Chapter III

REGIONAL GEOGRAPHY OF INDIA

The geographical material contained in Alberuni’s India may be assessed from the viewpoint of two different sources. The first source consists of the material which Alberuni painstakingly assembled from the ancient Hindu scriptures, such as the Bhuvankosa and the Kurma-yibhaga of the Puranas, as well as from works of Indian authors such as Patanjali, Panini, Utpala and Varahamihira. The other source consists of those ideas and concepts which Alberuni derived from his own observations. In this latter group may also be included that knowledge which came to him through the works of his predecessors. There seems to be no point in emphasizing the relative significance of each of the two above mentioned sources, for information from each of these sources is valuable. However, at this stage it may be noted that Alberuni’s first acquaintance with India must have been either through the ancient Hindu works which got translated into his language or through the random works which already were popular in Pahlavi and Syriac languages. As such, the significance of this category of sources cannot be overemphasised.

Alberuni’s great reliance on the Puranas — specially the Vayu, the Matsya and the Aditya — in matters of geographical importance, can be easily understood. These Puranas not only
give a list of rivers, mountains, lakes, seas, peoples, countries and so on, but also present them as academically truthful. A number of concepts, which later found place in the works of Indian astronomers, were actually propounded in the Samhitas. As for example, the *Navkhandaprathima* concept which is found developed in the Navkhanda section of the *Markhandeyapurana* is available in other works of later Hindu period. It was for this reason that Alberuni felt the necessity of going through the *Puranas* himself and of tapping the sources in original. Thus his book on India draws a large number of illustrations and an assortment of quotations from the *Puranas*, although he seldom reports them without his comment. Actually, he examines every original statement with a critical eye and verifies its authenticity from other available sources and, if possible, from personal observations. He thus keeps a balance between textual knowledge and scientific search.

He does not put blind faith in the writers who preceded him in writing on the geographical aspects of India. He asserts, and rightly so, that what others have generally written about India is merely a copy of the other peoples unacknowledged work.\(^1\) This attitude required of him to adopt a cautious and assiduous approach in his studies of India. It is well known now that Alberuni’s sojourn in India was confined only to a limited portion of the country in the northwest.\(^2\) To be more precise, Alberuni

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\(^2\) Ibid., Vol.1, pp. 317-18.
did not go much beyond the Rechna Doab in the east, while in the south, Multan on the Chenab seems to be the farthest extent of his visit. Thus, it is certain that a very large part of the country was left out of his direct observation. Doubts may therefore arise regarding the authenticity of the accounts of those regions which were not visited by him. But such doubts would not be entertained by those readers who know that Alberuni never accepted a fact unless it was scientifically investigated and proved. One can be sure that Alberuni's geographical descriptions are most often reliable and precise — and often original.

As would be seen later, in making personal observations Alberuni concentrated on the minutest details which may have been ignored/persons with an ordinary understanding. Alberuni's accounts, both physical and cultural, are therefore full of these details which make his Kitab fi tahqiq ma'l-l-Hind a record of great geographical value. The details furnished by him regarding the form and indentations of the coast of India, or the clusters of islands found in the Indian Sea, or the origin of the Indo-Gangetic Plain, or the traditions and customs of the peoples living in the sub-continent bear testimony to his being the foremost regional geographer of the Middle Ages. Alberuni's another significant contribution which should be mentioned here is his sixteen itineraries which have been selected in such a manner as to include almost all the important trade and cultural routes diverging from the main nodal points and embracing on their routes some sixtyseven medieval towns and metropolises. The
details of directions and distances in these itineraries are remarkably accurate.

The Concept of Seven Dvipes

The division of the earth into some workable number of regions have been one of the academic pursuits of civilizations from the earliest times. Different nations made this attempt according to their level of knowledge and conceptions. For instance, the Muslims, like the Greeks, divided the earth into seven latitudinal strips depending upon the length of the longest day. Most Greeks, as well as the Arabs and the Persians, used to divide their known part of the earth into seven sections. The Indians, as Alberuni notes, made the same number of divisions which they called dvipes. The reason why most of the nations adhere to number seven, lies in the fact that this number seems to have earned an element of mysticism during the Middle Ages.

Alberuni, who had had the occasion to go through the ancient books of the Hindus like the Puranas (Matsya, Aditya and the Vayu), the Mahabhasya of Patanjali, Brihadrsamhita of Varahamihra and the commentaries of other authors, gives a remarkably vivid picture of the seven divisions. It may be noted here that although Alberuni had consulted all the possible sources in this connection, he placed greater reliance on the Matsya Purana for the clarity of its narration.

Quoting from Hindu sources Alberuni writes that the Hindu astronomers conceived the 'inhabitable world' to be divided into
seven collar-like strips which were separated from each other by the same number of seas. Since these were surrounded by water, they were called 'dvipas'. The name of these 'dvipas', starting from the central one and working outwards are Jambu-Dvipa, Saka-Dvipa, Kusa-Dvipa, Kraunca-Dvipa, Salmala-Dvipa, Gomeda-Dvipa and Pushkara-Dvipa.  

