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## Physical Geography during Vedic-Civilization: A Literature Survey

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### Abstract

Geography is fossilized within the shade of History. Historical events, historical societies, and even paleo-ritual realms bear the thought of Geography, the culture of folk-geography and the film of geo-society. From mid 2<sup>nd</sup> to mid 1<sup>st</sup> millennium BCE (or the Late Bronze Age and the Iron Age), the Vedic society belonged to Hindus of Northern and North-western part of Indian subcontinent. Though this time period is controversial yet a chronological transition could be traced from the late Harappa period to the rising of Mahajanapadas (early Indo-Aryan Kingdoms in India); the Vedic age (when Veda was composed) would be demarcated. To deal or to evaluate the Vedic-Geography, the analysis of Vedic literature has much importance. In Vedic literature (Rig-Sama-Yajur and Atharva), an important hidden geographical scenario could be demarcated with respect to its; physical, social, culture, economic, traditional, folk, medical, behavioral, ritual, religious believes. The purpose of this paper is to frame and find the geographical overview, especially physical sites of Vedic time period. For this purpose helps from literary surveys has been sought after. The key findings of this paper are: the geographical periphery of Vedic civilization, its riverside world, biodiversity, climatic scenario and the oceanic world. These have vitally contributed to the proper analysis of paleo-geography of great importance which in turn gives an explicit frame of contemporary geography.

**Keywords:** Fossilized, Paleo-Ritual, Geo-Society, Paleo-Geography, Contemporary Geography.

### Introduction

The philosophy of Geography had been changed from its developmental chronology. In the dawn of Geographical thought, it was firmly concentrated within Environmental Deterministic approach. People were mainly dependent on nature and their culture and life was controlled by natural components like; Light, Wind, Water, Soil. The disturbances in the aforesaid components create a fair situation and that was the regulator of human culture and their society. During Vedic period, Vedic society followed a specimen geographical environment; where physical to socio-cultural environment have been dealt very promptly. Each of the four Vedas consists of the metrical *Mantra* or *Samhita* and the prose Brahmana gives direction of the ceremonies at which the Mantras were to be used and explanations of the legends connected with the Mantras and

rituals. Both these portions are termed shruti (which was passed on to consecutive generations orally instead of any hand written documentation). Each of the four Vedas seems to have passed to numerous Shakhas or schools, giving rise to various recessions of the text. Within the all mantras of Vedic literature, multi-dimensional socio-economic-cultural and also physical outlook have been reflected and through the proper analysis of different mantra (hymns or chants) we can find out a geographical environment of Vedic-time.

### **Objective**

To search the actual physical world or geography that was privileged around 1500 BCE. and to airing or present the paleo-geography on a dish to present researchers in the world for their improving the research work and knowledge.

### **Data Base and Methodology**

**Stage I:** At the initial or pre-stage of the writing of this book I studied Rik Veda; edited by Abdul Aziz Al Aman, Sama Veda, Yajur Veda and Atharva Veda; translated and edited by Sri Bijan Behari Goswami in detail to know all the mantras, sukta etc. And from the Vedic Mantra I searched different aspects of geography in point-wise. To fulfill the whole knowledge and to search the geographical aspect I cultivated different journals, books, and Internet website articles like: *The Practical Sanskrit Dictionary* of V.S. Apte (Ed.) , *India: The Ancient Past* of B.Avari (2007), *Hymns of Atharva-Veda: The Sacred Book of the East part Forty-two* of M.Bloom and F.M. Muller (1897), *The Geography of Rig Vedic India*. M. L. Bhargava (1964), *The Yajur Veda* of D. Chand, (1992), *Exploration in Applied Geography* of M. Chatterjee, H.M.Misra and A.K. Dutta (Eds.), *Prachin Bharote Nari* of R. Chottopadhyay and P. Bhattacharya, *The-Aryans of Ancient South Asia: Language, Material Culture and Ethnicity* of G.Erdosy, *The Blackwell Companion to Hinduism* of G. Flood (Ed.), *An Introduction to Hinduism* of G. Flood, *Sama Veda, A History of Indian literature: Veda and Upanishads* of J.Gonda(Ed.), *The Rig Veda : Complete* of R.T.H. Griffith and etc. During the preparatory stage of literature survey author surveyed more information from the e-books, E-Vedas, different maps of Vedic society.

**Stage II:** After reading possible all the theoretical explanations I prepared different relevant tables, maps, and structured the point-wise explanations. During preparation I got the scientific help from the different experts in this field. During framing I used photoshop to prepare the map. Actually this book is mainly based on theoretical survey.

### **Veda : An Identity**

The Vedas are considered the earliest literary record of Indo-Aryan civilization, and the most sacred books of India. They are the original scriptures of Hindu teachings, and contain spiritual knowledge encompassing all aspects of our life. The ancient texts of the Veda reflect a symbolic world in which ritual, notably sacrifice performed by a priest for a patron, was central to the thriving of the community (Flood, 2003) Vedic literature with its philosophical maxims has stood the test of time and is the highest religious authority for all sections of Hindus in particular and for mankind in general. The word *Veda* means 'knowledge'- the best of all knowledge in Hindu eyes (Avari, 2007) and it manifests the language of the gods in human speech. The laws of the

