrifice.

Thou, the bearer of the thunderbolt, didst drown Shruta, Kawasha, Vriddha, and afterwards Druhyu, in the waters : for they, Indra, who are devoted to thee, and glorify thee, preferring thy friendship, enjoy it.

fu x0;ok·uok nás'p "kf"V% 'krk l¡"ki% "kV· lgl kA
"kf"Voh jk l vf/k "kM· n¡ok;¡ fo'ofnUnL; oh;k d rkfuAA
(ऋग्वेद, 7/18/14)

The warriors of the Anus and Druhyus, intending (to carry off the) cattle, (hostile) to the pious (Sudas), perished to the number of sixty-six thousand six hundred and sixty : such are all the glorious acts of Indra.

vkofnUæ ;euk rRlo'p çk= Hkn lo rkrk e"kk;r·A
v tkl'p f'kxokk ;{ko'p cfy 'kh"kkf.k tHkj'0;kfuAA
(ऋग्वेद, 7/18/19)

The dwellers on the Yamuna and the Tritsus glorified Indra when he killed Bheda in battle : the Ajas, the Shigrus, the Yakshas, offered to him as a sacrifice the heads of the horses (killed in the combat).

These seven verses give almost all the details regarding the battle - the place where it was fought, the parties to the battle, the number of soldiers which were killed in the battle and the result of the battle. There is reference to this battle of 10 kings in Sukta 83 of Mandal 7 also but because all major details are available in this Mandal, we can analyze this battle on the basis of this Sukta 18 of Mandal 7.

1. The place where the battle was fought

As is clear from verse 8 and verse 11, this battle was fought on the banks of river Parushni known as Ravi today. Because this area is north to the original Saraswati-Drishadwati area of Trishdasyu on the banks of Saraswati, this appears to be a later development in the Rgvedic society.

2. The parties to the battle

The victorious party is certainly Sudasa, who from a homogenic interpretation of the entire text is a Puru king and Tritsus are his allies. There is controversy among the scholars regarding the confederacy of 10 kings. Five of them are mentioned in verse 7 of sukta 18 quoted above. They are - the Pakthas, the Bhalanas, the Alinas, the Sivas, the Visanins. They may be tribes or groups of different communities as appears from their names. Regarding these five there seems to be no controversy. But scholars are not of one opinion regarding the remaining five. While Baldev Prasad Mishra and P.L. Bhargava add the Panchjanas Puru, Yadu, Anu, Dhrhyu and Turvasu as the other five kings, Shrikant Talageri opposes it and calls it absurd. There is reason for this strong opinion of Talageri. For one thing, Yadus have been mentioned nowhere in the verses pertaining to this battle so also the Purus and if Purus are against Sudasa then who is Sudasa? Therefore, this simplistic addition of five Janas as the five other kings does not seem to be proper. The solution suggested by Talageri is that the other five are Simyus, Bhrgus, Druhyus, Prthus and Parsus. There is only one reservation to this solution of Talageri and it is that why he has not mentioned Shruta, Kavasha, Vraddha, Aja and Shighru who have been mentioned in sukta 18 itself and has drawn two kings from sukta 83 namely Prathu and Parshu, who admit of other interpretations also as has been done by many scholars. In fact, the problem is regarding 3 kings only because Bhrgu and Dhrhyu are also clear in verse 6. To my mind the 3 others kings are Shruta, Kavasha and Vraddha mentioned in sukta 18 only. Thus, there is no need to draw any names from verse 83. Besides, it is quite possible that all these 10 kings may belong either to Anu or Dhrhyu dynasties. Thus, the 10 kings are the 5 ones mentioned in verse 7 and the remaining five are Bhrgu, Dhrhyu, Shruta, Kavasha and Vraddha. Regarding the 10 kings identified by Talageri,

their identification with the people in the north and the west by him is of great importance and opens new vistas for the research of the dispersal of the Rgvedic people towards the west. His analysis is as follows :

The Prthus : The Prthus/Parthavas are none other than the Parthians of latter-day Iran.

The Encyclopedia Britannica has the following to say about the Parthians. : "Parthia : ancient land corresponding roughly to the modern Khorasan in Iran; the same is also used in reference to the Parthian empire (247 BC-AD 224). The first certain occurrence of the name is as Parthava in the Bisitun inscription (c. 520 BC) of the Achaemenian king Darius-I.

The Parsus : The Parsus/Parsavas are none of other than the Persians of latter-day- Iran.

As already quoted before : "the fist allusion to the Parsua or Persians, then localized in the mountains of Kurdistan, and to the Madai or Medes, already established on the plain, occurs in 837 BC, in connection with an expedition of the Assyrian king, Shalmaneser III."

The Madai or Medes are the only major Iranian group who do not figure in the battle. And the reason for this is clear from the Puranic accounts : one branch of the Anus had already migrated southwards and westwards into the western parts of the Saptasindhu : the Madras were an Anu people located there, far from the scene of this battle.

The Pakthas : The Pakthas can be none other than the Pakhtoons/Pashtus/Pathans. The name is so peculiar and unique that the identity is unmistakable, and even Bhargava is compelled to admit the fact.

Once the key to the identification is known (i.e. that the ten peoples were, most of them, the ancestors of

different sections of Iranians) it is easy to identify three more of them.

The Bhalanas : The Bhalanas were the ancestors of the Baluchi people (cf. the Bolan Pass in Baluchistan).

The Visanins : The Visanins were the ancestors of the Pisaca (Dardic) people. The original name, Visanin, was obviously mutilated into Pisaca by the latter Purus. (In the Rigveda itself, the word Pisaci occurs only once, and means "banshee".)

The Sivas : The Sivas were the ancestors of the Khivs.

And a seventh people, of the ten, are also clearly identifiable with another group of people who were not exactly Iranians (they belonged to what, in modern classification, is a different Satem branch of Indo-European languages, the Thraco-Phrygian branch, of which Armenian is the sole living representative), but who were situated to the north-west of the Iranians, and were culturally so Iranianized as to be considered, by many scholars, to be Iranians (like the present-day Armenians, who are also often branded as Iranians).

The Bhrgus : The Bhrgus were the ancestors of the Phrygians. According to the Encyclopedia Americana : "The Phryges or Phrygians - ethnologically the Phrygians seem to have been closely related to the Armenians. Both were of Indo-Germanic stock as has been proved by recent studies on the Phrygian language, which is known to us only from the scanty remains of widely-scattered inscriptions and a few glosses ... Like Armenian, the language seems to be Iranian in its affinities."[117]

This analysis of Talageri suggests great dispersal of Rgvedic people towards the north and the west after this battle of 10 kings which according to my assessment was fought between 8115 BC to 7800 B.C. i.e. the close of Krta

Yuga. The progeny of Pracheta, the Dhrhyu king must have fought in this battle and from the Anu dynasty the progeny of Mahamanas must have been there.

Shivaji Singh has given the location of these various Rgvedic people and has indicated their dispersal to various areas. "It is known that the extreme north west of the Rigvedic geographical horizon, which extended at least up to the river Kabul (Kubha) in Afghanistan, was occupied by the Gandharis, Pakthas, Alinas, Bhalanasas and the Vishanins. After their defeat in the 'Battle of Ten Kings' the Druhyus had also moved towards the north-west from the Saraswati Valley. Their presence in the Gandhara region is attested to by the later tradition (Macdonell and Keith 1912/95 : 1.385) The Puru leader Trasadasyu had acquired a new territory on the banks of the river Swat (Suvastu) and he is described as ruling over there (RV, 8.19.37). This appears to be in addition to his original domain in the Saraswati Valley for he says that he has possession over two territories (mamadvita rashtram kshatriyasya, RV, 4.42.1). In the Sindh and Punjab region were located the settlements o the Sivas, Parsus, and Vrichivants. The Purus and the Bharatas continued to occupy respectively the western and eastern parts o the Saraswati Valley down to the end of the Rigvedic period. The Srinjayas too were located somewhere nearby the territory of the Bharatas. They were closely allied wit h the latter for Bharata chief Divodasa and a Srinjaya leader are celebrated together (Macdonell and Keith 1912/95: 2.469) and the Turvasas are depicted as common enemies of both (RV, 7.18 & 6.27.7) During the Rigvedic period the Yadus seem to have migrated from the Saraswati region towards south and south-west finally reaching the Gujarat and Kathiawar area where according to Epic-Puranic tradition, many of their lineages flourished. In their journey towards Gujarat they had to cross through large water-logged tracts in which Indra is said to have helped them (RV, 6.20.12). That, they

became large cattle owners and wealthy, is also attested to by the text (RV, 8.1.31; 6.46). To the south of the Punjab, in the region of Rajasthan and Malwa were located the settlements of the Matsyas and Chedis. In th eastern part of the Rigvedic geographical horizon on the banks of the Yamuna lived the Ajas, Sigrus and Yakshus.[118]

Chapter-15 - Chronological Sequence of Ancient Indian Literature

Before we further proceed, in the chronology of Vedic literature it would be worthwhile to review the chronological sequence of entire ancient Indian literature from the Vedic Samhitas down to the Buddihistic period. On the basis of internal evidence, this ancient period can be divided into six periods as under :

1. Vedic Samhita period (Earlier Vedic period)
2. The Ramayana period (Middle Vedic period)
3. The period of Atharvaveda, Brahman and Sutras (Later Vedic period / period of Indus-Saraswati Civilization).
4. The Mahabharata period
5. The Yask / Panini period
6. The Bouddha / Jain period

This periodization has been done on the basis of internal evidence available in ancient literature and the beginning of this period has been taken from the Vedic Samhitas as no other literature prior to Vedic Samhita is available. Otherwise also Vedic Samhitas are undisputably the oldest literature, not only of India but of the entire world. This Vedic period according to our assessment extends up to 9000 BC.

Coming to the Ramayana period, there is no Rama story in the entire Vedic literature. The words such as Dasharatha, Sita, Dashasya etc. found in the Vedas are not the characters of Ramayana. They have been used with different meanings. Thus, word Dasharatha has been used as an adjective of king Kaksivan and the word Sita has been used in its original meaning i.e. furrow. The characters of Ramayana like king Janaka or king Ashvapati

of Kaikaya have been mentioned in later Vedic literature like Shatspath Brahmana or Brhad Arayanak Upnisad which means that Ramayana period precedes the Shathapatha Brahmana period which (we shall discuss) belongs to 3000 BC.

From a study of Valmiki Ramayana, it is clear that by the time of this Ramayana, only three Vedas Rigveda, Yajurveda and Samveda were in existence which means that Atharvaveda must have come after the Ramayana period. This is because several times only three Vedas have been mentioned in Valmiki Ramayana. In the Adityahridaya Stotra of Lanka kanda only three Vedas have been mentioned.

vg rkekuf;"kfe u"Vk onJrhfuo
_X;t% lkeikjx%A

Similarly, in Kishkindha kanda when Hanumana meets Rama and Lakshamana in the guise of a Brahmana and talks to them in Chaste Sanskrit, Bhagwan Rama observes :

ukuXonfouhrL; uk;t|oin/kkfj.k%
uk lkeonfon"k% 'kD;e|o foHkkf"krqeA

(वा.रा. 4/3/28)

"Such speech is not possible from a person who has not become modest by the study of Rigveda who does not hold Yajurveda in his heart and who is not an excellent scholar of Samveda."

Here also only three Vedas have been mentioned.

While there is no mention of any event of Mahabharata in Valmiki Ramayana. Mahabharata contains the entire Ramayana called as Ramopakhyana in its Arayanak Parva in 700 verses (Chapter 257 to 274).

Besides, at 86 places there is mention of Ramayana or its characters or events in Mahabharata. There is specific mention of Valmiki Ramayana also in the Mahabharata.

'ykd'pk;s ijk xhrk Hkkxoa.k egkReuk
vk[;krs jke pfjr uifr çfr Hkkjre

(म.भा. 12/57/40–41)

jktku çFke foUnr rrk Hkk;k rrk /kue
jktU;lfr ykdL; dirk Hkk;k dirk /kue
vfi pk;s ijk xhr% 'ykdk okYehfduk Hkfo

(म.भा. 7.118.48)

Thus, Mahabharata is decidadly posterior to Ramayana. The Yajurveda and Samveda and of course the Rigveda are before the Ramayana and Atharvaveda and the entire Brahmana and Sutra literature is after the Ramayana.

Yask, Panini, Boudha and Jain are definitely after the Mahabharata and there is no controversy about their periods being clearly after the Mahabharata War.

Chapter-16 Period-V 5000 to 3500 B.C. : Late Vedic Period and Early Brahmana Period

Lane-I : Archaeology : Chalcolithic cultures Mehargarh, Nagwada, Koteshwara, Padri etc. : Village-towns with short-distance exchanges in luxury items and essential goods.

Mallory has argued that one can discern iconographic representation of the Indo-European creation myth in the stone stelae of the early Bronze Age in the Alpine region. Here, he claims, there is a long tradition of expressing mythic concepts in stone at sites such as Val Camonica and some of the stelae, which depict a possible sunburst at the head and repeated elements such as weapons, have been interpreted, one grounds far more obvious to the purpose than others, as clear reflections of the original cosmogonic or Purusa.[119]

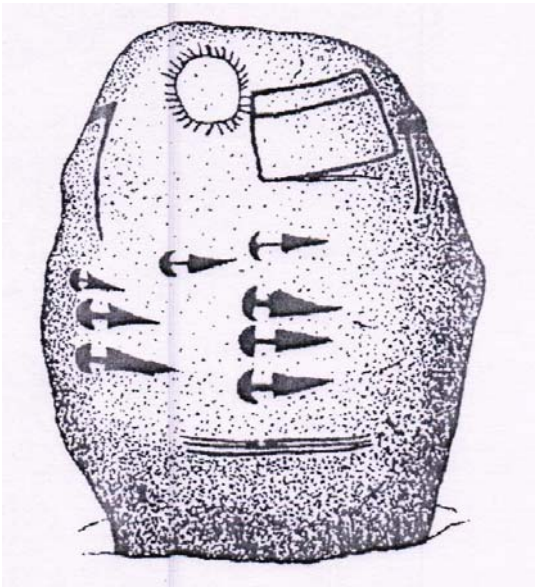


Fig.11 : Cosmogony - North Italian stela from Bagnolo, which has been interpreted as Purusa-Stela, e.g., the sun is

placed in the highest registrar and is seen as an alloform for the 'eye', the weapons have been claimed to represent the multi-armed nature of the primeval giant

Lane-II : Archaeoastronomy

Date of Rama

As far as the period of Rama is concerned, we have two astronomical clues to arrive at approximately correct period of Rama. One is available in Padmapurana where it has been mentioned that during the reign of King Dasharatha, the Saturn passed through the two arms of Star Rohini i.e. Aldabaran. This combination is called Rohini-Shakatabheda (piercing through the cart of Rohini). Shankar Bal Krishna Dixit has worked out the date of this Rohini Shakatabheda, which comes at 5294 before shaka or 5217 B.C. [120] The other indicator of the period of Rama is the planetary position given in the Valmiki Ramayana about the birth of Rama and his three brothers in the Balakanda of Ramayana. The relevant shlokas run as under:

rr'p }kn'k ekl p=k ukofed frFkk
u{k=k·fnfrnoR;k LokPpk LFk"k i´pk
xg"kdd:V yXuk okDirkfoUnuk lg
çk|ekuk txUukFkk looykdueLÑre·
dklY;ktu;n jke fn0;y{k.kk;reAA
i";k tkrLr Hkjrk ehuyXuk çlUu/kh%
lkik tkrk r lkfe=h dyhj·H;fnr jokAA

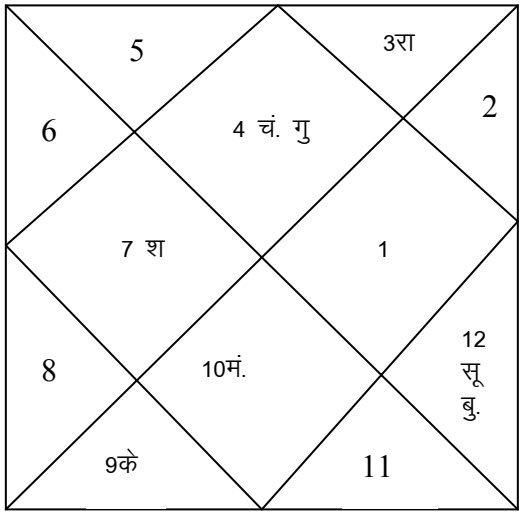
(वा.रा.बाल. 18/8–10, 15)

Then, in the 12th month known as Caitra on the 9th day of bright half of the month, in the constellation of Punarvasu and five planets being either in own house or in exaltation, in the ascendant of Karka with Jupiter and Moon. Queen Koshalya gave birth to Rama with divine attributes to

whom the whole world bowed in benediction and who was the Lord of this world. Bright talented Prince Bharata was born in Pushya Star in Meena ascendant and two sons of Sumitra namely Laxmana and Shatrughna were born in Ashlesha Star in the Karkat Lagna with sun in exaltation.

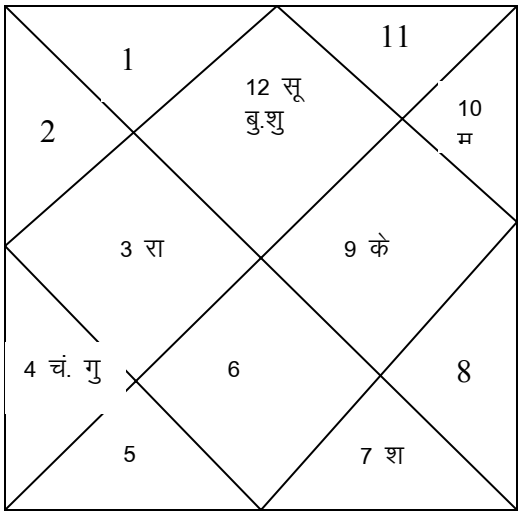
Valmiki Ramana, Balkanta, 18/8-10, 15

Caitra Shukla 9 Punarvasu
10 January 5115 B.C.



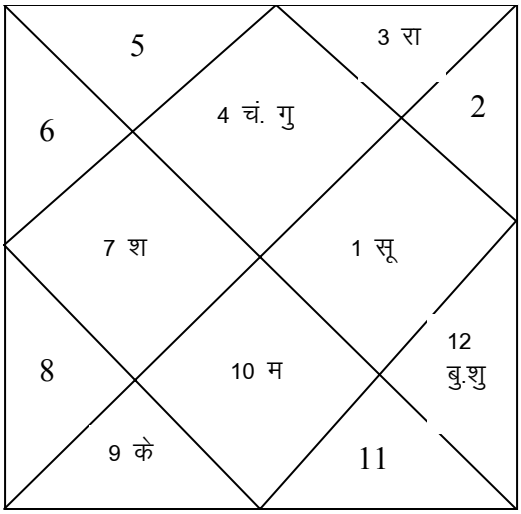
Rama

Caitra Shukla 9 Punarvasu
10 January 5115 B.C.



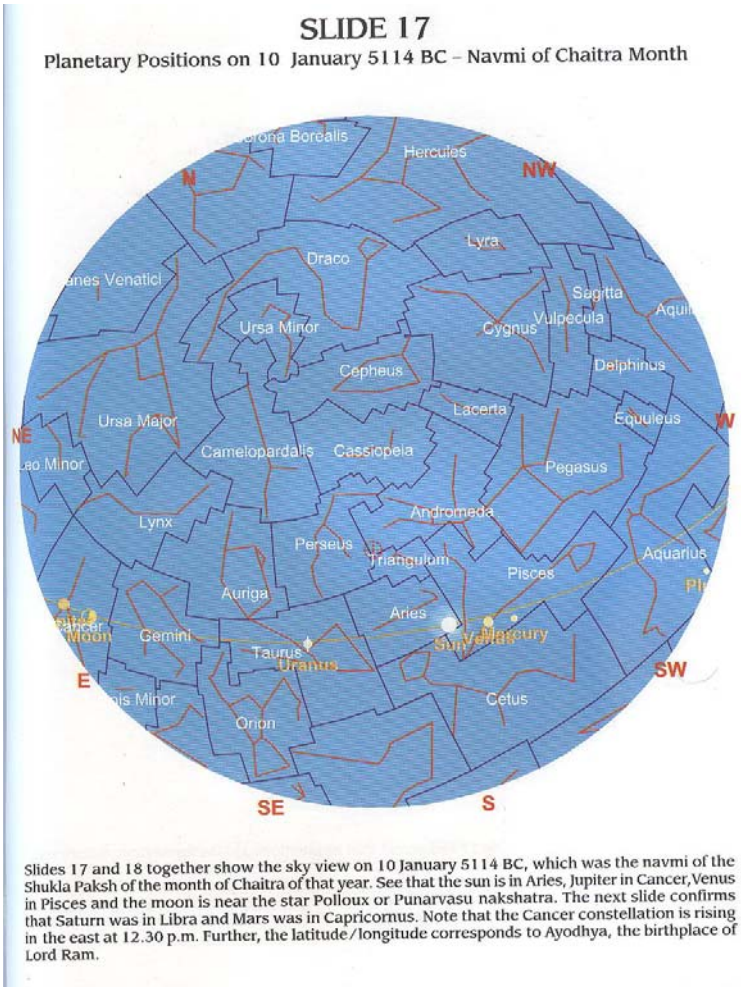
Bharata

Caitra Shukla 11 Ashlesha
11 January 5115 B.C.



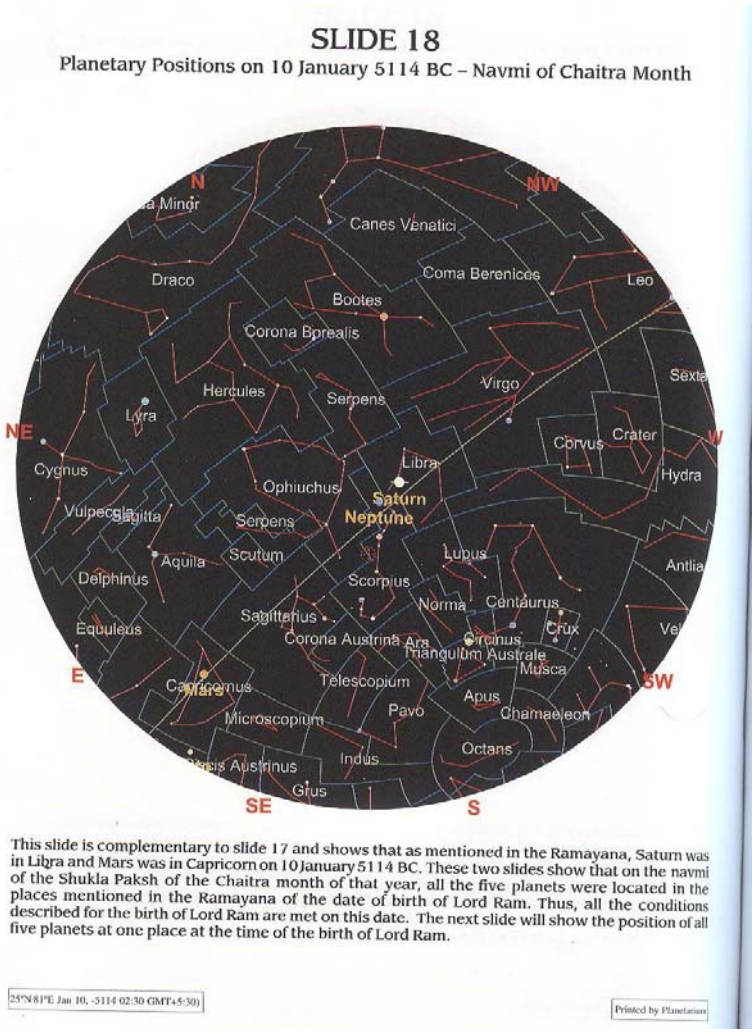
Laxmana/Shatrughna

Luckily, these days we have got planetarium software. A scholar named Pushkar Bhatnagar has made this calculation in his book 'Dating the Era of Lord Rama' and he has found that the above mentioned planetary combination obtained in -5114 AD or 5115 B.C. on 10th January. He has given slides of that day viz. Caitra Sukla Navmi Punarvasu Star 5115 B.C. which is given here under:



Slides 17 and 18 together show the sky view on 10 January 5114 BC, which was the navmi of the Shukla Paksh of the month of Chaitra of that year. See that the sun is in Aries, Jupiter in Cancer, Venus in Pisces and the moon is near the star Polloux or Punarvasu nakshatra. The next slide confirms that Saturn was in Libra and Mars was in Capricornus. Note that the Cancer constellation is rising in the east at 12.30 p.m. Further, the latitude/longitude corresponds to Ayodhya, the birthplace of Lord Ram.

