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The Roots of Indian Geography[1]

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Abstract

The paper examines the commonly held belief that Indian intellectual tradition was devoid of any idea of space, place, region or landscape, the idea that led to a discipline such as geography. A cursory exploration of pre-colonial Indian literature does not fully substantiate this belief. Though ancient Indian scholars did not specifically promote the knowledge of the earth in a formal discipline like geography, they did use geographical notions of direction, distance, area, countries and regional characteristics in their description of the land and people.

Indian intellectual tradition is usually accused of the neglect of documenting the history and achievements of society and the people of India. Whatever we know of the progress of science and literature during the early Christian era is only by putting together piecemeal the works of different savants. The worst sufferer has been the pre-Islamic history of the country which was never recorded and has been pieced together by collating the literary, documentary, archaeological and inscrip-tional evidences by European scholars, followed by Indian scholars of history who have been able to compile a far more comprehensive and equally uthentic history of different areas, dynasties and regimes.

Geography, unlike history and other disciplines, had a better appeal, related as it was to places, people, rivers, mountains, lakes, plants and the spread of humanity at large. The advantage with geography is that places and their physical characteristics have not changed much during the historic period of a few thousand years and can still be identified and, in a large measure, with considerable accuracy. The disadvantage, on the other hand, is the embryonic stage of the development of the discipline. The traditional Indian knowledge around 2000 B.P. consisted of grammar, lexicography, philosophy, astronomy including mathematics, *Dharmasastra* (law), *Artha-sastra* (political economy), architecture, medicine and literature. History was clubbed with *Puranas*, an encyclopaedic text of unclassified genre, usually referred to as *Itihas-Purana*. Geography did find a place in early writings under different labels but the subject wasn't considered important

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enough to warrant a separate treatise on the discipline.

The subject, unlike in Greece and other Mediterranean countries, was not recognised as an independent discipline nor was there any serious effort to develop it. A systematic description of the earth including the continents, the mountains, rivers, people, places, territories, seasons and rainfall, however, figured in several epics, astronomical works, and the Puranas, often as a didactic dialogue between a 'know all' seer and his disciple(s). The first mention of the word '*Bhoogol*' or '*Bhugol*', an equivalent term for geography in Sanskrit or most modern Indian languages rooted in Sanskrit, is noticed only in first century Sanskrit text called '*Pancratra*', or in *Bhavisya Purana*, much later.

A Comparison with Early Greek Writings

It must be emphasised that the comparison proposed here is related to the nature and content of geography during the corresponding chronological sequences in two distant parts of the globe, and doesn't consider contemporary geography that has resulted from a long period of evolution having undergone several paradigm shifts and their replacement. The subject, for long, remained anchored to the task of exploration of unknown areas of the globe and their description. Thus, geography remained a description of territories and regions with all the constituent elements in the landscape.

Unlike the early scholars of India who were only preoccupied with grammar, philosophy, abstract logic and some astronomy during the pre-Christ period, the Greeks had developed a penchant for history and geography, besides other branches of knowledge, several hundred years before Christ. Though there is no obvious comparison, one would not fail to notice that the early Greek scholars had a notion of geography that could develop into a discipline. In sharp contrast to the situation in India, they engaged themselves in articulating the scope of the discipline. As explorers, navigators, colonialists and the torch bearers of early civilisation in the western world, they wrote treatises on the known world. The first regular treatise of which we have any distinct account is that of Hecataeus of Miletus which was probably written before the 6th century B.C. and referred to by the later writers as the first 'systematic description of the world as it was known to Greeks' (Bunbury, 1932). Written during 520-500 B.C., one of Hecataeus works called '*Periegesis*' or 'Description of the Earth' assumes the character of regional geography, containing not only the Mediterranean coast and islands but a general outline of all the countries of the world as known to the Greeks. This treatise like the Accounts of Megasthenes - '*Indika*' is lost to the world; only the excerpts quoted by subsequent authors remain. It is remarkable that Hecataeus appears to have collected some information not altogether untrustworthy covering India. And as early as 5th century B.C. (484-425 B.C.), the Greek historian Herodotus who could be as much of a geographer as a historian, since there were no independent disciplines then, wrote extensively on geography and is often credited with the old idea that 'all history must be treated geographically and all geography must be treated historically' (James, 1971:28). Eratosthenes, considered the father of geography, was not only

familiar with geographical context, but even coined the word geography. Being a mathematician, he calculated the circumference of the earth with the help of the height of the mid-day sun at two distant places, the distance between which was known. Strabo (64 B.C. - 20 A.D.) wrote 43 books of historical memoirs before embarking on his geographical work. 'The comprehensive work of Strabo surpasses all the geographical writings of antiquity, both in grandeur and plan, and in the abundance and variety of its materials' (Humboldt, *Cosmos*,Vol.II:18, quoted from E.H. Bunbury, 1932). Of the seventeen geographical volumes of Strabo, discovered almost six centuries after his death, the first two books were aimed at describing the aims and methods of geography, six (11-16) were devoted to Asia, and the 15th volume specifically treats India and Persia. Claudius Ptolemaeus, commonly known as Ptolemy (mid 2nd century A.D.) further advanced the idea of geography and wrote his famous '*Geographike Hyphegesis*' (A Guide to Geography) in six volumes that were consulted for long as a ready reckoner for longitudes of places. Bunbury (1932) also refers to Avienus who wrote '*Descriptio Orbis Terrae*' in poems in 4th century A.D. What is unique is that the Greek writers titled their volumes as geography or geographical. Undoubtedly, the Greek author who contributed most to the geography of India was Ptolemy who wrote about mountains, rivers and places in India. The merit of his work is discussed in the sequel.

There doesn't appear to have been any parallel development in India that could lead to the evolution of a discipline like geography. There is virtually no literature maintained in oral tradition or committed to writing till the time of Buddha (5th century B. C.) that even remotely suggests the notion of geography or geographical ideas. What one finds instead is a stray mention of rivers, places, people and territories. An ode to some rivers of India or mention of people or kings, or the battles they fought, as in Rg. Veda Samhita, or the mention of the territories of different kingdoms and republics described in the Buddhist texts don't qualify these references to be classed as geography. Yet, the organised inventory of geographical features like mountains, rivers, forests, people and even of countries does suggest that right from the first century A.D., the time of the writing of the *Mahabharata*, the seers and epic-composers may have felt the necessity to impart to the disciples some knowledge of territories and people, besides talking to them of other aspects of life like law, polity and philosophy. For, it couldn't be just a chance or a flight of fancy to discuss at length the people, the territories, the climes, the forests the lakes, the rivers and the mountains spreading over an entire section of an epic like the *Bhisma Parva* of the *Mahabharata*, or a *Purana* like *Markandeya* or *Vayu Purana* or an astronomical work like that of Varahmihira, all ranging in antiquity from the 1st to the 10th century A.D.

Sources of Ancient Geography of India

One may group the literary sources of ancient geography of India into five categories

1. Stray mention of people, places, and territories without any intent to create a geographical information base. In this category, one may include the *Vedic* and very early Buddhist literature.

2. Organised listing of physical features like mountains and rivers, besides territories, people and their habitat. In this group one may include the literature from the 1st century onwards, notably *Smritis*, epics like the *Mahabharata* and the *Ramayana*, *Puranas* and technical treatises like *Parasar Tantra* and *Brhat Samhita* or certain works of poetics like Rajshekhara's *Kavyamimamsa*.
3. Unconfirmed, yet oft-mentioned manuscripts of indigenous geographical texts, originating from 15th century onwards.
4. Eighteenth, nineteenth and twentieth century writings of Europeans and Indian scholars who reconstructed the ancient geography of India through the corpus of Indian literature hitherto neglected in their geographical interpretation.
5. Geographical as well as non-geographical writings and reports on themes cognate to geography that offered support for a better appreciation of geography of this sub- continent. The latter may also include the work of various surveys like geological, botanical, anthropological and above all the Survey of India, the last one being charged with mapping of the British Empire in India.

   The non-literary sources may include the archaeological findings, including inscriptions.

Geographical Knowledge through *Vedic* Literature

The earliest texts of Indian origin, inherited by oral tradition, but now committed to writing, come to us through *Vedic* literature - a huge corpus of literature that consists, besides four *Samhitas* (*Rg., Yajur, Sam and Atharv Ved Samhitas*) of *Brahmanas, Aranyakas* and *Upnishads*. The *Rg. Veda* doesn't talk of territories and places, but it speaks of rivers and people. The first ever mention of Indian rivers comes to us from the *Rg. Veda*, a text at least two thousand year old. A large number of rivers, essentially from Punjab and Uttar Pradesh are mentioned in the Xth *mandal* (book of Rg X.75) of the *Rg. Veda*, in a section titled *Nadistuti* (prayer to the rivers). Some of the rivers, familiar to us, include Sindhu, Saraswati, often mentioned as *Naditama* (the best river), Ganga, Gomti, Parusani, Yamuna, Reva, Vipasa (Beas), Sutudri (Sutlej) and Sarayu. Besides being a part of *Nadistuti*, these rivers are also mentioned as the site of a king's victory or representing the boundary of two kingdoms. Statements contained in the hymns like 'Trisus and Sudas won a great battle against their foe on the Yamuna' (Rg VII.18.19), or that 'Sadanira formed the boundary between Kosalas and Videhas' or that 'Saraswati with Drsadwati formed the western boundary of Brahmavarta' only show their value as reference points. Such references also occur in *Atharva Veda* (IX-17:1-9), *Satpath Brahmana* (I, 4-1:10-18) and *Aitereya Brahmana* (VIII-14). But the mention of places, areas, rivers, and people, occurring in Vedic literature, is hardly enough to qualify them as geographical writing. It must, however, be admitted that these may prove very helpful in understanding the geography of that period. For a very systematic study throwing light on the sources of the ancient geography of India, the reader is referred to S.N. Majumdar (1919, 1921) and H.C. Ray Chaudhury (1928).

Geographical Facts and Organised Geographical Knowledge

The utmost one can think of these references is to adopt them as geographical facts to reconstruct the geography of early periods, to the extent possible. It is to be emphasised that there is a distinction between the geographical facts and the intended geographical writing or geographical organisation of facts and their interpretation. Admittedly, there is no doubt that geographical facts like the names of places, territories and physical features do help our understanding of geography because these are contextually used, but these don't constitute a geographical writing. Most of what has been written or passed on as geography is neither geography nor geographical writing. At best, these are place or territory names strung together with an intent to identify them in the contemporary Indian landscape.