Vedas regulate the social, legal, domestic and religious customs of the Hindus to the present day. The Veda is intimately connected with Vedic ritual and its primary function is a one (Flood, 1996). All the obligatory duties of the Hindus at birth, marriage, death etc. owe their allegiance to the Vedic ritual. They draw forth the thought of successive generation of thinkers, and so contain within it the different strata of thought. Each Veda consists of four parts – the Samhitas (hymns), the Brahmanas (rituals), the Aranyakas (theologies) and the Upanishads (philosophies). The collection of mantras or hymns is called the Samhita. The Brahmanas are ritualistic texts and include precepts and religious duties. Each Veda has several Brahmanas attached to it. The Upanishads form the concluding portions of the Veda and therefore called the “Vedanta” or the end of the Veda and contains the essence of Vedic teachings. The Upanishads and the *Aranyakas* are the concluding portions of the Brahmanas, which discuss philosophical problems. The *Aryanyakas* (forest texts) intend to serve as objects of meditation for ascetics who live in forests and deal with mysticism and symbolism. Although the Vedas are seldom read or understood today, even by the devout, they no doubt form the bedrock of the universal religion or “Sanatana Dharma” that all Hindus follow. The Vedas have guided our religious direction for ages and will continue to do so for generations to come. And they will forever remain the most comprehensive and universal of all ancient scriptures. In post-Vedic times, Veda was extended to indicate to include the two epics, the *Ramayana* and the *Mahabharata* (Mittal and Thursby, 2006). ‘The Mahabharata overflows with mythical and legendary details on the Veda’ (Gonda, 1975). The Vedas are direct utterances of God revealed to some *ṛsis* arises from a confusion between the expression Veda meaning knowledge in general and “The Vedas” referring to the works discussed here (Ganapati, 1982). No doubt all the Knowledge arises only from God, otherwise how could creation have taken place which involves a vast amount of concealed knowledge divulged in the manifestation processes themselves. Knowledge was there which arose as ideas of the creator. Then it is unbelievable that God reveals his ideas are to endow man with the faculty of speech and to inspire him with ideas through his brain and to induce him to the utterances. Such ideas as from the content of the Vedas are revealed only to profound thinkers who had gone through life’s experiences and gathered wisdom. The expression “Revelation” used to indicate the source of the Vedas has been thoroughly misunderstood. What was meant to be conveyed by the word was that the knowledge which remained locked up in man’s brain, before language had developed to such an extent as to enable one’s thoughts and ideas to be translated cogently into speech was perfected. Thus man himself was the author of the revelations and not God direct. This truth is borne out by Rig Veda itself as stated in Mandala 10|71|1-2.

*Ved-Vyasa (Rishi)* has compiled the Veda. *Vyasa* was grandfather of the *Kauravas* and *Pandavas*. Hindus traditionally hold that *Vyasa* categorized the primordial single Veda into four. Hence he was called *Veda-Vyasa*, or “Splitter of the Vedas,”. This splitting, being a feat that allowed people to understand the divine knowledge of the Veda. The word *Vyasa* means split differentiates or describe. *Vyasa* appears for the first time as the author of, and an important character in the Mahābhārata. He was the son of Satyavati (also known as Matsyagandha), daughter of a ferryman or fisherman, and the wandering sage Parashara. He was born on an island in the river Yamuna. The place is named after him as Ved-Vyasa, possibly the modern-day town of Kalpi in the Jalaun district of Uttar Pradesh. He was dark-complexioned and hence may be called by the

name *Krishna* (black), and also the name *Daipayana*, meaning 'island-born'. Vyasa (Devanagari:vyāsa) is a central and revered figure in the majority of Hindu traditions. He is also sometimes called Veda Vyasa (*veda vyāsa*), (the one who compiled the Vedas) or Krishna Daipayana (referring to his complexion and birthplace). He is the author as well as a character in the Hindu epic Mahabharata and considered to be the scribe of both the Veda.

### **Chronology of Veda**

The Vedas, meaning the repository of knowledge, form the fundamentals of Vedic religion and Aryan society. "The available earliest literature of India has unanimously accepted the four Vedas as revealed to the *rishis* at the time of the universe" (Shrava, 1977). About the origin of Veda's evidence should be noticed from R.V. 1|1|3, 'the Brahma Sutras declare that Brahma was the sources of the Veda, and that, on this foundation, *Sankara* argues that Brahma must be omniscient' (Muir, 1861). The Vedas are probably the earliest documents of the human mind and is indeed difficult to say when the earliest portions of the Vedas came into existence. As the ancient Hindus seldom kept any historical record of their religious, literary and political realization, it is difficult to determine the period of the Vedas with precision. Historians provide us many guesses but none of them is free from ambiguity. The Vedas are among the oldest sacred texts. The Samhitas dated roughly 1500–1000 BCE, and the "circum-Vedic" texts, as well as the redaction of the Samhitas, date to c. 1000-500 BCE, resulting in a Vedic period, spanning the mid 2nd to mid 1st millennium BCE, or the Late Bronze Age and the Iron Age. The Vedic period reaches its peak only after the composition of the mantra, with the establishment of the various branches (shakhas) all over Northern India which annotated the mantra samhitas with Brahmana discussing their meaning, and reaches its end in the age of Buddha and Panini and the rise of the Mahajanapadas (archaeologically, Northern Black Polished Ware). Michael Witzel gives a time span of c. 1500 BCE to c. 500-400 BCE. Witzel makes special reference to the Near Eastern Mitanni material of the 14th c. BCE the only epigraphic record of Indo-Aryan contemporary to the Rigvedic period. He gives 150 BCE (Patañjali) as terminus ante quem for all Vedic Sanskrit literature, and 1200 BCE (the early Iron Age) as terminus post quem for the Atharvaveda. Transmission of texts in the Vedic period was by oral tradition alone, preserved with precision with the help of elaborate mnemonic techniques. A literary tradition set only in post-Vedic times, after the rise of Buddhism in the Maurya period, perhaps earliest in the Kanva recension of the Yajurveda about the 1st century BCE; however oral tradition predominated until c. 1000 CE.