So far as the principle of the division of the 'inhabitable earth' is concerned, there was little conceptual difference amongst nations. Whether a division is designated as a cline or iqlim or kishwar or dvipa, it meant the same thing. However, the Greek and the Arab divisions take into cognizance a spherical earth, so that their divisions were more scientific. On the other hand, the Hindu concept of the 'dvipas', like those of the kishvaras of Persians, is a conjectural and a hypothetical in so far as it conceives the earth to be flat and circular like a disc. Alberuni is naturally very critical of the Hindu concept. He is convinced of the irrationality of such a division and asserts that it has no scientific base. He notes that the difference between the Muslim and the Hindu divisions, is partly due to the difference between their ways of thinking and partly due to the difference in language or that of the text.  

The earliest notion of the division, which later became the basis of the geography of the Suryasiddhanta, consisted of four dvipas, viz., the Jambu, the Uttarkuru, the Ketumala and the Bhadrasava. These four dvipas were conceived as spreading like

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4 loc.cit.  
5 loc.cit.
the petals of a lotus flower around Mount Meru. The concept of
the seven dvipas was a modification of the previous concept.
Alberuni, however, does not provide any information on this
issue. As far as the dimensions of dvipas is concerned, Alberuni
remarks that each is the double of the preceding one. In the
same way each sea is the double of the preceding sea. They
increase in the progression of the powers of two. Thus if the
central dvipa is reckoned as one, the next would be two; the
third four; the fourth eight; the fifth 16; the sixth 32 and
the seventh 64. Hence, that the total of all the seven dvipas
was 127. It may be pointed out here that Alberuni's assessment
of these dvipas is very close to the original texts now available.
An attempt has been made by modern scholars to interpret the
seven dvipas and the seas scientifically. Muzaffar Ali is very
near the truth when he synonymises the seas with the impenetrable
large expanses of sand or forests which surround the positive
areas of settlement, called the dvipas. Actually these seas were
nothing but the negative areas unsuitable for habitation.

The Jambu-Dvipa:

According to Alberuni the Jambu-Dvipa is the central dvipa
which is 100,000 yejanas in length and is named after a huge
tree extending over a space of 100 yejanas. Alberuni gathers some

very useful piece of information from the Vayu Purana regarding the inhabitants of the Jambu-Dvipa. Accordingly, they have been classified into two groups — the first is named Kimpurusha and its people have a golden complexion and are pious and free from sins and take date-palm juice as their food; the other is Haripurusha, whose members are of a silvery complexion and are known for their longevity of life and are beardless and their food is sugar-cane. Alberuni infers from the above information that since the inhabitants of the latter group are beardless and of silvery complexion, they might be the Turka, but since sugar-cane has been mentioned as their food, a more southerly latitudinal position should be awarded to this dvipa. Emphasising his point of view further, he remarks that a golden or a silvery complexion is hard to find and what we get is the colour of burnt silver, which is found among the Zanj, 'who live no doubt longer than we, but only a little longer, and by no means twice as long'.

Alberuni furnishes a full description of the seven dvipas and from a comparative study of the position and description of each of the dvipas it may be inferred that the Jambu-Dvipa embraced a large area surrounded by the Pushkara-Dvipa in the northeast of Asia, Saka-Dvipa in the extreme southeast, Kusa-Dvipa in the southwest and the Karaunca-Dvipa in the west, or lying over the Europe. Thus here is a region which extends from the tip of India including Ceylon and running northward up to

the northern limit of Asia and from a line joining the Ural with the Caspian up to the Makran Coast in the west and to the ramparts close to the headwater of the Yenesi around Baikal in the east.

Saka-Dvipa:

Alberuni, on the authority of the Matsya Purana, prefers to count the Saka-Dvipa as the second dvipa in the order of enumeration. It may be pointed out here that the text of the Vayu, Vishnu Puranas and the Mahabhasya of Patanjali differ in their views wherein the second dvipa is Plaksha. Alberuni discusses the mountains and rivers of this dvipa and obtains his information from the Matsya Purana. Amongst the seven mountains of the first ocean he refers only to two: one which is golden in colour and wherefrom the rain bearing clouds originate, and the other which contains all the medicines. All the mountains are adorned with jewels and are the abodes of Devas and demons. He also mentions the existence of seven rivers and informs us that one of the rivers is as pure as the Ganga. The accounts of the seven rivers as found in the Vayu Purana. Some scholars have identified Ksirasamudra with the Bay of Bengal and the description furnished by Alberuni of its moist rainy climate help to identify this dvipa with the southeast region of Asia. To be more precise, as Muzaffar Ali is, the Saka-Dvipa extended over the countries of Southern China, Siam and Burma, Malaya and Indo-China.10

The inhabitants of Saka-Dvipa, according to Alberuni, are

pious and have a long life. They are a simple unambitious type and have the propensity to change the rule of the kings.\textsuperscript{11}