Map-12



Map-13

In these slides the Cancer ascendant is seen rising along with Moon and Jupiter (Slide 17). Venus, Mercury and Sun can be seen in Aries. Saturn in Libra and Mars in Capricorn can be seen in Slide 18. From this calculation we

have sufficient reason to conclude that the period of Rama is about 5000 B.C.

In my book 'Mahabharat Ka Kal Nirnaya' I have worked the date of Mahabharata as 1952 B.C. (the date of Mahabharata shall be discussed in next period). Between Mahabharata and Ramayana, 35 generations are available and if we take equal number of missing links, with an average of 40 which is quite probable in those comparative stable times this period comes at 2800 years which when added to 2000 B.C. comes as 4800 B.C. which is quite close to 5000 B.C. Thus, the date of Rama in all probability is 5115 B.C. as worked out by Pushkar Bhatnagar on the basis of the planetary position of the birth of Shri Rama.

Lane-III : Comparative Mythology, Theology and Linguistics

When we compare the religious concepts and the concept about the creation of India, Sumer and Egypt, we find many commonalities. In all the three cultures, this creation has come up out of the original waters, in all of them the Heaven and earth have been shown as combined being separated by the air, the Sun is staying on a pillar and the capacity of the sound to create the universe. The sun worship was particularly migrated from India to Egypt.

But commanality does not mean that the original source of all these concepts is India. Ram Vilas Sharma has found out the theo-sociological ground for this assessment. He observes that in Rigvedic pantheon, many stages of development can be seen. The first stage is that one where mothers are important. These mothers live together collectively. The second stage is the one when the number of mothers reduces and there are two or three principal mothers only. The third stage is when men acquires prominence and live together collectively. The fourth stage is when the number of man reduces and there are two or

three principal male figures and the fifth and final stage is one when there is combination of one man, one woman as father and mother.

आपो अस्मान् मातरः शुन्धयन्तु। (10.17.10)

Let these mothers sanctify us.

आपोदेवीरूपह्वये। (1.23.18)

We call upon waters as mothers.

Both अपः and आपः are of feminine gender and a plural number. They represent a group of mothers. This is the first stage of social development. Water was worshipped in Egypt, Sumer and India and in all these three countries it was conceived as sacred. In the initial social development, worship of water started and on this worship of waters the imprint of matriarchal authority is available only in India. Rivers Vipasha and Shutudri are two mothers licking their calf. (3.33.3) Here there is importance of two mothers. धावापृथिवी the heaven and sky are father and mother but they have been called two mothers also (3.31.12). They produce the world (3.25.3). They are समन्ते स्वसारः Sisters related to each other. This is the second stage. In this stage itself the only mother Aditi can be counted who is the mother of all the Adityas (suns).

In Rgveda, Maruts are the Gods who are always remembered collectively. They are all equal (5.59.6). Just as spokes are connected to the naval of a chariot wheel, they are mutually connected (10.78.4). This is the ideal situation of a patriarchal society. This is third stage of development. Then the ideal pair of two Gods are Asvins. They were born together. Similar pairs are Mitra, Varuna, Indra, Brhaspati, Soma, Pushan etc. This is the fourth stage. Then comes the stage of one God and one Goddess. तन्माता पृथिवी तत् पिता द्यौः This is the final stage where a male and female Gods are there. In Egypt and Sumer, the heaven and

sky are the reflections of patriarchal society. But the matriarchal form of Gods more ancient than this is available in India. Thus, the cosmogonical thinking of these three countries India, Egypt and Sumer when compared on sociological grounds, India emerges as the original source of all of them.

Ram Vilas Sharma holds that the earlier form of Enki is Varuna who resides at the places where from the rivers emerge. The similarity between Varuna and Enki, the God of Mesopotamia is greater than between the Dyaus and Greek Jeus. Without taking Rgvedic themes into account, the Sumeri Babylonian Pantheon can not be understood properly. It should be remembered that the full development of Pantheon in all the stages as available in Rgveda is neither preserved in Sumer nor in Egypt.[121]

The Egyptian civilization goes back to around 4000 B.C. and then came the Mesopotamian civilization. These similarities of mythological and theological concepts indicate not only the contacts between three countries but because India emerges as the most ancient of them, in all likelihood, the Indian Aryans had gone to Egypt and Mesopotamia, ruled there and created the Indo-European language at those places.

Linguistics

The Harappan culture of about 1000 years, the Minon, Mycenaean culture of another 1000 years and in between the Mitanni Hittite culture of equal time - in a vast land under a well organized government administration for a long time, the Indo-European languages were created in this area. The decisive role of India in the creation of Indo-European languages is a proven fact. The old Iranian language of Avestan is very close to Sanskrit. From the point of view of linguistics, the old Iranian language is in fact another form of Sanskrit. But the aspirate voiced

phonemes (झ भ घ ढ ध) are not there even in old Irani language which indicates that Sanskrit is older than the Avestan language. Ram Vilas Sharma holds that the country where these voiced aspirate sounds have been preserved is the original source of the Indo-European languages. From here one stream went to the west and changed the sound due to the impact of non Aryan languages. While the other stream went to the East to the Slavic countries up to Russia. The stream which went to the East is known as Satem and stream which is went to the West is known as Kentum. The oldest language of Satem branch is Avesta and the oldest language of Kentum branch is Greek and both these languages are so close to Sanskrit as no other language of western Europe is. Thus, two most ancient languages of Indo-European family seem to be the extensions of Vedic Sanskrit.[122]

Lane-IV : Literary History

This is the period when the first dynasties of Egypt were founded. Waddell has identified the first dynastic ruler Menes of Egypt with Manasyu of Puru line in Indian king list. He says Menes' identity with this Manasyu or Aha Manjas (or Manj) then became a certainty when I revised the Sanskrit text of the Indian Epic Chronicle record of him. He quotes verses 5, 6 and 7 of Mahabharata Adiparva chapter 95 to establish this identity. In fact he has given the transliteration of these three verses in Appendix VIII of his book 'The Makers of Civilization'. When we look to the original Mahabharata, these three verses run as under :

çohj'ojjkæk'okL=;% i=k egkjFkk%A
ijk% ik"V;ket k;Ur çohjk o'kÑr rr%AA
euL;jHkor rLekPNjluhlr% çHk%A
ifFk0;k'prjUrk;k xkIrk jkthoykpu%AA

'kDr% lq:guuk okXXeh lkoh jhru;kL=;%A
euL;kjHkou i=k% 'kjk% lo egkjFkk%AA

Puru gave birth to three sons from his wife Pausti, Pravir, Ishwar and Raudrasva. All the three were great charioteers. Among them from Pravir, this line continued. Pravira's son was Manasyu whose mother was Shurseni and he was very powerful. The lotus-eyed Manasyu ruled the entire earth girdled by four seas. From Manasyu through Souviri were born three sons Shakta, Samhanan and Vagmi. They were all great warriors and charioteers.

Thus the above three verses do not indicate any connection of Manasyu with Egypt. The interpretation of Waddell taking Gopta has a form of Egypt appears to be really very farfetched. Besides, Pravir and Manasyu are among the earlier kings of the Puru line and in terms of time they are very ancient when we compare with the first dynasties of Egypt. puru or Prabhu as Pharah is also questionable. Besides, Asmanjas of Ahmanjas as Wadell has given the alternative name for Manasyu is also not possible The Asmanjas is in the Iksvaku line as the son of Sagara and Manasyu and Asmanjas are more than 50 generations apart.

But as we have discussed earlier, this was the period of the second dispersal of Indian Aryans towards the West. The Identity of Menes, the fist dynastic king of Egypt can be established quite plausibly with Manu, the grandson of Agnivarna. As indicated above with Agnivarna the Iksavaku line almost came to dead end and this Manu the grandson of Agnivarna went to the forest for performing great penances. With the result he got the kingship of unknown lands which could be Uttarkuru and this Uttarkuru has been identified by Waddell himself as the vast tract from the Mesopotamian to Anatolia. Thus, it is quite likely that the first dynasty of Egypt was established

by the Iksavaku king Manu. The probability is further confirmed by the fact that a little later in history the Hyksos kings who ruled Egypt for about 500 years were definitely Iksvakus. Their genealogical names are Indo Aryan. It appears that the progeny of the Purus particularly the progeny of Druhyu and Turvasus occupied the areas of Mesopotamia and the progeny of Iksavakus occupied the Egyptian kingdoms.

According to Ram Vilas Sharma, the first king of Crete according to the Greek tradition was Minos. This Minos is also a derivative of Manu. After his name only the Minoan culture is known. This civilization was not limited to Crete but was spread over the entire Aegean region. According to Higgins the persons who had inhabited other islands in addition to the Crete and also the main land of Greece, they came there around 2800 B.C. from Asia minor. As we have seen from linguistic considerations the people who came to Greek mainland from Asia minor could not have been the original inhabitants of Asia minor. Because they were speakers of Indo European languages and Indo European language could not originate in Asia minor, as is evident from the flow of languages of west their ancestors must have definitely come from India and they were the fathers of the Minoan civilization of Greece.[123]

Chapter-17 Period-VI 3500 to 1900 B.C. : Period of Brahmanas, Indus Saraswati Civilization and Mahabharata

Lane-I : Archaeology : Early Bronze age cultures, Mehargarh, Nausharo, Harappa, Mohenjodero, Lathal, Kot Diji, Dholavira, Banawali, Kunal, Surkotda, Kalibangan etc.

The Indus Saraswati civilization has been dealt with great details in earlier sections. The points which deserve special mention regarding the common features between the Sutra literature and the Harappan civilization are of special importance. After all, Harappan towns have elaborate planning, the roads are strictly at 90° angle, the squares and rectangles have been properly drawn and the whole town is well oriented i.e. according to the cardinal directions. After all, who taught Harappans the method of finding out Praci or the East-West line? Or who taught them to make correct right angles? Definitely, this has bearing on the Sulba sutra geometry of third millennium B.C.

Rajaram and Frawley observed that "Harappan archaeology is not only much more sophisticated (and greater in scale and scope), but also older than the Old-Babylonian by more than a thousand years.

There is a further remarkable connection. The so-called Harappan seals frequently depict the spoked wheel. It will be shown in succeeding chapters, the unfolding picture about ancient societies is leading to a fundamental chronological benchmark making the early Sutra period, the mature Harappan civilization, and the Sumerian civilization of Mesopotamia overlap in time. Baudhayana was a sage belonging to the early Sutra period. The Harappan seals depict spoked wheels with six spokes rather than the sixteen given by Baudhayana in his example. Since

he already had a general method, this would have presented him no problems.

Archaeology also supplements our knowledge relating to the geometrical applications of Vedic mathematics. For instance, Mackay has noted the existence of tools among Harappan ruins for drawing circles, going back to 2500 BCE and beyond. Among the artefacts from the recently excavated site of Dholavira, one of the authors (Rajaram) noted a finely finished circular disc with equi-angular sector markings. It was probably part of a tool used in navigation and/or surveying, or possibly astronomy. The gnomon - another geometrical object used by surveyors and in astronomy is also found in the Sulbas.

The spoked wheel is of course a frequently occurring motif on the Harappan seals. One can only suppose that the seals were describing an object that was widely known and easily recognizable. It was probably used as a compound symbol by scribes using the Indus script.[124]

Lane-II : Archaeoastronomy :

Stage-IX : The Krttika Period

The evidence of krttikas being always in the east as available in Manava sulba-sutra and Baudhayan sulba-sutra has been analyzed and its period found … as 3016 B.C. For the corroboration in the Brahmanas, the most glaring reference, often quoted by the scholars, is the one in Satapatha Brahmana (II.1.2/3)

'एक द्वे त्रीणि चत्वारीति वा अन्यानि नक्षत्राणि अथैता एव भूयिष्ठा यत्कृत्तिकास्तद् कृत्तिकास्वादधीत। एता ह वै प्राच्यै दिशो न च्यवन्ते। सर्वाणि ह वा अन्यानि नक्षत्राणि प्राच्यै दिशश्च्यवन्ते – तत्प्राच्यामैवास्यै तद्दिष्याहितौ भवतस्तस्मात् कृत्तिकास्वाद–धीत[277] ।।3।।

'There are asterisms with one, two, three or four stars; but Krttikas contain a multitude of them, hence lay (annual

sacrificial) fire in krttikas. These do not deviate from the east; all other stars do deviate from the east. Hence in the east, sitting attentive towards their direction, lay fire in the krttikas'.

There cant be a more explicit, direct and emphatic statement than this. This needs no explanation. Its astronomical significance and period have already been worked out. This is an absolute unambiguous mathematical argument which unmistakably places the antiquity of Satapatha Brahmana at 3000 B.C. along with all that Sutra-literature (Baudhayana, Manava etc.) which speak of krttikas in the due east.

Stages of Krttika (Pleiades)

Coordinates of krttika (η cauri) in 2000 AD.

Longitude = 36° - 8′ - 07″ Ayanansa 23°-51′-26″

Latitude = 4° - 3′ - 03″

Decl. = 24° - 06′ - 18″

Proper motion as per Meteorology Department Ephemeris 2000

Long. + .009″ per year x 5000 = 45″

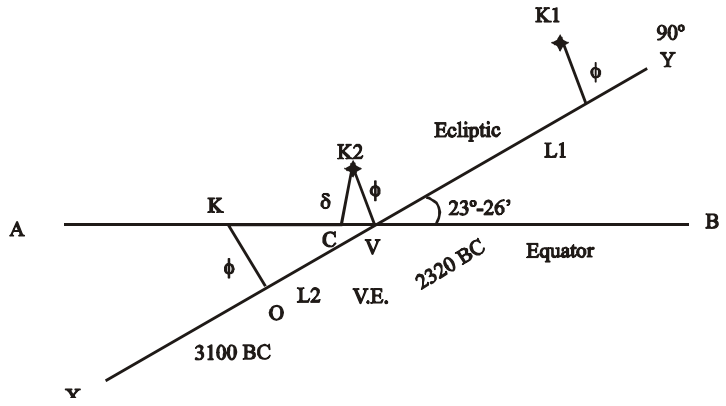
Lat. - 049″ per year x 5000 = 4′-5″

∴ In 3000 B.C. coordinates would be

Long. 36° - 7′ - 22″

Lat. 4° - 7′ - 8″

Obliquity in 3100 B.C. 24° - 2′ - 7″ (As per Lahiri)



In the above figure AB is a section of celestial equator; XY, a section of the ecliptic

K 1 is the present position of krttika

K2 is the position when its place is on the Vernal Equinox i.e. when its tropical longitude is zero.

K is the position when it is on the celestial equator i.e. due east.

$\angle$ YVB is the obliquity of the ecliptic (ω) which was 24°-2′-7″ around 3000 BC.

At position K_2, Krttika was on the equinox but it (the star) was not on the celestial equator due to latitude. It was north of equator by an angular distance called declination or delta (δ). Therefore the star has to go further south at the position K when it is exactly on the celestial equator i.e. due east. In order to find out position O, we must find out the longitude OV (L_2). L_1 is the present Sayan longitude of Krttika.

$$\angle KVO = \omega = 24°$$

$$\frac{\text{ज्या } \phi}{\text{ज्या } L_2} = \tan \omega$$

Or $\frac{R \sin \phi}{R \sin L_2} = \tan \omega$ Or $\sin L_2 = \frac{\sin \phi}{\tan \omega}$

$$\therefore \sin L_2 = \frac{\sin (4° - 7' - 8'')}{\tan 24°} = \frac{0.07182}{0.44522} = 0.16132$$

$\therefore L_2 = 9.2837 = 9° - 17' - 01''$

$L_1 + L_2 = (36°\text{-}8'\text{-}7'') + (23°\text{-}51'\text{-}26'') = 59°\text{-}59'\text{-}33''$

$+ \quad 9°\text{-}17'\text{-}1''$

$69°\text{-}16'\text{-}34''$

When Krttikas recede this much distance, then it will be on the celestial equator.

@ 49.3″ per year, it comes to $\frac{69° - 16' - 34''}{0 - 0 - 49.3''}$

$= 5059 - 2000 = 3059$ B.C.

@ 49.5″ ,, $= 5038 - 2000 = 3038$ B.C.

@ 49.8″ ,, $= 5007 - 2000 = 3007$ B.C.

S.B. Dixit in his article "The Age of Satapatha Brahmana" (Indian Antiquary) has given 2990 B.C. as its date[275] which comes when we take the average of 50″ per year. But from 3000 BC to 2000 AD the equinox shift varies from 49.3″ to 50.3″ per year. Hence an average of 49.8 is justifiable rather than 50″. Hence the most accurate date for Krttikas to be due east is 3016 B.C.

This same postition of Krttika has been mentioned in Baudhayan Sulba Sutra and other Sulba Sutras also.

प्राचीज्ञानोपायाः कर्मान्त उक्ताः। कृतिकाः खल्बिमाः प्राचीं दिशं न परिजहाति तासां सन्दर्शनेन मापयेदित्येतदेकं श्रोणासंदर्शनेन मापयेदित्येतदेकं चित्रास्वात्योरन्तरालेन मापये दित्येतदपरमिति।

'The methods of finding the east have been given in works dealing with rituals. These krttikas do not deviate from the east; therefore one view is that it (the east) should be measured by looking at them; another view is that it should be measured by looking at srona (old name for sravana) and a third view is that it should be measured by looking at the interval between the chitra and svati'.[125]

The Architecture of Stonehenge (U.K.)

In 2007, I went to England, Rome and Paris to find out some ancient Aryan monuments in Europe. There I went to the famous ancient monument called Stonehenge and studied the monument at great length. I collected literature pertaining to it from there and also from other sources. By study of the dating, the dimensions and the astronomical significance of the monuments, my preliminary conclusion is that such a monument with so much precision regarding the point of summer solstice and other cardinal points of Sun's journey could have been erected by the Vedic Aryans only as no other civilization at that time viz. about 3000 B.C. had the knowledge and know-how of the astronomical and geometrical intricacies needed for such a construction excepting India whose geometry and astronomy was quite advanced in the 3000 B.C. as it evident from the Sulba Sutra Geometry and many references in Satapathabrahmana and Taitiriyasamhita. The dimensions and structure of the Stonehenge along with its date now established after carbon-14 dating indicate glaringly that no other people except the Aryans could have accomplished this feat.

The Stonehenge is a large circular construction with a ditch surrounding it. There is an outer ring with dia 360'. Inside this outer ring there are 30 sarsen stones arranged in a circle with lintels thereon. There are 56 holes which are called Aubrey holes, 30 YZ holes and 5 gates made of two vertical and one horizontal stones called trilithons. There

are 60 blue stones and in the inner most side there is a structure of horse-shoe shape with 19 blue stones. Put together these dimensions can be summed up as under :

Dia of outer ring	360'
Sarsens	30
Aubrey Holes	56
Y.Z. Holes	30
Trilithons	5 gates
Blue Stones	60
Horse Shoe Blue stones	19

Now all these numbers are very important and have got a clear astronomical significance. The inner circumference 1140 ft. is divisible by 30. Besides, 1140/360 gives the value of pie as 3.16 known to the Aryans since the time of Surya Siddhanta as √10. This value is also given in Maitrayani Sulba Sutra which dates about 3000 B.C. The magic number of 360 was given to the world by Rigvedic Aryans only and this number finds place in the first mandal of Rigveda :

}kn'k ç/k;'pØesdk =hf.k uH;kfu d m rfPpdsr

rfLeURlkdk f='krk u 'kadok·filrk% "kf"Vu pykpykl%

(1-164-48).

'The wheel (of the Samvatsar) with twelve segments of the rim, three naves is known by some rare scholars; in it are fixed three hundred and sixty moving spokes'.

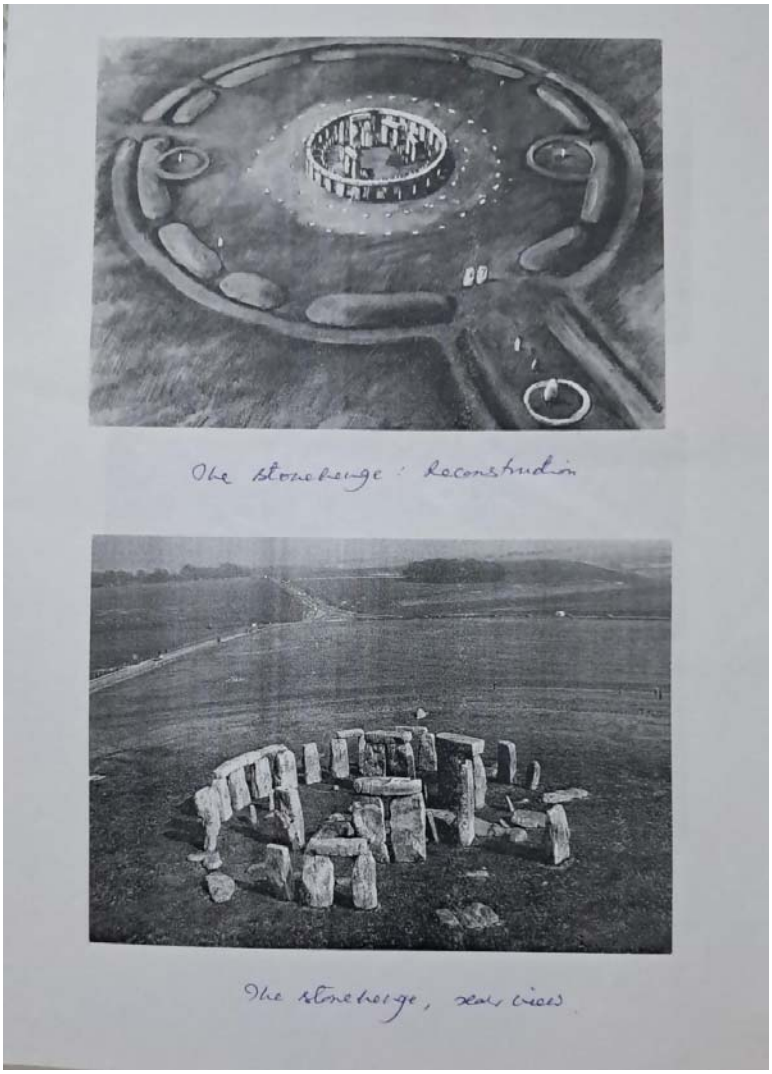
Here the symbolism is transparent; the Risi obviously means the Samvatsara or the solar year in which there are twelve months (or signs of zodiac), three major seasons - summer, winter rains or three stages of the Sun, the two

solstices and the equinox and three hundred and sixty solar days.

We had a fully developed calendar in the Vedic times itself with a sexagesimal system - 6 days in a week, 30 days in a month, 12 months in a year and 360 days in a year. This was a (mean) civil year as opposed to the true year of the priests which varied depending on the nature of the samvatsara.