Indika, Jambudvipa, Bharat, Hindustan

One of the most fundamental questions usually asked is when the territory we identify today as India, Bharat or Hindustan came to be recognised by these names. Indika (also written Indica), as a specific expression of territorial entity we call India, has a much greater antiquity than either Hindustan which has the same root as India, or Bharat. The root of most expressions used by Greeks and Persians for India lies in '*Sapta-Sindhavas*' (Rg. Veda VIII.24.27) or simply Sindhu, known to the Greeks as Indus. The earliest reference to India is found in an inscription at Naksh-I-Rustom, dating back to 515 B. C. where the word Hi(n)du is used in a territorial sense as a part of the Darius empire (Law, 1954). Herodotus (b. 454 B.C.) in his book III of the history talks of the twenty satrapas of which 'Indians' was the twentieth, the most populous region known to the world. To Herodotus, Indika was the easternmost inhabited country of the world. By 4th or 3rd century B.C., Indika became a common term for India among the Greeks as suggested by the writings of Ptolemy, Megasthenes and Arrian (J. W. Mc Crindle, 1877). Thus, the term India, signifying a certain territorial entity, has an exogenous origin. In contrast, Bharat as territorial entity came to be recognised somewhere around 1st century B.C. or A.D. seen in the Mahabharata, or more elaborately in the text of *Vishnu Purana* of 3rd-4th century A.D.

An important territorial concept which appeared on the scene during the Buddhist period was *Jambudvipa*, referred to in the Buddhist texts of 3rd century B.C. (Mahavastu-III-67, and Lalitvistara-ch.Xii). The term also appears in many *Puranas*, signifying a continent amongst several others, though it is doubtful if the term was ever used to denote India, after the first century AD. *Jambudvipa* as a country's name was in use during the reign of Asoka as is evident from the rock edicts found at Sahsaram (Bihar), Rupnath (M.P.), Bairat (Rajasthan) and Gujarra (M.P.). But, that it is not mentioned in the rock edicts of southern India like those at Brahmagiri, Siddapur, Maski, Eragudi, Govinath and several others, is suggestive of the fact that Asoka used this expression only for the northern part of the empire.

The Knowledge of the Territorial Limits of India

As stated above, from the Vedic period onwards different expressions evolved to

denote different territories. It also meant that the entire subcontinent did not become known to the inhabitants at a stretch. At the same time, one should not imagine that the unknown regions of India were uninhabited. From the period of stone age man lived in most parts of India, though communication may have been difficult and the people were not organised in well knit large societies till around 3500 B.C..

The knowledge of the entire territory of India grew slowly, yet before the development of Asokan empire in the third century B.C. which extended beyond Mysore, most of the southern territories were known to the scholars of Sanskrit who had an extensive following. Jambudvipa, as territory, was not known to Panini, the grammarian, (5th century B.C.) nor is the word Bharatvarsha used by him in the sense we normally perceive. But the territories of the south were known to Katyayan, another grammarian, (4th century B.C.). He knew Cholas (Chodyaartham), and since the Cholas occupied the extreme point of South India, it could be assumed that by 4th century B.C. the Aryans knew much of India, though neither as Jambudvipa nor as Bharatvarsha (D. R. Bhandarkar,1986,reprint). Further evidence comes from the writings of Megasthenes (4th century B.C.) who writes about Taprobane (Tamraparni, Sri Lanka). The mention of Cholas, Pandyas, Satyaputra (king) and the Keralaputra as far as Tamraparni, the bordering regions of Asokan empire, in Asokan inscriptions suggests that by the time of Asoka the entire country including Sri Lanka was known.

The knowledge of the south Indian territories, known by their ruling dynasties like Cholas and Pandyas, existing concurrently with the notion of Jambudvipa confined to only part of the empire of Asoka, don't add up to the notion of a unified territory known either as Jambudvipa or India. Even Bharatvarsha, though known as a territorial entity, from the first to the ninth century, and elaborated in the *Mahabharata* (1st century) and *Vishnu Purana* (3rd or 4th century) was not universally used as a term for the entire country. It was divided into larger and smaller kingdoms, and the rulers of different regions did not collectively think of a common unified territory called Bharat. It was left to the Muslim invaders and some of their kings who controlled a much larger territory to give a name to their *sultanate* or kingdom. And they chose Hindustan, a Persianised version of Indika, as opposed to Bharatvarsha.

The Earliest Regionalisation of India

The need for division or regionalisation of Bharatvarsha (India) arose not so much because the Aryans or subsequently the Buddhists were interested in different regions of the country or their characteristics in terms of their relief, drainage, flora, climate, people and their occupation, but more because the expansion of the Aryan field of influence and incessant migration of people made the knowledge of different areas for them and the ruling dynasties an imperative. The divisions of India wherever mentioned refer to the people of the region. In fact, the divisions are often known after the people.

One of the earliest division of India as devised by the Aryans was based on the

relative location of different areas. Thus the Buddhist and the Brahmanical texts alike talk of '*Madhya Desa*' or '*Majjhimdesa*' (literally the central country) as the territory occupying the core area of Aryan occupation. *Aitariya Brahmana* talks of the Kuru-Panchala territory as the *Madhyadesa* located, according to Manu (*Dharma Shastra*-II.21) between the Himalayas and the Vindhyas and Prayag and *Vinasana* (where Saraswati disappears) (quoted from D. R. Bhandarkar, 1986). The Middle Country during Buddhist times, as suggested by Rhys Davids (1904), extended further east till Bhagalpur.

The Five-Fold Division of Bharat Varsha

With *Madhyadesa* located at the core, other regions were known as *Pracya* (eastern region), Udicya or *Uttarapatha* (northern region), *Dakshinapatha* (southern region) and *Aparanta* (the western region). It may be emphasised that *Satpath* and *Gopath Brahmana* have used *Madhyadesa* as a reference point to distinguish topological regions and their inhabitants as *Prachyas*, *Udeechya*, and *Neechya* to denote the territory and the people of the eastern, upper and lower regions. Different terms adopted by the Aryans for the territory occupied by them evolved as the area of their occupation expanded. Other terms like *Brahmavarta* and *Aryavarta* were also used to denote the core area of Aryan occupation. These territorial entities developed during the *Brahmana* period (around 700 B.C.). The notion of *Madhyadesa* was strengthened during the *Smriti* period (200 B.C.) According to *Manusmriti*, the famous law book of Manu, '*Madhyadesa* is (was) the region which is enclosed in the north by the Himalayas, on the south by the Vindhyas, on the west by Binasini and on the east by Prayag (Manu-II.21, quoted from D. R. Bhandarkar, reprinted 1986). Others who defined *Brahmadesa* or *Aryavarta* include Vashisth and Baudhayan. The latter particularly identified the regions peripheral to Madhyadesa, inhabited by people of mixed origin. Thus the four regions that were current for centuries were (Law, 1954):

1. Madhyadesa (Middle Country), so called because of its central location
2. Udicya or Uttarapath (Northern India)
3. Pracya (Eastern India)
4. Daksinapatha (Deccan)
5. Aparanta (Western India)

While the centrality of Madhyadesa is evident, there are controversies about 'Uttarapatha' which may have been originally a great trade route, the northern high road, so to say, which extended from Savatthi (Shravasti) to Takkasila (Takshila) in Gandhara (Law, 1954:13). But Brahmanical sources include the entire Indus Valley, the cradle of Aryan civilization in Uttarapatha. Pracya or Eastern India beyond Madhyadesa included the Magadh kingdom. Dakshinapath lay to the south of the Vindhyas, though there are Buddhist texts which define Dakshinapath as the territory south of the Ganges. As for Aparanta, there are variable identifications of the region ranging from North Konkan to Sindhu-Sauvira. The variable interpretation of these terms resulted from the status of the explored territory in ancient India. Territorial fronts were pushed further as more territories became known.

Nine Divisions of India

Most of the *Puranas* and the *Mahabharata* while giving a description of Bharatvarsha divide it into nine divisions (*Navkhand*). The *Markandeya Purana* (Ch. 57), *Matsya Purana* (Ch. CXIV) and *Vayu Purana* (Ch. XLV) - all talk of these nine divisions. These sources name the first eight divisions and about the ninth they assert 'this sea girt dvipa is the ninth division', possibly too well known to be named. Rajsekhara, the 9th century Sanskrit poet, in his *Kabvymimansa* (tr. S. Parashara :259) specifically mentions all the nine divisions of India.

These are:

1. Indradvipa,
2. Kaserumat,
3. Tamraparna,
4. Gabhastiman,
5. Nagdvipa,
6. Saumya,
7. Gandharva,
8. Varundvipa, and
9. Kumaridvipa.

Though there is a near unanimity about the names of these divisions, also called dvipas, but there is no agreement on their location. In fact, there is a lot of speculation about their location. S. N. Majumdar, while editing Cunningham's *Ancient Geography of India* appends a small chapter in the Appendix I of the edited volume and tries to identify these divisions on the basis of a Greater India in which he includes Burma and even S. E. Asia. To the present author this appears too far fetched as these are clearly the divisions of Bharatvarsha, and to conceive of further India or even Greater India appears imaginary. As late as 12th century, the celebrated mathematician Bhaskaracharya mentions these nine divisions in the 41st stanza of '*Goladhyay*', a part of his famous work *Siddhant Siromani.*

In a clear departure from all these divisions, Varahmihira, the 6th century astronomer, in his *Brhat Samhita* (tr. R. K. Bhat, 1981, Ch. XIV & XV) had prescribed a simple yet convincing division of India into nine parts. The divisions given by Varahmihira are indicated by known territories and their direction and are easily identifiable.

These are:

1. Panchala (central),
2. Magadh (east),
3. Kalinga (south-east),
4. Avanti (south),
5. Anarta (south-west),
6. Sindhu-Sauvira (west),
7. Harhaura (north-west),
8. Madra (north),
9. Kauninda (north-east).

One of the important aspects to be noticed about these regions is that nowhere there is any mention of the criteria which form the basis of these divisions. Varahmihira talked of important kingdoms in each direction. In other cases, only a few of the divisions are clearly identified, like Gandharva in the north-west of India. Thus, these nine divisions as recognised by the Puranas and Varahmihira could be compared as follows. (Table 1)

In fact, none of these divisions proves very useful. A far more interesting account of the people is given in the Mahabharata an account that shows the inhabitants of different regions of India.