\textbf{The Kusa-Dvipa:}

As quoted by Alberuni, it is the third dvipa on the list of Matsya Purana. By virtue of its position as the third dvipa, it is double the size of the Saka-Dvipa. Like the previous dvipa, this is also traversed by seven mountains and seven rivers. All these seven mountains contain, according to his information, important items of great utility, such as jewels, herbs, flowers, cereals and so on. He particularly emphasises the medicinal and curative value of some of the drugs found in these mountains. Visalyakarana, for instance heals every wound instantaneously and mritasamjivan can restore life to the dead. Alberuni also notes the tradition regarding the existence of an eternal fire, called Mahisha, which would not extinguish until the whole world reaches its destruction. Writing about rivers, he particularly refers to one, named Jauna, which is one of the greatest and the purest rivers. The Jauna of Alberuni may probably be the Yamuna and if it is so the location of this dvipa approximates with the region now occupied by Iran and Iraq, i.e., southwest Asia. Some scholars consider it extending up to Ethiopia.\textsuperscript{12} Alberuni does not find any account of the inhabitants of this dvipa in the Matsya Purana and therefore consults Vishnu Purana for this purpose. It is stated that the natives of this dvipa are pious and have a life as long as 10,000 years.\textsuperscript{13}

\begin{footnotes}
\item[12] Ali, \emph{op.cit.}, p. 41.
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The Krounca-Dvipa:

This is the fifth dvipa according to Vishnu Purana and Patanjali, but the fourth according to the Matsya Purana. It is double the size of the Kusa-Dvipa. The rivers of this dvipa, according to Alberuni, are the tributaries of the Ganga. The inhabitants are generally white and are pious and pure. They live a peaceful community life without any distinction of caste and creed. In Vishnu Purana, he found mention of a single community, but at a later place in the same Purana he discovers four distinct castes.\(^{14}\) This dvipa has been identified with the region around the Black Sea.\(^{15}\)

The Salmala-Dvipa:

The details of this dvipa and of its inhabitants as discussed by Alberuni seems to be based on the information contained in the Matsya, Vishnu, Vayu Puranas and Patanjali, although he himself mentions only the first two Puranas in this respect. From what Alberuni writes about the nature and life of the inhabitants of this dvipa it may be inferred that he is talking about a metaphysical world. They neither have lust nor anger nor fall ill. They lead a contented life without toiling. They do not experience the change of seasons and therefore do not need to protect their bodies against the weather. They live for as long as 1,000 years. According to his citation from the Vishnu Purana, they are handsome. From the above account it is hard to identify

\(^{14}\) loc.cit.
\(^{15}\) Ali, op.cit., p. 45.
this dvipa with any present day region. However, some writers take it to be the tropical part of Africa bordering on the Indian Ocean.  

**The Gomada-Dvipa**

This dvipa being the sixth on the list of the Matsya is double the size of the Salmala. *Vayu Purana* counts Saka-Dvipa in its place. Alberuni, on the authority of the *Matsya*, describes two main mountains in this dvipa. The first is Sumnas which is of a pitch dark colour and is the loftiest of all mountains. The second is Kumuda which is golden in colour and contain herbs. The climate of this dvipa, according to *Vishnu Purana*, is very healthy and pleasant, so much so that the place is visited by the dwellers of the paradise. This region has been identified with the region around the Mediterranean Sea.  

**The Pushkara-Dvipa**

The seventh dvipa, according to *Matsya Purana*, is the Pushkara. Alberuni gives a concise account of this dvipa. From examining his account, it is possible to say that this dvipa has a northerly situation and a mild climate, which is blissful and makes life easy and simple. It is rainless and has no rivers. This dvipa has two mountain systems. The first, which is in the east is known as Citrasala; it is 34,000 *yojanas* high and has a circumference of 25,000 *yojanas*. The second is Manasa, which is 35,000 *yojanas* in height and is situated on the western side.

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16 loc.cit.
Alberuni, on the basis of information from the Vishnu Purana, remarks that the name of this dvipa is after a tree, called nyagrodha. Musaffar Ali interprets Pushkara as the lake of lotuses. On this basis and also keeping in view other important factors, he identifies this dvipa with the Scandinavian lands, Finland, European Russia and Siberia.18

The Mount Meru

The concept of a high nodal mountain is not confined only to the Hindus but is found in almost every civilization of the past. Hence, Alberuni's interest in this matter seem logical, for he was already familiar with the Persians' concept of Al-Burj. The Vedic Mahameru, the Puranic Meru, the Chinese Sumeru (Taing-ling), the Biblical Mount Moriah have not only audible correspondences with the modern Pamirs (Pai Mir, i.e., the foot of the eminences), but have also a conceptual similarity. Alberuni presents a long discourse on the Indian concept, relying on the informations contained in the works of authors such as Brahmagupta, Balabhadracharya, Aryabhata Senior and Junior. He also quotes the Matsya, Aditya, Vishnu and the Vayu Puranas. He gives various versions of the shape, dimension and colour of the mountain. Alberuni did not get a chance to go through the Buddhistic literature in this connection. Anyhow, whatever he writes depending on a secondary source, Aleranashahri, comprises a sober and reliable account.19

Alberuni's excerpts from the various Hindu books, show that Mount Meru holds a nodal position in the general configuration of the earth. He reports from the text of the Matsya Purana the concentric belts of great mountain ranges which surround the Mount after the other. These ranges are Himavant, Hamakuta, Nishadha, Nila, Sveta and Sringavant. In the centre of these mountains is Ilavrita. The system as a whole is called Purusha-parvata. The region between the Himavant and the Sringavant is called Kailasa. \(^{20}\)

**The Nav-Varshas**

According to Alberuni's account, on the four sides of the almost quadrangular base of the Mount Meru, there are nine different countries situated between various mountain ranges. In the centre, as already mentioned, is Ilavrita, the highest of all. Around this region in the east is the kingdom called Bhadrasva. On the north of Meru are three kingdoms, namely, Amyaka, Hiranmaya and Kuru. On the west is Ketumala and on the south are the kingdoms of Bharatvarsha, Kimpurusha and Harivarsha. These are the nine varshas discussed by Alberuni from the commentator of the book of patanjali (Mahabhasya).