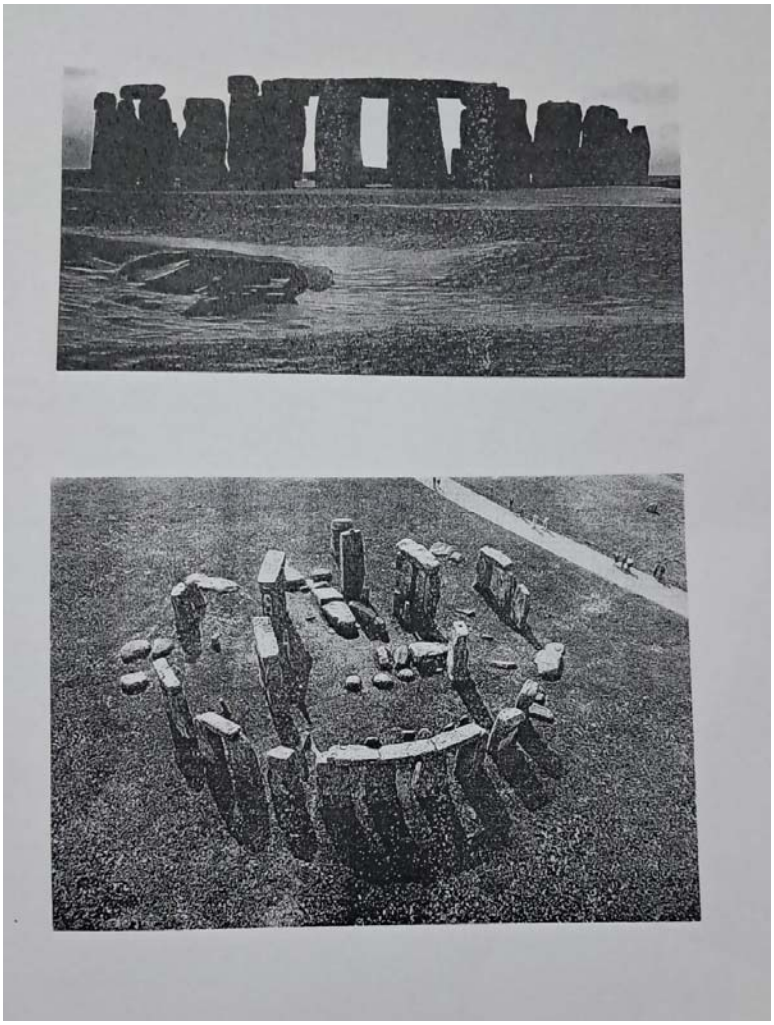
30 Sarsens is clearly 12th part of 360. The significance of 56 Aubrey holes is that the eclipse cycle of 223 lunar months was known to the Rigvedic Aryans and there is a clear mention of a solar eclipse in Rigveda in 5th Mandal of it. 56 is ¼ of it so that after the completion of the 4th round, they could have easily predicted a solar or lunar eclipse. Similarly, number 19 which is the number of stones in the Horse shoe is the famous period when the luni solar and the solar calendars coincide as per Indian nirayan system. Thus, this Stonehenge must have served as a permanent calendar and observatory to the Aryans who went there in connection with their commercial pursuits during later Vedic times around 3000 BC and earlier. The directions of the two gates of Stonehenge have been so arranged that one can see the sunrise of the summer solstice in the north-east direction and the sunset of the summer solstice in the south-west direction. The current archaeological finds have clearly established the earliest phase of Stonehenge between 3000-2920 BC. (English Heritage Guidebooks: Stonehenge, 2005, p.6) To find out the latitude and longitude of a place for constructing an observatory for the observation of the summer solstice and equinoxes, only Vedic Aryans had the know how at that time in the form of the palabha and the nadyantar. I had worked out that the palabha (the shadow of twelve angula sanku at mid-day on equinox day) must be 15 angula and the nadyantar as 13 ghatis. The nadyantara of Alexandria

and Rome has been given in our ancient astronomical texts as 7 ghatis 20 pala and 10 ghatis respectively which shows our ancient connection with that world. Earlier there were many claimants as the builders of this Stonehenge viz. Romans, Danes, Egyptians and Druids. But with the date of this structure pushing back in antiquity, all of them vanished. Now, English archaeologists are trying to ascribe the structure to the indigenous British cultures which is clearly improbable as no trace of a civilized society with a capacity to construct such an intricate structure existed in Britain at that part of history. Because of the imperial mindset of the some European archeologists, it was and is difficult for them to imagine a subject race having performed such a feat. But the facts of the case clamour loud and clear the intelligent hand of the Vedic Aryans behind this ancient astronomical observatory now known as Stonehenge.



The stonehenge : Reconstruction

The stonehenge, real view



Lane-III : Linguistics Religion, Geometry and Mathematics

Vedic connections with the West Asia

Among the Hittite records in Anatolia has been found a manual on horse training written in what is virtually pure Sanskrit. Now there are more than hundred such records testifying to the use of Sanskrit and Indian names. The invocation is clearly Indian : Indra, Mitra, Varuna is a classic Vedic formula - not Iranian.

Then there is the question of Kassites, an Indo-Aryan people who appeared in Iran and West Asia early in the second millennium BCE and even before. The Kassites who also worshipped Indian deities ruled Babylonia for over 500 years follwing their overthrow of the Old-Babylonian empire of the famous Hammurabi.

The Kassites have not received the attention their historical importance merites. They appeared in the hinterlands between India and Iran at a crucial period in history and could account for many Indian vestiges found in West Asia. Frawlay (1991) notes a Kassite record of 1750 BCE in which a deity named 'Himalaya' is mentioned. This is only possible if these people were already familiar with India. The date of the first appearance of the Kassites corresponds roughly to the time of the final desiccation of the Saraswati river. It is well known that Indian records like the Puranas and Brahmanas speak of the drying up of the Saraswati. The focus of Indian civilization then shifted from the Saraswati region to the Ganga well to the east. Political supremacy also shifted from the Bharatas on the Saraswati to Magadha on the Ganga. The Ganga replaced the Saraswati as the holiest of rivers in the Indian pantheon. All these developments are noted in the Puranas and other writings.

The Babylonian ruler Samsuiluma (ruled c. 1749-1712 BCE), son of Hammurabi, noted the presence of the

Kassites in his domains. He built a fortress in 1726 BCE as a bulwark against them at the Tigris-Diyala confluence. But the Kassites soon estblished themselves under a king named Kashtiliashu. Before long they were masters of Babylon itself. Judging from their recorded worship ofthe deity Himalaya and other practices, they were a people familiar with India before appearing in Iran and West Asia. The Kassites are believed to have introduced the use of the horse into the region. The spoked wheel and the light Indian chariot made their appearance in the region, also around the same time. The famous Vedic commentator Baudhayana gives a method for designing spoked wheels in his mathematical treatise. The Rigveda also knows the spoked wheel. All these again point to Indian antecedents.

In Gurney's book, there is another evidence of the connection between the Hittite culture being of Indian origin. In statue, the Hittite king has been shown with winged sun disc. In Egypt, the emblem was the manifestation of emperorship and it was used by Mitanni rulers also. From Iraq to Turkey and from Turkey to Egypt, the emblem of royalty was the sun disc and this has direct connection with Rgveda. Gurney himself mentions it. It appears that this emblem was Mittani kings as a representation of the sky resting on a pillar which is a concept peculiar in Rgveda. Besdies, Gods like Indra and Varuna, the technical words pertaining to the chariotry and this emblem of sun disc, they all indicate the connection of Mitanni kings with Indian origin.

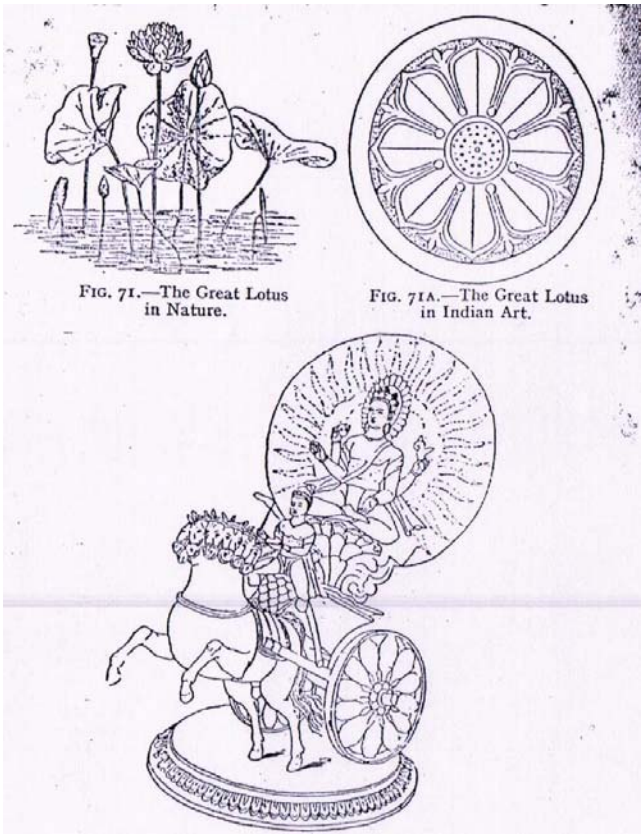


Fig. 12 : Indian Sun-god on Lotus showing Lotus as Chariot-wheel

Ram Vilas Sharma also mentions that in Hittite kingdom, there were innumerable temples. That the method of worship in these temples was exactly the same as can be now seen in Indian temples. According to Gurney himself has given the details about the method of worship of the deities in these temples. He observed that just removing the address to the weather God it would be difficult to believe that such an elaborate worship could have been done anywhere outside India and that too crossing Iran and Iraq in a Northern province of Turkey.[126]

The ancient Vendidad mentions the hapta hendu (Vedic sapta sindhu) suggesting memories of the period when the Saraswati was still flowing. on the basis of Xanthos, Zoroaster may tentatively be placed between 1900 and 1800 BCE, squarely in the early Kassite period. It is thus possible that Zarathushtra, to give his Iranian name, represents a schism in the Vedic religion of India around the time of the final drying up of the Saraswati river. Zoroaster who appears to have been from Bahlika (North-West Afghanistan) might have found refuge under a Kassite prince. His Gathas mention Zoroaster's wanderings in search of a patron. He was obviously a heretic.

Archaeology and literary records point to a movement of the Indo-Aryans from the Indo-Iranian border into Iran, Mesopotamia, Anatolia and West Asia, but none at all into India from the west.[127]

Renfrew has referred to a very recent discovery about the commonality of rituals between various Indo-European speaking countries of the world. He has quoted Joseph Vendryes in this respect. "Seventy years ago, the founder of the periodical *Etudes Celtiques*, Joseph Vendryes, published an article entitled "Vocabulary equivalences between Indo-Iranian and Celtic', in which he suggested the existence in these early languages of certain very similar terms relating amongst other things to ritual and religion and hence to religious traditions common to the two areas and languages. Following this evidence, it has been suggested that the brahmans (the priests mentioned in the Vedic Sanskrit texts of India), the Magi of the early Iranian *Avesta*, the *flamines* and pontifs of the Roman religion, and the druids of the early Celts played closely analogous roles in their different communities, and that these analogies were due to their common origin in still earlier Indo-European institutions. These are exciting proposals, and they were taken up with enthusiasm by many scholars.

Comparable suggestions have been made about the early Irish and Indian law books: they consisted of canonical texts, invested with a sacred origin, and interpreted exclusively by privileged caste. There were law schools in both countries and the relations between pupil and teacher were similar, with eventual rights of succession."[128]

Seidenberg's Analysis of the Sulb-Sutra Geometry vis-a-vis Greek and Babylonian Geometry

Comparing Vedic geometry with the Greek and Babylonian A. Sedenberg observes :-

"Let us compare old Babylonian and Vedic, or Vedic and Greek mathematics. The basic point is that the dominant aspect of old Babylonian mathematics is its computational character. Consider then, the theorem of Pythogoras under two aspects corresponding to two formulations given above : (one is constructive or geometric and the other is algebraic or computational) : in aspect 1 the theorem is used to construct the side of a square equal to the sum or difference of two squares; in aspect 2 the theorem is used, say, to compute a diagonal of a rectangle. Aspect 2 comes in, for example, when one uses the (3,4,5) triangle to construct a right angle. The sulbasutras know both aspects and so does Satapatha Brahmana. The Taittiriya Samhita at least knows aspect 2 which comes in when constructing a right angle with the theorem; the discussion of the kamya altars also made it plausible that it knew aspect 1 (also). The 'Elements' has only aspect 1 but the Greeks know aspect 2, as well, since they had Pythagorean number triples. Now the old Babylonians had aspect 2, but they would have had no use for aspect 1 : they would simply square the lengths of the sides of the given squares, add, and take the square root.

Or consider the problem of converting the rectangle into a square. In India and Greek, this is done

geometrically, as explained. The old Babylonians would have had no use for such a procedure; they would simply multiply the two sides and take the square root.

The geometric algebra of Greece and of India have a common source different from old Babylonia of 1700 B.C.".

Mr. Seidenberg's conclusion regarding some pre 1700 B.C. common source' from which both India and Greeks or even old Babylonian might have borrowed stems from two presumptions:-

(i) He relies on Prof. L. Renou and J. Filliozat for the chronology of Sanskrit classics because he writes -'As to the chronology L. Renou and J. Filliozat whose work is well thought of in Sanskrit circles, place the 'Satapatha Brahmana at 1000-800 B.C.

(ii) The so called theory of Aryan migration to India, because he writes 'In view of these facts, it still looks to me as if the invading Aryans brought the geometrical rituals in with them, and I retain the impression that the Greeks and the Vedic Indians got their geometry from a common source, perhaps their common ancestors'. He also holds the view that 'Harappan civilization is a derivative of Babylonia, at least at its inception'. He adopts the dates of wheeler viz 2500 B.C. to 2000 B.C. as the limits for Harappan civilization.[253] In fact because 'history' is a subject alien to him and for which he has to depend on others, he makes many surmises. But if we take his conclusions regarding relative chronology of mathematics and try to date 'Satapatha Brahmana' and 'Sulba Sutras' from their texts itself astronomically, a coherent and consistent picture can emerge 'doing

away' with the purely imaginary surmise of the unknown so-called 'common source'.

Briefly, the well-argued and well-thought conclusions of Mr. A. Seidenberg regarding the relative chronology of Mathematics of India, Babylonia and Greece are :-

(i) 'The theorem of Pythagoras, as we have seen used to be attributed to Pythagoras (550 B.C.) but this is no longer the general opinion, as we now know, the theorem was known in old Babylonia some 1200 years earlier. Similarly, it would appear the role of the 'Agnicit was imposed on Pythagoras'.

(ii) We have good grounds for believing that legends of geometric rituals existed in Greece in the third and even the fifth centuries B.C. According to Theon of Smyrna (Hiller Ed. p.2) Eratosthanes said that the duplication (of an altar) was for the purpose of fighting a plague'.

(iii) From these passages (e.g. S.Br. X. 2.3.6) it is not only clear but explicit that the Satapath Brahmana knows the basic 7½ purusa altar, its augmentation 1 square purusa at a time and the principle of maintaining similarly of form. The exact construction of the larger altars requires, in effect, the theorem of Pythagoras. I therefore regard it as certain that the Satapatha Brahmana knows the theorem.... The Satapatha Brahmana (III. 5.1.1-6) and the Taittiriya Samhita (VI. 2.4.5) both explicitly give the dimensions of the mahavedi : this is an isosceles trapezoid having bases 24 and 30 and width 30. There is a (15, 36, 39) triangle here and the Sulba sutras use this to construct the Mahavedi. The Mahavedi is loaded with Pythagorean triples (a b c) satisfying $C^2 = a^2 + b^2$. Not only is (15, 36, 39) there but also (12 16 20), (15 20 25) (5, 12, 13), (8,

15, 17) and (12, 35, 37) all mentioned in the Apastamba sulba-sutra in connection with the construction of the Mahavedi. The conclusion is nearly certain that the theorem of Pythagoras was known at the time of the Taittiriya Samhita.

(iv) We come to the desired conclusion, namely, that Greek geometry (especially the theorem of Pythagoras) did not some how make its way into Vedic geometry, as Greek geometry is only supposed to have started about 600 B.C.

(v) The geometric algebra of Greece and of India have a common source different from old Babylonia of 1700 B.C.

(vi) Old Babylonians got this identity [$xy = \{(x+y/2)^2 - (x-y/2)^2\}$], from a set up like that found in the Sulba sutras, but of course from a pre-1700 B.C. source.

(vii) For us the important conclusion is that the mathematics we see in the Sulba-sutras already existed before 1700 B.C.

(viii) No one can say with any confidence, or at any rate with reference to the evidence that the old Babylonian mathematics of 1700 B.C. was not known a thousand years earlier to the sumerians. If it was, then by the arguments given, the geometrical knowledge of the Sulba-sutras goes back that far too.

Note Professor Van der Waerden has now put forward the thesis that mathematics was invented by the Indo-Europeans before their dispersal between about 3500 and 2500 B.C. (cf "Pre-Babylonian mathematics" I and II Archives for History of Exact Sciences, 23 (1980).

In fact the last argument given by A. Seidenberg extends the limits of the mathematical knowledge of sulba-

sutras from 1700 B.C. to 3500 B.C. Obviously their problem is what that 'common source' is from which 'sulba-sutras' and later the Babylonians and Greeks might have drawn their geometry. As I have mentioned above, this problem stems from an erroneous presumption that sulb-sutras or Satapatha Brahmana post date Aryan-migration to India supposed to be about 1200 B.C. But if a mathematically convincing proof could be found that Satapatha Brahmana and sulba-sutras themselves date back to 3100 B.C., the problem actually evaporates. Then the coherent picture is that the geometry of sulba sutras is a development of the ritualistic geometry of Samhitas and Brahmanas coming from pre 3100 B.C. vedic literature; from them the Sumerians and the old Babylonians learnt it, thence it found its way to China, Arab empire, Southern Spain, Egypt Greece and Europe.

To summarize the argument : *the elements of ancient geometry found in Egypt and Babylonia stem from a ritual system of the kind observed in the Sulvasutras*. (Seidenberg 1962 : p 515; emphasis addeed).

His last observation is especially noteworthy; the Egyptian records he refers to are from the Middle Kingdom - c.2050-1880 BCE - and they derive from the Sulba. The Egyptian date is slightly earlier than the Old-Babylonian, though either will suffice for our purposes. Also, as previously noted, archaeology is already beginning to supplement these dates. We believe that archaeology will soon render the whole dispute moot, and the role of the Sulba and its derivatives will primarily be as a link between archaeology and ancient scientific literature.

Further, we have also found connections between the so-called Step Pyramid or the *mastaba* built c. 2650 BCE by Djoser (c. 2686 to c. 2613 BCE) and the *smasana - cit* altar described by Baudhayana. This Step Pyramid was the forerunner of all the future pyramids of Egypt. The

smasana-cit altar (i.e., cemetery shaped altar), as its name itself clearly indicates was connected with Vedic funerary rituals. Since all Egyptian pyramids were erected to serve as mausoleums, the connection is not only mathematical but also of religion and ritual.

Baudhayana also describes the spoked wheel, and in fact gives as ingenious method of designing them. Since the spoked wheel is a commonly occurring motif in the so-called Indus seals, the Baudhayana Sulba is also a link between the Egyptian and the Harappan worlds. It will later be shown that the Harappan civilization really belongs to the early Sutra period. Thus the Baudhyana Sulba links both the Egyptian and the Harappan worlds to the early Sutra period.[129]

Indo European Language Family and its Asian Background

The period between 2800 BC to 1200 BC is the one when the Indo-European languages of Southern Europe were created. The first and most important center of these creation was Crete. From here the Minoan civilization spread to the mainland and islands of Greece. With the spread of the civilization the language of Crete was also spread. Around 1500 BC, a new civilization was born. It was obviously influenced by the Minoan civilization but was different from it. Both these civilizations were created by the peoples of Afro-Asian origins - a fact which is accepted by majority of archaeologists. Hence it has to be accetped that the languages that bore the Minoan Mycenean civilization were of Afro-Asian origin. Among these Afro-Asian languages, the Indo-Aryan languages were of utmost importance. Hence, the Greek and Latin languages are called Indo-European languages. Among these languages the resemblance between Sanskrit and these languages is due to the Indo-Aryan element and Europe has nothing to do with it. These linguistic elements were carried to Europe

by Asian immigrants. In Europe, whatever is the area of Indo-European languages is in fact an extension of the language of greater India.[130]

By way of a final conclusion Dr. Ram Vilas Sharma holds that the second millennium BC is the millennium of great campaigns. During this period many groups of Indian Aryans spread from Iraq up to Turkey. They left the imprint of their language and culture everywhere, they settled.[131]

Chapter-18 Lane-IV : Literary History - The Date of Mahabharata War :

Puranic and Astronomical Evidence

Puranic Evidence:

According to the genealogy prepared and critically edited, the date of Mahabharata can be arrived at with the help of certain references which occur in almost all Puranas. There are two such important references - one indicating that at the time of Yudhisthira, the Pandava king, the constellation of the Great Bear (Saptarshi) were in Magha (Regulus), the other indicating the time interval between king pariksit II and Mahapadmananda the first king of Nanda dynasty. The first reference is-

> vklu~ e?kklq equ;% 'kklfr i`Foha ;qf/kf"Bjs u`irkS
>
> "kM~ f}d~ iapf};qr% 'kddkyLrL; jkT;L;A
>
> *Asan maghasu munayah sasati prthivim yudhisthire nrpatau*
> *Sad dvik pancha dviyutah saka kalastasya rajyasya*

(Rajtarangini I – 56)

"The sages were in Magha (α Leonis) constellation at the time when king Yudhisthira was ruling the earth; a period of 2526 years has elapsed since the time of the reign of the king."

The same reference in these very words finds place in the Brhat Samhita of Varahamihira. In Srimad Bhagvata Purana (BH), this reference has been indicated in the following words:

> सप्तर्षीणां तुयौ पूर्वो दृश्येते दिवि संस्थितौ
>
> तयोस्तु मध्ये नक्षत्रं दृश्यते यत् समं निशि
>
> *Saptarsinam tu yau purvau drsyete divi samsthitau*

Tayostu madhye naksatram drsyate yat samam nisi

BH, XII-2, 27

rUuo _"k;k ;DrkfLr"BUR;Cn'krU u.kke

r Ronh;s f} tk% dky v/kuk pkfJrk e?kk%

Tenaive Rsayo yuktastisthantyabdasatam nrnam

Te tvadiye dvijah kale adhuna casrita maghah

BH, XII-2, 28

"Among the seven sages, the two sages (Stars) which are seen in the eastern direction in the sky and are in a straight line with a constellation in the zodiac, these sages remain with that constellation of the zodiac for 100 human years. They are now, in your period, (The period of Pariksita II) situated in Magha."

The second important reference which finds place in almost all the puranas is as under:

;kor ijhf{krk tUe ;koUunkfHk"kpue

,rnso"k lgl r K;s ip'krkUkje

Yavat pariksito janma yavan Nandabhisecanam

Etad versa sahasram tu jneyam panca satottaram

There are four variations of the last part of this verse in different puranas:-

1. ज्ञेयं पंचदशोत्तरम् : jneyam pancadasottaram : 1015
2. ज्ञेयं पंचाशदुत्तरम् : jneyam pancasaduttaram : 1050
3. ज्ञेयं पंचशतोत्तरम् : jneyam pancadasottaram : 1500
4. शतं पंचदशोत्तरम् : Satam pancadasottaram : 1115 : or : 1510

We know that there were nine Nandas who ruled for 100 years and then came Chandragupta Maurya. The time of Chandragupta Maurya is generally accepted as 324 BC by the historians. But if you compute the time of Chandragupta on the basis of the Buddha nirvana in 544 BC the time of Chandragupta Maurya comes as 354 BC because it is also accepted by historians that Mahapadma came 90 years after Buddha nirvana which means that if we take the time of Nandas as 100 years, Chandragupta Maurya's time would be –544+190 = -354 or 354 BC . Regarding the variation of the above reference of puranas, scholars like M.M. P.V. Kane and Sridharaswami have almost finally settled the issue in as much as they have proved by varios arguments that the correct version is *Jneyam pancasatottaram* 1500 :which means the time interval between Pariksit and Mahapadmananda is 1500 years. Sridharaswami , the great commentator of Srimad Bhagvat puts this interval as 1498 years. The argument of these scholars find support from the fact that the period in which the intervening kings ruled totals up to 1498 or 1500. According to them, 22 kings of Brahadratha dynasty ruled for 1000 years, 5 Vitihotra for 138 years and Sisunagas for 362 years. This makes a total of 1500. Sridharaswami takes the reign of Sisunagas as 360 years instead of 362 and hence the time interval according to him between Pariksit and Mahapadmananda is 1498. The detailed time intervals of these kings have been given in various Puranas and they can also be seen in the genealogy of post Bharata Magadha kings prepared by me. Starting from Chandragupta Maurya, if we add 100 years for Nanda and 1500 years for the period between Mahapadmananda and Pariksita the time of Pariksita comes at 324 + 100 + 1500 = 1924 B.C. If we take the date of Chandragupta Maurya as 354 B.C. and accept the interval as 1498 instead of 1500, the period of Pariksita comes as 354 + 100 +1498 = 1952 B.C. With the help of the list of generations we find that there are 30

kings between Pariksita and Ksemaka, contemporary of Mahapadma in paurava dynasty; there are 35 or 36 kings between Marjari, the contemporary of Pariksita and Mahapadma in Magadha dynasty and there are 30 kings between Brhadbala the contemporary of Pariksit and Prasenjit the contemporary of Mahapadma in Iksvaku dynasty. Knowing that these lists are fragmentary and presuming half of this number as missing links, if we take an average of 30 years per generation, this also gives a time interval of 1500 years. Thus on the basis of genealogy of the kings the date of Mahabharata War is in the 20th century B.C.