Table 1

A Comparison of the Nine Divisions of India after Varahmihira, Puranas and Rajsekhara

DIVISIONS

Directions	After Varahmihira	After Puranas	After Rajsekhara
Central	Panchala	-----	Kumari(ka)
East	Magadh	Indra	Indra
S-East	Kalinga	Kaserumat	Kaserumat
South	Avanti	Tamraparna	Tamraparna
South-West	Anarta	Gabhastimat	Gabhastimat
West	Sindhu Sauvira	Naga	Naga
North-west	Harahaura	Saumya	Saumya
North	Madra	Gandharva	Gandharva
North-east	Kaurinda	Varuna	Varuna

Territorial Organisation during the fifth Century B.C. A Clue to Geographical Understanding

The first clear indication of the territorial organisation of Northern India into kingdoms and republics comes to us from the Buddhist canonical literature and Sanskrit Brahmanical texts. The intent of the mention of territorial organisation is hardly geographical. In fact, this, to my mind, is to suggest the spread and sway of Buddhism, yet it gives a significant insight into the areal orientation of different kingdoms, and the people who ruled over them. The southern areas of the continent though governed by non-Vedic dynasties were not fully known. And this relative ignorance of southern regions of the country led to the attention being focused on the more familiar north Indian realm. This also shows how little was known of much of Peninsular India even as late as Buddha's times.

The Sixteen *Mahajanpadas*

According to Buddhist canonical texts, specifically *Anguttara Nikaya*, and subsequently also repeated in the Brahmanical texts, *Jambudvipa* consisted of sixteen *mahajanpadas* (the Great provinces). It has to be noted that these sixteen *janpadas* together occupied only part of India and did not extend beyond Bhagalpur on the east, and hardly extended till the Vindhya in the south. Their maximum extension was towards the north-west and they touched the Aravallis in the south-west. The *Mahabharata*, the undisputed greatest epic in Sanskrit literature, also gives an account of these *janpadas* in its *Karnaparva* with a description of the people (Law, 1954). The sixteen *janpadas* as mentioned in 'Anguttara- Nikaya' are as follows:

Janpada	**Capital**
1. Anga	Campa
2. Magadha	Rajagriha
3. Kasi	Varanasi
4. Kosala	Sravasti

5.	Vajji	Vaisali
6.	Malla	Kusinara
7.	Ceti	Canderi
8.	Vamsa	Kausambi
9.	Kuru	Hastinapur
10.	Pancala	Ahichhatra & Kampilya
11.	Machha (Matsya)	Vairata
12.	Surasena	Mathura
13.	Asaka	Potana (Paithan ?)
14.	Avanti	Ujjayini
15.	Gandhara	Takkasila (Takshila)
16.	Kamboja	Kamboja (?)

The description of these kingdoms and republics is always associated with the teaching or the visit of Lord Buddha or his followers. Though there is a stereotyped list of 'Sixteen Maha-Janapadas' at four places in the above text, the first eight of these sixteen kingdoms were very much under the sway of Buddhism with the exception perhaps of Magadha where the royalty did not believe in the merits of embracing Buddhism or being a monk. The north west kingdom of Kamboja also showed the minimal impact of Buddha.

The political divisions mentioned in the Anguttara Nikaya were existing just prior to Buddha (D.R. Bhandarkar, reprinted 1986) even in the 6th century B.C.. The country then was divided into several small kingdoms and there were no imperial dynasties to which others were subordinate. By the time of Buddha, when he was preaching at Varanasi (also written Baranasi), some consolidation had taken place and there were only four main kingdoms, viz. Magadha with capital at Rajgriha and Patliputra; Kosala with capital at Sravasti, Vatsa with capital at Kausambi and Avanti with capital at Avanti (Ujjain).

The Stages of Territorial Expansion of the Vedic People

It is obvious that from the *Vedic* period onward there was a progressive movement towards east and south, but more towards east than to the south. The use of iron plough and better techniques of agriculture may have led the *Vedic* people to colonise the fertile Ganga valley further east. Moving southward meant traversing the hilly Vindhyan terrain without there being in view a clear prospect of better life. By the time of the Mahabharata war, before 7th century B.C., a number of independent kingdoms, including those mentioned above, and many in the non-Aryan domain had appeared on the scene.

During the early stages of the settlement of the *Vedic* people, the Aryans, the Yamuna arc was probably the eastern limit and they occupied the area west of the Indus-Ganga divide, the area largely drained to the Arabian sea. A relatively well drained area, dry climate, enough savanna land for pastoral and agricultural activities suited the temperament of the Vedic people who remained confined to the area west of the river Yamuna. As population grew, agriculture developed and need for larger territory was felt, the Vedic people crossed the Yamuna and started settling in the fertile Ganga-Yamuna doab. The colonisation of the Ganga-Yamuna doab, the emergence of a well defined territorial concept of Madhya-desa and a clear delineation of Kuru-Panchala territory occurred in the post-Vedic phase, a phase marked by the dominance of Brahminical Smritis on the one hand and the emergence of a liberal and more democratic faith propounded by the Buddha on the other. According to Brahmanical texts,

Madhyadesa, the core area of Brahmanic culture, mentioned earlier, remained confined to the region west of present Allahabad for a long time (Manu II-21, quoted from D. R. Bhandarkar, Carmichael lectures). The Buddhist sources, however, talked of Madhyadesa extending further eastward as far as 600 km east of Prayag (Rhys Davids, 1904). According to Rhys Davids (1904:91), 'By Madhyadesa the Buddhists meant the whole of North India. Of Aryan settlements in India, the ones they don't include are those on the coast of Orissa and those on the coast of Kalinga'. These were separated from the Aryan territory by dense forests. Because Madhyadesa is traced to the Buddhist canonical text, (Vinaya-II.38), the document being dated to 4th century B.C. by Oldenberg, Rhys Davids claims greater authenticity for his interpretation of the larger areal extension of the region eastward. Regardless of the antiquity of the Buddhist text in which the term occurs for the first time, its usage by the Aryan society earlier cannot be ruled out. The earlier divisions like *Uttarapatha* and *Dakshinpatha*, *Udeecya* and *Pracya* suggest their reference to Madhyadesa.

Further eastward expansion was not easy as the moving Vedic culture faced resistance from different ethnic and cultural groups who had their own social organisation and religious practices. The rapidity with which the Aryans moved eastward was considerably slowed down with confrontation of established groups. It took a lot of time and persuasion, besides the use of force, to evolve a system of principalities. The rise of Buddhism was the direct result of the domination of the *Vedic* people who intended introducing their own social hierarchy on the one hand and the revolt of certain other groups which didn't subscribe to caste hierarchy and believed in the basic human rights on the other. The shift in the centre of power from Indraprasth, Hastinapur, Ahichhatra and Kampilya to Patliputra can be taken as an evidence of the gradually shifting dominance and control of the Gangetic plain, albeit slowly. And this dominance became only too obvious during and following the Buddha's time till the end of the Mauryan empire. It would be wrong to assume and believe that the rise of Buddhism was a religious movement. In fact, it was the rise of non-Aryan groups who held their guard and established their authority over many areas.

Early Greek Writings and their Understanding of Indian Geography

Without discussing the contribution of Greeks to the development of geography, only their understanding of, and contribution to Indian geography is recounted here briefly. The Greek writings on India were largely based on their knowledge acquired of the Persian empire which extended till the Indus river and beyond in the fifth century B.C., and subsequently through the accounts of historians accompanying Alexander during his invasion of India, as well as the travellers who visited India later. The only Greek, though not a geographer but on a diplomatic mission to India, who had the first hand impression of India while living at Patliputra (present Patna) during the closing years of the fourth century B.C. was Megasthenes, whose description of India is available in fragments, collected by Dr. Schwanbeck of the University of Bonn in Latin, and translated subsequently by Mc Crindle. One is not certain how extensively

Megasthenes travelled in India and wrote what he obseved from a privileged position at Patliputra. He talked of the dimensions of India, pronouncing a distance of 28,000 east-west, and a north-south distance of 32,000 stadia. His account of monsoons occurring twice a year, making it feasible to grow two crops annually is undoubtedly based on observation. But his description of seven castes comprising philosophers, *netherds* and shepherds, artisans, military professionals, overseers and councillors hardly appears consistent with contemporary Indian reality. Should this be a convincing argument against non-existence of the four varnas during the Mauryan period. Megasthenes also suggested that Indians were free and that there were no slaves. Familiar as he was with the Greek society which practised slavery at the height of its civilisation, the absence of slavery in India, must have struck him as some thing very ideal.

The anonymous author who wrote the 'Periplus of the Erythrean Sea' (tr. W.H. Schoff, 1912) is often quoted as an authentic source for his description of the west coast of India including river estuaries, ports and important marts. But the Greek geographer who wrote elaborately on India was Claudius Ptolemaeus popularly known as Ptolemy whose work, in parts, was made available to the Indian readers after its translation by Mc Crindle in the last quarter of the 19th century, and now reprinted several times over. Ptolemy was essentially an astronomer and a mathematician. His most famous astronomical work was' Almagest', followed by his writing of geography. He titled his work as '*Guide to Geography*'. Of the eight books written by Ptolemy, six were in tabular form arranged according to countries and provinces, giving a summary of the whole at the end. But his most significant contribution is his map of the world where India figures prominently with the limitations that one can understand. His description of geographical features of India and the co-ordinates of places he has mentioned could be counted as a very significant advance on the geography of India unknown to the world (Mc Crindle, 1941). Known for his map based on a graticule of latitudes and longitudes, Ptolemy injected considerable scientific vigour in determining the location of places on the globe and a greater level of accuracy.

Yet, many commentators have written critiques on the works of Ptolemy including his map of Asia, particularly on his placement of equator which was placed too far north, and the determination of longitudes on the basis of an underestimated value of the earth's circumference. He located the places on the basis of reported instead of surveyed distances. 'As a result the shape of India is utterly distorted in his map. His results would place Paithan in the Bay of Bengal, make Ceylon an enormous island, make the Ganges flow into the sea some where near Canton-- and carry Patliputra to the east of line from Tonquin to Pekin' (Majumdar, 1919: 15-22).