**Bharatvarsha and its Khandas** – Bharatvarsha is one of the three kingdoms which are situated to the south of the Mount Meru. This kingdom is synonymous with India and has been treated by Alberuni with special attention. The whole geographical region lying south of Himavant above the sea has been designated after the name

of Bharata, the great-grand-grand-son of Manu Swayambhuva. According to Alberuni it has a width of 1,000 yojane and a length equal to nine times of its width (9,000 yojane).

From Alberuni's writings about Bharatvarsha, it is clear that this region, whether we take it as India Proper, i.e., the land of the Hindus or, in a broader sense, consider it to be extending much beyond the boundaries of India, has been divided at various times into different khands. The earliest seems to be the nine-divisional approach. Here a word of caution is necessary. In dividing Bharatvarsha into nine khands or divyasa (both these terms are sometimes interchangeable adding more confusion) different approaches have been taken as to its real dimensions. The concept of Bharatvarsha itself is very vague. If at one place in Puranic literature it means India Proper at the other it may mean 'Great Bharatvarsha' embracing parts of southeast Asia, including the islands and peninsulas of East Indies. Alberuni himself realizes that it was a matter of confusion and therefore tries to bring out the difference between the primary nine parts of the inhabitable earth, known as Nav-Khanda-Pratima and the secondary type of nine vargas of Bharatvarsha which itself is one of the nine khands of the okyukone.21 Alberuni feels that in dividing the prathamik nav-khand emphasis has been laid on inter-located seas within each khand. He argues that India is not traversed by any sea and the basis of nav-khanda-pratima, therefore, does not apply to India.

Bharatvarsha — Bharatvarsha here denoting India Proper south of the Himavanta. According to this table which Alberuni compiles from the information given in the Vayu Purana, the nine countries are as follows:

1. Indradvipa or Madhyadesa, i.e., the middle country in the center. Some modern scholars identify it with the Trans-Brahmaputra region.

2. Kaserumat in the east. Sometimes identified with the coastal plains lying between the deltas of the Mahanadi and the Godavari.

3. Saumya in the west. It is considered to be the coastal belt west of India.

4. Gabhastimat in the south. The name of the country is perhaps a misnomer for Gabhastiman, a region identified with the hilly belt between Narmada and Godavari.

5. Vayu Purana in its enumeration of the nine khands of Bharatvarsha does not provide any name for the country lying to the north and therefore Alberuni also leaves it unmentioned in his table.

6. Tamravarna in the south-east. Great confusion is found amongst the modern scholars in identifying it. If Tamravarna is the region drained by the Tamraparni river it should lie in the extreme south. Sometimes Greeks' Taprobane, i.e., Ceylon, is identified with it. Abul Fasal in his Ain-e-Akbari places it between Sukti and Malaya. The region south of the Kaveri is more likely the correct answer.

7. Nagarsamwritta on the north-east of Indradvipa. It is difficult to trace this khanda in Vayu Purana where an altogether different name, Varuna, is met with. As from the direction given by Alberuni to this locality it may be inferred that this region probably corresponds with the region lying in the extreme north-east of India, i.e., Nagaland.
8. Gandharva lying to the north-west of Madhyadesa. There can be no doubt in identifying this region with the ancient Gandhara. This is the Trans-Indus Region.

9. Nagadvipa. Alberuni place it to the south-west of the Indradvipa. It seems there is some confusion in Alberuni’s mind regarding its location. In all probability this dvipa must have been located in the south-east covering Chhota Nagpur and the mountainous belt of the Narmada and the Godavari. This region has a long tradition of keeping Naga colonies and kingdoms. 22

Kurma-cakra - As to the shape of the oekumene, it is likened to and invariably mentioned as resembling a tortoise, kurma. According to Alberuni’s explanation, it is named so because 'its borders are round, (and) because it has a globular convexity on its surface.' 23 According to another explanation given by him, the country is divided according to the direction of lunar stations, which assume a figure similar to a tortoise. 24

Alberuni presents a vivid account of the nine division of Bharatvarsha on the principle of the tortoise-circle. This division he takes from the samhita of Varahamihira and comments that Varahamihira's Bharatvarsha implies India only, for each varga corresponds to a region from India Proper. 25 These regions (vargas) are Pancala, Magadha, Kalinga, Avanti, i.e., Ujjain, Ananta, Sindhu and Sauvira, Harahasura, Madura and Kulinda. These nine divisions served as important kingdoms in the past. Pancala in the centre, Magadha in the east, Pulinda in the north-east, Madura in

22 Ali, op.cit., p. 130.
the north, Harahuna in the north-west, Avanti in the south and Kalinga in the southeast were all glorious lands.