The astronomical Evidence:

We now turn to astronomical references in the Mahabharata, which provide a clear interpretation regarding the date of Bharata War. I have for this purpose consulted the critical edition of Mahabharata published by Bhandarkar Research Institute, Pune to eliminate any uncertainty about the text. I may also mention some precautions to be taken while interpreting correctly an epic like the Mahabharata for any specific purpose. It may be mentioned that Mahabharata being an epic, the great poetry, there are references about the facts and there are also the fiction. We have to carefully segregate the facts from the fictions. Then, there may be some descriptions which are used as rhetoric to heighten the eeriness of the atmosphere which the poet intends to create. The third precaution necessary in all interpretations, whether the interpretation of law, the constitution or a literary work, is that the interpretation should be according to the scheme and the basic theme, what may be termed as the basis structure of the text. Any interpretation which is repugnant to the basic theme and the basic structure of the text can not be accepted as correct.

The first important reference in this connection is a colloquy of Srikrsna and Karna:-

c;k% d.k brk xRok æk.k 'kkUruo Ñie
lkE;k;a orrs ekl% lçki;ol/ku%

Bruyah karna ito gatva Dronam Santanavam Krpam

Somyoyam vertate masah suprapayavasendhanah

llrekPpkfi fnolknekoL;k Hkfo";fr
lxkek ;T;rk rL;k rkekg% 'kØnorke

Saptamat capi divasat amavasya bhavisyati

Sangramo yujyatam tasyam tamahuh Sakradevatam

(M.B. V-140-16, 18)

According to this dialogue between Karna and Srikrsna, Srikrsna tells. Karna on way while returning from Hastinapura after the failure of peace-talks with Duryodhana – "Thou Karna ! returning from here (to Hastinapura)- tell Bhisma Pitamaha, Drona and Krapacharya that this is a pleasant month when sufficient fodder for the animals and fuel for the people is available, the forests are full of herbs and fruits, there are no insects of flies, the mud is dried-up ; the rivers are full of sweet water, neither it is cold nor warm. (This is the best period for war). The Amavasya will fall on the 7th day from today and that Amavasya will be ruled by the star of Indra. War be begun on that day.

The last words in this dialogue are very important. They mention unmistakably that Amavasya falls on 7th day from that day and star ruling on that Amavasya is the star of Indra. The star of Indra is Jyestha and with the help of description of time, we can safely conclude that this Amavasya is Amavasya of Sharada Rtu when rivers are full of water, the mud has dried up and forests are full of green

herbs and fruits and neither it is hot or cold. Thus this Amavasya can be no other except the Margasirsha Amavasya according to the North India calendar and Kartika Amavasya according to the South India calendar , i.e. the Amavasya which falls 15 day after the Kartika Purnima. According to the scheme of the months and stars also Amavasya with Jyestha as its star can fall only in Margasirsha because the star on the 15^{th} day from Marga-Amavasya i.e. on Marga Purnima will be Mrgasirsha which tallies with Margasirsha as its month. This gives us a clear clue about the beginning of the War. The Adi parva in following verses gives a clear duration of the War as 18 days-

vgkfu ;q;q/ks Hkh"eks n'kSo ijekL=for~
vgkfu iap æks.kLrq jj{k d#okfguhe~

Ahani yuyudhe Bhismo dasaiva paramastravit
Ahani panca Dronastu raraksa kuruvahinim

vguh ;q;q/ks }s rq d.kZ% ijcykZnu%
'kY;ks·/kZfnols pSo xnk;q)er% ije~

Ahani yuyudhe dve tu Karnah parabalardanah
Salyo'r dhadivasam caiva gadayuddhamatah param

rL;So fnolL;kUrs ækS.kgkfnZD; xkSrek%
çlqIrs fuf'k fo'oLrs t/uq;kZSf/kf"Bja cye~

Tasyaiva divasasyante Drauni Hardikya Gautama
Prasuptam nisi visvastam Jaghnur yaudhisthiram balam

(-1.2,26,28)

The great warrior Bhisma fought for 10 days; the general of Kuru army,. Drona defended it for 5 days , Karna known for his might to smash enemy forces, fought for 2 days; Shalya (the Army Chief of the last day of the

Kaurava forces) for half a day and in the afternoon of the same day there was the mace dual between Bhima and Duryodhana (in which Duryodhana was killed by Bhima). At the close of that very day Asvatthama, Gautama and Hardikya(Krtavarma) massacred the forces of Yudhisthira while they were sleeping relaxed during the night. This duration of 18 days is of great help to us for the purpose of our computation because this mentions that Bhisma fell on the 10th day of the War. If we compute from Margasirsha Amavasya the 10th day would fall on *Margasirsha Sukla 9*. This along with another most important reference in the Mahabharata i.e. the reference about the passing away of Mahatma Bhisma solves our problem. This latter reference is as fellows:

ifjoÙkkfg Hkxoku lglka'kqfnokdj%
v"Vipk'kr jk=;% 'k;kuL;k| e xrk%
'kj"k fuf'krkx"k ;Fkk o"k'kr rFkk
ek?kk·; leuçkIrk ekl% lkE;% ;f/kf"Bj
f=Hkkx'k"k% i{kk·; 'kDyk Hkforegfr

Parivrtto hi Bhagavan sahasransur Divakarah
Astapancasatam ratryah sayanasyadya me gatah
Saresu nisitagresu yatha varsasatam tatha.
Magho'yam samanuprapto masah saumyo Yudhisthira
Tribhagasesah pakso'yam suklo bhavitum arhati.

(XIII.153,26-28)

"The thousand – rayed Lord Sun has turned (north-ward) now.58 night have passed while I have been lying on these sharp arrows and they looked hundred years. O Yudhisthira! pleasant month of Magha has come, only ¾ of it remains and this fortnight is the bright fortnight." This description gives us the following details :

1. The Sun turned north-ward on the day of the passing away of Mahatma Bhisma. In fact he was waiting for this Uttrayana to leava this world, as according to the scriptures, anybody dying during the Uttrayana goes to heaven.
2. 58 nights had elapsed from the day he fell in the battle field.
3. That the date on that day was Magha Sukla 8, the word Magha and Sukla have been mentioned in so many words while Tribha-gasesha clearly indicates that it was half fortnight which means the 8^{th} tithi (15/2 = 7.50). Incidentally Maghasukla Astmi is celebrated as Bhisma Astami traditionally and indicated as such in the Panchangas of the country from times immemorial. This gives strength to our interpretation of the *tribhaga sesah* as Magha-sukla Astami.

Because the Sun turned north-ward that day we know from the primary astronomy that the Sun entered Sayana Makara on that day i.e. 10^{th} Rasi of the zodiac. One Rasi equals to 30°. The Sun has crossed 9 Rasis on that day which means it was at 9X30 = 270° on that day. This gives the Sayana position of the Sun.

But nothing has been mentioned about the star on that day. The star of the day, as we know, gives position of the Moon on a particular day and these positions are Nirayana positions i.e. Sidereal longitudes of the Moon. Our object is to find out the star of the Moon on the day of the passing away of Bhisma. We know that the War began on Jyestha star. We also know that Bhisma fought for 10 days and later on lay for 58 night on arrows which means that there is an interval of 67 nights (9+58) between the beginning of the War and passing away of Bhisma. This shows that from

Jyestha 68th star was ruling on that day. By straight computation it comes as Rohini (2 rounds of zodiac 27 X2 = 54 + 14 = 68 i.e. 14th star from Jyestha i.e. Rohini. Incidentally there is a reference in the Mahabharata, which mentions that it was the Rohini star and Maghasukla Astami on the day Mahatma Bhisma passed away. This occurs in Shanti Parva, Chapter 47 of Geeta press, Gorakhpur Edition of Mahabharata and as pathantar in the foot-notes of Bhandarkar Edition of Pune.

'kDyi{kL; pk"VE;k
ek?kekl L; ikfFko
iktkiR;s p u{k=s
e/;s çkIr fnokdjs

Suklapaksasya ca astamyam
Maghamasasya parthiva
Prajapatye ca naksatre
Madhyam prapte divakare

"(Bhisma passed away) on the 8th Tithi of bright fortnight of Magha ruled by the star of prajapati(i.e.Rohini) at the time when the Sun was in the mid Heaven."

With these two basic and most important references, our search for the two strong pillars on which the theory of the date of Mahabharata war can be constructed becomes complete. The rest is research i.e. the interpretations and derivation from above two important data and its support by collateral references.

From the above discussion, we get the following data-

i. The war started on Marga Amavasya Jyestha star.

ii. Bhisma fell on 10th day i.e. on Marga Sukla 9.

iii. Bhisma passed away on Magha Sukla 8. Rohini star. 58 nights intervened between the fall of warrior Bhisma and his passing away.

iv. The Sun turned north-ward on the day Mahatma Bhisma passed away which means the Sayana (tropical) longitude of the Sun on the day was 270° from the vernal equinox of that year.

v. The Saptarshi or the Great Bear were in Magha (Regulas or α Leonis).

The Methodology

In astronomy, there is an element known as Ayanamsa or precession of equinoxes .There are two Zodiacs or belts of stars and constellations in the sky. One in fixed zociac or Niranaya Zodiac followed in the Indian system of astronomy which starts from a fixed point in sky called Aswini (Mesha 0) and it has been identified as a point in sky which is 180° away from the bright star Chitra(spica); the other is moving zodiac (Sayana) which starts from the vernal equinox point of a year which is styled as Aries 0 and which shifts back ward every year at the rate of 0°-0′-50″(mean). This is followed by Western astrologers. It has got an accelerating motion and the current rate of precession is 50.3″ per year. During Mahabharata times, it must have been less. The accumulated difference between the fixed zodiac and the moving (Sayana) zodiac of a year is called the amount of precession or Ayanamsa. This means if the Ayanamsa of a year can be found out, its time interval can be worked out from a given year on the basis of the rate of ayanamsa. In the present case, we have Sayana longitude of the Sun and the nirayana longitude of the moon . Because the lunar day or tithi has also been given which is based on the nirayana longitudenal difference of the Sun and the Moon, it is possible to work out the nirayana longitude of the Sun.

From both Sayana and nirayana longitudes of the Sun, the ayanamsa can be worked out by simple subtraction.

The tithi or lunar days depend on elongation of the Moon from the Sun i.e. their difference in longitude. When they are 12°apart, Pratipada or the first tithi ends, when they are 24° apart, Dvitiya or second lunar day or tithi ends. Thus every tithi is 12° extant in terms of a angular difference between the Sun and the Moon and when they are 180° apart, it is Purnima. Similarly a star (Naksatra) is 13°-20′ extant from 0° of Aswini or Mesha o and they are 27 in number. Rohini is fourth star. The astronomical conversion of the data Magha Shukla 8 Rohini is-

a. The Moon is between 40° to 53°-20′.

b. The difference between Sun and Moon is between 84°(12°X7)and 96°(12°X8)

c. The nirayana longitude the Sun on the point of Daksinayana (Summer Solstice) in the Magha star i.e. between 120° and 133°-20′ (Magha is 10^{th} star in zodiac i.e. (13°-20′ X 10).

Following equations cans be formed:

Moon – Sun = 84°-to96°

Moon = 40° to 53° – 20

Sun = (1) Moon – 84° or (2) Moon – 96°

Moon is between 40° and 53° – 20

Or (adding 360° for the sake of convenience)

Between 400° And 413°-20

There are four option for the Sun-

Sun = 400°-84 = 316° (1)

= 400°-96 = 304° (2)

=(413°-20′)-84° =329°-20′ (3)

=(413°-20′)-96° = 317° - 20′ (4)

But from (c) above we know that the Sun is between 120° and 133°-20′ (Magha) on the day of summer solstice (Daksinayana) which means it will be between (120° + 180°) = 300° to 313°-20′ on the day of winter solstice (Uttrayana). Hence out of the above four equations, only (2) i.e. 304° can be accepted, the others are out of the limits of 313°-20′ . This gives us the nirayana longitude of the Sun on that day as 304°.

The nirayana longitude of the Sun = 304°

The Sayana longitude of the Sun = 270°

Hence ayanamsa = 304° – 270° = 34°

The time interval from the 0 ayanamsa year is

$$\frac{34}{0 \quad - 0' - 50} \quad = 2448 \text{ years}$$

The astronomical tradition gives us 499 A D as the year or 0 ayanamsa. Hence

2448 – 499 = 1949 B.C. is tentatively the year of Bhisma Nirvana.

Having fixed this tentative date for the Bharata War, the historian's task is almost over because precise date is not material for him. But the interpretation of Mahabharata for the date is not complete nor the task of an astro-scientist until other references regarding position of planets, comets and stars are also looked into and a consistent conclusion is drawn which fits into all important references. Because the stars of the important days have been given along with position of planets, it should be possible to arrive at an exact date and day when the War

began and also the succeeding events till the passing away of the great warrior Mahatma Bhisma.

We have known from above that the War began on Marga. Amavasya (as per Krsnadi or north Indian Panchangas) or Kartika Amavasya (as per Shukladi or south Indian Panchangas) i.e. on the Amavasya which falls after Kartika Purnima. In the following discussion, all my references of lunar days and months will be with reference to north Indian Panchanga.

The greatest confusion so far while fixing the position of planets, has been regarding identity of these planets. In Mahabharata the general allegation is that there are two or more contradictory or astronomically impossible references regarding the position of planets, hence any consistent interpretation is impossible. But if we go through the text little carefully, there is no such confusion nor contradiction. In fact, in the Mahabharata, particularly in Bhisma Parva, there are references to comets and not to planets. If we compare these names of comets, which resemble the names of planets, with the great astronomical treatise of Varaha Mihira viz. Brhat Samhita, there will be no difficulty in identifying them. Varaha in Ketuchara Adhyaya of Brhat Samhita has given a thousand types of comets they are-

(a)	Sons of Sun	(रविजाः *Ravijah*)	= 25 types of comets
(b)	Sons of Fire	(अग्निपुत्राः *Agniptrah*)	= 25 types of comets
(c)	Sons of Death	(यमपुत्राः *Yamaputrah*)	= 25 types of comets
(d)	Sons of Earth	(धरातनयाः *Dharatanayah*)	= 22 types of comets
(e)	Sons of Moon	(सोमपुत्राः *Somaputrah*)	= 3 types of comets

(f)	Brahma's Son	(ब्रह्मसुत *Brahmasuta*)	= 1 types of comets
(g)	Sons of Venus	(शुक्रपुत्राः *Sukraputrah*)	= 84 types of comets
(h)	Sons of Saturn	(शनिपुत्राः *Saniputrah)*	= 60 types of comets
(I)	Sons of Jupiter	(गुरूपुत्राः *Guruputrah*)	= 65 types of comets
(j)	Sons of Mercury	(बुधपुत्राः *Budhaputrah*)	= 50 types of comets
(k)	Sons of Mars	(भौमपुत्राः *Bhaumaputrah*)	= 60 types of comets
(l)	Sons of Rahu	(राहुपुत्राः *Rahuputrah*)	= 33 etc.

The above list includes *Dharatanaya Ravitanaya* and *Somputra* or *Sasijah* which also mean respectively the Mars, the Saturn and the Mercury in astrological parlor. Other terms like *sweto grah* (white planet) or *Angaraka* also create confusion being indicative of Venus or Mars whereas actually they are not as per the context. But the basic characteristics of Comets, which have also been styled as *Graha*s or *Mahagraha*s is that they are all fiery – *Prajwalitau, Jwalanarkavrnah pavakprabhah* etc. are the epithets used for them and from them we can distinguish comets from planets in spite of similarity in names. Varaha has given this symptom of a comet-

vgrk'kk·uy:i ;fLeLrRdr:ieokDre·

Ahutasanalarupam yasmins tat keturupamevoktam

(Br. S. Ketuchara-3)

Not being fire if looks like fire, must be a Ketu or Comet-

Another caution while interpreting these references is that, at times, these comets, sons of Saturn, Jupiter, or Venus have been referred to not as their sons but simply as *Jupiter, Saturn or Venus* which can be recognized by context and the meaning becomes clear by indicative power -–one of three powers of words – *Abhidha lakshana* and *Vyanjana* (narrative, indicative and suggestive powers) when due to astronomical improbability, there is *Mukhyarthabadha* obstruction to the principal meaning thus-

laoRlj LFkkf;uk xgk çTofyrkoHkk
fo'kk[kk;k% lehiLFkkS cgLifr 'kuS'pjk

Samvatsara *sthayinau grahau prajjvalita vubhau*
Visakhayah samipasthau Brhaspati Sanaiscarau

(Bhisma, 3.25)

Both the fiery comets – Brhaspati and Sanaischara which stay in a star for a year, are now near the Vishakha star. Because Brhaspati, the planet does not stay in a star for a year the principal meaning is obstructed and hence by *Lakshana* the indicative meaning has to be accepted which makes it a reference to a comet and not to a planet. Besides these Grahas have been qualified by the epthet *Prajvalitau* (fiery, burning) which confirms the meaning. I have observed that all these references to comets occur in Bhisma Parva, Chapter III, the object of which is not so much to indicate the true sky position of these times as to heighten the eeriness of the atmosphere of War and destruction because these comets in the public perception are harbingers of death and destruction – the particular stars indicating particular warring country –as per astronomical Siddhanta. Thus (1) *Svetograha* M B, 6.3.11) (Br. S. Ketuchara, 4/39) destroys one fourth of population *Tribhagaseshah prajah kurute* (2) Kapalketu (M B, 6.3.12) (Br., 5.11/55, 11/31) in Pusya destroys the king of

Magadha *Syamograha* (M B, 6.3.15) (Br. S, 11/38.58) causes destruction of the sovereign in Jyestha etc. Similarly four other comets have been mentioned which can be identified easily and which justify the statement-

fu%lj Urk 0;n';Ur l;kr llr egkxgk%

Nissaranto vyadrsyanta Suryat sapta mahagraha

(8.26-24)

The seven great comets appeared as if coming out of the Sun.

With this background, we can easily determine the position of various planets at the time of Bharata War-

The Sun and Moon : As we already know, the war began on Marga Amavasya, Jyestha star as anticipated and probably planned by Lord Krsna. Hence the Moon is in Jyestha (226° –40′ to 240°). The Sun being with Moon, is also in Jyestha or Vraschika Rasi

The Mars : There is a clear reference to Mars which is not comet-

ÑRok pkxjdk oØ T;"Bk;k e/klnu
vujk/kk çkFk;r e=k lxe;fUuo

Krtva cangarako vakram jyesthayam
Madhusudhana

Anuradham prarthayate maitram sangamayanniva

The Mars transiting retrograde in Jyestha (Antares or α Scorpi) applies for Anuradha, the star of Mitra (a form of Sun) as if providing a company for her : The other reference *Maghasvangarako vakrah* is in Bhisma Parva Chap. III, which as I have said is full of references to comes and not to planets and the context also makes it dear.

Mercury and venus : Both are in Jyestha as per

> Hkxqlquq /kjklquq 'kf'ktsu lefUorkS
>
> *Bhrgusunu Dharasunu sasijena samanvitau*

The Son of Bhrgu (Shukra or Venus)

The Son of Earth (Mangala or Mars) and the son of Moon (Budha or Mercury) were together. With son of Bhrgu or Venus. –Shalya 11.18

> 'kqØ çks"Bir% iwoZs lek:g; fojkspr%
> mÙkjs rq ifjØE; lfgr% lenh{kr%
>
> *Sukrah prosthapade purve samaruhya virochate*
> *Uttare tu parikramya sahitah samudikshate*

-Bhisma, 3.135

Can not be a reference to Venus but to a comet known as son of Shukra referred to as Shukra alone in this verse because Venus is maximum 60 apart from the Sun and because Sun is Vrschika, Venus can not go beyond Kanya or Makara. Prosthapada or Uttara and purva Bhadrapada are in Mina. This verse is also in Bhisma parva, Chapt. III which I have mentioned contains all references to comets.

Jupiter : Karna Parva (94,51) gives clear indication-

> c`gLifr% lEifjok;Z jksfg.kha
> cHkwo pUækdZ lekS fo'kkaEir%
>
> *Brhaspatih samparivarya Rohinim*
> *Babhuva candrark samo visampate*

O King ! Jupiter having accosted Rohini (aldebaran or α Tauri*)* has become like Sun and Moon (who have the prerogative of accosting Rohini usually). As discussed earlier *Visakhayah samipasthau brhaspati sanaiscarau* (Bhisma, 3.27) is clearly a reference to comets, the epithets being *(Grahau prajvalita uabhau) (Both fiery Grahas)*

Saturn (Shani) : There are two clear references –

(i) çktkiR;a fg u{k=a xzgLrh{.kks egk|qfr%
'kus'pj% ihM;fr ihM;u çkf.kuks·f/kde~

Prajapatyam hi naksatram grahastiksno mahadyutih

Sanaischarah pidayati pidayan pranino'dhikam!

The great bright and sharp planet Shanaischara (Saturn) afflicting the Prajapati-star (i.e. Rohini) thus indicating great suffering to the people.

(ii) jksfg.kha ihM;R;s"k% fLFkrks jktu~ 'kus'pj%

Rohinim pidayatyesah sthito rajan Sanaischara Bhisma, 2.32

'O king ! this Sanaischara (Saturn) is afflicting Rohini.

Thus the Saturn is clearly either in Rohini star or near it there by afflicting the star by its aspect.

Rahu : Rahu and Ketu are north and south nodes of Moon. There is a dear reference in Bhisma Parva that there was eclipse on the day of War and also on the Purnima (Full Moon day) preceding it –

pUæl;kZoHkkS xzLrkS ,dekls =;ksn'khe~
viof.k xzg.ksrkS çtklaö'k;fe";r%

Chandra Suryavubhau grastau ekmasim trayodasim

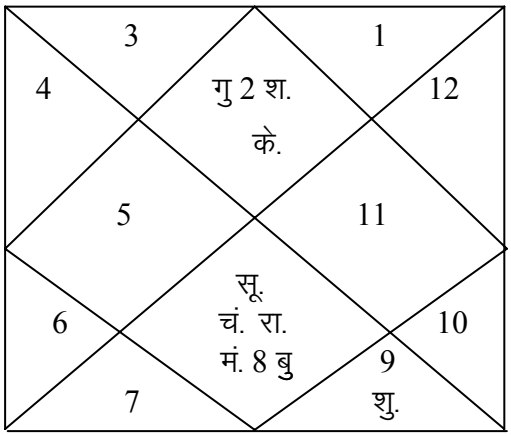
Aparvani grahenetau prajasansayamisyatah Bhisma, 3.32

The Sun and Moon both have been eclipsed within a month on a Tryodasi (13th day). This unusual phenomenon of eclipses on a day other than the new Moon or Full Moon suggest destruction of the people. The Kartika Purnima

looked luster-less; the Moon became pale in the lotus coloured sky.

Because of eclipses the Rahu or Ketu should be with the Sun and the Moon i.e. in Jyestha or near by. With these derivations the map of heavens on the day of the beginning of the War is like this –

Marga Amavasya Kuruksetra Sun-set time.



Astrologically, because all planets are divided in two houses, it indicates a clear War situation.

Our next task is to find out the precise year and precise day of the War so that when we make actual calculation of planets and stars for the day, we can compare how far the planetary position tallies with the position arrived at above. For that I had to wander with the help of calculator and computers a few years before and after 1949 B.C. - our tentative date arrived earlier. I struck at 1952 B.C. as the year when most of the conditions referred to in Mahabharata and discussed above satisfy. It was after months and months of constant thinking and calculations that I could fix up the precise date and calculate planetary

positions and corresponding Julian year and dates. The results of my calculations are as under -

		B.C.	Kali year	Before Shaka	Julian year
i.	Beginning of Kali	3102(18/2) -(1150)	00 +(1150)	3179 -(1150)	1612 +(1150)
ii.	The year of Mahabharata War	1952	1150	2029	2762
iii.	The date of Mahabharata War	17th Oct. Thursday	Marga 30 Guruwara	Marga Ama	17 Oct.
iv.	Number of Days from Beginning of Kali (Ahargana)		420280 days		

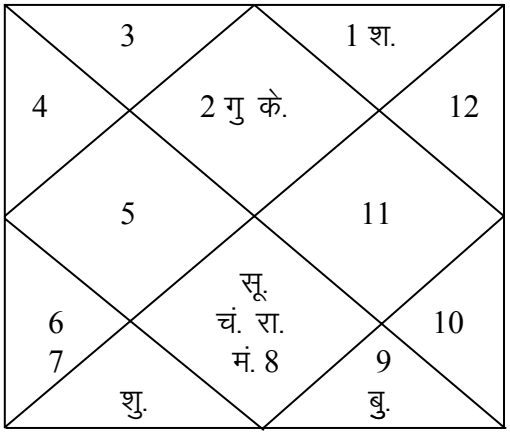
I have expressed this date in following words -

अमायांमार्गमासस्य व्योमपंचशिवेकलौ नक्षत्रेशक्रदैवत्ये असीत् भारत, भारतम्।

v. Julian days since the beginning upto the date of Mahabharata War — 1008745

vi. Planetary Position : (as on 17th October, 1952 B.C.)