### **Results and Discussions**

#### **Location of Vedic Society and Perception About River**

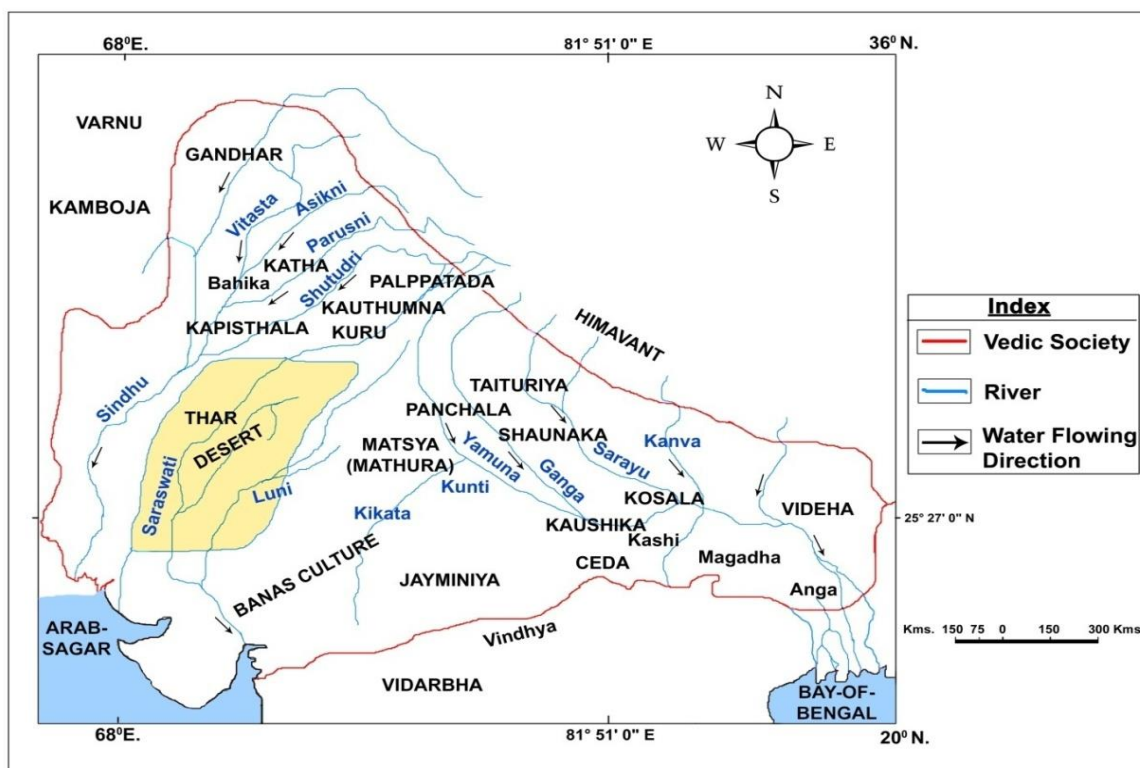
Rivers and riverine tracts were some attractive concept to Vedic people. The river Swarasvati gets several mention in Vedic literature. In Rig Veda, numerous rivers were identified, From which a safe conclusion could be that Vedic culture grew along river catchment area. In RV<sub>2</sub> 10|75, a total of 19 different rivers are associated by name. Vedic saints (rishis) were known about the source of the river Ganga, Yamuna, Indus and Swaravati. They knew that these four rivers origin from the same place (RV<sub>1</sub> 3|1|6). In Rik Veda (RV<sub>2</sub>,10|75|6) the tributaries of Indus were highlighted like Sindhu (Indus), Vitasta (Jhilam), Asikni (Chenab), Parusni (Ravi), Shutudri (Sutlej) and Bipasha (Bias). So from this observation it may be concluded that Aryan community was mainly situated

in Punjab, Pakistan and Indus basin area. But in later, the imprint of Vedic civilization was also identified on Ganga-Yamuna basin area. Sarasvati River was most floods prone and was of devastating nature. A hymn supporting this statement: "O Sarasvati; do not torched on us with your water" (RV2 6|52|6,6|61|2,5,6,14). River like Sarasvati destroyed crops and 'with her strong waves she destroyed the mountain...'. So, in Veda, River was worshipped by people. Though in present scenario the Vedic Sarasvati is missing its might thus described. Ved-Vyasa (writer of Veda) was also concussing about the river water's sound (RV2,8|69|2) and the origin of Indus River (RV 2, 8|92|22). So from this statement it is clear that the north western part of India was not dry and the direction of Indus River was the same as it is today. Non-Aryans were demarcated with respect to their skin colour (RV 2, 9|81|1). Artificial river has been observed in Yajur Veda (SYV 16|37). Nature of *Sindhu* (Indus) has an explanation in Veda. '...the waves of Sindhu may be fallen in severe territory...' (SYV 17|95). Ved-Vyasa was a great fluvial geographer because he had every minute knowledge about the confluence of five rivers to River Sarasvati (SYV 34|11). Flooding behavior of river has been dealt very nicely. According to Vedic literature, River-silt (pak or ponko) was the fault of river (KYV 2|3|14). So it is most outstanding matter that the river knowledge was so strong of Vedic people. '...water goddess flow jointly, again some river down to sea for confluence' (KYV 2|5|12) In respect of geographical studies, the aforesaid line deals with the different stages or location or mouth of river). The characteristics of river water have also been flourished in Veda like the river blows its surf to sea (AV 1|2|2). Moss aided river was found in Vedic society (AV 6|1|4|1).