The Location and Extent of India

Alberuni is very accurate in his assessment of the location and extent of India. He finds that in the north India's boundary is maintained by a range of snowy mountains. These mountains are the Himavant which lie south of the Mount Meru. In fact they are a part of the main vertebrae of the mountainous chain which runs althrough the middle latitude of the 'inhabitable earth'. The Plain of Hindustan is bounded by the sister mountains of this chain on the east, north and west. The coast of south of India is washed by the waters of a sea. To be precise, it is the Indian Sea which, according to Alberuni, assumes different names depending upon the countries and islands whose shores it washes. In the west, Alberuni considers Tis as the first Indian town on the coast beyond which are situated the countries of Makran, Sijistan, Balkh and Kabul. In the north, the neighbouring countries are Tibet, Nepal and China. The last mentioned also borders India on the east.

For the enumeration of India's latitudes and longitudes, Alberuni chooses the four cardinal points represented by Armayel (Bela) and Ramsher (Rameshwaram) in west and east respectively and by Addishtan (in Kashmir) in the north, and by Ramsher (Ramesh- varam) in the south. Thus, the latitudinal and longitudinal extent

of India can be fixed so that the maximum east-west width comes to 27 degrees 45 minutes and the maximum north-south extension to 21 degrees and 20 minutes. It may be noted here that this assessment takes into consideration the whole of the Indian sub-continent and not the traditional concept, that is the India consisting of the land of Sind and Hind. It would appear that Alberuni's estimate of the country's longitudinal extension are much in excess of its true dimensions. This is because Alberuni committed gross errors in computing the longitudes of those places which were situated far in the east. His latitudinal extension, however, falls short only by a few degrees from the actual computation.

The Coast of India - The coast of India begins at Tiz, the capital of Makran, and then taking a south-easterly direction reaches Debal (Karachi). Between these two places is the Gulf of Turan. Beyond the Gulf of Turan are the lands of pirate communities which include the Bawarij. From Tiz the coastline runs to Laran (Konkan Coast), after which is a great bay in which is situated Ceylon. It should be noted here that Alberuni's description of the coastline from Tiz to the southern tip of India is very accurate. There are numerous indentations, gulfs and bays which he notes in this section of India. The rest of the coastline from Ramsher to the Gangesayer has generally been ignored by him and he gives little information about it. Two factors in this respect need emphasis. First, in this section of India Arab settlements were either scanty or none and consequently it could inspire little interest.

in the minds of the Muslim historians of those times. Secondly, the eastern coast of India is less indented in comparison to the western coast, so that it was naturally less interesting for Alberuni as an object of description.

On the western coast, Alberuni mentions a number of places. These places had been historically famous for a long time and a few of them were actually points of attraction for early Arab settlers. The coastal places which Alberuni mentions on the western section are Tawaleshar, Debal, Loharani, Kucch, Baga, Baroi, Somnath, Kambayata, Assavil, Bihroj, Sandan, Sobara and Tana.

On the eastern side of India, he gives only a few well known places which were either Hindu centres of learning or centres of pilgrimage. These places are Kanji, Darvad, Padnar, Usalnar and Ramshar. The setubandhu of the Ramayana is also mentioned by him. Panjavar, i.e. Tanjavur (Tanjore) is another place of significance mentioned by him.

Relief and Drainage - Alberuni has gone into some detail regarding the relief and drainage of the country. Most of the information that he gives us in this connection is derived from the Hindu Epics and the Puranas, but from secondary sources. He also takes help from other noted Hindu astronomical works. Alberuni's great reliance on these works seems justified, for until then India, specially its northern part, was almost a terra incognita for the Arabs, who even if they visited and wrote about India, did so superficially and haphazardly. Also, they seem to have little geographical understanding.
In this discussion of the relief and physiography of India, Alberuni goes in detail about the northern mountains, which in his opinion bordered the country on all sides. These were the loftiest of mountains and were perpetually snow-clad. They consisted of several ranges and constituted a part of the great rib-like chain which ran across the entire 'inhabitable earth' in the mid-latitude. These ranges had far-reaching geographical influences. Alberuni rightly values their significance as a watershed between the north flowing and south flowing rivers. He also viewed them as a guard against foreign invasions or migrations. As a determinant of meteorological conditions their value was obvious.

Alberuni's description of the mountains of the northern India is very graphical. He makes note of a series of mountains, whose southern slopes are steeper than the northern. They span the entire northern length of India. They take a south-easterly and then an easterly turn above the Ganga Plain. The Brahmo-Ganga plain is the narrower in comparison to the Indus plain. He also notes that the mountain chain has two syntaxes -- one in the west and the other in the east -- from where the mountains take a southerly trend. He mentions the Kamroop mountains in the northeast of India which 'stretch away as far as the sea'. In all probability, he means those hills which lie on the border of India and Burma: Patkei, Naga, Barel, Mizo and the hills of Tripura, Manipur and Burma. In the west, he refers to the mountains of Kabul. For the central part of northern India, his discussions are more elaborate. It is here that he makes the best use of the

information that was available in the Puranas. As said earlier, the central part of this mountain chain is the main branch of the mountain system which runs between China and the country of the Franks as well as of the Jalalika (Gallicians). According to Hindu traditions, a mountain of great magnitude, called the Mount Meru, existed under the north pole. The mountains which form the boundaries of India are, according to Hindu sources, situated south of the Mount Meru and the colder regions of the inhabitable world. These mountains are Himavant, Hemakuta, Nishadha, Nila, Sveta and Srngavant. The whole of this mountaneous region is called Purushaparvata and the region between the Himavant and the Srngavant is called Kailasa, which according to the Matsya Purana is the play-ground of the Rakshasa and Apsaras. Other mountains which, according to him exist to the north of India are the mountains of Harmakot, which are the sources of Jhelum (Jhelum) and the Ganga. These mountains arise from above the line of perpetual snow and behind of them is Mahacin, i.e., the Great China. Yet another range of mountain is Unang, where the river Sind has its source and which lies in the territory of the Turks. Also, to the west of the river Sind there exists the mountain Kulrjak which, like the Dunbayand mountain, is dome-shaped.