Graha	Mean Position	True Position	Star
Sun	232°-51'-46"	7^{s}-21°-56'-46"	Jyestha
Moon	240°-59'-56"	7^{s}-26°-4'-36"	Jyestha
Mars	242°-5'-17"	7^{s}-22°-8'-17"	Jyestha
Jupiter	42°-17'-37"	1^{s}-14°-6'-37"	Rohini
Saturn	26°-15'-45"	0-15°-39'-45"	Bharani
Rahu	232°-41'-36"	7^{s}-22°-41'-36"	Jyestha
Ketu	52°-41'-36"	1^{s}-22°-41'-36"	Mrga



Marga Amavasya Kuruksetra
Sun-set time 17-10-1952 B.C.

vii.	The war ended	Pausa Krsna 2 Pusya star
		3rd. Nov. - Sunday
viii.	Mahatma Bhisma	Magha Shukla 8 Rohini star
	passed away	23rd December - Monday
	Ahargana	420 347
	True Sun	300°-56'-23" (Nirayana), 270° Sayana
	The Moon	40°-54'-28" (Nirayana)
		Rohini Star

Eighth lunar day (Astami) in the morning.

It was ninth (Navami) at the time of mid-day.

All coordinates precisely tally with the references in the great Epic, as discussed earlier.

ix. Other important events :

1	Birth of Lord Krsna	23rd July 2045 B.C. 2669 J.Y. Wednesday Kali 1058, Shaka - Purva 2122 Bhadra Krsna 8, Rohini
2	Birth of Yudhisthira	2nd August, 2045 B.C. Shaka Purva 2122
3	Beginning of Yudhisthira Shaka	2099 before Shaka (2526-427)
4	Banishment of Pandavas	9th May, 1965 B.C. Asadha Krsna 8 Kali 1138
5	Return of Pandavas from seclusion	16th May, 1952 B.C. - Asadha Krsna 8 - Kali 1150 (Period of Banishment 4755 days)
6	Birht of Pariksit	1950 B.C.
7	Death of Dhrtarastra Maharshi Veda Vyasa started writing Mahabharata	1932 B.C. 1932 B.C.
8	Passing away of Lord Krsna	1920 B.C. 23rd July, 2794 J.Y. Bhadrapada Krsna 13 Shakapurva 1997
9	Pandavas left for forest Coronation of Pariksit	1917 B.C. - Kali 1186 1917 B.C. - Kali 1186

10	Passing away of Pandavas Death of Pariksit and corronation of Janmejaya	1916 B.C. 1856 B.C. - Kali 1246

This conclusion confirms to the astronomical and puranic tradition of India as also to the historical and archaeological findings regarding this great event of Indian history. There is a complete convergence of the astronomical, puranic, historical and archaeological views on this point inasmuch as :-

1. The oft-quoted reference of Brahatsamhita of Varaha Mihir and Rajtarangini of Kalhana viz. आसन् मघासु मुनयः etc. finds confirmation in this conclusion because the Yudhistira Shaka as per this conclusion started in Shaka Purva 2099 which is 2526, the figure given in the quotation under reference minus 427, the date of Varaha Mihir. Besides, the seven Sages i.e. the summer solstice falls in Magha because the Nirayana longitude of the Sun on the winter solstice day being 300° 56', the longitude of the Sun on the summer solstice day would be 120° 56' i.e. in Magha divisional star.

2. Even the secret of the figure 2526 gets solved by this calculation because the Nirayana longitude of Magha star (Regulus or α Leonis) now a days is 125° 58'. In Mahabharata time as per the observations of the astronomers of those times it would have been 125° 5' i.e. 35°5' is the Ayanamsa variation from the sayan position of winter solstice. With an average of 50" per year this comes exactly 2526 years (35°5' / 0°0'50") before 0 ayanamsa year which the period of Varaha Mihir and Aryabhatta.

3. The oft-quoted puranic reference regarding the time interval between Parikshit and Mahapadmananda i.e. 1500 years also gets confirmed in this conclusion.

4. The archaeological findings that the river Saraswati got dried up around 2000 BC and that there is reference in Mahabharata about the drying up of river Saraswati mentioned in connection with the pilgrimage of Balrama is confirmed because the date of Mahabharata war in this conclusion is little later than 2000 BC. The sub-oceanic archaeological findings of the famous archaeologist Mr. Rao regarding the town of Dwarka confirm this date.

5. The various genealogies of Magadha as well as the Paurava kings which number around 30 between Parikshit and Mahapadmananda and taking into account some missing links the interval of 1500 years between Parikshit and Mahapadmananda is also justified. Megasthanese, the famous Chinese traveler has counted 153 kings from Dionysus to Kandragupso (Chandragupta) and has given a period of 6451 years which gives an average of 42.16 year per king.

6. The tradition of the Mahabharata war having been fought at the junction of the Dwapar and Kaliyuga can be explained in this way that according to the celestial yuga tradition of astronomers the war occurred 1150 years after the start of celestial kaliyuga which is the junction (sandhi) of Kali only because technically the sandhi of Kaliyuga is 100 celestial years or 36000 solar years. 1150 is less than 360th part of the total duration of Kaliyuga i.e. 432000. According to human cycle of yugas, Kali started when Krishna left this world. As per my calculation, the date of the Nirvana of Krishna is Bhadrapada Krsna 13 Shaka Purva 1997. This is the date given in the Puranas for the beginning of the

Kali. Thus, the Mahabharata war occurred in Dwapara of the human cycle of yugas. We havealready discussed of evidences to suggest the two cycles of yugas - celestial and human.

To conclude, 17th of October 1952 B.C., Thursday, Marga Krsna Amavasya, Kali 1150 or Shaka-purva (Before Shaka) 2029, Julian year 2762 is the date when Mahabharata War began. In my detailed treatise on the subject, I have successfully refuted all theories which fix this date as 3138 B.C. or 2448 B.C. or 1400 B.C. or 3102 B.C. Neither the planetary position as mentioned in Mahabharata nor the phenomena of Uttarayana on the date of passing away of Mahatma Bhisma do obtain on respective days in these dates. In 3138 BC, the ayanamsa would be about 47° which would make the Niryana position of the Sun on the Uttarayana day as 270+47=317º which means the Uttarayana would occur some time around Falguna Krsna 12; in 3102 BC, the ayanamsa is 46°35' and the position of Uttarayana would be almost the same as in 3138 BC. In 2448 BC, the ayanamsa would be 38° making the Nirayana longitude of the Sun as 270+38=308° taking the Uttarayana to Magha Purnima. In 1400 BC, the ayanamsa would be about 24° making the Nirayana position of the Sun as 294° and the Uttarayana falling on 4th or 5th Lunar day of Magha Shukla i.e. falling short of Magha Shukla Astami as mentioned in the Mahabharata. Thus, obviously all these dates considered by other scholars earlier do not confirm to the specific astronomical details as given in the Mahabharata.

Some scholars notably Narhari Acharya, N.S. Rajaram, N. Kazanas and Subhash Kak etc. still hold to the date 3067 BC or 3102 BC as the date of Mahabharata War. There are two very strong objections to this date. First one, as Mr. Rajaram himself admits Mahabharata mentions a dried up Saraswati in relation to the pilgrimage of Balrama

and its an admitted fact that river Saraswati dried up in about 2000 BC. Thus the date of Mahabharata can not be earlier then 2000 BC. Rajaram himself observes "the most notable description of the Saraswati occurs relative to Balrama's pilgrimage (Mahabharata, Salya Parva 36-55), which examines in detail the course of the river, including giving stories of its earlier greatness. The Mahabharata reflects a period when the Saraswati's course was broken but it still had significant water in it. Manu Samhita (II.21), which speaks of the disappearance of the Saraswati, reflects similar data. However, it is uncertain whether this was the course of the Saraswati at the actual time of the Mahabharata War or of those who wrote about the War some time later. Such a broken Saraswati appears to agree with the late Harappan era, perhaps not long before the drying up of the river around 1900 BCE."[132]

On the face of a very strong opposition to his theory, Rajaram takes recourse to sidelines under the garb h*owever, it is uncertain whether this was the course of the Saraswati at the actual time of the Mahabharata War or of those who wrote about the War some time later*. What uncertainty could be there when there is specific mention of dried up Saraswati in Mahabharata War. It certainly can not be the period of the writers of the Mahabharata.

Another example of his ducking the very strong opposition to his theory is astronomical where in Mahabharata there is a clear mention of the demise of Bhisma on Magha Shukla Astami at the onset of winter solstice. The words in the Anushasan Parva already quoted cannot admit of any other meaning and scholars of Mahabharata over last two centuries have been giving the same meaning to it. But Rajaram wants to read in these words the month of Phalgun instead of clear mentioned Magha. Because if we take his theory of 3102 BC the winter solstice can not happen in Magha Shukla. His

interpretation of relevant verse on page 194 and 195 of his book "Vedic Aryans and the Origins of Civilization" is absolutely unacceptable and no scholar can derive that meaning from those words. His conclusion therefore that from this we conclude that Bhishma was awaiting the coming of the next bright fortnight. Since it was already Magha, this can only refer to the fortnight at the beginning of the next month - which is Phalguni" is wholly erroneous and not warranted by the words in the relevant text and rules of interpretation.

He talks of the traditional date for the war as 3102 BCE. (Rrajaram, p. 191-192). But there is no such tradition. This date of 3102 BCE has been mentioned nowhere in any Purana or Mahabharata or any ancient historical text. Aryabhatta has also not mentioned it. He simply talks of 60 time 60 years after three quarters of a yuga. He never mentions Kalyuga much less 3102 BC. It is his commentators who have taken recourse to this date of 3102 on the basis of their knowledge of the Siddhanta Shiromani of Bhaskar II. In fact, before Bhaskara II there is no mention of this date 3102 BC as the date for the beginning of the Kalyuga anywhere in entire ancient Indian literature. Bhaskar has used this as a hypothetical date for the purpose of his calculations. This has nothing to do with the human Kalyuga which started as per the details of Puranas given in all Pancangas these days on Bhadrapada Krishna Triyodashi. The year for the advent of this Kalyuga has been worked out by me as 1997 before Shaka. Then his quoting of the commentary of the Shatapatha Brahmana, by Shri Hari Swami in the first century BCE is not factually correct. Shri Hari Swami mentions the patronage of king Vikramaditya of Avanti but nowhere mentions any era of Kali. The relevant commentary of Shri Hari Swami is reproduced below -

इत्याचार्यहरिस्वामिनः कृतौ शतपथभाष्ये
नवमाध्याये तृतीयं ब्राह्मणम्।।9।।3।।

नागस्वामिसुतोऽवन्त्यां पाराशर्यो वसन् हरिः।
श्रुत्यर्थं दर्शयामास शक्तिः पौष्करीयकः।।

श्रीमतोऽवन्तिनाथस्य विक्रमार्कस्य भूपतेः
धर्माध्यक्षो हरिस्वामी व्याख्याच्छातपथीं श्रुतिम्।।

भूभर्त्रा विक्रमार्केण क्लृप्तां कनकवेदिकाम्।
दानायाध्यास्य कृतवान् श्रुत्यर्थविवृतिं हरिः।।1।।

इति श्रीसर्वविद्यानिधानकवीन्द्राचार्यसरस्वतीनां शुक्लयजुर्वेदीये माध्यन्दिन–

शतपथब्राह्मणभाष्ये हविर्यज्ञं
नाम प्रथमं काण्डं समाप्तम्।।1।।[133]

Thus, ends the third Brahmana in the ninth chapter of the commentary of Shatapatha Bhashya by Shri Acharya Hari Swami.

Shri Hari Swami was the son of Naga Swami, of Parashar Gotra lived in Avanti or Ujjaiyini. In the reign of king Vikramaditya, the ruler of Ujjain, he was Dharmadhyaksha (head of religious and legal affairs). He wrote the commentary of Shatapatha Brahmana.

In the above colophon, there is no mention whatsoever of any period of Vikramaditya.

Thus, the claim of Shri Rajaram that Shri Hari Swami specifically mentions that he composed his commentary on the Satapatha in the year 3047 of the Kali Era (55 BCE) under the patronage of King Vikrama of Avanti (Shastri 1979: p. 47) (Rajaram-Frawley, 2001, p. 192-193) is factually incorrect. Besides, the overwhelming and consistent evidence of Puranas regarding the time interval between Parikshit and Mahapadmananda being 1015, 1050 or 1500 can not be brushed aside. Therefore, these

conclusions are supported neither by tradition nor by internal astronomical references nor by the Puranas, apart from being against the archaeological hardcore fact of the drying of Saraswati.

So far as the stand of Narhari Acharya is concerned, there are very strong grounds which demolish his thesis of 3067 BC –

While the author deserves many commendations for his industry and ingenuity, his conclusions suffer from major inconsistencies and do not confirm to even major events of the great epic viz. :-

(i) According to him, War started on 22nd November 3067 B.C. He also holds that the War lasted for 18 days which means that it ended on 9th December. Bhisma fell on 10th day i.e. 1st December. But according to him he died on 17th January 3066 B.C. which means a gap of 48 nights only and not 58 as specifically mentioned by Bhisma in Anusasana Parva :-

अष्टपंचाशतं रात्रयः शयानस्याध मे गता।

(ii) As per his conclusion the Uttarayana fell on 13th January and Bhisma died on 17th January. He equates Margasirsa Amavasya (Jyestha star) with 14th October 3067 B.C. and Kartika Purnima with September 29, by straight calculation 17th January falls on Phalguna Shukla Panchami and not Magha Shukla Astami as he claims. There can not be adhimas (intercalary month) after Kartika as the Sun at that time being near its perigee moves very fast and the solar month is shorter than its Lunar counterpart. Hence the adhimasa sesa is negative.

Coming to actual calculations, the adhimasa sesa at the beginning of 3067 B.C. is 27.269 days which means

only after 3 month, the adhimasa (intercalary month) will fall. This makes Asadha (approximately) as the adhimasa of 3067 B.C. and certainly not Margasirsa, which is astronomically improbable.

Otherwise also chitra-paksa ayanamsa in 3067 is 46°-48'-32" which means the Uttarayana is at 270 + (46°-48'-32") = 316°-48'-32" (Shatabhisa) such a position (Kumbha 16°-48') of nirayana Sun can obtain only in the month of Phalguna and not Magha.

Thus his conclusion is against his very hypothesis and the clear description of the epic that Bhisma died on Magha Sukla Astami.

(iii) Bhisma was waiting for the Uttarayana to come to leave his life and he left this world the day Uttarayana came.

निवृत्तमात्रे त्वयने उत्तरे वै दिवाकरे।

(when the winter solstice had just set in)
(Shanti Parva, Ch.47)

But according to Mr. Achar, Uttarayana (W.S.) fell on January 13 and Bhisma died on January 17 i.e. fourth day after the Uttarayana. This is not only against the express text of the Mahabharata but against logic also because why should Bhisma who was waiting for the Uttarayana counting nights under way painful bed of arrows wait for another four days when the Uttarayana had come.

Each one of these inconsistencies strike at th very root of his thesis and make it untenable.

(iv) Besides, the peace talks failed according to him on 7th October (Marg. Kr. 9 Uttara Phalguni). Krsna came back to Upaplava on 8th October (dasmi-Hasta). But the war started on November 22 i.e. after 44 days on Bharani. This is very unnatural and

against all diplomacy for the enemy parties on the brink of war to wait for 44 days after the final peace talks had failed. Besides, it is not warranted by any text in the Mahabharata. On the countrary Sanjaya clearly says the star on day of the start of the War was in the realm of Magha (Maghavisayagah) which means in Aswini Magha or Moola and the count back of 58 nights (of Bhisma lying on the bed of arrows) +10 days of fighting from Magha sukla 8 makes the start of war on either Margasirsa Amavasya Jyestha or more probably the next day on Moola star - 7 days after the failure of peace talks.

(v) Balarama, according to him started on November 1 (Pusya) - 22 days before the war and 24 days after the failure of talks. There is no authority, not even an indication for such a start of Balarama for his pilgrimage. He returned according to him on December 12, Sravana. But the war as per his calculation ended on 9th December (Moola). The text clearly says he returnd on the days the war ended to see the mace - dual of his disciples. Therefore Mr. Achar could not solve the Balarama quiz as he returned on 9th December Moola star and not Sravana or he returned three days after the war which is contrary to the text.

(vi) Similarly his simulation regarding late rising of the Moon on 8th December is irrelevant as 8th December according to his scheme of war falls on 17th day (war ended on 9th December) whereas this incident relates to the death of Ghatotkaca who died on 14th day of war i.e. on 5th December as per his scheme.

(vii) As per this date though Saturn is in Rohini, but Jupiter is admittedly in Revati against the text :-

बृहस्पतिः सम्परिवार्य रोहिणीम् बभूव चन्द्रार्कः समो विशांपते

Therefore the date 3067 B.C. suffers from major inconsistencies and does not confirm to even the major events of the Mahabharata epic.

Subhash Kak also goes off the mark when he suggests 3137 B.C. as the date for Mahabharata War. Though, he gives an alternative date also as 1924 B.C. Some of his observations in his article "The Mahabharata and The Sindhu Saraswati Tradition"[134] are highly debatable. For example - he banks on the mention of Devaki Putra Krishna in Chhandogyopanishad. This Devaki Putra Krishna is certainly not Vasudeva Krishna of Mahabharata and the authors of Vedic index suggest that he may be some rishi. This reference appears to belong to the time when there was matriarchal society in India and the names of rishis were after their mothers, as can be seen in the Guruvansha Parampara of Chhandogyopanishad itself. Similarly, other names that he mentions are characters not belonging to Mahabharata period except probably the Vichitravirya. But that can not push the date of Mahabharata in 3000 B.C. Similarly, his statement that Aryabhatta declared the war to have occurred in 3137 B.C. (page 86) is factually incorrect. Artyabhatta has nowhere mentioned any such date and Varahamihira's date 2449 is from his period i.e. the actual date comes as 2449-505 = 1944 B.C. which is quite probable date. The discrepancy is not due to different reckoning of the Nakshatras (27 to 28) but due to misreading of the text. His most devastating statement is when he quotes O.P. Bharadwaja (page 90) and he equates Rigveda in 3000 B.C. with Mahabharata War. There can be nothing more shocking than this. Because this is against all tradition and against all hardcore facts of archaeology and astronomy and leaves no room for the later samhitas and Ramayana period. Such a conclusion obviously can not be accepted. Besides, it is always hazardous to date an event on the basis of the names of sages like Vasistha, Viswamitra, Asvalayan, Yagyavalkaya etc. because they

are individual names as well as eponyms. Many of them cover the entire tradition from Iksvaku to Krsna e.g. Durvasa and Narada. Almost the similar is the case with Vasistha, Vishwamitra, Yagyavalkaya etc. Any attempt to date or event on these sages names may lead to disastrous results.

From the above detailed discussion the most probable date which confirms to the hardcore archaeological fact of the drawing up of Saraswati, the hardcore astronomical fact of Bhisma leaving this world on Magha Shukla Astami with the advent of winter solstice and the consistent tradition of Puranas is 1952 B.C. and this date forms a bedrock for the further chronology of ancient Vedic literature.

Connection with Egyptian Civilization

This is the period of the old kingdom (c. 2950-2130 BCE) and the middle kingdom (c. 2050-1800 BCE) of Egypt. The Indo-Aryans, as discussed above created these dynasties. The pyramids were built during 3rd and 4th dynasties of old kingdom. The influence of Harappan civilization and Sutra literature can be traced in both the old kingdom and the middle kingdom of Egypt.

The period of third dispersal

This was a period of great upheaval and large groups of Indo-Aryans went to the West. The reasons for this dispersals could be traced as : 1. the drying of Saraswati river and ecological imbalance 2. The Mahabharata War after which the defeated kings must have fled to the West where their kins had already established empires and 3. Krishna had deliberately stopped the worship of Indra due to which the Indra worshippers must have gone to Egypt and Mesopotamia where these Gods were held in great veneration and were worshipped.

Chapter-19 Period-VII 1900 to 1400 B.C. : Mature Harappan Period and Close of Krttika Period

Lane-I : Archaeology : Late bronze age cultures Hulas, Bhagwanpura etc.

Late Harappan Period, 1900-1300 BC Harappa, Periods 4 and 5, 1900-1700 BC

Beginnings of the Ganga Phase

About this period, which Subhash Kak names as localization era, he observes - "If one juxtaposes these phases with the events of the Mahabharata, it appears that at the end of the War the region changed from a period of several isolated, independent kingdoms to that of a larger state. The unification created at the end might have provided the climate in which epic poetry was patronized by the king. This idea supports the view that the growth of the Epic from its original form took place during the transition to the Integration Era or perhaps at the end of the Localization Era.[135]

Lane-II : Archaeo-astronomy

The Early Purana period and the close of Krttika period. Vishnupurana (II-8, 76-78) has the following *shlokas* which represent the close of Krttika period :

प्रथमे कृतिकाभागे यदा भास्वांस्तदाशशी।
विशाखानां चतुर्थेऽशे मुने तिष्ठत्यसंशयम् ।।

विशाखानां यदासूर्यश्चरत्यंशं तृतीयकम्।
तदा चन्द्रं विजानीयात् कृतिका शिरसि स्थितम्।।

तदैव विषुवाख्योऽयं कालः परमशोभनः
तदा दानानि देयानि देवेभ्यः प्रयतात्मभिः।।

When the Sun is in the first part of Krttika then the Moon stands in the fourth part of Vishakha. There is no

doubt about it. When Sun travels third part of Vishakha then the Moon stands at the head of the Krttika. That is the most pious period of Visuva or the equinox. At that time oblations should be made to the Gods by the disciplined ones.

When V.E. at 30° it means 1875 B.C

When V.E. is in (Krttika) 27° it means 27°/50" = 1944-285 = 1659 or 1660 B.C.

Lane-III : Linguistics

The Indo-European language and the Indian chariot with the spoked wheel are the great indicators of the spread of Indo-Aryans in the West. Quoting Piggot, Ram Vilas Sharma observes that initially the chariot of Sumer was with solid wheels and asses were yoked in it. But the chariot of Mittanis are different from it. Piggot explains that after 2000 B.C. the Indo-Europeans adopted this chariot with spoked wheels in Sumer Akkadiyan kingdoms. The spoked wheel chariot with the use of horses gave them extra advantage in speed and this helped them in extending their area of influence in the West. This means that in the Greek area this chariot reached from West Asia and with it the Indo-European vocabulary. Piggot holds that in the mainland of Greece, this chariot reached in 1500 B.C. or little earlier and in Crete in 1440 B.C. It is very interesting to note that great poet Homer, who wrote his epic on Greek society, its princes used to go to Hittite capital Hattusas for learning chariotry. Thus, in the oldest epic of Greece, the source of words relating to Chariot is the Hittite kingdom. From the Hittite, Mitanni kingdoms, the chariot of Indian Aryas first reached Egypt then Greece and thereafter reached the middle and northern Europe after about 1000 years.[136]

Prichard has given many letters written by the aristocracy of Palestine, Syria, Phoenicia to the kings of

Egypt. Among these kings the reign of Amenhotep III and Akhenaten was between 1413 to 1362. In these letters the names that appear are all in Indo Aryan languages like Indarut (Indrot), Biryawaza. A list of these names has been given in Appendix-IX. There are some 100 such proper names. They all occur between 1700 and 1250 B.C.