There have been other critical comments on Ptolemy's dependence on and borrowing from the Indian sources, particularly the *Puranas* while writing on India. Johnson (1941) while commenting on Ptolemy's geography of India remarks - 'Ptolemy begins his description of India with an account of the coastline, evidently based on information from Greek traders with the East. But, for the interior, he does not make use, as might have been expected, of the

Alexander and later Greek historians but adopts a highly individual arrangement of his own which must depend on some other sources'. Johnson makes out a case that for his account of the interior of India, and particularly of the mountains and rivers, Ptolemy depended on the *Puranic* sources. 'It is noteworthy that for the Kabul and Chenab, Ptolemy uses the later Puranic forms, not the Vedic names known to the earlier Greek writers, and that for other four Punjab rivers his forms render the Indian names more correctly.--- The division of the hills of India into seven groups is hardly an arrangement which could have occurred to a Greek traveller or a merchant---. He further arranges his rivers in dependence on the mountains in exactly the same way as that tract (*Mahabharata VI-309-84 and Padma Purana*) does. The conclusion seems inescapable that at the base of his description there lies the *Puranic* text, perhaps in a more correct and antique recension. Ptolemy did not take over the whole of the work but only as much as was requisite for his subject, but it is a fact of some significance that an identifiable Sanskrit text should have been available in some form or the other at Alexandria'.

The contribution of the Greek authors may have been minimal but what is remarkable is that they wrote something about India as a geographical description during a period when there was no tradition in India of describing a country geographically or depicting it cartographically. Thus, while the Greeks had an idea of distances, areas and orientation of different countries of the known world and developed a technique of locating places on the basis of co-ordinates, the Indian scholars were still groping in dark. In fact, even when they started writing about geography, distances were based on wild guesswork or fantasy.

The Place of Geographical Facts in Classical Indian Literature and the Status of the Discipline

The random geographical facts scattered through the voluminous corpus of Indian literature, though not appearing as geographical presentation, are, no doubt, very valuable in understanding both physical and human aspects of geography. By correlating the water bodies, the land resources, the growing territorial expansion one can meaningfully extrapolate them to understand the community organisation, migration of people, the group conflicts caused because of rivalry for the possession of larger territorial space and land resources. But all these references in no way add up to a cogent geographical presentation and understanding. The geographical facts were narrated, without underlining their importance. These accounts may have resulted from the extensive travels by seers and itinerant *sadhus* who narrated what they saw during the course of their travels often undertaken as pilgrimage to some important shrines, seats of learning or periodic bathing rituals. There were also mendicants moving from one region to another recounting their experiences, and thus a body of information resulted that was often repeated ad *nauseam* over decades till some fresh information was added, not very different from the 19th or 20th century style of writing regional geography.

The earliest mention of geography as a discipline is traced to *Bhagvat Purana*, the 8th century puranic text where *Bhugol*, also written sometimes as *Bhoogol*, a vernacular

term for geography in most Indian languages, derived from Sanskrit, is found ranged with mathematics, using the expression '*Ganitasya, Bhoogolasya*' meaning thereby of Mathematics and of Geography (Shrimad Bhagvat Puranam. 5.20.38 & 5.25.12). Besides, there is as in case of many other Puranas, additional information about the mountains and rivers of India. What appears certain, therefore, is the realisation that geography was an important and useful discipline, but it did not progress much. Perhaps the last of the great scholars who advanced science through mathematics and geometry was Bhaskaracharya followed by a period of relative stagnation in the Indian intellectual tradition.

Geographical Information from the Epics - The Mahabharata and Ramayana

The two great epics still unsurpassed in the classical Indian literature are Ramayana and Mahabharata. Ramayana, composed by sage Valmiki around 1st century B.C., is the story of lord Rama, an incarnation of the Hindu God, Lord Vishnu, and the son of King Dasaratha of Kosala, the palace intrigue for succession, the exile of lord Rama, kidnapping of his queen Sita by Ravana, the king of Lanka, followed by her rescue after a bloody war with the powerful Ravanna, and his triumphant return toAyodhya after fourteen years of exile, to be finally crowned as the king of Kosala.

The geographical information in the Ramayana is contained in the canto called 'Kiskindha kand' which gives a description of tribes, rivers and the hermitages of the seers in the five great regions of India. Besides, there are descriptions of the territories en route, followed by Rama and his entourage. In an assessment of the information gained from Ramayana, Pargitar remarks that 'the main features of central and southern India portrayed in the poems are undoubtedly correct' (Pargiter, 1894:233). Mahabharata, the most voluminous epic with 100 000 verses, presumably composed by sage Vyasa, and perhaps of a later day origin, offers a far more comprehensive and better organised geographical information about the country, in Vth book named 'Bhisma Parvan' of the epic (Mahabharata, Ganguli tr.,1970) . It takes the form of a dialogue between Sanjay, the man with a divine vision, and Dhritrashtra, the blind king. Here, the narrator is asked to describe the accurate details of the countries from which the kings and the combatants have arrived to participate in the war. What follows is a long pedagogic talk given in sections I to X, under the title Jambu Khand Nirman and sections XI-XII as Bhumi section. Sanjay, the narrator, proceeds systematically with an exercise classifying the creatures of the earth between mobile and immobile, between oviporous and viviporous; the animals between wild and domestic mentioning them by name, and the vegetation between trees, shrubs, climbers, creepers and grass. On being probed further, he talks of mountains, rivers, forests, lakes, countries and the people. The rivers occupy a large space, and there is no important river known today that is left out, besides a large number that cannot be easily figured out. Almost all the dynasties and kingdoms that existed in the country are mentioned. Pargiter (1908) in a paper entitled '*The Nations of India in the Battle between the Pandavas and the Kauravas*' has mentioned the dynasties from

the Madhyadesa, West, Northwest, South, and East, participating in the war and marshalled on either side.

What appears intriguing is that, as mentioned in the Mahabharata, even 'the Pandyas with contingents of Dravidian races from Karnataka participated in the war on the side of the Pandavas'- pargiter-1908 p.332. It is known that the Pandyas ruled over parts of the peninsular India with their capital at Madurai. Obviously, the suggestion is that the whole of Peninsular India was fully known at the time of the Mahabharata war. According to D.R. Bhandarkar, as explained earlier, Aryans knew the entire country only by 4th century B.C.. Thus, it is doubtful if the principalities of the south were known at the time of the Mahabharata war. It is likely that the participation of the Pandyas could be a subsequent insertion in the text of the Mahabharata which in any case was composed after the war, followed by successive insertions and appendages, leading to the emergence of this voluminous text. Thus, the existence of all the dynasties, named after communities, at the time of Mahabharata, is not quite credible. Yet the geographical information contained in the epic, not scattered but well organised at one place, suggests the awareness on the part of the composers the importance of such information.

Geography in Astronomical Texts

The two astronomical texts discussed here are *Parasar Tantra* and *Brhat Samhita* of Varahmihira, an astronomer of the 6th century (505-587). Maurice Winternitz (1922), one of the foremost commentators of Sanskrit literature says that 'chapter XIV of *Brhat Samhita* contains a complete geography of India. This ends with a list of the countries, the people and other terrestrial features that are under the overlordship of specific planets'. No doubt, his observation is based on the remarks of Fleet (1893) who provided a topographic list of *Brhat Samhita*. *Brhat Samhita* is not a complete geography as claimed by Winternitz, but it is quite an elaborate description of many features. The XIVth chapter of the text (Varahmihira's Brhat Samhita: tr. by M. R. Bhat, 1981) includes nine regions of the country, each carrying a name and coinciding with one direction.

These are: 1. Madhyadesa (Kuru-Panchala country); 2. Magadha (Eastern); 3. Kalinga (Southeast); 4. Avanti (Southern); 5. Anarta (Southwest division); 6. Sindhu Sauvira (Southwest division); 7. Harhauras or Harahauras, 8. Madras (N. W. division); 9. Kaunindas (N. E. division). Each of these regions is further subdivided, describing mountains, forests, rivers, tribes and people of each region. Among the tribes described are also included the Kiratas and Cinas, the latter term appears similar to China. It is likely that Varahmihira knew the existence of China without knowing the significance of an international boundary. Also, his purpose in describing the people was more astrological than political or administrative. In ch. XXIII, he talks of rainfall and even of rain gauges, and ch. XXVII carries an account of wind circle. He goes on to discuss signs of earthquakes in chapter XXXII and growth of crops in chapter XL.

Bhaskaracharya, a distinguished mathematician and astronomer of the 12th century (b. 1114 A. D.), known for his outstanding

contribution to several branches of mathematics, wrote a treatise under the title '*Siddhantsiromani*' (ed. K. D. Joshi, Varanasi, 1961). This mathematical treatise was divided into four parts: 1. *Pathganita-dhyay*, also known as *Leelavati*, 2. *Beejganit* (Algebra), 3. *Gruhganitdhyay*, 4. *Goladhyay*. Of these the fourth part viz. *Goladhyay* relates to geography of India. The third chapter of Goladhyay, called Bhuvankosh, is entirely devoted to geography. Though considered an outstanding mathematician, Bhaskaracharya fell back on secondary sources for his description of India and its division. In the 21 *shloka* (stanza) of Goladhyay he says 'The *acharyas* (learned scholars) have said that in the midst of salt sea Jambudvipa is situated in the centre of the earth. In the southern half, there are six *dveepas* (continents) and seas'. He almost summarises the Bhuvankosh of the Puranas including the contentious ninefold division of Bharatvarsha, consisting of 1. Aindra, 2.Kaseru, 3. Shakalya, 4.Tamraparn, 5. Gabhasti, 6. Kumarika, 7. Nag, 8. Varun, and 9. Gandharva. These nine divisions of Bharatvarsha are not identical in all the epics, puranic and astronomical texts. Bhaskarcharya doesn't even conform to Varahmihira whose divisions are more specific and could be easily located. His account of the mountains is a mere inventory taken from earliest texts, nor does he have to say much about the characteristics of the region and the society. He does, however, mention that in Kumarika division *varna vyavastha* (caste system) exists and in some other parts *Antyaj* (low caste people) live. It is beyond the competence of the present author to comment on his geometrical calculations and findings, more so because these were expressed in *krosas*, a controversial measure of distance, interpreted variously. He calculated the circumference of the earth to be 4967 yojanas, and the diameter of the earth to be 1581-1/24 yujanas, and the area of the earth to be 7,853,034 sq. yojanas (stanza 52 of Goladhyay).

What is clear that a mathematician like Bhaskaracharya realised the significance of the knowledge of the earth and its constituent parts.

Puranas and Systematic Description of Geographical Features

Puranas literally mean texts that describe the antiquity of people and places. Numbering a couple of hundred, some date back to early Christian or even pre-Christian era, but there are some written even during the medieval period. These have no specific authors and present a compilation of narratives and tales as told over the centuries.