In the central part of India, Alberuni makes mention of hilly tracts, which again is based on the information given in the Puranas. The name of the mountains, although somewhat confused, are Mahendra, Malaya, Sahya, Suktiban, Rikshaban, Vindhya and Pariyatra. These are the hills and ramparts which make up the

31 Ibid., Vol.I, pp. 247-8
Central Highlands of India

Alberuni envisages that the mountains of the northeast continue into the southern and eastern part of India. This view is erroneous, because the hills of the south (Nilgri, Nallamalai, Velikonda, the Eastern Ghats and others) are not in any way related to the mountains of the north. Alberuni thinks that the same chain which runs in the east takes a southerly turn and reaches the great ocean, "where parts of it penetrate into the sea at the place called the Dika of Rama" (Adam's Bridge). It seems that Alberuni's knowledge of the east and south was rather meagre. Either the informants gave him erroneous reports or he, in the absence of first-hand knowledge, relied too much on the contemporary Arab sources, where all the maps of the inhabitable world showed the eastern and northeastern coasts of India as a long straight line without any angular turning between the Ganga delta and the mount of Godavari.

The Rivers of India - Alberuni takes into account a number of rivers of India. His knowledge of these rivers was mostly derived from the Vayu Purana. The majority of these rivers are now identifiable and they may be classified under six broad groups depending upon their sources. In our present study we have taken note of as many as 87 rivers which may be classified as follows:

1. The rivers issuing from the northern mountains of India, which are twentyone in number.

2. The rivers issuing from the eastern hills of India, which are five in all.

3. The rivers issuing from the hills of Eastern Ghat, which constitute another group of five rivers.
4. The rivers issuing from the southern hills of Travancore, which are only four and form the smallest group.

5. The rivers issuing from the hills of Western Ghat, which are eight in number.

6. The rivers issuing from the hills of the central highlands of India, which are as many as 24 and thus form the largest group. For the sake of convenience, this group may be divided into three sub-groups, namely:

(i) those issuing from the eastern section of the Vindhyan mountains and are 17 in number;

(ii) those issuing from the central section of the Vindhyan mountains and are 13 in number;

(iii) those issuing from the western section of Vindhyán Mountains including the Aravalli ranges and are 14 in number.

We may now examine the above mentioned six groups in greater detail:

1) **The Rivers Flowing from the North:**

This group of rivers covers most of northern India. It includes three river-systems, namely the Sind System, the Ganga System and the Brahmaputra System. The several rivers in these systems are Sindhu (Sind), Chandrabhaga (Chenab), Biyatta (Jhelum), Biyaha (Beas), Iravati (Ravi), Shataldar (Sutlej), Sarsati (Sarsvati), Jaun (Yamuna), Gang (Ganga), Sarayu (Ghagra), Devika (Lower Sarju or Deeg, a right bank tributary of the Ravi?), Khun (Kabul?), Gomti, Dhutapa (Sarda), Visala (Beas?), Bahidasa (uncertain; Burhi Rapti?), Kausika (Kosi), Miscira (Tista), Gandaki (Gandak), Iohita (Brahmaputra) and Drisdavati (Chitang, a tributary of Ghaggar between the Yamuna and the Sutlej).
(2) The Rivers Flowing from the Eastern Hills

This group includes rivers most of which are small and rather insignificant. This catchment area is limited to the Chota Nagpur Plateau, embracing parts of southern Behar, eastern Madhya Pradesh up to the vicinity of Raipur and northern Orissa. The rivers are Rsika (Rsikulya), Sukumari (Suktel, a tributary which joins the Mahanadi at Sonpur in Orissa), Mandaga (Mand), Kupa (Arpa) and Palasini (Jonk, near Raipur). These rivers have been described as descending from the hills, which lie to the east and south of the main Satpura-Vindhyan ranges almost encircling the upper catchment area of the Mahanadi and which are referred in the Puranas as Suktimat, Suktiman or Suktimantaparvata. 34

(3) The Rivers Flowing from the Eastern Ghats

Mahendraparvat, which is described as the source of the rivers of this group is generally identifiable with the northern section of the hills of Eastern Ghat. The rivers are Rskuliya (Rsikuliya), Langulini (Langulia), Tridiva (the three headwaters of the Langulia, the Vegavati, the Nagavati and the Suvarnamukhi, are collectively known as Tridiva), Vamsakara (Vamsadhara) and Iksula (Bahuda, on which Ichapuram is located).