Aryan Influence on Egyptian Religion

The Sun worship in Egypt started with the reign of Akhenaten. The Sun king Akhenaten of Egypt (who ruled during 1352-1336 B.C. according to the mainstream view) was a son-in-law of Tusharatta, the Mitanni king of North Syria, through queen Kiya. (The name Tushratta is spelled Tuisrata in the Hittite cuneiform script, which does not distinguish between 'd' and 't' very well). Some have suggested that the Sanskrit original is Dasaratha, a few others that it is Tvesaratha (having splendid chariots), a name which is attested in the Rgveda. Letters exchanged between Akhenaten and Tusharatta have been found in Amarna in Egypt and other evidence comes from the tombs of the period, which have been discovered in excellent condition.

The Mitanni, who worshipped Vedic gods, were an Indic kingdom that had bonds of marriage across several generations with the Egyptian 18th dynasty to which Akhenaten belonged. The Mitanni were known to the Egyptians as the Naharin (N'h'ryn').

The daughter of King Artadama was married to Tuthmose IV, Akhenaten's grandfather, and the daughter of Sutarna II (Gilukhipa) was married to his father, Amenhotep III, the great builder of temples who ruled during 1390-1352 BC ("khipa" of these names is the Sanskrit kshipa, night). In his old age, Amenhotep wrote to Tusharatta many times wishing to marry his daughter, Tadukhipa. It appears that by the time she arrived

Amenhotep III was dead. Tadukhipa was now married to the new king Akhenaten, becoming famous as the queen Kiya (short for Khipa).

The Egyptian kings had other wives as well. Akhenaten's mother, Tiye, was the daughter of Yuya, who was a Mitanni married to a Nubian. It appears that Nefertiti was the daughter of Tiye's brother Ay, who was to become king himself. The 18th dynasty had a liberal dose of Indic blood.

We see Kassites, a somewhat shadowy aristocracy with Indic names and worshipping Surya and the Maruts, in western Iran about 1800 B.C. They captured power in Babylon in 1600 BC, which they were to rule for over 500 years. The Mitanni, another group that originated thus ruled northern Mesopotamia (including Syria) for about 300 years, starting 1600 BC, out of their capital of Vasukhani. Their warriors were called *marya*, which is the proper Sanskrit term for it.

It was during the reign of this Akhenaten or Amenhotep IV that the first concept of Semitism emerged inasmuch as whereas earlier in Egypt many Gods were worshipped, Akhenaten started the worship of only one God i.e. the Sun. The unity of Gods among their diversity, something which is very special of Vedic philosophy can be seen in Akhenaten's religion. To demonstrate the similarity between the devotional feelings of the Egyptians in the reign of Akhenaten and Rgvedic hymns regarding the Sun, two portions respectively of Akhenaten's hymn about the Sun and the Rgvedic hymn are quoted here.

Hymn to the Aten (the Sun)

Your dawning is beautiful in the horizon of heaven,
O living Aten, creator of life!
When you set in the western horizon,

Earth falls into a deathly darkness,
People sleep in chambers, heads covered,
oblivious of the world,
the possessions in their head stolen.

Vedic hymns to the Sun

Homage to the Eye of Mitra and Varuna!
To the mighty God offer this worship
to the farseeing emblem, born of the Gods.
Sign praise to the Sun, the offspring of Heaven. (1)
May this word of Truth guard me on all sides,
while earth and heaven and days endure.
To its rest goes all else that moves, but never
do the waters cease flowing or the sun rising. (2) (RV, 10.37)

Seeds of Semitism

Margaret Murray has indicated three stages of the development of Egyptian religion. First stage is pre-historic where the Gods who rose after the death were worshipped. With the interaction of the neighboring countries this converted into the worship of Osiris. In the second stage, the dynasties emerged and two Gods Horace Syen in the North and Setekh Makar in the South were worshipped and at the third stage, the Sun worship seems to have been imported. Imported because Egypt had very scanty rains and Sun was looked upon as an enemy. This is really surprising that the Sun who was once looked upon as enemy for centuries became the sole God of the Egyptians at this stage. This must have been possible due to Indian influence on Egypt through its rulers.[137]

Lane-IV : Literary History

One important peace of information that Puranas contain about the contact of India with the West Asia during this period and the preceding one is the episode of Shri Krishna bringing back the lost son of his preceptor Sandipani. It is well-known that Krishna and his brother Balarama had come to Ujjain for studying Vedas, Shastras and all arts from sage Sandipani of Ujjain. Puranas inform us that these brilliant students studied all the Shastras and all the arts within 64 days. When they had completd their education, Krishna requested his preceptor in humility as to what he can do for him by way of *Gurudakshina*. Sage Sandipani had lost his son sometime ago and the only information that he had about him was that he was drowned in the sea near Prabhas (Somanath) area. For all purposes, he took him as lost. Therefore, he asked Shri Krishna, looking to his divine powers to bring back his lost son. Puranas mention this son as dead because of the confusion of the town to which Shri Krishna and Balarama went in search of him when he was not found in the sea. The name of this city was Vaivasvatpuri - literally the town of the Sun. But Vaivasvatpuri traditionally means Yampuri also i.e. the abode of the Lord of death. That is why all the Puranas give confused information about this episode. According to Harivansha, Shri Krishna landed in the sea at Prabhas and asked the ocean to return his preceptor's son. The ocean said 'your preceptor's son is not with me, one demon named Panchajana has taken him away.' Shri Krishna then killed Panchajana but did not find his preceptor's sun with him. Then he went to the Vaivasvatpur. Not knowing who was the ruler of the Vaivasvatpur (the city of the Sun) at that time the authors of the Puranas took him to be the Yamaraja and caused the fight of Shri Krishna with him, whereafter Shri Krishna's preceptor's son was restored to him.

ततो वैवस्वतपुरं जगाम पुरुषोत्तमः।
ततो यमोऽभ्युपागम्य ववन्दे तं गदाधरम्।।18।।

तमुवाचाथ वै कृष्णो गुरुपुत्रः प्रदीयताम्।
तयोस्तत्र तदा युद्धमासीद् घोरतरं महत्।।19।।

ततो वैवस्वतं घोरं निर्जित्य पुरुषोत्तमः।
आससाद च तं बालं गुरुपुत्रं तदाच्युतः।।20।।

आनिनाय गुरोः पुत्रं चिरं नष्टं यमक्षयात्।
ततः सान्दीपनेः पुत्रः प्रभावादमितौजसः।।21।।

Harivansha Purana, Vishnu Parva, Ch.33/18-21.

The best among the man Shri Krishna then went to the Vaivasvatpur. Lord Yama the ruler of Vaivasvatpur stood and bowed to Him. Shri Krishna told him "give back my preceptor's son". Thereafter, there was great fight between them. Having vanquishe Vaivasvat or the son Vivasvan i.e. Yamaraja. Shri Krishna obtained his preceptor's son from him. Then he brought him before his preceptor and restored him to his father.

S.R. Rao has done some good research about this episode and using probably other sources has given a very rational account of this incident. According to him Punardatta, the son of sage Sandipani was kidnapped and taken away by a demon known as Panchajana. Thereafter, the account of S.R. Rao of this incident is as follows :

"These Rakshasas condemned by the Aryans as barbarians and nicknamed as demons captured Kusasthali, which is identified with modern Dwarka by some scholars. The Panchajana ship in which Krishna and his friend Uddhava entered stealthily at night sailed from Prabhasa. It was bound for Vaivasvatpuri which appears to be an Egyptian port where, according to the legends, the Divine Mother ruled. Punardatta had been sold away by Punyajana Rakshasas for high price and was married to the princess of

Vaivasvatpuri. The names of the persons working on the ship, namely, Bhikku, Kukkura, Radda, Hakku and Hullu bear close resemblance to those mentioned in the Sumerian texts relating to Dilmun Trade. The Harivansa says that Vaivasvatpuri, or the sea of the Sun, was situated in the Nagaloka near Patala and was ruled by Nagakanyas or snake-maidens. As the story goes, Krishna rescued Punardatta after a fierce battle with the king of Vaivasvatpuri.... The Punyajana Rakshasas might have belonged to Dilmun, where the Harappan merchants had established their colonies. Prof. Kramer identifies Dilmun with the Indus cities (but it is Melluha, not Dilmun), while Prof. Bibby is inclined to identify it with Bahrain island. Whatever be the identification of Dilmun, one thing is certain : by 1700 B.C. Dilmun merchants had the monopoly of trade with India, and Kusasthali (Dwarka) situated on the tip of the Kathiawar peninsula seems to have come under their sway."[138]

Two things should be noted with reference to this incidence. Firstly, no dead man can be brought to life. Had that been the case Shri Krishna would have brought to life his own brothers who were killed by Kansa. Hence, the account of the Puranas is obviously erroneous due to the confusion about Vaivasvatpur which means the city of the Sun as well as the city of Yama. The Egyptian capital in those times, because of the worship of the Sun introduced by their rulers was known as the city of the Sun. Had Sandipani known that his son is dead, he would not have asked Shri Krishna to give him back. He simply knew that he has been lost in the sea. The incident which was in the memory of the people got confused and Shri S.R. Rao has given a very correct version of it as reproduced above. The other thing to be noted is that this incidence should have happened during the middle kingdom 2050 to 1800 of Egypt when the new religious order worshiping the Sun was in vogue. This has relevance about the date of Shri

Krishna and the date of Mahabharata war also which quite fits into 1952 B.C. the date of War which I have arrived at and have discussed in the last section. Since, a sort of Vedic religion was being practiced in West Asia and Egypt in those times, the people there as well as the rulers must have been in need of priests and India would have been a very good place for import of such priests for their purpose. This might have caused this incidence.

Section-4

Chapter-20 Conclusions

On the basis of detailed discussions in the forgoing paragraphs after examination of archaeological, archaeo-astronomical, religio-philosophical, linguistic and literary evidence, the following conclusions emerge regarding the Vedic chronology, the original homeland of the Indo-European language and the dispersal of Indo-Aryans from the Sapta Sindhu or *Brahmarshi Desha* to the West Asia, Egypt, Anatolia, Southern, Western and North-Western Europe : -

1. The Vedic period extends from 9th millennium B.C., the end of the last glacial period to 2000 B.C., the period of the drying up of Saraswati river and the Mahabharata War, coinciding with the declining phase of Vedic Harappan civilization with intermediatary stages, very clearly defined. There are reminiscences of earlier cycles, extending up to 27000 B.C. from 12800 B.C., the date from which the present cycle of Vedic civilization starts with the advent of Krta Yuga and first kings of Indian dynasties like Iksavaku, Pururva etc.

2. Sapta Sindhu or the Brahmavarta is the homeland, the u*rheimat* of Proto-Indo-European language and this language is none other than the Proto-Vedic Sanskrit which can be termed as *Urusprache*, the *Uruwolk* being the earliest Rgvedic people, inhabiting the area between Vedic river Saraswati and Drishadvati - the land known as Sapta Sindhu or Brahamarshi Desha. Proto-Vedic Sanskrit being the earliest existing Indo-European language with literature endorsing clear memories of the dispersal of the Rgvedic people towards the north and the west in the distant places,

no other area in the world fits in the requirement of the homeland of the Proto-Indo-European.

3. The estimated period of the first dispersal of these Rgvedic people towards the west is about 7500 B.C., sometime after the battle of 10 kings mentioned in the Rgveda. From there Rgvedic people migrated to the various areas in the north and the west in three streams -

   (i) the first stream as indicated above, was around 7500 B.C. after the Dasrajna battle (the battle of 10 kings) towards Anatolia, Crete and Greece. A little after this, Iranians must have separated from Vedic Indians. The Dasrajna battle suggests that successors of Anu dynasty went towards Iran, successors of Druhyu dynasty went towards West Asia and Turkey and successors of Turvasu, probably occupied the Syria and the Mesopotamia. This hypothesis fits well with hypothesis A of Renfrew who testifies presence of Indo-European speaking neolithic aryan farming community in Anatolia in 7000 B.C.

   (ii) the second stream of dispersal took place around 4000 B.C. after the decline of Iksavaku dynasty. Agnivarna's grandson named Manu appears to have established the Egyptian first dynasty, its first ruler being Menes. Waddell identifies Menes of Egypt and Menos of Crete with Indian king Manasyu. But the proper identification taking the collateral circumstances and the time frame in account is with Manu, the grandson of Agnivarna - a fallen king of Iksavaku dynasty.

   (iii) the third stream and probably bigger than the earlier two, took place around 2000 B.C. after

the drying up of the Saraswati river and the Mahabharata War. The princes who were defeated in the Mahabharata War, the people who were annoyed because of the stoppage of Indra worship by Shri Krishna and the people who were affected by the drying up of Saraswati river and thus creating ecological imbalance must have fled to the west. They are the ones who established Mesopotamian, Sumer and Babylonian dynasties with the relations in Egypt.

4. The Aryan migration or Aryan invasion theory is completely baseless. Conjecture and motivated fraud perpetrated upon unwitting Indians who were a subject race to the English people. There is no indication what so ever in the entire vast Indian literature or any foreign origin or any reminiscence of a foreign land. The theatre of all happenings of Rgvedic civilization is squarely the Sapta Sindhu area of North West India and Aryan civilization a continuous civilization from the earliest Rgvedic days down to the present day - the Indus-Saraswati civilization included.

5. The ancient Rgvedic Aryans in 7th, 4th and 2nd millennium B.C. were the carriers of Proto Vedic Sanskrit in the distant lands of Crete, Greece, Anatolia, Sumer, Egypt and Babylonia because they ruled these countries during various periods. A foreign language easily establishes its roots in a country if the rulers of their country are the speakers of that language. By trade contacts alone, a language cannot spread. The class example of modern days is English which spread throughout the globe, because English people ruled the world for two centuries. Thus the root cause for the spread of Indo-European

to the major part of the world is because the Rgvedic Aryans ruled those areas in various periods of history and their language became the language of the ruling class. With the rulers went the aristocracy and the priestly class also which helped in the spread of their language. A branch of the Proto-Vedic Sanskrit went towards East also which accounts for Indo-European languages like Slavonic and Tocharian.

Shrikant Talageri has analyzed these language dispersals to the various parts of the globe connecting them with the dispersal of the people of Druhyu, Anu and Turvasu dynasties after the battle of 10 kings, so prominently mentioned in the Rgveda.

"The Indo-European languages, in the Original Homeland itself, had split into Satem and Kentum dialects which later developed into the present-day Satem and Kentum branches.

The Puranas, however, classify the Indo-European peoples to the north and west of the Vedic Aryans (the Purus) into only two categories : Anus and Druhyus. The facts therefore, suggest the following logical hypothesis : the Anus were probably the speakers of Satem dialects (and not just the Iranians), and the Druhyus were probably the speakers of Kentum dialects.

The present-day Indo-European languages are divided into nine branches of which four are Kentum : Germanic (or Teutonic), Italic, Celtic and Hellenic; and five are Satem : Indo-Iranian, Baltic, Slavonic, Thraco-Phrygian and Illyrian. But, as we have seen, the classification suggested by the puranas is slightly different : while we may roughly identify the early speakers of Kentum dialects with the Druhyus, and the early speakers of Satem dialects with the Anus, the Indo-Iranians do not fall into the Anu category in toto. While the Iranians were Anus, the Vedic

Aryans were Purus, and the speakers of the ancestral forms of the Inner-Indo-European dialects were variously Yadus, Turvasus, Iksavakus, Pramsus, etc. Keeping this in mind, we must count only Iranian and not Indo-Iranian, as a branch of the Satem category.

Now, let us examine the various branches to see if our identification of some of them, in the Puranas and the Rigveda, is corroborated by any other factors.

Of the nine non-Indian branches, we find five branches clearly and distinctly named in the Dasarajna hymns. They are the Iranian, the Thraco-Phrygian (Armenian), the Illyrian (Albanian), the Hellenic (Greek) and the Celtic. Most linguists agree that the Italic branch is very close to the Celtic, and many even postulate an original Italo-Celtic branch from which the Italic and Celtic branches later branched out. On this basis, we may presume the Italic branch also to have been among those present, although it is not expressly mentioned in the hymns.

Thus, we get only three branches which are emphatically not present on the scene. They are the Baltic, the Slavonic and the Germanic.

We may, therefore, postulate a two-fold division of the ancient Indo-Europeans: one group consisting of the speakers of the Baltic, Slavonic and Germanic proto-languages, whom we may term as "earlier emigrants", since there is no mention of them in the Dasarajna hymns or anywhere else, and who may be regarded as the people whose emigration to the north of Afghanistan and beyond to distant areas is specifically described in the Puranas; and the second group consisting of the speakers of the other proto-languages, whom we may term as the "later emigrants", whose presence in India at the time of Sudas is clearly recorded in the Dasarajna hymns.

This division, it may be noted, is different from the Satem-Kentum one, since both the groups contain both Satem and Kentum peoples,. And this interpretation of the Dasarajna hymns, on the basis of which we have proved India to be the Original Homeland, stands confirmed by the fact that this twofold division agrees with certain basic geographical, historical and linguistic factors :

1. The Baltic, Slavonic and Germanic branches can be geographically designated as the "northern branches", while all the others constitute a long belt of "southern branches".

2. These three branches are the only ones (outside India) which appear to have been present in their historical habitats for so long a period that there is no actual record of their arrival there. The other branches (outside India) are known, on the basis of their own express traditions or of the records of other peoples, to have arrived into their historical habitats from outside. Hence also, scholars have tended to postulate the location of the Original Homeland in the areas of these three branches (i.e. northern and central Europe, or South Russia).

3. Linguistically also, these three branches fall into one category, while all the other branches fall into a second category. Thus, the Encyclopedia Britannica describes the division into Satem and Kentum branches, and immediately qualifies it by describing a second division which cuts across the first one : "Characteristic Developments of Indo-European Languages : As proto-Indo-European was splitting into the dialects that became the first generations of daughter languages, different innovations spread over different territories. Indo-Iranian, Balto-Slavic, Armenian and Albanian agree in changing the palatal stops *k, *g and *gh into aspirants (श स ष) or

> affricates ..... Of the languages that share this change, however, Balto-Slavic shares with Germanic (including English) an *m* in certain case-endings where other Indo-European languages, including Indo-Iranian, Armenian and Albanian, have *bh* or a sound regularly developed from *bh*."

All this confirms the validity of our interpretation of the Puranic and Vedic evidence.

This story of the dispersal of the different branches of Indo-European languages from India is, in fact, the only theory which accounts for every single factor.[139]

This conviction is borne out by sound scientific logic and not merely the conjecture born out of the indigenousness of a few Indian scholars. Collin Renfrew has given a key to tackle this problem. We have applied that key to find out the solution of the problem with the little difference that we moved this key a little more eastward to come to the final conclusion. Renfrew applied the key only partially and his view is that the homeland was Anatolia. But the question is during that antiquity of 7000 B.C. was there any culture in Anatolia so rich that it could have created the language which is the mother to all Indo-European languages. Till now there is no evidence whatsoever for such a culture nor there is any literature from Anatolia which may suggest such a culture. On the other hand in Sapta Sindhu there is both the oldest, the most perfect, the most archaic Indo-European language of the world and the oldest and the richest literature of the world by way of Rgveda. Renfrew's key is "It seems likely then that the first Indo-European languages came to Europe from Anatolia around 6000 B.C., together with the first domesticated plants and animals, and that they were in fact spoken by the first farmers of Europe. That, I suggest, is the key to the solution of the Indo-European problem." Domesticated plants and animals as also quite improved

farming is attested in the Rgvedic period and later the period of Yajurveda and Atharvaveda. Hence, the key of Renfrew applies squarely in the case of Sapta Sindhu i.e. North-West India. From out of the many derivations that Renfrew has made in his famous book "Archaeology and Language" he himself suggests the original homeland of Indo-European languages East of Anatolia either contiguous with it or otherwise ..... This hypothesis that early Indo-European languages were spoken in north India with Pakistan and on the Iranian plateau at the sixth millennium BC has the merit of harmonizing symmetrically with the theory for the origin of the Indo-European languages of Europe. It also emphasizes the continuity in the Indus valley and adjacent areas from the early Neolithic through to the floruit of the Indus Valley civilization - a point which Jarrige has recently stressed. Moreover the continuity is seen to follow unbroken from that time across the Dark Age succeeding the collapse of the urban centres of the Indus Valley so that features of that urban civilization persist, across a series of transformations, to form the basis for later Indian civilization."[140]

Renfrew himself admits that first farmers of Anatolia did not develop farming there, but there was some advance beginning further in the East beyond Turkey. Here he has all but indicated the possibility of the development of Indo-European farming community in India when we compare this opinion of his with the findings that he has made in relation to Indus-Valley civilization and Mehargarh findings. He says, " It is likely that the first farmers of west Anatolia did not develop farming there, on the spot, from wild prototype species, and we should imagine the wave of advance beginning rather further to the east, perhaps in the Konya Plain, where the site of Catal Hyyuk is located, or **further east still**."[141]

From the whole bulk of evidence, archaeological, archaeo-astronomical, linguistic, mythological, theological etc. inescapable conclusions that emerge is that Sapta-Sindhu of the North West India is the *Urheimat* of the Indo-European languages and early Rgvedic people are the *Urvolk* who spoke proto-Vedic Sanskrit which is their *Ursprache*. -

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Appendix I

The Ikswaku Dynasty

(Solar Race)

1. Manu Vaivasvata
2. Ikswaku (9 others)
3. Kuksi
4. Vikuksi
5. Bana
6. Kakutsa-I
7. Anena (Anaranya or Suyodhana - A.P.)
8. Prthu
9. Visvarandhri (Visvagasva A.P., V.P.)
10. Canrda (Ayu - A.P.) (KIndu, M.P.)
    (Ardra, V.P.A.P.)
11. Yuvanasva-I
12. Sasvata (Sravanta a.P.) (Vatsak)
    (Sravasta MPVPHP)
13. Brhadasva
14. Kuvalayasva (Dhundhumara)
    (21 thousand sons of Dhundhumara have been
    mentioned which means a great gap of time here)

I

Drdhasva Kapilasva Bhadrasva
(Danda A.P. M.P.)
(Candrasva U.P.H.P.)