The geographical information in the Rig Veda, to put it in a glance, more or less pertains to the area from Uttar Pradesh in the east to Afghanistan in the west, the easternmost river mentioned in the text being the Ganga, and the westernmost being the western tributaries of the Indus. The area of the Rig Veda extended from western Uttar Pradesh to Afghanistan. The home of the Vedic Aryans, during the period of composition of the Rig Veda, was the mid part of this area: the Saptasindhu or Punjab, the Land of the Five Rivers surrounded on the east by the Sarasvati and on the west by the Indus. Their eastern horizon was western Uttar Pradesh and their western horizon was Afghanistan. After taking the Punjab to be the habitat of the Rig-Vedic Aryans, the matter is not left at that. A further slant is introduced into the explanation of the geographical data in the Rig Veda: it is routinely implicit, on the foundation of an irrelevant theory based on a misapprehension of linguistic data, and without any basis within the Rig-Vedic data itself, that a movement from west to east is to be discerned in the Rig Veda. There are three rivers named in the Rig Veda to which this applies: the Sarasvati, Gomati and Sarayu. The Sarasvati in the Rig Veda is the river to the east of the Punjab (flowing through Haryana) and the Gomati and Sarayu in the Rig Veda are rivers to the west of the Punjab (western tributaries of the Indus). This is the common agreement, and it is documented by an appraisal of the references in the Rig Veda. But a Sarasvati (Haraxvaiti) and a Sarayu (Haroiuu) are also found in Afghanistan; and a Gomati and a Sarayu are found in northeastern Uttar Pradesh. Evidently, there has been a shift of name, in the case of these three river-names, from one river to another. The Vedic Indians, who beliefs and cults are to be examined here, settled on the banks of the river Indus and in the Punjab during the period in which the oldest texts were composed. According to very rough estimates- and we can go by only rough estimates- this period is around 1500 to 1000BC (Oldenberg, 1988). Soma

plant was an inhabitant of the severe northwestern and northern regions: all the references to the sources of Soma, in the Rig Veda, make it very obvious that the plant grew in the mountains of Kashmir, Afghanistan, and the extreme northwest of the Punjab. The only definite thing known about the place of origin of Soma is that it grows on mountains (RV 1|93|6; 3|48|2; 5|43|4; 5|85|2; 9|18|1; 9|62|4; 9|85|10; 9|95|4; 9|98|9, etc.). Nonentity more specific is mentioned in the Family Mandalas or the early upa-mandalas of Mandala 1.

The Zoroastrian sacred book, Avesta, mentions about River Helmand in Afghanistan which resembles the description of River Saraswati in Rig Veda. This river is called Harahvaiti in Avesta, phonetically the same the same as Saraswati. The Vedic people during their migration eastward to India carried with them their poetry, religious beliefs and also place and river names and reused them while settling in India.



Map 1: THE AREA OF VEDIC SOCIETY

It is doable that YavyAvati may be one more name of the Yamuna. To support it we can write a significant view that is "The old beds of the ancient Drsadvati and the Yamuna... ran very close to each other... the two rivers appear to have come close at a place about three miles southwest of Chacharauli town, but diverged again instantly after... the Yamuna... then again ran southwestwards almost parallel to the Dradvati, the two again coming about two miles close to each other near old Srughna..." ( Bhargava, 1964). Jahnvi, which is clearly another name of the Ganga, is named in two hymns; and in both of them, it is translated by the scholars as something other than the name of a river: Griffith translates it as "Jahnu's children" (RV 1|116|19) and "the

house of Jahnu" (RV 3|58|6). The word Sindhu in the Rigveda primarily means "river" or even "sea"; it is only secondarily a name of the Indus River: thus Saptasindhava can mean "seven rivers" but not "seven Induses". The relative insignificance of the Indus in the Rig Veda is recognized by the fact that the Indus is not mentioned even once in the three oldest Mandalas of the Rig Veda. Since the word Sindhu, in its meaning of "river", occurs frequently throughout the Rig Veda, scholars are able to juggle with the word, often mistranslating the word Sindhu as "the Indus" even when it means "river". However, even this sophistry is not possible in the case of the three oldest Mandalas (6, 3 and 7): the word Sindhu, except in eight verses, occurs only in the plural, and can be translated only as "rivers". The Sarasvati is referred to in nine Mandalas out of ten in the Rig Veda (i.e. in all except Mandala 4, which represents the westernmost thrust in the westward movement of the Vedic Aryans). The Indus is referred to in only six Mandalas (1, 4, 5, 8, 9, 10); and in three of these (5, 9, 10), the references to the Sarasvati far outnumber the references to the Indus. In Mandala 8, the references to the Indus outnumber the references to the Sarasvati (by six verses to four). In the common and late upa-mandalas of Mandala 1, the Indus, but not the Sarasvati, is enumerated with other deities in the abstain of the Kutsas which forms the last verse of nineteen out of their twenty-one hymns. In Mandala 10, although there are more references to the Sarasvati, it is the Indus, and not the Sarasvati, which is the main river lauded in the *nadistuti* (RV 10|75), the hymn in Praise of the Rivers. The Sarasvati is so noteworthy in the whole of the Rig Veda that it is worshipped as one of the Three Great Goddesses in the Aprisuktas of all the ten families of composers (being named in nine of them and implied in the tenth). The Indus finds no place in these Aprisuktas.

**The Eastern Rivers:** The Ganga and the Yamuna are the two easternmost rivers named in the Rigveda. One or the other of these two rivers (either by these names, or by their other names, Jahnvi and Asumati correspondingly) is named in seven of the ten Mandalas of the Rig Veda, including the three oldest Mandalas (6, 3 and 7). The *nadistuti* begins its enumeration of the rivers with the Ganga and moves westwards. Griffith, in his footnote to RV 10|75|5, takes pains to propose that "the poet addresses first the most remote rivers. *Ganga*: the Ganges is mentioned, indirectly, in only one other verse of the *Rig Veda*, and even there, the word is said by some to be the name of a woman (RV 6|45|31)."