(4) The Rivers Flowing from the Southern Hills of Travancore

The catchment area of the rivers of this group lies in the Nilgiri-Anaimalai hills which are collectively referred to in the

34 Ali, op.cit., p. 112.
Puranas as Malayaparpvata. The etymology of the name is from 'malai'. The rivers are Kritamala (Vagai), Tamravarni (Tamraparni), Pushpajati (Pambiar) and Utpalavati or Satpalavati (Periyar).35

(5) The Rivers Flowing from the Hills of Western Ghat

In the Puranas and other ancient Indian literature, the almost continuous hills of the Western Ghat are collectively known as sahyadriparvat. The rivers rising from these hills, as mentioned by Alberuni, are Godavari, Bhimarathi (Bhima), Krishna, Vaini (Vina, a headwater tributary of the Krishna; Vaini should not be confused with the Penner since the latter does not rise from the Sahyadri), Vanjula (Manjira, a tributary of the Godāvari), Tungabhadra, Keveri and Suprayoga (Vedavati or Hagari).

(6) The Rivers Flowing from the Central Highlands

As has been noted earlier, the rivers forming this group constitute the largest catchment area. They rise from three clearly different sources, namely:

(a) Rkahavatparvat: These mountains have been identified with the modern Vindhya, from the source of the Sonar to the eastern limit of the ranges which mark the catchment area of the river Son.36 The rivers to which they give rise are Sona (Son), Narmada (Narbada), Mandakini, Dasarna (Dhasan), Citrakuta, Tamasa (Tons), Pippalisreni (Paisuni, a tributary of Yamuna flowing between Ken and Tons), Karatoya (Karammasa), Niletpala (uncertain), Suktimati

36 Ibid., p. 112.
(Ken), Matkuna(?), Tridiva(?), Pisacika(?), Vipasa (Bewas), Jambula (Jamni, a tributary of the Betwa), Siteraja (Sonar-Bearma, tributaries of the Ken river) and Markuna (sic. if the river is Maksuna, which is very likely, then it may be identified with Sakri which meets the Ganga between Patna and Monghyr). 37

(b) The Vindhyaas Proper: In ancient literature, the term Vindhya was generally applied to those hills and ranges which were situated at the north as well as to the south of the Narmada, that is to say a section of the Vindhyaas and also of the Satpuras. The rivers rising from these hills as noted by Alberuni are Tapi (Tapti), Pyosni (Painganga, a tributary of the Godavari), Nirvindhya (Newuj, a small tributary of the Chambal whose catchment area lies between Ujjain and Vaitravati), Verna or Vina (Wainganga), Vaitarani (Baitrani, which flows through Orissa into the Bay of Bengal), Madra (Sipra, on which Ujjain is situated and which along with two other rivers mentioned above, namely, the Nirvindhya and the Pyosni, does not rise from the Vindhyaas but from the Paripatra Range), Nisadha (Sind, on which Narwar, the capital of Nisadhas was located), Kumudhvati (Suvarnarekha), Toya or Karatoya (Brahmani) and Mahagauri (Damodar). The other rivers mentioned in this group, i.e., Sitibahu, Antasira and Durga or Durgama still await proper identification.

(c) The Paripatra Parvata: The western section of the Vindhyaas along with the Aravallis was known to composers of the Puranas as Paripatra Parvata. Alberuni describes a number of rivers which

37 Ibid., p.110.
according to his knowledge of the *Puranas*, especially the *Yayu Purana*, used to flow from these mountains. The rivers are Vedmriti (Banas), Vedavati (Berach), Vritraghn (Banganga–Utangan), Sindhu (Kali Sindh), Varnasa (W. Banas which flows west of the Aravallis), Candana, *i.e.*, Nandani (Sabarmati), Satira (Saraswati), Mahati (Mahi), Para (Parbati), Carmanvati (Chambal), Vidisa (Bos, the river falls into the Betwa near Besnagar), Vetravati (Betwa), Sipra (Sipra of Ujjain, the famous river of Meghdoot of Kalidas) and Avanti (Avanti, which rises near Mhow).

**THE PHYSICAL DIVISION OF INDIA**

Alberuni's description of the physical geography of India reveals the fact that he held the view that India has three physical divisions. In the north, as discussed above, is the belt of the bordering mountains, which constitutes the first physical division. The second division is comprised of a vast and broad plain composed of the debris and material brought by a large number of rivers which have been flowing through the region from antiquity, when the plain was only a depressed bed of a sea. Though Alberuni considers this plain to cover a much larger area than it actually does, he is indeed original in his concept that the plain in the middle of India is one of deposition. He is not totally wrong when he says that the plain of India is bounded on the south by the Indian Ocean. The statement is partly true because at the extremities, both in the west and the east, the sea does touch

39 loc. cit.
margins of the plain. The third physical division, which Alberuni does not very explicitly demarcate, seems to be one which is comprised of the hills, escarpments, bosses and spurs of central India extending up to the tip of India and uniting in them the mountains of the east. This portion of India, as his accounts bring out, has a variegated relief. That this region is a highland above the average height of the plain of India is again discernible from his description of the rivers of the south which have their sources in them. 40

Another significant fact brought out by Alberuni in his evaluation of the physical landscape of India is the presence of inter-montane plateaus. One such plateau, which is surrounded by high inaccessible mountains is Kashmir. 41 Others are those of Tibet and Nepal which again have difficult terrain. 42