16. Pramoda

17. Haryasva I (Varyasva V.P.)
18. Nikumbha
19. Barhanasva (Sanhatasva AP HP MP)
20. Krsasva (Akrsasva AP MP) (HP mentions three sons of Samhatasva- Krsasva, Aakrsasva Prasenajit
21. Senajit (Ranasva - A.P.)
22. Yuvanasva II
23. Mandhata

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24. Purukutsa Ambarisa Muchukunda (No Ambarisa in H.P.)
25. Vasuda
26. Trasadasyu
27. Sambhuta (V.P. H.P.)
28. Anaranya I
29. Prsadasva (V.P.)
30. Haryasva-II
31. Sumana (Sudhanva H.P.) (Vasuman - Pargiter)
32. Tridhan-va
33. Trayyaruna
34. Tribandhana
35. Satyavrata (Trisanku)
36. Hariscandra

37. Rohita (Rohitasva)
38. Harita
39. Campa (Caksu V.P.) (Cancu H.P.)
40. Sudeva (H.P. mentions them as)
41. Vijaya (sons of Cancu)
42. Bharuka (Ruruka V.P., H.P.)
43. Braka
44. Susandhi
45. Bharata (R)
46. Asita (Kalindi)
    (Bahu H.P. Pagiter)
47. Bahuka
48. Sagara (to him 60,000 sons were born which means a long interval of time Satyayug ends about here 8000 B.C.)
49. Asamanjasa
50. Amsuman
51. Dilip-I
52. Bhagiratha
53. Sruta
54. Kakutsa-II
55. Raghu-I
56. Nabha (Nabhaga M.P.)
    (As per H.P. Bh Nabha is son of Sruta)
57. Ambarisa
58. Sindhudvipa

59. Ayutayu (Srutayu A.P., Ayutajit H.P.)
60. Rtuparna (Friend of Nala)
61. Sarvakarma (Artuparni-H.P.)
62. Sudasa
63. Sudasa Kalmasapada (+Madayanti)
    (Mitrasaha) (Issue less-Vasistha gave the Progeny)
    (A gap here : hence two traditions - one of H.P. another of Bh.)
64. Shankhana (R)
65. Asmaka
66. Mulaka (Nari Kavaca)
67. Dasaratha-I (Sataratha-Pargiter)
68. Aidwid (Ilbil-V.P.) (Vraddhasarma, Sarvakarma H.P.)
69. Visvasaha-I
70. Anaranya-II
71. Nighna
72. Anamitra
73. Duliluha
74. Dilip II
75. Raghu-II
76. Aja
77. Dasaratha-II
78. Rama, Laksmana, Bharata, Satrughna
79. Kusa
80. Atithi
81. Nisadha

82. Nala (M.P. A.P. H.P. Bh.)
83. Nabha
84. Pundarika
85. Ksemadhanva (Sudhanva A.P.)
86. Devanika
87. Aniha (Ahinagu H.P.)
88. Rupa
89. Ruru
90. Pariyatra
91. Balasthala (Dala)
92. Chala (Anala-H.P.)
93. Uktha
94. Vajranabha
95. Khagana (Sankhanabha, Shankhana)
96. Vidhrti (Vyutthitasva)
97. Visvasaha-II
98. Hiranyanabha (disciple of Gemini (Yogacharya)
99. Puspa
100. Dhruvasandhi
101. Sudarsana
102. Agnivarna
103. Sighra
104. Maru
105. Prasusruta
106. Susandhi (Sugandhi V.P.)
107. Amarsana (Sahasvanta-Pargiter)

108. Mahasvan
109. Visvasahya
110. Prasenajit-I
111. Taksaka
112. Brahad-bala (killed by Abhimanyu I Mahabharata-1952 B.C.)
113. Vihadrana (Brhatksatra)
114. Urukriya (Muruksepa V.P.) (Uruksaya)
115. Vatsavrdha (Vatsavyuha)
116. Prativyoma
117. Bhanu
118. Senapati Divak (Divakara)
119. Vira Sahadeva
120. Brahadasva-II
121. Bhanuman
122. Pratikasva
123. Supratika
124. Marudeva
125. Sunaksatra
126. Puskara (Kinnara V.P.)
127. Antariksa
129. Sutapa (Suvarna V.P.) (Suparna)
130. Amitrajit
131. Brahadraj
132. Barhi
133. Krtanjaya

134. Rananjaya
135. Sanjaya
136. Sakya Suddhodana
137. Langala (Siddhartha-Buddha)
138. Prasenajit-II (Rahula V.P.)
139. Ksudraka
140. Ranaka
141. Suratha
142. Sumita (Last King)

Appendix II

The Paurava Dynasty

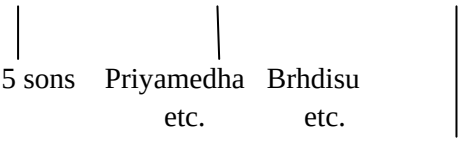
1. Manu Candra
2. Ila (d) (Budha)
3. Pururava
4. Ayu
5. Mahusa
6. Yayati
7. Puru
8. Janamejaya-I
9. Pracinvan
10. Pravira
11. Manasyu (Namasyu-V.Vn.M.)
12. Carupada Bh.
    Jayada V
13. Abhayada
14. Sudyu
15. Sudhanva (Sudyu, Bh. Sudhyu, Vn. Dhundhu, V)
16. Dhundha
17. Bahugava (Bahuvidha, M.)
18. Samyati
19. Ahamyati
20. Raudrasva (Bhadrasva, M.)
21. Avacina
22. Ariha-I
23. Rceyu (Rksa I) (Aucheyu, Vn.M.)
24. Matinara (Antinara V.M. Vn.
    Rantinara Bh. (D. Gauri)
25. Tansu
26. Ilina (Surodha, H.V. Raibhya, Bh.)
27. Dusyanta, Sura, Bhima, Pravasu, Vasu
28. Bharata (Sakuntaleya)

He had three queens. They gave birth to nine sons but all were killed as found unworthy of the king. He had thus, no son of his own. There is a break in the tradition.

29. Vitatha (Bharadvaja)
30. Suhotra-I, Suhota, Suhavi, Suyaju, Rcika (Suhotra-I is called Vaitathi also)
31. Ajamidha-I (Sauhitra) Sumidha, Purumidha) (died issue less)
32. Rksa-II (S/o Dhumini) Jahnui, Vrajin Rupin (6) (Sons of Kesini) — Dusyanta II, Paramesthi (Sons of Nili)
33. Samvarana-I (Srutarvan ?)
34. Kuru-I (+Vahini)
35. Asvavan, Abhisyanta, Caitraratha, Muni, Janamejaya
36. Pariksit-I (According to Bhandarkar Editino Pariksit-I is S/o Abhisyanta)
37. Janamejaya-II
38. Devasrava
39. Devavata
40. Dhrtarastra-I
41. Pandu
42. Valhika
43. Nisadha
44. Mahateja
45. Jamubunada
46. Kundodara
47. Padati
48. Vasati
49. Kundika
50. Hasti
51. Vitarka
52. Kratha

53. Kundala (Kundina)
54. Havisrava
55. Indrabha
56. Aparajita
57. Dhumanetra
58. Sunetra
59. Vithavya
60. Mitravan
61. Krtavan
62. Sindhu-Ksit Bharata
63. Asvamedha Bharata (or Bharata + Sunanda D/o Sarvasena)
64. Bhumanyu-II (+Vijaya)
65. Brhatksatra, Mahavira, Jaya, Nara and Garga
66. Suhotra-2
67. Hasti
68. Vikunthan

69. Ajamidha-II Dvimidha
70. Riksa, Kakeyi, Gandhari (Visala, Nila)



125 sons Priyamedha etc. Brhdisu etc.

71. Shanti (Susanti M)
72. Purjanu
73. Ark (Prthu M)
74. Bhadrasva

75. Mudgala Jaya (Srnjaya) Brhadisu (Panchalas) Javinar Kampilya
76. Vasistha
77. Indrasena

78. Vindhyaswa (+Menaka)

79. Divodasa
Ahalya (d) + Gautam

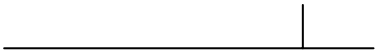
Satananda

80. MitrayuMaitravan Maitreya
81. Chaidyavara
82. Sudasa
83. Somaka (Ajamidha-III)
84. Rksa-III
(Youngest of 100 sons of Dhumini eldest being Jantu)
85. Samvarana-II
86. Kuru II (+Subhangi)

87. Sudhanva Jahnu Pariksit
88. Suratha
89. Bhimasena I
90. Viduratha
91. Sarvbhauma
92. Jayatsena
93. Ruchira
94. Mahabhauma
95. Aradhi
96. Mahasatva
97. Devatithi
98. Ayutayu (Ayutayu or Ayuta)
99. Akrodhana (or Krodhana)
100. Rsaya (Rksa-IV)
101. Bhimasen-II
102. Dilipa (Pratisrava ?)
103. Pratipa

104. Devapi Santanu Valhika

105. Bhisma Chitrangada Vicitravirya



106. Dhrtarastra Pandu

107. Duryodhana etc. 100 sons Yudhisthira Bhima

Arjuna Nakula Sahadeva

108. Abhimanyu
109. Pariksit-II
110. Janamejaya-III
111. Satanika-I
112. Sahasranika
113. Asvamedhadatta (Asvamedhaja-Bh)
114. Adhisimakrsna (Asimkrsna-Bh)
115. Nicaksu (V.P.) Vivaksu (M.P.) Nemicakra (Bh)
116. Uktha (Bhuri-M.P.) (Usna)
117. Citraratha
118. Suciratha (Sucidrava-M.P., Kaviratha-B.P.)
119. Vrasniman (V.P.) Vrstiman (Bh.)
120. Susena
121. Sunitha
122. Rcha (Rucha)
123. Nrchaksu
124. Sukhibala
125. Pariplva (Parisrava-M.P.)
126. Sunaya (Satya-M.P.)
127. Medhavi
128. Nrapanjaya (Puranjaya-M.P.)
129. Mrdu (Urva-M.P., Durva-Bh)
130. Tigma (Tigmata-M.P., Tithi-Bh)

131. Bradratha
132. Vasudana (V.P.) Vasudama (M.P.) Sudasa (Bh)
133. Satanika-II
134. Udayana (Durdamana-Bh)
135. Ahinar (Vahinar-M.P., Bh)
136. Dandapani (Khandapani-V.P.)
137. Nirmitra (Nimi-Bhagavata)
138. Ksemaka (Last King)

Appendix IIA

The Dynasties of Anu, Turvasu and Druhyus

6. Yayati

7. Anu Turvasu Druhyu Puru Yadu

8. Vahni Babhru

9.

10.

11. Sabhanara Garbha

12.

13.

14.

15. Kalanal

16. Bharga Setu

17. Srnjaya

18.

19. Puranjaya Bhanuman (Bh)
Gobhanu (V)

20.

21. Janmejaya Tribhanu (Bh)
Traisanu (H)
Traisamba (V)

22.

23. Karandhama Angarsetu (H)
Aradwan (V)
Arabdha (Bh)

24. Gandhara (H.V.Bh)

25.	Mahashala Marutta Mahamani (V)	Dharma (Bh, V)	
26.		Sammata (d) given to father of Dushyanta	Dhrta(Bh, V)
27.			Durmana (Bh) Durgama (V)
28.			Pracheta(Bh, V)
29.	Mahamanas		100 sons
0			fought in the Dasrajna battle

Note : The dynasties of Turvasu and Druhyu terminate here so far as the Puranas are concerned. But the dynasty of Anu continues.

Dynasties of Anu

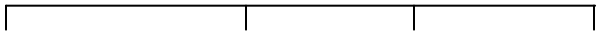
33.	Ushiner	Titiksu
34.	Shivi	Usadhrata
35.	Hema	
36.	Vrsadarbha, Suveer	Sutapa
37.	Kaikaya, Pundra, Madrak	Bali
38.		Anga, Banga, Kalinga, Sumha
39		40. Para, 41. Diviratha
40		42. Dharmaratha
41		Chitraratha
42		Rompada
43		Turanga

44	Prithulaksha
45	Champa
46	Haryanga
47	Brhatkarma
48	Brhadbhanu
49	Brhanmana
50	Jayadratha
51	Vijay
52	Dhrti
53	Dhrtavrata
54	Satyakarma
55	Adhiratha
56	Karna (Kunti's son)
57.	Vrsasena

Appendix - III

Yadava Dynasty

1. Manu Vaivasvata
2. Ila (Budha)
3. Pururavas
4. Ayu
5. Nahusa
6. Yayati
7. Yadu



8. Krostu — Sahasrajit (Nila Vn. P) — Nala (Raghu Vn. P) Pn. P) — Ripu

(H.P. V.P. & Vn.P. give a fifth son Anjika, Antika or Jit)

9. Vrjinivan
10. Svahi (Swahi - Bh) (Swati PP)
11. Rusadgu (Ruseku Bh.) (Rasadu V.P.) (Usangu M.P.) (Rusadru, Urubhanga - J.B.)

A gap of about 10 kings here

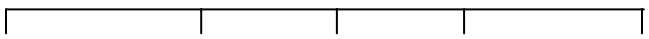
21. Citraratha
22. Sasabindu (Had 100 sons and many queens)

Gap in tradition. Daughter married to Mandhata.

33. Prthusrava (one of the six Prthuganas)
34. Antara (Uttara, Dharma-Bh)

35. Suyajna
36. Usana (Usata H.P.)
37. Sineyu (H.P.) Titiksu (M.P.) Sitesu (Vn. P)
38. Marutta (H.P. V.P. M.P.) Rucaka (Bh)
39. Kambala Barhi-I
40. Rukma Kavaca

41. Parajit (H.P.) Havisman (J.B.)

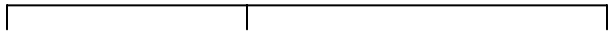


42. Jayamagha Rukmesu Prthurukma Palita Harita (Hari)

Again a gap in the traditions.

Junior contemporary of Sagar)

52. Vidarbha



53. Kratha Kusa (Kosaka)

Romapada

|

54. Kunti Babhru
55. Dhrsta (Vrsni V.P.) Ahuti (Krti Bh)

(Dhrti KP)

(Dhrsti Bh)

56. Nirvrtti (V.P. H.P. Vn.P.) Sweta (K.P.)

(Ananta H.P.)

Visvasal (K.P.)

57. Dasarha
58. Vyoma Kausika (KP),

(MP) (Usika-Bh)

59.	Jimuta	
60.	Vikrti (V.P.) (Vrhati H.P.)	Sumanta
61.	Bhimaratha	Amla
62.	Rathavara (V.P.)	Sveni
63.	Navaratha	
	Dhrtiman	
64.	Dasaratha (Drdharatha M.P.)	Vapsuman
65.	Ekadasaratha (V.P.)	
66.	Sakuni	Brhanmeha
67.	Karambha	Srideva
68.	Devarata	Vitiratha
69.	Devaksatra	
70.	Devana (V.P.)	Cedi
71.	Madhu-I	Damaghosa
		Sisupala
72.	Medhartha Sambhava (V.P.-P)	Anavarath (Vn.P)
73.	Maruvatsa (H.P.) Kuruvatsa (Vn.P) (Kuruvas Bh)	
	Puruvasa (V.P., M.P.)	
74.	Anuratha (Vn.P) (Anu (Bh)	
75.	Puruhotra (Bh. Vn.P.)	
76.	Jantu (M.P.) (Amsa (Vn.P.) Purudvaha (V.P.)	
	(Aiksvaki)	
77.	Satva (V.P.)	
78.	Satwata-I	

At this stage there is a clear gap in the tradition. This Satwata has been shown in Puranas to have six or seven sons :-

Bhajin, Bhajaman, Yadunandana Vrsni, Devavrdha, Andhaka nd Mahabhoja, Bhagavata adds Divya to the list. Out of them only two lines viz. Those of Andhaka and Vrsni go upto Mahabharata period, the remaining four terminate at second or third generation after sons of Satvata. This means this is an old tradition and memories are vague and there are no more details. There is a long gap also. In fact at this stage the story of Harivansa (II-7-38) where Haryasva, an Akswaka marries Madhumati daughter of Madhu-III (Daitya) of Madhupur and gives birth to Yadu-II comes in. To this Yadu, Satavata and Satvata Bhima were born at third and fourth stage. Andhaka and Vrsnis are progenies of this Satvat Bhima which I style - a Satvata Bhima or Satvata II. Thus Andhaka and Vrsni are not sons of Satvata - I, they are progenies Satvata II or Satvata Bhima. That is why epithet Yadunandana has been given to Vrsni which is not justified with reference to earlier Yadu son of Yayati, more than fifty generations anterior to him. Satvata-I ha remaining four or five sons.

तेषां विसर्गाश्चत्वारो विस्तरेणेह ताञ्छृणु

(H.V. I-37-1.2)

Though H.P. mentions five names, but talks of four Vansas only.

78. Satwat - I

Bhajin	Bhajaman	Devavrdha	Mahabhoja
	(Two queens)	|	|
(1)	(2)	Babhru	The Bhojas
Nimloci	Satajit		
Kinkini Bh	Sahasrajit		
Dhrsti	Ayutajit		
Nimi			
Vrkana	(Vn.P.)		

Vrsni
Krmi
Krmana
Dhrsta (H.P.)
Sura
Puranjaya

(This description shows vagueness and that after second generation, no details are there in any Purana)

Haryasva is fifth generation above Bhima Satvata who is some six generations above Rama Dasarathi. So that Lavana son of Madhu-II or Madhuwati daughter of Madhu-II and wife of Haryasva have to be at Sl.No. 78 to be contemporary of Rama.

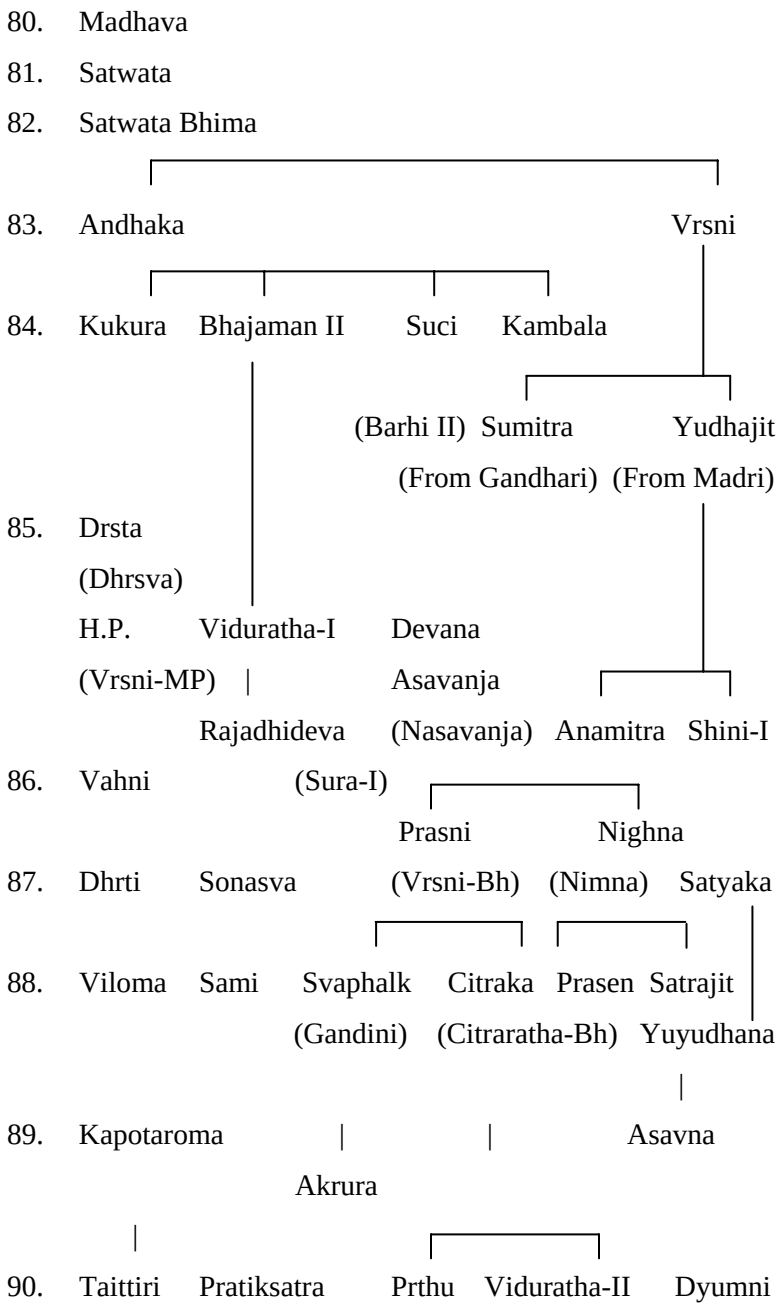
पर्यये चैव रामस्य भरतस्य तथैव च
सुमित्रासुतयोश्चैव स्थानं प्रान्ते च वैष्णवम्
भीमेनेयं पुरी तेन राज्य सम्बन्धकारणात्
स्वयं स्थापिता पूर्वं स्वयमध्यासिता तथा

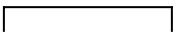
(H.V. II-38-41,42)

When Rama with his brothers passed away, this Mathura (which was earlier won by Satrughna from Lavana S/o Madhu) was won over by Bhima because of his relations with earlier Lord (Madhu) of this kingdom.

Therefore on the scale of Iksvaku dynasty Haryasva comes at Sl.No. 72 or 73. From this stage Yadu vamsa - its Andhaka and Vrsni lines passed over to Mathura as progenies of Yadu-II.

76. Purudvan (H.P.) clearly speaks of two Madhus - one son of Devaksatra, another son of Purudvan (I-36) or Puruhotra.
77. Madhu - II
78. Haryasva (Aiksvka) + Madhumati (daughter of Madhu II)
79. Yadu - II


80. Madhava
81. Satwata
82. Satwata Bhima
83. Andhaka
Vrsni
84. Kukura
Bhajaman II
Suci
Kambala
(Barhi II)
Sumitra
Yudhajit
(From Gandhari)
(From Madri)
85. Drsta
(Dhrsva)
H.P.
Viduratha-I
Devana
(Vrsni-MP)
Asavanja
Rajadhideva
(Nasavanja)
Anamitra
Shini-I
86. Vahni
(Sura-I)
Prasni
Nighna
87. Dhrti
Sonasva
(Vrsni-Bh)
(Nimna)
Satyaka
88. Viloma
Sami
Svaphalk
Citraka
Prasen
Satrajit
(Gandini)
(Citraratha-Bh)
Yuyudhana
89. Kapotaroma
Asavna
Akrura
90. Taittiri
Pratiksatra
Prthu
Viduratha-II
Dyumni



Bhoja Deva Upadeva Sura-II |

91. Anu Hrdika-I Bhajaman III Kuni (Tuni)

(Sarpa-MP) Krtavarma Shini-II |

92. Nala Yugandhara

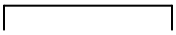
93. Dundubhi Sevetavahana

Pratiksetra

94. Aridyota 94. Swayambhoja

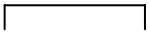
(Abhijit-Vn.P.) 95. Hrdika-II

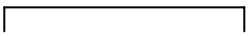
95. Puruvasu 96. Shatadhanu Devamidhusa



96. Ahuka Ahuki 97. Sura-III

(Kaseyi) 98. Vasudeva





97. Devaka Ugrasena 99. Krsna Balarama etc.

| |

|

98. Devavan etc. Kamsa etc. 100.

Sambha etc.

sons Devaki etc.

99. (daughters)

Both Vasudeva and Devaki are at Sl.No. 98 still there are some 8 missing generations because in Puru dynasty Yudhisthira, contemporary of Krsna is at Sl.No. 107. These

missing links must be at the time of transition from mainline to Mathura-line under Yadu-II. A second reason for shift ot Mathura line is that the progeny of Andhaka and Vrsni (as also Kukura and Bhajamana-II) flourished in Mathura and when Krsna with his team was required to leave Mathura, under the pressure of Jarasandha he went to Dvarka (Anarta) which again was under Madhu Daitya and later his grandson Madhava and never under the control of the progeny of Satvata I. Authority for linking Devamihusa with Citraka Vidhuratha line of Vrsni in Visnu Purana (IV-14)

स्वयं भोजः ततश्च ह्रदिकः ।।6।।

ततश्च कृतवर्मा, तस्मात् शतधनुर्देवमीदुसाधा बभूवुः ।।7।।

देवभीदुषस्य शूरः शूरस्यापि मारिसा नाम पत्न्यभवत्

अस्याञ्चासौ दशपुत्रान् अजनयत् वसुदेवपूर्वान्

Besides, in Bhagavata Hrdika-Krtivama line is linked with Citraka of Vrsni line. Because Krsna could not be with Andhaka Krtavarma, hence after Hrdika, Devmidhusa has been linked (J.B. also does it) making Hrdika-I as father of Krtavarma and Hrdika-II as father of Satadhanva nd Devamidhusa.

Appendix - IV

Haihaya Dynasty

(A sub-line of Yadava Dynasty branching from Sahasrajit S/o Yadu)

1.	Manu	21. Dhrsti (J.B.)
2.	Ila + Budha	22. Vaiharta
3.	Pururavas	23. Avanti
4.	Nahusa	24. Vrsa
5.	Yayati	25. Vrpyadya
6.	Yadu	26. Madhu
	|	
7.	Sahasrajit Krostu Nala Ripu	27. Urjit
8.	Satajit	28. Jayadhvaja
	|	
		29. Kutsa (J.B.)
	Haihaya Mahahaya Venuhaya	30. Yanga (J.B.)
9.	Venutantra	31. Taljangha (vanquished by Sagar of Iksvaku line)
10.	Dharma netra (Dharma Tantra-V.P.)	
11.	Kunti (Kirti-V.P.)	32. Virhotra (V.P.)
12.	Samhat (M.P.) Sohanji (Bh)	Vitihotra (M.P. Bh)
	Sanjneya (V.P.)	33. Drasta
13.	Mahisman	34. Ananta (V.P.)
		Anarta (M.P.)
14.	Bhadrasrenya (Rurasenya-MP)	Yudhana (J.B.)
15.	Durdama (M.P.) Durmada (Bh)	35. Madhu (Bh)

(V.P.) 36. Vrsni

16. Kanaka (M.P. V.P.) 37. Durjaya (V.P.)

| 38. Amitradarsana

(V.P.)

17. Krtavirya Krtagni Krtavarma Krtauja

18. Arjuna Kartavirya

Hence, there is a clear gap in this tradition.