After the *Smriti* period when the law of this land was codified under the label of *Dharmshastra*, and after the great epics Mahabharata and Ramayana were composed, the sages of this country may have thought of writing down the history and geography of this land. But they had no records to rely on. The Vedic texts that were orally recited, a few inscriptions and the corpus of literature consisting of epics, poetry and drama that were readily available were neither adequate nor suitable to reconstruct the history of this vast country. The well recognised personages of Ramayana and Mahabharata that represented different ruling dynasties, the marital liaisons, the wars they fought and the treaties they concluded carried some semblance of history but to reconstruct

history in a chronological sequence was a tall order.

Yet, the drive to produce a history and above all a genealogy of ruling dynasties, giving the period of their reign, resulted in a speculative building up of a chronology with tales that could create some interest. The *Puranas* were, by definition, supposed to have five characteristics, viz. 1. *Sarga*, the creation, 2. *Pratisarga*, the recreation i.e. periodic destruction and renewal of the world, 3. *Vamsa*, the geneaology, 4. *Manvantaram*, the great epochs and finally 5. *Vamsanucarita*, history of the generation (M. Winternitz, 1985:693). Most of the *Puranas* were written during the Christian era. The oldest ones are believed to be Brahma, Markandeya, and Vishnu *Puranas*. While *Vamsa* and *Vamsanucarita* provided enough scope to write down the genealogy and history of the past, the *Sarga*, the creation aspect resulted in the inclusion of what is known as '*Bhuvan Kosh*' (Dictionary of the Earth), an important though not indispensable part of most of the *Puranas*. The contents of the *Puranas*, and even the genealogies, often varied from one *Purana* to another, often presenting a chaotic melange of fact and fiction with the result that the narratives of *Puranas* were often dismissed as imaginary tales.

In a more reasonable assessment, the contents of *Puranas* can be grouped into two categories, viz. 1. Non-verifiable facts, like history of the remote past, distances and areas and the spread of continents, facts which may have been impossible to ascertain with the state of knowledge in the 4th century A.D.; and 2. Verifiable facts, like places, rivers, mountains, forests and people, etc. Thus, the *Puranas* do contain a lot of information that is authentic in addition to what is speculative.

Geography in the *Puranas*

A systematic, though limited, description of geography of this land is found in most of the Puranas under the title '*Bhuvan Kosh*', which, if literally translated, means dictionary of the earth. In fact, the term Bhuvan Kosh appears almost identical to '*Vishwakosh*', a Marathi Encyclopaedia. E. E. Pargiter, a member of the Indian Civil Service and a judge at Calcutta High Court, in his translation of *Markandeya Purana* (1904) replaced the title *Bhuwan Kosh* (cantos 54-60) with the term 'geography'. The geographical descrip-tion, as other parts in the book, runs as an instructive dialogue between a disciple, Kraustuki and sage Markandeya. Running into 125 pages, the 'question-answer' session discusses the continents, countries, geography of Jambudvipa (Jambudvipa being the adopted name for India by the Buddhists and even used in Brahmanical literature), nine divisions of Bharata, its mountains, its rivers, their typology, forests and the people of different regions. Some times, *Bharat varsha*, signifying a country, was considered as a component of the larger continental entity, Jambudvipa.

The treatment of certain aspects like rivers and people is very exhaustive, and it is certain that a very meticulous collection of data has preceded before this text was written. The names of most of the mountains and rivers can be verified and a special section is devoted to the river Ganga, coming from Mt. Meru and flowing down to sea. Among other things, this *Purana* mentions eight major and twenty minor mountains.

The Classificatory System of Mountains and Rivers

While the mountains are grouped into major and minor categories, the rivers are grouped into perennial and seasonal rivers. Talking of rivers, sage Markandeya says 'all the rivers possess holy merit, all are flowing into the ocean, all are mothers of the world, and all are well known to cleanse from all sins'. The epithet mother for rivers may have originated during the *Puranic* period as well as the fact that the rivers (bathing in rivers) cleanse all sins.

The drainage basins of the entire country are grouped not on the basis of the principal river basins and their tributaries, but after their source, the mountains from where they emerge. Thus, the rivers emerging from Hima-vat (Himalayas) are grouped in one category. The grouping continues for the rivers originating from Paripatra (Central Indian plateau), Vindhyas, Sahaya mountain (Sahyadri, Northern W. Ghats), and Malay (Southern Western Ghats). The people of India are described region wise, like the people of Central region, people of the North East, people of the Eastern country, people of Southern region, the people of Western region, the people of Vindhyan region and the people of the Himalayan region. The list of peoples is rather long. A few of them from each region can be identified even today imparting credibility to the description.

The seven cantos of the Markandeya *Purana* under the title *Bhuvan Kosh* are a serious exercise to give a geographic description of India known to the educated people of the 4th century India, represented by a class of intellectuals and philosophers known as '*Rishis*'. *The Bhuwan Kosh of the Puranas*, in the opinion of the author, is the earliest serious and organised attempt to understand the geography of this country.

The Speculative Section of the Description in the *Puranas*

The speculative answers, as witnessed in the didactic dialogue, present a picture in exaggeration, born out of ignorance. The length, breadth and areas are highly exaggerated. To quote an instance, the length and breadth of *Jambudvipa* (India) is 100,000 yojanas, i.e. 700,000 miles. Equally outlandish is the statement that the earth is 50 *crore yojana* (3500 million miles) in every direction. As far as the distances and areas are concerned, there are frequent and impossible overstatements.

More prominent and highly controversial is the description of seven *dvipas* (Jambu, Plaksha, Salmala, Kusa, Krunca, Saka, Pushkara) surrounded by seas containing salt water, sugarcane juice, wine, *ghee* (clarified butter), curd, and milk. Today it is known that the composition of the sea water is relatively uniform with some latitudinal variation with an average of 3.5% content of salt. A mention of seas made of milk, *ghee* and wine is just fictitious. Whether it was the ignorance of the sages or a mischievous induction of ludicrous facts in the subsequent recensions of the *Puranas* is any one's guess. Yet, the fact remains that such wild statements have put a question mark on the authenticity of *puranic* statements. However, in the opinion of the author, the compilation of facts relating to physical features and the people of the country, rather accurately, in the early centuries of the Christian era, is an achievement that cannot be underestimated.

The Value of *Puranic* Geography

The geographic description contained in the *Puranas* represents a step forward in understanding the geography of the earth and the geography of India. To be sure, there are factual errors and some statements may be highly speculative, yet, the value of what is written on Indian geography some 2000 years ago should not be assessed in the light of contemporary geographical knowledge. The successive generations of scholars should have verified the facts and built on the existing foundation. But unlike *Ashtadhyayi*, the Sanskrit grammar of Panini, that attracted universal attention, and resulted in the production of generations of commentaries, the *Bhuvan Kosh* (geography) contained in the *Puranas* remained neglected, consigned to the corner of a manuscript library. Even astronomers like Varahmihira (early 6th century) repeated it, without much improvement, though he must be given the credit for scrupulously avoiding the speculative sections where precise measurements were involved. The subsequent Islamic scholars also adopted the *puranic* description without any change, though they kept away from the fictitious parts of the text. There could be many reasons for this neglect, but one of the principal ones could be the difficulty in travelling to different parts of the country as these were ruled by different dynasties. It was not easy to travel, record, remember and compile facts to compare and improve the description. It could also be that once written, the facts based on speculation were not modified out of veneration for the sages. But the most crucial reason appears to be the non-existence of a system of survey, measurement and cartography.

Despite all their limitations, the geographical sections of the *Puranas* represent the earliest attempt at organising the geographical facts of India in a systematic style. Two things emerge out of it, the first that the geographical facts, representing distribution of natural and human features could be woven into a separate theme, a subject matter, that appeared under the rubric called 'Bhuvan Kosh', and that a lot of thinking should have gone into the organisation of these features that created a pattern and a style resembling the present day regional geography. Secondly, there was an attempt to divide the country into regions based on their relative locations with reference to the centre represented by *Madhyadesa*, and their characteristic physical features, like mountains, rivers, forests, crops and the people that inhabit those regions. Rejecting outright the geography contained in the *Puranas*, as a modern mind is prone to do, is like throwing the baby with the bath water. If the modern writers think so seriously of what Strabo, Ptolemy or Pliny the elder said about India, what prevents Indian scholars from looking into what the Puranas have to offer.

A Serious Attempt at Understanding the Geography of *Puranas*

Without in any way underestimating the work of nineteenth and twentieth century scholars of Sanskrit and Indology who wrote about the geography of ancient India, the credit for the first attempt to reconstruct and interpret '*The Geography of Puranas*' goes to Prof. S. M. Ali, a professor of geography at Sagar (M. P.) in the mid-sixties of the last century. Ali was undoubtedly a very serious

scholar and devoted considerable time looking into not only the *puranic* text but also much of the work on *Puranas* that preceded him. This writer, while acknowledging his scholastic dedication, finds that Ali's work suffers from over interpretation. An example of this is his cartographic depiction of the seven '*dvipas*' (continents), some extending into Latin America, a continent explored only in the 15th century. He has been true to the text, taken the *Puranas* as gospel and tried to find a correspondence in the contemporary world, an exercise more or less to conform to his notion of the *puranic* facts. One would, however, not hesitate to give him the credit for having broken a new ground by looking into the *puranic* contribution to the geography of India.

Convergence of Geographical Accounts in *Mahabharata, Puranas* and *Brhat Samhita*

While it is difficult to establish the antiquity of these texts to assign precedence of one over the other, there is a considerable similarity of description and approach. This also proves that there was an established and accepted notion of the geographical facts going under the title of *Bhuvan Kosh* in the *Puranas, Jambu Khand Nirman Parva* and *Bhumi Parva* in the Mahabharata, and *Kurma Vibhaga* in Brhat Samhita of Varahmihira. These were quoted by Rajasekhara in 10th century and Al-Beruni in the 11th century, but the subsequent scholars failed to build on the foundation laid during the epic period to develop a more credible geography of the country, even though much of the country was subsequently known to the rulers and scholars of this country alike. There are, however, indications that several manuscripts of geographical texts written during the medieval centuries did exist and have been occasionally mentioned, but there has been no serious efforts to find, edit and publish them.