The places named directly or indirectly in the Rigveda can be classified into five basic geographical regions, from west to east, on the basis of present-day terminology: Afghanistan, Punjab, Haryana, Uttar Pradesh and Bihar.

**Afghanistan:** The only place-name from Afghanistan that we find in the Rig Veda is "Gandhari". The gandharvas are referred to in 20 versus in 16 hymns, and *all except one* of these references are in the very latest parts of the Rig Veda: Mandalas 8, 9 and 10, and the general and late upa-mandalas of Mandala 1.

**Punjab:** The Punjab is known in the Rig Veda as "Saptasindhu". There are other phrases in the Rig Veda which signify "seven rivers"; but these do not make up references to the Punjab, as seven is a number commonly applied in the Rig Veda to various entities to indicate "all" or "many": thus we have references to the seven horses and seven wheels of the Sun's chariot, seven mouths of



*Brhaspati*, seven *Rsis*, seven priests at the sacrifice, seven sacred places, seven castles of the aerial demon destroyed by *Indra*, seven saintly singers, seven rays of the sun, seven flames of Agni, seven male children, seven elements, seven *Adityas*, seven nitty-gritty of the sea, seven races of men, seven heads, seven hands, seven tongues, seven threads, seven germs within the seed, seven tones, seven metres, and so on repeated throughout the Rig Veda.

**Haryana:** The region in Haryana known as KurukSetra or BrahmAvarta in ancient times was considered to be the holiest place on earth. However, neither the word *Kuruksetra*, nor the word *BrahmAvarta*, is found in the Rig Veda. But the Rig Veda refers to this holy region by other names or epithets: it is notorious as *vara A pRthivyA* (the best place on earth) or *nAbhA pRthivyA* (the navel or centre of the earth); and two open places in this region are named in the hymns: *IlayAspada* or *Ilaspada*, and *Manusa*. These two places are evidently named in RV 3|23|4: “He (*Devavata*) set thee in the best place on earth (*vara A pRthivyA*) in *Ilayaspada*, on an favorable day. Shine brilliantly, Agni, on the *Drsadvati*, on *Manusa* on the *Apaya*, and on the *Sarasvati*.”

**Uttar Pradesh:** The Uttar Pradesh of the contemporary is more or less alike to the land identified in ancient literature as AryAvarta or MadhyadeSa. Neither the word AryAvarta, nor the word MadhyadeSa, is found in the Rigveda. Nor is there any straight reference in the hymns to any position in Uttar Pradesh. But, the AnukramaNIs give us with a priceless clue: hymns 9|96 and RV10|179|2 are composed by a late Bharata RSi who (like many other composers in MaNDala 10 and the corresponding parts of MaNDala 9) attributes his compositions to his remote ancestor, Prataradana. He, consequently, uses the epithets of his ancestor: in RV 9|96, the epithet is *Daivodasi* (son or descendant of *Divodasa*); and in RV 10|179|2, the epithet is *Kasiraja* (King of KASI). *Prataradana* was a king of KASI, which is in eastern Uttar Pradesh. This can only mean that the *Bharata* Kings of the Early Period of the Rig Veda were Kings of KASI; and, in the light of the other information in the Rig Veda, the land of the Bharatas extended from KASI in the east to *KurukSetra* in the west.

**Bihar:** The most historically famed part of ancient Bihar was Magadha, also identified as Kikata. While the word Magadha is not found in the Rig Veda, the word Kikata is found in RV 3|53|14.

**Table 1: Region wise named of Rivers in Rig Veda**

<b>Geographical region</b>	<b>Rivers named in RigVeda</b>	<b>Source of Verse From RigVeda</b>	<b>Recent name</b>
<i>The North western Rivers (western tributaries of the Indus, flowing through Afghanistan and the north)</i>	Kubha	5 53 9.	Kabul
	Krumu	5 53 9.	Kurram
	GomatI	10 75 6.	Gomal
	Sarayu	10 64 9.	Siritoi
	Prayiyu	8 19 37.	Bara
	SuvAst u	8 19 37.	Swat
	GaurI	1 164 4.	Panjkor a
<i>The Indus and its minor eastern tributaries</i>	Kusava	4 18 8.	Kunar
	Sindhu	8 12 3;8 20 24;8 20 25;8 25 14;8 26 18;8 72 7.	Indus
	Susoma	8 7 29;8 64 11.	Sohan
<i>The Central Rivers (i.e. rivers of the Punjab )</i>	ArjIkIya	8 7 29; 8 64 11.	Haro
	Vitasta	10 75 5.	Jhelum
	AsiknI	8 20 25.	Chenab
	Parusni	8 75 15.	Ravi
	Vipas	4 30 11.	Beas
<i>Marudv rdha</i>	Marudv rdha	10 75 5.	Maruva rdhvan

<i>The East-central Rivers (i.e. rivers of Haryana)</i>	Sarasvati /Harahvatti (called in Zoroastrian)	2 89 3; 1 1 11; 1 3 8; 1 30 8; 1 32 8; 1 41 16-18; 1 3 10-12; 1 13 9; 1 142 9; 1 164 49; 1 188 8; 1 116 19; 3 4 8; 3 23 4; 3 54 13;5 5 8; 5 42 12; 5 43 11; 5 46 2, ;6 49 7; 6 50 12. 6 52 6; 6 61 1-7 ;6 27 5;7 2 8; 7 9 5; 7 35 11; 7 36 6; 7 39 5; 7 40 3; 8 21 17, 8 21 18; 8 38 10;8 54 4;9 5 8;8 67 32; 8 81 4; 10 17 7-9; 10 30 12; 10 64 9; 10 65 1; 10 66 5; 10 75 5; 10 110 8; 10 131 5; 10 141 5; 10 184 2	Sarasvati
	Yamuna/ Amnumati	5 52 17;7 8 19	Yamuna
	Ganga/ Jahnavi	6 45 31.	Ganga