19. Surasena

20. Sura

Five Janas were known as descendants of Kartvirya Arjuna

(1) Bhoja (2) Avanti (3) Tundikara (4) Virhotra (5) Taljangha

Appendix – V

Mithila (Videh) Rajvansawali)

1.	Nimi	28.	Suci
2.	Mithi	29.	Sanadvaja (Urjavaha)
3.	Janaka-I	30.	Urdhvaketu (Kuni)
4.	Udavasu	31.	Aja (Anjana)
5.	Nandivardhan	32.	Purujit (Rtujit)
6.	Suketu	33.	Aristanemi
7.	Devarata	34.	Srutayu
8.	Brahadratha	35.	Suparsva
9.	Mahavira	36.	Citraratha (Sanjaya)
10.	Sudhrti	37.	Ksemadhi
11.	Drastketu	38.	Samaratha
12.	Haryasva	39.	Satyaratha
13.	Maru	40.	Upaguru (Satyarathi)
14.	Pratindhaka (Pratipaka)	41.	Upagupta (Upagu)
15.	Kirtiratha (Krtiratha)	42.	Sruta
16.	Devamidha	43.	Vasvananta (Sasvata)
17.	Vibudha (Visruta)	44.	Yuyudha (Sudhanva)
18.	Mahidhraka (Mahadhrti)	45.	Subhasana (Suvaca)
19.	Kirtirata (Krtirata)	46.	Sudasa
20.	Maharoma	47.	Susruta
21.	Svarnaroma	48.	Jaya
22.	Hrsvaroma	49.	Vijaya
		50.	Rta
	Sirdhvaja (Janaka II)		Kusadhvaja
23.	Dharmadhvaja	51.	Sunaka

	|	52. Vitahavya
24.	Krtdhvaja Mitadhvaja	53. Sanjaya
|		54. Ksemasva
25.	Kesidhvaja Khandikya	55. Dhrti
	|	56. Bahulasva
26.	Bhanuman	57. Krti
27.	Satadumna (Shatadyumna)	58. Mahavasi

Appendix - VI

(Brhadaranyakopanisad)
Guruvansa - Parampara

1. Prajapati
2. Turkavsheya
3. Yajnvacha Rajastambayana
4. Kusri-I
5. Vatsya
6. Sandilya
7. Vamkaksayana
8. Mahitthi
9. Kotsa
10. Mandavya
11. Mandukayani
12. Sanjiviputra-I
13. Aditya
14. Aasrini
15. Vak
16. Kasyapanedhruvi
17. Silpakasyapa
18. Haritkasyapa
19. Asita Varsagana
20. Jivnavavan Vadhyoga
21. Vajasravas
22. Kusri-II
23. Upavesi
24. Aruna
32. Pracinayogi
33. Kashakeyiputra
34. Vedabhratiputra
35. Kronchikiputra (II)
36. Bhalukiputra
37. Rathotariputra
38. Shandiliputra
39. Mandukiputra
40. Mandukayaniputra
41. Gayantiputra
42. Alambiputra
43. Alambayaniputra
44. Sankratiputra
45. Shongiputra
46. Artabhagiputra
47. Warkaruniputra-I
48. Warkaruniputra-II
49. Warkaruniputra-III
50. Parasari-I
51. Yatsiputra
52. Parasariputra-II
53. Bharadvajiputra-I
54. Gotamiputra-I
55. Atreyiputra

25. Uddalaka
26. Yajnavalkya
27. Asuri
28. Asuranaya
29. Prsniputra
30. Aayurivasi
31. Sanjiviputra-II
56. Capy Tatha Kanvi Putra
57. Vaiyaghrapadi Tatha Alambiputra
58. Koshikiputra
59. Katyayaniputra-I
60. Parasariputra-III
61. Opasavastiputra
62. Parasariputra-IV
63. Bhardvajiputra-II
64. Gotamiputra-II
65. Katyayaniputra-II
66. Potimashiputra

Appendix - VII

Post Mahabharata Magadha Kings

Barhadratha 22 Kings 1000 years (M.P.B.P.Vn.P.V.P.)

1.	Samadhi (M.P.) Somapi (V.P.) Marjari (B.P.)	58 years
2.	Srutsrava (Srutvan-V.P.0	64 years
3.	Ayutayu	36 years
4.	Niramitra	40 years
5.	Suksatra (Suksetra-V.P.)	56 years
6.	Brahatkarma (Brahatsena-Bh.)	23 years
7.	Senajita (M.P.V.P.) Karmajita-Bh.)	50 years
8.	Srutanjaya	40 years
9.	Vibhu (V.P. - V.P. Bh.)	28 years
10.	Suci	64 years
11.	Ksema (Ksemya-V.P.)	28 years
12.	Suvraja (Suvrata-V.P.)	64 years
13.	Sunetra (M.P.) Dharma (V.P.) Dharmasutra (Bh.)	25 years
14.	Nivratti (M.P.) (Susraya-V.P.)	58 years
15.	Trinetra	28 years
16.	Dyumatsena (Dradhasena-V.P.)	48 years
17.	Sumati	55 years
18.	Subala	56 years
19.	Sunitha (Bh.) Suniti (V.P.) Mahinetra (M.P.)	33 years
20.	Satyajit	64 years
21.	Viswajit (Concala)	32 years

22.	Ripunjaya	50 years
		1000 years
		(One thousand years)

Pradyota Vansi		5 Kings	138 years
23.	Pradyota (Pulaka ka Putra)		23 years
24.	Palaka		24 years
25.	Visakhayupa		40 years
26.	Suryaka (Janaka-V.P.) (Rajaka-Bh)		21 years
27.	Nandivardhana		30 years
			138 years
Sisunaga		10 kings	360 years
28.	Sisunaga		40 years
29.	Kakvarna		36 years
30.	Ksemadharma		36 years
31.	Ksetrajita		34 years
32.	Bimbasara		28 years
33.	Ajatsatru		35 years
34.	Darsaka (V.P.) Dashak (M.P.) Darbhaka (Bh.)		35 years
35.	Udasi (M.P.) Udayasva (V.P.)		33 years
36.	Nandivardhna		40 years
37.	Mahanandi		43 years
			360 years

Nanda	9 kings	100 years

38-46 Mahapadma etc. nine nandas

Maurya	10 kings	137 years
47.	Chandragupta	
48.	Bindusara (Warisara)	
49.	Ashokvardhana	
50.	Suyasa	
51.	Dasaratha	
52.	Sangata	
53.	Salisuka (Shantishuka)	
54.	Somasarma	
55.	Satadhanva	
56.	Brahadratha	

Shungas	10 kings	112 years
57.	Pusyamitra	36 years
58.	Agnimitra	8 years
59.	Wasujyestha	7 years
60.	Wasumitra	10 years
61.	Andhaka (Bhadraka-Bh) Aardraka (V.P.)	2 years
62.	Pulinda (Pulindaka-V.P.)	3 years
63.	Ghosa (Ghosvasu-V.P.)	0 year
64.	Wajramitra	14 years
65.	Sambhaga (Bhagavata-Bh)	22 years
66	Devabhumi (Devabhuti-Bh)	10 years
		112 years

Abbreviations :

A.P.	Agni Purana
R	Valmiki Ramayana
M.P.	Matsya Purana
V.P.	Vayu Purana
Bh	Bhagawat Purana
Vn.P.	Vishnu Purana
H.P.	Harivamsa Purana
P.	Pargiter
J.B.	Jati Bhaskar of Jawala Pd. Misra
PVK	Purano ka Vamsanukramik Kalkrama
PP	Padma Purana

Appendix-VIII

Indic Names in West Asia

Over fifty years ago, Roger T.O'Callaghan and W.F. Albright published in Analecta Orientalia of Rome a list of 81 names (13 from the Mitanni, 23 from the Nuzi, and 45 from the Syrian documents) with Indic etymologies. Out of the list, Dumont provided the etymology of 45 names in the much more readily available Journal of the American Oriental Society of 1947. A few of these names with the Snaskrit cognates in parentheses are :

Abirata (Abhirata, pleased, contented)

Aitagama (Etagama, with the gait of an antelope)

Aitara (the son of Itara)

Artamanyu (Rtamanyu, revering the divine Law)

Ardzawiya (Arjaviya, straight, honest)

Birasena (Virasena, possessing an army of heroes)

Biridaswa (Brhadasva, possessing a great horse)

Bardaswa (Varddhasva, the son of Vrddasva)

Bayawa (Vayava, the son of Vayu)

Biryasura (Viryasura, the hero of valour)

Biryawadza (Viryavaja, owning the prize of valour)

Biryasauma (Viryasoma, the moon-god of valour)

Birya (Virya, valour)

Indrota (Dindrota, upheld by Indra)

Kalmasura (Karmasura, the hero of action)

Purdaya (Purudaya, giving much)

Rucmanya (Rucimanya, revering light)

Satuara (Satvara, swift)

Saimasura (Ksemasura, the hero of security)

Subandu (Subandhu, being good kinsmen)

Sumala (having beautiful garlands)

Sumida (Sumidha, bountiful)

Swardata (Svardata, given by heaven)

Tsitriyara (Citrya-rai, having distinguished property)

Uruditi (Uruditi, having wide splendour)

Warasama (Varasama, equal to the best)

Wasasatta (Vasasapta, possessing seven dwellings)

Wasdata (Vasudata, given by the Vasus)

Yamiuta (Yamyuta, favoured by Yamin)

Analysing the names, Dumont concludes that the names are clearly Indic and not Iranian. The initials is maintained and the group *sv* is represented by the similar sounding *sw* and not the Avestan *aspo*. Also, most of the nams are bahuvrihi or tatpurusa compounds.

Appendix-IX

DATED CHRONOLOGICAL LIST OF SUMERIAN OR EARLY ARYAN KINGS
FROM RISE OF CIVILIZATION TO KASSI DYNASTY, c. 1200 B.C.
(The years of Reign are within brackets)

Date B.C. (approximate).	Sumerian Names in King Lists and Monuments.	Dynasty.	Indian List Names.	No.
3378–3349	Ukusi of Ukhu City or Udu, Uduin, or UDIN, Indar, Induru, Dur, Pur Sakh, Sagaga, Zagg, Gaur or Adar (30)	1ST DYNASTY	Ikshvāku or Indra or Sakko or Purū (-ravas)	1
3348–3337	Azag Ama Basam or Bakus, Tasia Mukhla, Gin, Gan or Kan (12)	—	Āyus, Ama-Basu or Bikukshi-Nimi	2
3336–3273	**Azag Bakus or Gan at Unuk, Enoch or Erech City** (64)	**2ND DYNASTY**	(As above)	
3272–3248	Naksha, Enuzu, Anenzu, Unnusha, In, Enu (25)	—	Nahusha, Anenas or Janak	3
3247–3242	Udu, Uduk (6)	—	Udā-vasu, Yadu, Yayati, ((?) Puru)	4
3241–3212	Zimugur, Dumuzi (30)	—	Janamejaya or Jina	5
3211–3206	Uziwitar (6)	—	Vishtara or Wishtara	6
3205–3195	Mutin Ugun (11)	—	Matinara	7
3194–3184	Imuashshu or Pishmana (11)	—	Vishamsu or Tamsu	8
3183–3181	Naili (or Nandu) Iaxa Sumaddi or Duag (3)	—	Anila, (?) Ucchaya, Dushyanta or (?) Sunanta	9
3180– (or 27) Kings.	Baratutu, Bardo, Barti Pirtu	—	Bharata, Brihad, Prithu	10
	Gaudumu or Dudumunu	—	Gautama, Dhundhumara	11
	Dutu-Gindara	—	Dwat, Candra-ashva	12
	Azag, or Ashita-ab	—	Aja-midha or Siteshu	13
	Ishzax or Gishax Gamesh	—	Chaxus, Riksha, Rucaka or Ruk-meshu	14
	Uruash-Khād, Urusag-Khaddu Barama hasha or Arwasag ((?) 30)	URUASH'S DYN. of "Panch"	Haryashva or Barmyashva	15
	Madgal, A-Madgal Mukh	—	Mudgala or Mogallo	16
	Bi(d)asinadi, Bi(d)sar, Biugun or Biguaxu	—	Badhryashva, Pasenadi or B'ujyu	17

The Great Gap of 430 years with 26	Enun-nad Enash-nadi		—	Yuvanashwa 18
	Tarsi (Ene- or "divine") or Dixxi (Di- or "divine")		—	Dāsa (Divo- or "divine") or Trasa-Dasyu I 19
	Medi or Meti		—	Mettiyo or Mitrayu 20
	Kiuga, Mûkuda		—	Cyavana or Muckunda 21
	Tarsi, Dix-sāāx or (?) Shu-Dix		—	Su-Dāsa, Dussaha or Trasa Dasyu II 22
	Tizama		—	Somaka, Sambhuta 23
	[(?) Anda]		—	Jantu 23a
	Rumau or Pashipadda ("Mesanni-padda")		—	Prishada or Suvarna Roman 24
	Uruduki Raman Duruashi-padda or Rutasa Rāma ("Anni-padda")		—	Drupada I, Hrashva Roman or Rohida-ashva 25
	(?) Eama . . .		—	Vyoman, Vasumanas 26
	. . . Biama		—	Jimûta 27
	(?) Paunukha ("? Meshkalamdug")		—	Bhanu or Ban-kirti 28
	(Illegible)		—	Satya-brata 29
	,,		—	Harish-candra II 30
	,,		—	Harita or Rohit-ashwa II 31
	Gungun, Kingubi-Dudu		—	Cuncu or Dhundu 32
	Mama-gal		—	Vijaya 33
	Kalbu- (?) ru		—	B'aruka or Ruruki 34
	Tuke		—	Vri-Taka or Dhri-Taka 35
-2751	Bara-Gina, Puru-gin, Pardui-Bazum or Urudu-Gina, or Uruka-Gina		—	Pra-Cinvat, B'arad-Vaja, Bāhu or Bahuka or Puru II 36
2750–2726	Zaggisi or Saggisi	(25)	"Erech Dyn."	36a
2725–2671	Guni, Shar-Guni "Sargon"	(55)	"Sargon's" Dyn.	Kuni Sha-Kuni or Sagara 37
2670–2656	Mûsh (Uru-)	(15 or 9)	—	— 37a
2655–2641	Manis-Tissu (in Mesop.)	(15)	—	Asa-Manja, Manasyu 38
2640–2585	Narām-Anenzu (or "Sin") or Narām-ba	(56 or 38)	—	Anjana, Ansu-mat or Karamba 39
2584–2561	Shar-Gani Shar-Ri or Dilipa	(24)	—	Kunti-jit Khatwanga Dilīpa 40
2560–2558	Nigigi, Imi, Nanum, Iama (in interregnum) four kings	(3)	—	Bhagi-ratha
2557–2537	Dudu	(21)	—	Dhundu 41

Date B.C. (approximate).	Sumerian Names in King-Lists and Monuments.		Dynasty.	Indian List Names.	No.
2536–2522	Shûdur-kib	(15)	—	Suhotra II, Shruta Shrutāyus	42
2521–2519	Uru-Nigin	(3)	2ND ERECH DYN.	Nabhin, Nābhāga	43
2518–2513	Urish-Ginar	(6)	—	Harish-Candra or (?) Ambarisha	44
2512–2507	Tardu (or Kudda)	(6)	—	((?) Rathi*Tara* "g.g. son" of Ambarûshu)	44a
2506–2502	Ba-Sha-nini (or -ama)	(5)	—	Sindhu-dhipa, Sanjaya	45
2501–2494	Uru-ash (or -an)-uta	(6)	—	—	
2493–2452	Guti occupation without kings	(44 or 42)	GUTI DYN.	[KUSHA DYN.] Ayutāyus (or ? Duthaliyās, k. of Khatti)	46
2451–2449	Muruta	(3)	—	[Mûrtaya] Ritu-parna	47
2448–2443	In Kishu or Gishu	(6)	—	[Kusha]	
2442–2437	Irilla Tax [or Warla Gaba]	(6)	—	—	
2436–2431	Dug-me or Ug-me	(6)	—	—	
2430–2425	Eamamesh or Kashushamama	(6)	—	[Kushāmba] Sarva-Kāma	48
2424–2420	Inima Bakies, Baesses, Bakus or Basam	(5)	—	[Basu II or (?) Bhaji]	
2419–2414	Iziaush	(6)	—	—	
2413–2399	Iārla Tax or Dax	(15)	—	Su Dāsa II	49
2398–2396	Ibate	(3)	—	—	
2395–2393	Iārla ((?) Gash) or Kashushamama (?) 2nd term)	(3)	—	[Kushāmba (2nd term)]	
2392– —	Basium, Basam or Bakus (2nd term)		—	[Basu II or Bhaji (2nd term)]	
2391–2389	Nikin (or Nigin)	(3)	—	—	
2388–2387	[Lasi]-rubûm or La-Sirab	(2)	—	((?) Sarva-bhauma)	
2386–2385	Irarum	(2)	—	—	
2384– —	Darranûm	(1)	—	—	
2383–2382	Khāblum or Khab-Kalamu	(2)	—	Kalmāshu-pāda	50
2381–2375	Suratāsh Sin or Sarati Gubi Sin	(7)	—	(Sruta, Upa-Gupta)	
2374–2368	Iārla *Gu*(ash)*da* (? Gudia)	(7)	—	[Gādhi]	
2367–2361	[En-Ridi-Pizir] Pisba Ruddu	(7)	—	[Vishva-Ratha, s. of Gādhi]	
2360– —	[Tiri]-gan	(40 days)	—	[Trishanku, contemp. of above]	
2360–2353	Ashukhamukh or Utukhe-gal	(7½)	3RD ERECH DYN.	Ashmaka	51

2357–2335	Uruash-Zikum	(18)	UR DYN.	[URU BRANCH DYN. Uru-Riûka] Mûlaka 52
2334–2277	Dungi or Duk-gin (Shamu-)	(58)	—	[Dagni (Jama-)]
2276–2268	Purash-Sin (" Bur-Sin ")	(9)	—	[Parashu-Rāma and his massacre] Dasha ratha or (?)
2267–2259	Suash-Sin (" Gimil Sin ")	(9)	—	[Sushena] Shata-ratha 53
2258–2233	Il-Ibil-Sin	(26)	—	Il-Ibila or Iliyila 54
2232–2200	Ishbi-Ashurra	(33)	ISIN DYN.	Vishva-saha 55
2199–2190	Katnini-Kat (or Shu-ilishu)	(10)	—	Khatvanga or Dilīpa 56
2189–2169	Itīash-Dakhu	(21)	—	Dirgha-bahu 57
2163–2149	Ishshibash-Dakhu	(20)	—	Raghu 58
2148–2138	Libiash Ugun	(11)	—	Aja 59
2137–2110	Dashashi-urash, Muru	(28)	—	Dasha-ratha 60
2109–2089	Amar-Sin (" Bur-Sin II ")	(21)	—	Rāma (-Chandra) 61
2088–2084	Libi (Insakh)	(5)	—	Lava and Kusha 62
2083–2076	(Ash-)urra Iwi-i	(8)	—	
2075–2052	Insakh-bani	(24)	—	Atithi or Suhotra IV 63
2051– —	Zāmbi (3), Tenirpisha (4), Urdukuga (4), Sin Mapish (11)		—	Nishadha 64
— –2007	Damiq-ilushu	(23)	—	Nala 65
2023–2004	Anuha-Mubalit (" Sin Muballit " (20), of which four as emperor)		IST BABYLON DYN. as Emperors	Nabha or Nabhas 66
2003–1961	Khammu-Rabi or " Great Lotus "	(43)	—	Pundarīka or " Great Lotus " 67
1960–1923	Sāmsui-Uduna	(38)	—	Kshema-Dhanvan 68
1922–1895	Abieshu'a	(28)	—	Devānīka 69
1894–1858	Ammi-Satana (or -Ditana)	(37)	—	Ruru or (?) Suto-rusta 70
1857–1837	Ammi-Saraga or -Saduga)	(21)	—	Ahi-nagu 71
1836–1806	Sāmsu-Satana	(31)	—	Sudhanvan or Pariyatra 72
1805–1791	Saharki-Bal	(15)	SEA-LAND DYN.	Sahasra Bala or Bala (with separate line) 73
1790–1775	Xatal (" Gandash ")	(16)	KASSI DYN.	Sthala or Gaya 74
1774–1753	Agu-um	(22)	—	Auka or Uktha 75
1752–1745	Bizuiru (" Kashtiliash ")	(8)	—	Vajra-nābha 76
1744–1737	Ushigu	(8)	—	Shankha 77
1736– —	Abisuttash		—	Ab'yutthit-ashva or Dhyushit-ashva 78

Appendix-X

Guti Kings or Viceroys of Mesopotamia compared with Indian Lists.

Isin Lists		Monuments S.=Indus Seal	Indian Lists	
			Kusha Line	Solar Main Line
1. MURUTA	3 yrs.	—	MŪRTAYA s. of 2	Ayut-āyus
2. In KISHU (or GISHU)	6 ,,	KUSHU. *S.*	KUSHA f. of 1	Ritu-parna
3. Irila Tax (or Warla Gaba)	6 ,,	Irla TIŚUĀ or TAX. *S.*	—	Sarva-Kāma
4. Dug-me	6 ,,	(?) Udu-me, priest-k. of Lagash		
5. E-AMA-Mesh	6 ,,	KASHUSHAMAMA ,, AMA. *S.*	KUSHĀMBA, s. of 2	
6. Inima-BAKIES or BAESŠES	5 ,,	BAKUS or BASAM ,, or BAK. *S.*	BASU II, s. of 2	
7. Iziaush	6 ,,	AŚIASH. *S.*		
8. Iārla TAX or DAX	15 ,,	TASIA. *S.*	—	Su-DĀSA II
9. Ibate	3 ,,	ABATA. *S.*		
10. Iārla [GASH]	3 ,,	KASHUSHAMAMA ,, (2nd term (?))	(?) KUSHĀMBA (2nd term)	
11. BAGIES(PU)UM	1 ,,	BAKUS and BA-SI-UM, k. of Guti	BASU II, s. of 2 (2nd term (?))	
12. . . . Nikīn (or Nigīn)	3 ,,	NIGIN. *S.*	—	Nighna g.s. of Sarva K.
13. [LA-SI]-RABŪM	2 ,,	LA-SIRAB, k. of Guti		
14. Irarūm	2 ,,	IRIRUMUN. *S.*		
15. Darranūm	1 ,,	DAR. *S.*		
16. Khāblum	2 ,,	KHĀBLAM or KHĀB. *S.*	—	KALMASHA-pāda
17. SURATA-ASH SIN	7 ,,	SARATI GUBI SIN, k. of Guti	—	SRUTA-UPA-GUPTA or (?) SHINI, s. of Satyarathl
18. Iārla GU[1] (-ash) -DA (or Ga-[ash]-da)	7 ,,	GUDIA, p.-k. of Lagash. KUD-(*ash*)-DIA. *S.*	GĀDHI, s. of 5	
19. . . . [EN-RIDI-PIZIR] . . .	7 ,,	*En-Ridi* (or ERRIDI) PIZIR, k. of Guti	VISHWĀ RATHA, s. of 18 and contemp. of TRISHANKU	VASVA-NANTA
20. [TIRI]-GAN	40 (days)	RUDDU and PĪSHĀ. *S.* TIRIGAN, k. of Guti		

[1] *Gu*, as we have seen, is the Sumerian name for this sign (Br. 6103), and is therefore its major phonetic value.

About the Author

Dr. Mohan Gupta is a retired Civil Servant (I.A.S.) with an inborn penchant for academics. Born in 1940 in Bhusaval (Maharashtra), his family shifted to Vijaypur District Morena (now Sheopur) during World War II. He had his higher education in Gwalior (Madhya Pradesh) and completed his Post Graduate in English Literature in 1964. Later, he did his P.G. in Sanskrit in 1974, during his tenure as a Civil Servant. He obtained his D.Litt. Degree in 1999.

While serving in the field on various positions from S.D.M. to the Secretary Raj Bhavan and Commissioner Ujjain & Principal Secretary, Govt. of M.P., he continued his studies and research in his chosen fields - Sanskrit and Vedic Literature, Philosophy, Astronomy and Ancient History. He was Founder Vice-Chancellor of Maharshi Panini Sanskrit & Vedic University Ujjain and was also awarded President's Certificate of Honour for His Excellence in Sanskrit Language and Shastric Tradition.

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Cover design : Akshay Ameria

SHRI LAL BAHADUR SHASTRI
NATIONAL SANSKRIT UNIVERSITY
NEW DELHI-110016

ISBN : 978-81-986424-5-5

Rs. 850/-