Geography in the 10th Century Prosody Text - *Kavyamimansa*

This 10th century work of prosody (Rajasekhara's *Kavyamimansa*, tr. by S. Parashar, 2000) written by Rajasekhara (900-950 A.D.) has the last of its two chapters, 17 & 18, devoted to subjects apparently extraneous to the central theme of the book. These are titled '*Des Vibhaga*' and '*Kal Vibhaga*', meaning respectively the divisions of the country and divisions of time. In contrast to the description of the *Puranas*, the author was well aware of the distinction between a continent and a country. He uses the word '*Mahadvip*' for continents, a term currently used in Sanskrit and most geography texts in Indian languages. He talks of seven *varshas* (countries) in which Jambudvipa and Bharat Varsha are mentioned as separate *varshas*. Bharat Varsha is further divided into nine regions as in *Brhat Samhita* of Varahmihira and some of the *Puranas (Markandeya Purana-LVII, Matsya-P.CXIV, Vayu P.-XLV*: also see S. N. Majumdar's 'Puranic nine divisions of Greater India, in appendix-1, of Alexander Cunningham's '*The Ancient Geography of India*' edited by S.N. Majumdar, 1924, reprinted 2000). Following the puranic tradition, Rajasekhara talks of seven continents, seven oceans, seven varshas (countries), Bharat varsha (India) being one of them, and final nine regions of

Bharat Varsha. The seven continents mentioned by him, as in Markandeya Purana are: 1. Jambu-dvipa in the centre, 2. Plaksa, 3. Salmali, 4. Kusa, 5. Kraunca, 6. Saka, 7. Puskara. The seven oceans mentioned by him are the ones full of salt water, cane juice, wine, ghee (clarified butter), milk, curd and water respectively. The seven varshas (countries) described by Rajasekhara are Ramyaka, Hiranmaya, Uttarkuru, Jambu-dvipa, Harivarsha, Kimpurusa, and Bharata. Jambudvipa is described both as a continent and as a country. He divides Bharat Varsha into nine divisions; these divisions being the same as in the Bhisma Parva of Mahabharata, Bhuvankosh of Markandeya and other *Puranas*, and are mentioned subsequently even by Bhaska-racharya, the famous astronomer (b.1114) in his most esteemed work *Siddhanta-siromani* written in 1150 (tr. by L. Wilkinson, 1842). For a poet and commentator, the geographical descrip-tion of India by Rajasekhara are far beyond his reach. He has defined Aryavarta and for each of the five regions mentioned the *janpadas* (districts), and characterised them by their mountains, the rivers, the plants and the products including minerals. The nine divisions of India given by Rajasekhara are complete as he adds Kumariks as the ninth division unlike the Puranas which are not explicit and describe the ninth region as sea girdled and well known. These nine divisions, as described earlier, are one of the *Puranic* geographical puzzles. Many speculative interpretations have been made including those by Cunningham and Majumdar.

Missing Geographical Texts of the Medieval Period

One of the earliest claims about the existence of geographical texts written during the medieval period was made by Lt. Col. W. Wilford (1822). Stationed at Banaras, it seems, Wilford had close contacts with the Sanskritists of Banaras and could extract a lot of interesting information. Writing in '*Asiatic Researches*' in 1822, he wrote- 'It is my opinion that in the times of Pliny and Ptolemy, they had a more full and copious geographical account of India than we had forty years ago. Unluckily, for want of regular itineraries and astronomical observations, their longitude and latitude only were inferred; and this alone was enough to throw the whole of the geographical information into a shapeless and inextricable mass of confusion'.

He mentions quite a few old geographical treatises indigenous to India. Two of the oldest according to him were 1. '*Munja-Prati-Desa-Vyavastha*' and 2.'*Bhoja-Prati-Desa-Vyavastha*'. The second was a revised edition of the first which was written by or by the order of Raja Munja in the 9th century. It gave an account of various regions of India and even some other known countries. It was revised by his nephew Raja Bhoj during the 10th century. According to Wilford the two are to be found in Gujarat.

The next important geographical treatise is written by Bucca Raja or Bucca Sinha who ruled over parts of peninsular India in the year 1341 of Vikramaditya, i.e. 1285 A.D.. It is mentioned in the commentary of Mahabharata and it is said he wrote an account of 310 rajaships of India. 'I suspect, this is the geographical text called 'Bhuvana Sagara' in the Deccan.' The fourth text is a

commentary on the geography of the Mahabharata written by the order of Raja of Paulastya in the peninsula, by a pundit who resided in Bengal in the time of Hussein Shah who began his reign in 1489. The last of the texts mentioned above was in the possession of Col. Wildford.

Another text that probably existed in Bengal was '*Vikrama Sagara*', which also appeared subsequently as 'Kshetra Samasa'. It existed in Bengal in the early 17th century. Kshetra Samas was written by Bijjala, the last Raja of Patna in the year 1648. It contains an account of the provinces in the Gangetic plain and some south Indian provinces like 'Trichire Vali'. The death of the Raja prevented his pundit Jaganmohan from finishing it. It was intended for his children.

In the Kshetra Samas, three other tracts are mentioned. These are '*Das Khandaka*' written by Wilford as '*Dacsha-Chandaca*', '*Desavali*' and '*Krit Dharavali*'- all written by Rameswara in the first quarter of the 17th century.

Another comment on Sanskrit manuscripts of a geographical character comes to us from S. N. Majumdar (1921). He says that a manuscript acquired by Wilford once formed part of the library of Fort William College, Calcutta, and in 1921 when Majumdar wrote about it, it was in the Government Sanskrit College Library, Calcutta. Besides the above, Prof. Pulle, as stated by Majumdar (1921), has mentioned in his '*Studi Italiani di Filologia Indi-Iranica*', Vol. IV, existence of the following geographical works in the library of the Nazionale Centrale di Firenze (Italy) 1. *Lok-prakasa of Kshemendra*, the celebrated Kashmiri writer; the manuscript contains 782 pages and is profusely ilustrated, 2. three manuscripts of *Kshetra Samasa*, a Jain work with two different commentaries, 3. a manuscript of *Kshetra Samasa Prakaran*.

Al-Beruni, Ibn Battuta and Abul Fazl

Their contribution to Indian geography. It must be stated in the beginning that the geographical notions of the first two are based on what the earliest generations of philosophers had known about India and Indian geography. Al-Beruni (also called Abu Raihan by his compatriots, initially a hostage to king Mahmud of Ghazni (997-1030) who stayed at Ghazni for 13 years (1017-1030), and did not enjoy the favour of the king, travelled in some regions of India as companion of the princes of his native country and spent his leisure time studying India. He was the most distinguished scholar who ever visited India. Having a sharp and critical mind, and a keen observer, he wrote honestly about whatever he learnt and observed and put his observations collectively in a book titled 'Kitabu'l Hind'. The facts related to geography are compiled in Ch XVIII of his book where he talks of the rivers and the ocean, distances between different kingdoms and finally some observations of physical geography, particularly the Gangetic alluvial plain and orographic rainfall. He borrows heavily on the *Puranas*, mentions Hindu calendar and repeats and reproduces literally the chapter on mountains and rivers from *Vayu Purana* (Majumdar, 1921). The whole book, whichever part one takes, is a presentation of Hindu thoughts, ideas, their ways of thinking and living, their astronomy and astrology and even their philosophy. It is more a treatise on 'Hindus' than Hindustan.

In fact, the book is intended more for readers other than Hindus. But, he was a keen observer of nature and by logical analysis often reached astounding yet correct conclusions. If one likes to know the breadth of his understanding and vision, one has to note the following extract from his book- "If you have seen the soil of India...and if you consider the rounded stones found in earth however deeply you dig, the stones are huge near the mountains and where the rivers have violent current, and the stones are of smaller size at greater distances from the mountains and where the rivers flow slowly. The stones appear pulverised in the shape of sand where the streams begin to stagnate near their mouth and near the sea. If you consider all this, you could scarcely help thinking that India has once been a sea which by degrees has been filled up by the alluvium of the streams" (Sachau, 1910 tr.). One should not lose sight of the fact that this statement from Al-Beruni came a thousand years ago and well before the European geologists were arguing over the concept of gradualism as opposed to catastrophism in the 18th century. Yet, this statement of Al-Beruni when juxtaposed to the formulation of one of his contemporaries, the famous Avicenna (Abu Ali al-Husain ibn Abdullah 980-1037), a Persian, philosopher scientist and a physician, yields ground for questioning the orginality of Al-Beruni's statement. Avicenna's formulation as quoted by James says that 'the mountains were being constantly worn down by streams and that the highest peaks occurred where the rocks were especially resistant to erosion. Mountains are raised up, he pointed out and are immediately exposed to this process of wearing down, a process which goes on slowly but steadily' (P. James, 1980:66). There is such a similarity in the statements of these two contemporaries that one wonders if Al-Beruni got the idea of erosion and sedimentation from Avicenna who was his contemporary and a very reputed scientist. While one cannot rule out the possibility of the two having developed the idea of erosion and sedimentation and even uplift independently, transmission of this idea, from one to the other is highly probable, as both were of Persian origin and both wrote in Arabic, the lingua franca of those days.

His description of India as that of Hindu philosophy, astronomy, calendar and customs is borrowed entirely from the Sanskrit texts and his account of the rivers from the *Puranas*. Opinions differ on the question of Al-Beruni's travels inside India and there is no evidence of his travelling beyond Punjab. The places he really visited to determine their latitudes include Ghazni, Kabul, Dunpur, Lamghan, Purshavar, Waihind, Jailam, Sialkot, Mandakkakor, and Multan, all close to Ghazni.

Above every thing, the present author credits Al-Beruni with using the word Hindu for non-Muslim Indians, giving the word 'Hindu' a religious meaning.

Ibn-Battuta's '*Travels in India and China*' during 1325-54 A. D. period is a travelogue of a theologian many years after he completed his journey. In India, his accounts refer to his arrival in Delhi by a land route, his stay in Delhi for seven years during the reign of Sultan Mohd. Ibn Tughlaq about whose rule he remarked that 'His gate is never without some poor man enriched or some living man executed'. He met the Sultan in 1334 and was finally sent by him as an ambassador to China.

He travelled through Khajuraho, Gwalior, Dhar, Ujjain, Daulatabad, back to Nandurbar, Cambay, Goa, Honavar, Mangalore, Calicut and after several trips back and forth between Calicut and Goa, leaving finally for China. Battuta was a staunch Muslim, a quazi, and always used the adjective infidel for non-Muslims. On occasions, he called the Hindus infidel Hindus, like the statement that 'In Malabar, there are 12 infidel sultans, some of them strong with an army of 50,000 men'..