**Table 2: The evidence of geographical place-names in Rig Veda.**

Geographical place-names in recent	Geographical place-names in RigVeda	Source of Verse from RigVeda (RV)
Afganistan	Gandhara or gandharvas	1 22 14; 1 163 2; 3 38 6; 8 1 11; 8 77 5; 9 83 4; 9 85 12; 9 86 36; 9 113 3; 10 10 4; 10 11 2; 10 85 40,10 85 41; 10 123 4,10 123 7; 10 136 6; 10 139 4,10 139 6; 10 177 2.
Punjab	Saptasindhu	1 32 12; 1 35 8; 2 12 3; 2 12 12; 4 28 1; 8 54 4; 8 69 12; 8 96 1; 9 66 6; 10 43 3; 10 67 12.
Haryana	a. <i>Vara A pRthivyA</i> b. <i>NAbhA pRthivyA</i>	3 23 4; 3 53 11. 1 143 4; 2 3 7; 3 5 9; 3 29 4; 9 72 7; 9 79 4; 9 82 3; 9 86 8; 10 1 6.
UttarPradesh	Daivodasi Anukramani	10 179 2 10 179 2
Bihar	Kikata (Magadha)	3 53 14

### Floral Environment

*Somlata* was found in the Territory of *Muzbana* Mountain (RV 2, 9|46|1). *Chandan* (Sandel) tree was presented on that time (SYV,12|86). Another folk tree named *salmoli* tree, Palm tree (Tal) were found. The floral environment was destroyed during in summer (by forest fire) but during rainy season that was regenerated (KYV 1|5|9). One specimen type of tree that had been analyzed in Veda and when that was cutting red colour sap ejected. This may be the reason the tree got the name “teak” (*segun*) (KYV 2|5|1). So the characteristics of the tree have been also highlighted. *Palas* (a kind of red flower without fragrance) was the beautiful flower in Vedic aesthetic (KYV 2|5|3). Water is the cause of the plant’s birth and growth (KYV 3|3|6); this science was expressed here. Catechu tree was the famous tree of that time (KYV 3|5|7).

### Faunal Environment

*Plants bear life* -this scientific truth was first identified in Rig Veda (RV2 10/97/21). “*Jatpaksha*” bird, “*Shyan*” bird (SYV 18|53), one-hoos of an animal was the identified species in Vedic era. The nature of animals was also being explained here like the nature of Lion, Dog, horses eat grass and for this they move to grazing land (KYV 4|4|9). ‘...dangerous, dissimulating mountainous lion kills the animal...’(SYV 18|71). In Veda the dog were also identified as ‘naughty dog’ (SYV 19|36), Veda has also dealt the food item of animal like deer eats paddy (SYV 23|30). In Veda, total 609 different animals name had been situated among them 260 are wild animal (SYV 24|1). The name of the birds are *Bhuranya* (speedy moving birds), yellow beaked singing black bird (or Sari), wood peaker, *Srijoy*, *sarg*, *syandav*, *soka*, *supono*, *vas* (KYV 3|2|1), *bubhakhya*, *bartica*, *kinnor*, globe (water habitat or living bird), *sambit*, *stork* (*saros*), *owl*, *kulik*, *koulik*, *kamala*, *sichapi*, *maggu*, *jotu*, *pippka*, *bortica*, *suk*, *kopinjal*, *sparrow* (*chatak*), *chas*, *cucao* (*kokil*), *peacock*, *kroncho*, *tamrachur*, *gobadi*, *Garur-pakhi* (the bird look like as cow) (AV 1|5|3|1) and *bikkar*. The animals are tiger, rat, *sisumar* (water living animal), bear, mongoose (*nakul*), frog, *lopas* (wild), *monmal* named rat, camel, dog, lion, deer, elephant, monkey, wild sheep (SYV 24|38,24|36,24|33,24|34,24|35,24|13,24|20). Animal behavior has been dealt here like; during the act of milking of cow, the cow licks to her calf and for this milk is oozing (KYV 1|7|1). Bees and their importance in environment have been dealt here. Bees made honey from nekton of flowers (KYV 2|4|9). The animal’s habitat was identified in Veda like Snakes lived in holes in ground (KYV 4|2|8). *Vadra* (water cat), python, *buru* (dear type), *jahak* (cave fox), *kosh* (bird), *kutori* dear, horn less goat, lop (*burial sakuni*) etc . The destruction of crops by the rat was dealt in Veda (AV 6|5|5|1). So, animal behavior and society relationship was also described. Owl and pigeon lived in Vedic house (AV 6|3|4|1).The habitat of some birds were also highlighted here.

It is obvious that the animals form an friendly part of the idiomatic lore and traditional descriptions of the Rig Veda: the spotted deer, for example, are the official steeds of the chariots of the *Maruts*; and the name of the buffalo (like that of the bull, boar and lion) serves as an epithet, practical to various Gods, suggestive of great strength and power. The Gods approaching the place of sacrifice to drink the libations evoke the image of thirsty bisons converging on a watering place in the forest. The expand tails or manes of Indra’s horses suggest the image of the outspread plumes of the peacock’s tail. The elephant is referred to not only in its wild form, with the image of a wild elephant crashing through the forest, uprooting the trees and bushes in