Before proceeding to China, Ibn-Battuta visited Bengal, pronounced by him as Banjala via Chittagong (Sudkawan after Battuta) after sailing for 43 days. He moved northward and went as far as Kamaru (Kamrup in Assam) to meet Sheikh Jalal-ud-din of Tabriz who with his evangelical zeal had converted a large section of the population to Islam. He talks of Bengal as a vast country abounding in rice and observes 'In the whole world I didn't see a country where commodities were cheaper than in Bengal' and talking of the hill people of Assam, he observed that 'the inhabitants of these mountains resemble the Turks and possess great capacity for strenuous work'. He was fascinated by the plain and gardens of Meghna valley and Habibganj. Surprisingly he talks of slave boys and slave girls available at a bargain price in Bengal, and he bought one of the slave girls and his friend one of the slave boys (Mehdi Husain, 1953). It appears from his account that trade in slave boys and slave girls was widely practised in 14th century India. Was it common to all sections of the society or confined to certain groups?

Much is made of Ibn Battuta's account, but geographically its value is limited as Battuta could not be objective unlike Al-Beruni because of his religious background and a disparaging and denigrating attitude towards the people beyond the pale of Islam. He has occasionally talked of the customs of Hindus particularly those of Malabar. His account of crops, houses and people of Malabar and Maldives where he stayed for several months and his observations about Bengal give a peep into the life and society of the regions he visited during the 14th century. His travel accounts describe regions of India in the 14th century but are no better and far less objective than the accounts of European travellers during the 17th, 18th or 19th century.

Another author quoted in the context of geography is Abulfazl-I-Allani who wrote *Ain-I-Akbari*, the third volume of Akbarnama. It is surprising how Abulfazl has repeated the text of the Puranas including the nine dvipas, but what is new is his familiarity with Greek writers. He reproduces Ptolemy's chart including ten climates, beginning from equator in Taprobane (Sri Lanka). The seven climates extend from equator to 50 degrees latitude, assigning each climatic belt to a specific planet. The book has sixty pages of tables giving place names and their latitude and longitude. There is a list of fauna and the regions of their occurrence. There is a section devoted to Hindu learning and six schools of philosophy. At best, part of the book, where Ptolemy is quoted and applied, could be termed 'some aspects of astronomical geography'. There is nothing that Abulfazl added to geographical knowledge, particularly of India, but the book is really encyclopaedic in its breadth of the subject matter.

II

Colonial Approach to Geography and its Beginning

The arrival of Europeans on the Indian scene marked a novel and vigorous approach to the geography of this land. Europeans were strangers to this land and after the initial skirmishes with the regional rulers they were able to establish their foothold in India, beginning from Twenty-four Parganas of Bengal delta. As the prospects of territorial expansion appeared in sight, the most successful of the European powers, the British, struggled to know and learn more and more about India, its territory, regions, places, physical features and its resources on the one hand and its people, their languages, their traditions, their religions, their beliefs and their social and economic life, on the other.

From the mid-eighteenth century the British, represented by East India Co., were on the prowl. To promote their knowledge of the territories and the resources they set up a number of surveys like the Survey of India followed by Geological, Zoological, Botanical, Linguistic Archaeological, and Anthropological surveys. All these surveys worked to document meticulously the territories and the resources of the land.

The Work of European Scholars D'Anville, James Rennel, Vivien de St. Martin, Christian Lassen, and Alexander Cunningham

One of the earliest known efforts to understand the geography of India made by a French author was that of D'Anville who compiled the first map of India, '*Carte de l'Inde*' in 1752, thirty years before the first map of Hindoostan was drawn by James Rennel in 1788. Vivien de St Martin, who is called by S. N. Majumdar Sastri as the 'father of the geography of Ancient India', wrote '*Etude sur la Géographie et les Populations Primitives du Nord-ouest de l'Inde d'après les Hymns Vediques*' (1860). The study is based entirely on the study of Vedic hymns, perhaps the sole source of his knowledge of ancient India. The text is not available to the author for consultation though it is widely referred to as the earliest text on Indian geography.

It must be emphasised that almost a quarter of a century before Sir Alexander Cunningham wrote his famous Ancient Geography of India, a German Indologist, Christian Lassen, a distinguished professor of Antiquity and Literature, at the Royal Prussian Friedrich Wilhelm University had produced a serious geographical account of India as a part of his two volume work titled '*Alterthumskunde*' (1847) the first volume of which was largely devoted to 'Geographie and Ethnographie'. The geography section of the book runs into 400 pages. The treatment follows a regional approach. Starting with the time honoured discussion of the various names of India as they evolved, Lassen gives an account of the Himalayas in the three sections, Western, Middle, Eastern and Brahmaputra and goes on to discuss the position of India vis-à-vis other countries. Then follows the position, size and division, where he squarely divides India into Hindostan and Deccan and the way they were distinct from each other. The division of India into Hindoostan, Deccan and Karnatak was the old practice followed by the Mughals and even by James Rennel, the first Surveyor General of India, in the preparation of the his map of India (1782).

After discussing the mountains and some other physical features, he discusses the character of following regions. Western Hindostan, Middle Hindostan (Madhyadesa), further dividing Middle Hindostan into Northern and Southern Madhydesa, and the Eastern Hindostan or Praki (Prachi of the Mauryan times).

He starts his treatment of Deccan (Dekhan) with its boundaries, the Western Ghats, Mahrattaland, Berar mountains, Eastern Ghats and Nilgiris, West coast of Deccan, the Tableland and the East coast of Deccan, and finally Ceylon. The regional description being over, he talks of the natural products, vegetation, metals and wildlife. Hinterindien an expression used by German geographers for India beyond the Ganges is also considered by him with a closing chapter on Indian archipelago.

The adequacy or otherwise of Lassen's geographical presentation of India can be judged in the light of the mid 19th century knowledge of the country. Except for the East India Gazetteer produced by Walter Hamilton and some reports of Buchanan there was not much geographical material available. The first manual of the Geological Survey of India by Medlicott and Blanford (1879) had not yet appeared on the scene nor were the Archaeological or Anthropological Surveys established. There were certainly a handful of maps of different parts of the country which may have been used by Lassen. He was, it must be noticed by the scholars of geography, a contemporary of Humboldt and Ritter and there is reason to assume the he was influenced by the thinking of Humboldt and the writings of Ritter in what came to be recognised as the earliest regional geography in several volumes of '*Erdkunde*'.

But the most commonly known contribution to the ancient geography of India came from Sir Alexander Cunningham who arrived in India in 1833 to join the Bengal Engineers as a Lt. Engineer and retired as the Director General of Archaeological Survey of India. He was inspired by Vivien de St. Martin who wrote the geography of the North West of India on the basis of Vedic hymns and following his example, traced the post-Vedic, Buddhist and Greek sources, besides the travels of Chinese pilgrims, to reconstruct his account of India contained in the book '*The Ancient Geography of India*' (1871). Cunningham dealt specifically with the campaigns of Alexander and the travels of Hwen-Tsang and produced an authoritative book on India's ancient geography, focusing particularly on the Buddhist period. He adopted the fivefold division of India and traced the history of places and people in each region. In the regional system adopted by him, Northern India and Central India occupy a much larger space than Western, Southern and Eastern India, covering 270, 200, 100, 43, and 18 pages respectively. Since he was focusing largely on the travels of Hwen Tsang and the campaign of Alexander, he had a far greater volume of information and travel accounts of these parts than of South and East. He also traced the route followed by Hwen Tsang and identified places and compared distances (taking 6 li as one mile) as mentioned in his itinerary. Cunninghan, in fact, set the tradition of reconstructing the geography of ancient India based on literary sources. Equally at ease with ancient and classic Sanskrit texts as well as the researches by European scholars, he devoted considerable time and space to establish a correspondence

between the places and the people as known in antiquity, and mentioned in Puranas, Smritis, Mahabharata, or any other text, to their present identities, which are sometimes completely transformed.

Cunningam's contribution

Sir Alexander J. C. Cunninghan (1814-93), a man of many parts, came to India in 1833 as a Second Lt, Bengal Engineers. Having worked as an engineer in far fetched areas, from North-west India to Burma, and as the Chief of the boundary Commission in Ladakh, he developed phenomenal interest in ancient monuments. It is during his long period of absence from India (1966-71) and before he returned to the sub-continent as the Diector General of the Archaeological survey of India, that he wrote his famous book - '*The Ancient Geography of India*' a book that is more antiquarian than geographical. He did not notice the physical features nor the beauty of nature nor was he struck with the grandeur of the Ganges or the enormity of the Himalaya despite the fact that he was Chief of the Commission on Ladakh-Tibet boundary with Capt. Trachey and Dr. Thomson in 1847. He was obsessed with what was described by Hwen Tsang or mentioned by Ptolemy or Alexander's historians. He had his own notion of geography as is clear from the first edition of his book where he wrote "The geography of India may be conveniently divided into a few sections, each broadly named after the prevailing political and religious character of the period which it embraces, as the Bramanical, Buddhist and Mohammadan". He elaborates on the geography of each period which appears more like ancient history than geography. The present author believes that the book could have been more appropriately titled 'The Ancient History of Regions, Peoples and Places in India'. Yet he was competing with Vivien de St. Martin who scored a first by writing the '*Etude sur la Géographie et les Populations Primitives du Nord-Ouest de l'Inde après les Hymns Vediques-1960*'. Not to be left behind, Cunningham wrote '*An Ancient Geography of India*' choosing Buddhist period for his book. 'My chief guides for the period' he wrote 'are the campaigns of Alexander in the fourth century before Christ, and the travels of Chinese pilgrim Hwen Tsang in the seventh century after Christ'. Cunningham's approach despite his living in the mid and late 19th century, was entirely non geographical. Being an engineer by training, he had fascination for ancient monuments and was appointed the first Director General of Archaeology in India. Yet he was ignorant of the theme and spirit of geography and produced a book which is geographical in name and historical or archaeological in content.

N.L. Dey, S.N. Majumdar and B.C. Law Sanskrit Scholars who contributed to Indian Geography

A quarter of a century later another book that appeared on the horizon was N. L. Dey's '*Geographical Dictionary of Ancient and Medieval India*' (Calcutta, 1899). The book has been of immense value in identifying the places, tracing their history and their contemporary character. Though criticised by B.C. Law, the writer of this note found the book easy to consult as it followed a dictionary arrangement and gave a good deal of historical information of places. It would be unfair to ignore the contributions of

S.N. Majumdar Shastri* who edited several books including Mc Crindle's translation of Greek works and Cunningham's *'Ancient Geography of India'*. Majumdar's introduction to Cunningham's book running into 55 printed pages and the notes appended at the end of the book running into over 100 pages are not only as rich and informative as the original book itself, but even supplement it with the new and latest findings. S. N. Majumdar was undoubtedly the leading scholar in the twentieth century who demonstrated an in-depth understanding of the geography of ancient India, the sources of geographical information and the existing works in Latin, French, Italian or German that throw some light on the subject.