its path, but in its fully domesticated form as well: one verse (RV10|40|4) refers to wild elephants being tracked by hunters; another (RV 4|4|1) refers to a mighty king with his (retinue of) elephants; another (RV9|57|3) refers to an elephant (perhaps a temple elephant?) being decorated up by the people; and yet another (RV 6|20|8) refers to *Tugra* with his (garrisons of) elephants in what is obviously a reference to a battle. (In RV6|4|1 and RV 6|20|8, Griffith mistranslates *ibha* as “attendants” or “servants”.) Incidentally, when the tiger is mentioned in later texts (including the other Veda SaMhitAs), it has a purely “Aryan” name: *vyAghra*, which not only has a purely Indo-European etymology, but also has cognate forms in Iranian *babr* and Armenian *vagr*. And even in the Rig Veda while the word *vyAghra* does not occur even once in the text, it occurs in the name of one of the composers of RV 9|97: *VyAghrapAda VAsiSTha*. The word which occurs in the Rig Veda in the following references, stood for both the lion as well as the tiger (according to American archaeologist Mark *Kenoyer*, it probably stood for the tiger rather than for the lion). Animal breeding, especially cattle-breeding, was much more predominantly significant than agriculture: a condition whose effect is to be noted even in the religious sphere (Oldenberg, 1988).

**Table 3: The floral environment in Rig Veda period.**

Animals	Animals name during RgVead	Scientific name	Source of Verses
<i>Elephant</i>	<i>ibha, vAraNa, hastin, sRNi</i>	<i>Elaphus Maximus</i>	1 64 7; 1 84 7; 1 140 2; 4 4 1; 4 16 14; 6 4 5; 6 20 8; 8 33 8; 9 53 3; 10 40 4; 10 106 6.
<i>Buffalo</i>	<i>mahiSa</i>	<i>Bubalus Bibalus</i>	1 64 7; 1 95 9; 1 121 2; 1 141 3; 3 46 2; 4 18 11; 5 29 7,5 29 8; 6 8 4; 6 17 11; 7 44 5; 8 12 8; 8 35 7-9; 8 69 15; 8 77 10; 9 33 1; 9 69 3; 9 73 2; 9 86 40; 9 87 7; 9 92 6; 9 95 4; 9 96 6, 9 96 19; 9 97 41; 9 113 3; 10 8 1;10 28 10; 10 45 3; 10 60 3; 10 65 8; 10 66 10; 10 106 2; 10 124 4; 10 128 8; 10 140 6; 1 189 2.

<i>Indian Bison</i>	<i>Gaura</i>	<i>Bibos Gaurus</i>	1 16 5; 4 21 8; 7 58 2; 7 69 6; 7 98 1; 8 4 3;8  45 24; 10 51 6; 10 100 2.
<i>Peacock</i>	<i>mayUra</i>	<i>Pavo Cristatus</i>	1 191 14; 3 45 1; 8 1 25.
<i>Chital or Spotted Deer</i>	<i>pRSatl</i>	<i>Axis Axis</i>	1 37 2; 39 6; 64 8; 85 4, 5; 87 4; 89 7; 162 21; 186 8; 2 34 3,2 34 4; 2 36 2; 3 26 4, 5 42 15; 5 55 6.; 5 57 3; 5 58 6; 5 60 2; 7 40 3; 8 7 28.
<i>Camel</i>	<i>uSTra</i>		1 138 2; 8 4 7; 8 5 37; 8 46 22,
<i>Lion/tiger</i>	<i>siMha</i>		1 64 8; 1 95 5; 1 174 3; 3 2 11; 3 9 4; 3 26 5; 4 16 4; 5 15 3; 5 74 4; 5 83 3; 7 18 17; 9 89 3; 9 97 28; 10 28 4; 10 67 9.

### Season and Weather Analysis, Knowledge About Climatic Elements

In Rig Veda six seasons, twelve months concept had been analyzed. Vedic saints (*Rishis*) may be conscious about winter solstice and related the advent of rainy season in India, for instance ‘...Indra opens the water content from south and for result, which has emerged, that will be fallen over the sea’ (RV2 6|32|5). Regarding the seasons, Ved-vyasa was concuss and he grouped months as the onset of chronological seasons like; ‘..Jaistha and Ashar are Summer related season’ (SYV 14|6), ‘..*Srahbon* and *Bhadrah* are Rainy related season’ (SYV 14|15), ‘..Ashyn and Kartic are Sarat or Autumnal related season’ (SYV 14|16), ‘...*Magh* and *Falgun* are mist or winter season’ (SYV 15|57). Thundering and lighting (*Baj*) concept was dealt in Veda (SYV 18|28). The relation between winter and paddy thresh was analyzed here (SYV 23|26). So, the weather knowledge of Vedic farmer was very scientific. The cause of rainfall is sun and this cause was first realized by the Vedic people. ‘The Sun shine partly divided the wealth of Indra (rain) on land’ (SYV 33|42). To depict the nature of wind, Veda described it with sea (SYV 38|7). Season’s characteristic is described in Veda as: “Spring (*Basanta*) which is considered to be the king of season...rest of this summer, rainy, autumnal and winter (mist) seasons...we are worshipping” (KYV 1|6|2). The nature of weather in each season is mentioned in Vedas. During “*Basanta*” (spring) the morning is free from cloud like rainy season, “*Hemanta*” (autumnal winter) is free from snow or mist..., during the mid day the revelation of Sun was so high, in the evening of Autumnal the shine of the Sun was enjoyable (KYV 2|1|2). The Vedic people were also enlightened about the genesis of rainfall. They expressed their scientific view behind the cause of the: blackish colour of cloud, sunshine is the expression of rainfall...’ (KYV 2|1|8,3|3|4). “...water bearing cloud cast a dark shade at day time... dripping the rain on Earth’ (KYV 2|4|8).

Vedic people were knew about the genesis of the cloud for example 'O Megha (cloud); you are borne from water first time" (KYV 2|4|8). *Varsha-bandana* (singing in adoration during Rainy season) was reflected in the following statement of Veda: "O Barsa; Saturate the earth ... for this rent the extending cloud on sky ... then ... showing the water" (KYV 2|4|8). So it is the procedure of rain formation. In the Yajur Veda the formations of clouds, six seasons, the science of Arithmetic are discussed (Chand. 1992).