The most prolific writer on the ancient geography of India during the last century was B. C. Law. Being a scholar of Pali as well as Sanskrit, he had easy access to all information contained in the classical literature of India. Being familiar with French, he could draw equally on the researches done in France on India's antiquity. Law's books and research papers followed the pattern set by Cunningham both in content and style. He identified the places, regions and other geographical features as they appeared in Vedic or post-Vedic literature including the works of the legendary poet and playwright Kalidas. The purpose at every step was not so much to analyse and interpret but to identify the places and features mentioned in the Sanskrit and Pali texts and find their correspondence in the contemporary world. His famous work, *'Historical Geography of Ancient India'* (1954) published by Societé Asiatique de Paris is not very different from Cunningham's *'Ancient Geography of India'* (1871). While Cunningham focused largely on the Buddhist sources particularly the travels of Hwen Tsang and the writings of Greek historians after the knowledge they acquired from Alexander's invasion, Law had a much wider canvas not restricting himself to a limited source or a limited period. He grouped the geographical features, depending on their location in five regions, i.e. North, South, East, West and Central region of India, the same way as Cunningham did. The difference is in treatment, as unlike Cunningham, Law adopts an alphabetical approach like a dictionary, the same as in Dey's dictionary mentioned above.

None of the above texts will, however, qualify for a geographical writing in the contemporary idiom, and despite a very rigorous approach in identifying the places, the treatment remains non-geographical. Law undoubtedly had the advantage of publishing his book at a time when geographical ideas had struck roots in the Indian sub-continent and unlike Cunningham, he had access to far too many sources like the Survey of India maps, Gazetteers or even published modern geographical texts, yet his purpose was different and he followed an approach which helps the present day readers get some idea about the changes that a specific regional landscape - consisting of territories, rivers, mountains, cities and people - has undergone over the millennia or centuries.

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* The reader is referred to the long introduction to the revised edition of cunningham's book (1924) by S.N. Majumdar Shastri. Majumdar has given a sequential account of the contributions of different authors to the geography of ancient India till 1924. It is one of the most comprehensive reviews of the literature on the subject. He has also appended at the end some highty pages of notes and an appendix on the 'Paramic nine divions of India'

The Colonial Interest in Land and People of India

The colonial interest in India and its people, to start with, was neither incidental nor academic. It was born exclusively out of trading and evangelical interest of the Europeans powers. It would be, however, a folly to disregard their contribution to the knowledge of India, its territory, people, history, culture and tradition and finally its resources.

Of special interest to the colonial powers was the survey and mapping of the entire country, and this resulted in the establishment of the Survey of India in 1767 (initially as the Survey of Bengal) with James Rennel as the first Surveyor General. Rennel lost no time in compiling a map of India (1787) based partly on survey of certain territories under the possession or influence of the East India Company and partly on the basis of information collected from the army route marches and other reports. The survey work proceeded rapidly and by the end of the first quarter of the 19th century, the British had a fairly good notion of the Indian territory, and by 1881, the first map of India on a scale of 1"=32 miles was produced.

The story of the Survey of India, and the contributions of its distinguished Suveyors General like, James Rennel, William Lambton, George Everest and Colin Mackenzie and many others who laid a solid foundation for mapping India, is well known. The establishment of the Great Meridinal Arc of India, passing from near Cape Comorin to Banog, near Mussorie, in 1881 and the completion of the survey of the entire sub- continent in due course was certainly a great achievement for Survey of India, which simultaneously became a rich and reliable source of geographical information.

The Geological Survey of India

Established in the fifties of the 19th century, the Geological Survey of India contributed equally to the promotion of geographical understanding of the country. It must be emphasised that Physical Geology was a respected and indispensable part of geology and most geologists of the 19th century started their work with the physical geology of the area, that was akin to outlining the genesis and description of the physical features of a specific region. One has only to review the writings of early geologists in India to understand their contribution to Indian physical geography. Note the contribution of W. T. Blanford (1876) to the physical geography of the Great Indian Desert, or *'A Brief Sketch of Geography and Geology of the Himalaya Mountains and Tibet'* written by Col. S. G. Burrard. and H. H. Hayden (1907), revised subsequently by Sir Sidney Burrard and H. H. Heron (1933). It may be mentioned in passing that Sir H. H. Hayden, co-author of the original edition, was killed in the Alps by a rock fall in 1923, and hence the association of Heron in the second edition. The regional division of the Himalayas into Punjab, Kumaon, Nepal and Assam Himalayas is credited to Sir Burrad and his co-author. R. D. Oldham of the Geological Survey of India, on the other hand, may have felt the need to summarise the growing knowledge of India's structure and its physical geography, to contribute a paper - *'The Evolution of Indian Geography' (1894) in the Geographical Journal.*

Many of the writings of these geologists falling directly into the category of geography are buried in the records of the Geological Survey of India. Grinlinton's study of the Himalayan glaciers (1914, 1928) or that of Hayden of Kashmir glacier (1907), and C. F. Oldham's account of '*The Saraswati and the 'Lost' River of Indian Desert*' (1874), or R. D. Oldham's study of the '*Probable Changes in the Geography of Punjab and its Rivers*' (1886) - all fall in the category. Added to these are the accounts of the Ganga and the Brahmaputra, first produced by J. Rennel (1781) and then by E. H. Pascoe more than a century later in 1919. The list is pretty long; the studies mentioned above only serve as illustrations. While the geographers required an understanding of the geology of the area for appreciating its landscape, the geologists found a useful tool and a reference point in the physical features of the terrain, to give a definite relief and directional orientation to their geological investigations. The production of geological maps made available to geographers an additional tool for field analysis. Geological work involved not only dating the formations and deciphering their structure and lithological character but also exploring the area in terms of its relief and hydrology.

Statistical Reports, Gazetteer Series, Travelogues and other Writings

For the East India Company, administration of the territory they had taken control of, was very important. Since this was based on their precise knowledge of the region, they started a programme of collecting and compiling information in the form of Gazetteers and statistical reports. In 1807, Governor General Lord Minto appointed Dr. Francis Buchanan (1762-1829) to commence work on a full and accurate statistical survey of the territories under the immediate authority of the Presidency of Fort William. Dr. Buchanan made a thorough study of Dinajpur, Rangpur, Purnea, Bhagalpur, Gaya, Shahabad, Gorakhpur districts and the city of Patna. On each of these districts he submitted a voluminous report accompanied with statistical tables, maps and drawings. These were not published immediately, but the material was made available to other writers. As a result, in 1815, Walter Hamilton published his East India Gazetteer in London, quoting frequently from Buchanan's report. And nine years after his death (1838), Montgomery published his '*Eastern India*' in three volumes, an ill conceived and ill executed abridgement of the reports (Henry Schlosberg, 1970). Buchanan's report on Dinajpur, written before 1811 but not published until 1833, can be considered the first district gazetteer of India. The first published gazetteer was produced by Andrew Sterling (1793-1830). His '*An Account, Geographical, Statistical and Historical of Orissa Proper or Cuttock*' was published as volume XV of Asiatick Researches by the Asiatic Society of Bengal in 1822, and reprinted by Bengal Secretariat Press in 1904. A few more gazetteers appeared before the work was assigned to William Wilson Hunter (1840-1900) by the then Vice-Roy Lord Mayo. Hunter compiled the Imperial Gazetteer of India, (Trubner, London, 1881) and then proceeded to compile the '*Statistical Accounts of Assam and Bengal*'. Under his leadership several Imperial Gazetteers of different states were compiled. The state series were followed by

district Gazetteers covering the entire country.

Gazetteers are a great source of information, notwithstanding Professor O. H. K. Spate's remarks in his book '*India and Pakistan*'. I am not quite sure if Spate kept the gazetteer(s) out of his sight while writing his magnum opus on India and Pakistan. He was, no doubt, bemused at the simplicity of information processing by Indian authors, which appeared to him akin to a gazetteer. Yet gazetteers, frequently updated, remain a great and reliable source of information and have been most helpful in understanding the geography of this country. One may add to the gazetteers the reports of the Archaeological as well as Anthropological Survey of India, the Census data and reports, and statistical reports produced periodically and the climatic data from the Indian Meteorological Department of Govt. of India.

The Tripod of Indian Geography

The present author has no hesitation in stating that the Indian geography has for long been supported by the proverbial tripod of Survey of India producing maps, Geological Survey of India making geological surveys and producing maps of different regions, and the gazetteers in different series produced from the 19th century till today. Information gleaned from other sources as mentioned above provides additional enrichment, but the role of the above sources has been crucial in the past. These organisations, having once broadly surveyed the entire country, did not stop there but continued working, expanding the scope of their work and offering all kinds of support to the people, the Government and professionals alike in understanding the area and resources of this country. The gazetteers have been periodically revised, new areas added and progressively more information has been added to enhance their utility. Other surveys whether they relate to people, flora, fauna or early and pre-historic societies, have proved equally effective in understanding the geography of this land. Certain governmental organisations, like Indian Meteorological Department, Census Operations, or Department of Agriculture, all with their neatly compiled database have been a useful instrument for understanding the country and its geography.

Disjunction between the Geography of Pre-Colonial and Colonial Period

A comparative study of the concept, sources and methodology of geographical studies in the pre-colonial and colonial period shows a complete disjunction. One aspect that is common to the points of view of both the periods is the centrality of space, place or region as a theme. The description of the earth has been the sheet anchor of both the periods. The Colonial geography had, to its advantage, far more authentic information of places and people, based as this information was on accurate surveying and extensive field work and reports. In the task of compiling information, the Government was the main agency that did not spare any effort to understand the country in all its aspects, not only to build a sound database that could be helpful in decision making and governance but that could also further the colonial interests.

Secondly, the concept and content of geography also changed from one of mere accumulation of facts and their description, to one of systematic description and

interpretation, a scheme in which the character of a place, and the pattern of distribution of specific elements in the landscape demanded explanation.

Such a geography which sought to elicit causative and explanatory approach and a regional synthesis developed in the Western world in the 19th century, the period when the British were firmly established in India. What kind of geography the colonial powers promoted, and what the western scholars accomplished, to give a complete and reliable picture of Indian geography could be the subject of a separate study. Here only the beginning and the roots of Indian Geography are traced.

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