They knew the role of wind incase of rainfall (KYV 2|4|9). Equinox concept is dealt in Veda (KYV 3|3|6). Vedic society was known about the relation between agriculture geography and wind. Chants praising bayu god (wind) speaks of his powers - 'you give us food crops with our respect, give the life to our destroyed crops give us the waited wealth' (KYV 3|3|8). About the identification month, Vedic *rishi* were very scientific and have given a descriptions like: *chaitra* and *baishakh* is *basanta* season, *jaistha* and *ashar* is summer season, *sraban* and *vadrah* is rainy season, *ashyn* and *kartic* is autumnal, *agryan* and *pous* is *hemanta* season, *magh* and *falgun* is mist winter season (KYV 4|4|11).

### **Astronomical Knowledge**

Vedic Saints (composer of Vedic hymns) was conscious about astronomical knowledge and science like they were confirming about that the Moon received its light from the ever burning sun (RV<sub>1</sub>1|84|15). Which well proves the fact that they had an absolute clear idea about the difference between Solar year and Lunar year (RV<sub>1</sub> 1|25|8), Solar VIBGYOR, Summer Solstice and Winter Solstice concept (RV<sub>1</sub> 1|164|12), new moon. They believed that the source of the earth and the Sun was 'Brahma' or 'Parabrahma' or 'absolute-being' (SYV 23|60). But in respect of modern science it has been cleared that that Brahma means shape-less universe or Big Bang. Comets and the fall of meteor were also included in Vedic literature (AV 9|1|10|8). From this it is clear that around Vedic time any event of fall of meteor was held as extra terrestrial heavenly body that has 'falling burn-like power' (KYV 1|2|14). Vedic people were conscious about the changing shape and size of moon. The phenomena of gradual increase in its size were termed as 'suklo-paksha' while the gradual decrease in size is 'krishna-paksha' (KYV 2|4|14). In the paper entitled "The moon in Rig Veda" S.C. Sharma (1971) depicts the phases of the moon and other characteristics of the satellite, its importance as a celestial body and, significance as one of the gods as depicted in the Vedas [Chatterjee, Misra and Dutta(Eds.), 2008]

### **Oceanic Environment**

They specified "Rivers move to seas..." (SYV 13|38) proving their knowledge even about the surrounding water bodies. The world of ocean and its characteristics have been vividly dealt here, for instance - "...in sea different waves come one after another" (KYV 3|2|2). Ice moss, sea moss were also used in Vedic literature (KYV 4|6|1). Different oceanic birds are found in Veda like *bahash*, *darbida*, found hovering over the waves of the seas (KYV 5|5|13).

### **Conclusion (The Geographical Thought of Veda)**

When we read the branches of the Veda then a clear geographical perspectives can be seen i.e. in Rig Veda the Earth is divided in two hemispheres (RV<sub>1</sub> 1|164|12). People worshipped the mother Earth and expressed the view as: '...O mother Earth;...give us happiness' (RV<sub>2</sub> 6|51|5,

KYV p.482). Vedic people had vivid knowledge of geography For instance 'at the edge of mountain, river confluence is found...' (RV<sub>2</sub> 8|6|28) and "O *Maruthgana* (wind); when you move, no faulted-cloud and trees create loud ... The Earth is shaking..." (RV<sub>2</sub> 8|20|5). In Vedic literature, there are different geographical observations made. They knew about the time and direction of sun rise and sun set "...Agni (Sun) is rising towards East daily" (SYV 17|58). The rotation of the Earth, the Sun and the day have been analyzed in Veda (SYV 20|29). They expressed the climate based agricultural knowledge. "... where the *Indra* (cloud) and wind blows together, there the sorrow of food scarcity is not experienced" (SYV 20|26). People knew about the relationship between rain and animal growth (SYV 20|86). Mountains were discussed by the goods carrying people. A nice method was discussed here that is, to carry the weighted goods on mountain area; people will place the weightages on mountain slope during moving (SYV 23|26). Earth was worshipped as Goddess which reflects the environmental deterministic view of Vedic people. Vedic literature glorifies mother earth or goddess earth by saying - '*O Prithivi* (Earth); You give us happiness, reduce sorrow, you are the establisher of mass people; give us shelters' (SYV 36|21). Through the lighting in night the darkness can be removed-this type of geographical philosophy is found in Veda (KYV 1|5|9). Nature has been dealt in different portion of Vedas with geographical explanations. The morning shows the day (KYV 3|3|8) – the last statement supports this view. The geographical concerns among Vedic chants (or *rishi*) were so remarkable. They denoted earth as '*O Prithivi*; and mentioned that '... the place where mining have been practiced, *Bayu* (wind) may fill that heart like place' (KYV 4|1|4). thus it was believed that the materials removed by the wind ('bayu') which considered the main reason for rain occurrence, created undulation on the earth surface like lakes and ponds, which was latter filled by rain water. So that is the picture of water conservation thought of Vedic era. In Veda, earth was taken as something living that can feel the pain when drugged (KYV 4|1|4). The earth's origin is dealt here significantly - '... before the earth origin it was completely water periphery and that water is free from life', this statement is completely true in modern science. So it can tell that Vedic *Rishi* was known about the earth history in right way (KYV 7|1|5). People of Veda were conscious about the disaster Earthquake (AV 19|1|10|8). Vedic people were known about the source of river water of north western Indian subcontinent and we can see the name of *Himabat* (or Himalaya) in Veda which was said to be the origin some of the rivers (AV 18|4|9|9). Less watered streams were named as 'kullya' in Veda (AV 20|2|4|7).

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