The Islands of India

According to Alberuni, the long stretch of water which marks the southern boundary of India is studded with innumerable islands. He names a few of the off-shore islands which form part of the territory of India. Amongst them are Dibajat, Kumair and Sangaladip which have been referred to in great length. Dibajat does not seem to be the specific name of any one island or group of islands but in all likelihood is a term derived from Sanskrit word द्विप (meaning 'island') and adapted and coined to

41 Ibid., Vol. I, p. 286.
suit the Arabic language. In fact 'Dibajat' is the plural form and
denotes here a group of islands which are no other but the
Maldiva and Laccadiva group of islands. These islands, according
to Alberuni, are situated in the middle of the Indian Ocean and
are also called the islands of Ramm and Diva. A peculiar
characteristic of this group of islands, according to him, is
that they constantly undergo submergence and emergence. They
very slowly rise above the surface of the ocean, first appearing
as sand-dunes and then gradually hardening into firm soil. He
notes the interesting point that while one island may be undergoing
through an emerging phase the next nearby island may be submerging
and disappearing in the ocean. Thus, according to Alberuni, these
islands are in a state of perpetual oscillation between submergence
and emergence. When an island submerges into the water the
inhabitants of that island migrate to the next one. One explanation
that Alberuni has for this is the tidal effect of the sea-waves
which assume great magnitude submerging all that comes in their
way.

From Alberuni's description of the islands of Dibajat an
inference can be drawn about the occupations of the natives of
these islands. Agriculture seems to be the main occupation for
sustenance, for amongst the produce of the islands, Alberuni notes
cereals, dates and coconuts. This again proves the hot and
humid character of the climate of the islands. Alberuni classifies

44 loc.cit. Also see p. 233.
the Dibajat into two groups: one is known as Diva-kudha and the other the Diva-kanbar. The former derived their name from the kauri-shell which is generally collected there in large quantities, and the latter from the cords made from coconut fibres. These cords were of great value as they are used in fastening together the planks of ships.46

Kumair is another island situated in the Arabian Sea. Probably, it is situated very close to the Dibajat for Alberuni considers the island as one of the group of Dibajat. Alwarda Island also belongs to the Kumair.47 Alberuni refutes the general impression, probably prevalent amongst the Arabs historiographers, that Kumair is named after a tree which produces 'screaming human heads instead of fruits', asserts, on the contrary, that the name is that of the local 'people the colour of whom is whitish'.48 Alberuni gives an interesting anthropological note about the indigenous population of Kumair as well as of the Waqwaq island. Though these two islands belong to the same group, the indigenous people differ not only in the colour of their skin but in other respects also. While the Kumairis are whitish and short-statured and have close resemblance with the Turks, so far as the build of their body is concerned, the Waqwaqian population is of a mixed type, in which there is a small portion of the inhabitants is black in colour.49 This black race of the Waqwaq might have been the original occupant of the island but later Turk immigration

47 loc. cit.
48 loc. cit.
pushed it aside and compelled it to migrate to other islands, turning it into a numerical minority. Another fact which is corroborated from Alberuni's writings is that as these black people had a high price in the slave market they must have been marketed out. In spite of the fact that Alberuni finds the local population close to the Turks, at least in physical appearance, they are Hindu in customs and religion. Waqwaq island is also famous for its black ebony-wood.

Alberuni gives a most graphic and precise account of Singaldib or Sarandib. According to him it is an island which is situated opposite Ramsher (Rameshvaram) at a distance of 12 farsakh. There is a bridge between the island and the southern coast of India and by Alberuni's description the bridge is a collection of isolated mountains between which the ocean flows. The bridge is known as setubandha and is 2 farsakh away from Ramsher. Alberuni gives the legendary origin of the bridge as it is popularly supposed by the Hindus to have been built by Rama in order to reach Lanka where his wife Sita was kept captive by Ravana.

Alberuni notes the fading commercial importance of Ceylon which at one time was famous for pearl culture. The pearls, according to him, have now disappeared.

Some 16 farsakh east of Setubandha Alberuni points out the location of Kihkind. By his descriptions Kihkind appears to be a mountainous island which was largely inhabited by a race of

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50 loc. cit.
52 Ibid., Vol.I, p. 211.
monkeys who were initially human beings. By all measures Alberuni's accounts of Kihkind are based on popular and legendary believes and their identification with any present island is rather difficult.

The islands of the Zabaj are another group of islands which are situated in the eastern extremity of the Indian Ocean. According to Alberuni, these islands which are called by the Hindus Suvarna-Dvipa, i.e., the gold islands, are much nearer to China than to India. Alberuni's description of these islands show them to correspond with the Indonesian Archipelago, and Zabaj seems to be an early form of Java.

Climate

Alberuni's note on the climate of India is by no means elaborate and exhaustive. Nevertheless, he has very competently highlighted the salient features of the Indian climate. According to his evaluation the climate of the country is tropical rainy. Summer is the rainy season when the entire country gets heavy precipitation. Alberuni, by citing a few examples from different parts of India, observes that the rainfall regime in various parts is not identical. Generally the rains begin with the Hindu month of Ashadha and in some cases may last up to Magha. The duration and amount of rainfall is, according to his account, is subject to two major factors. One is the northerly situation of the province and the other the build of the country. Alberuni maintains, distance from the northern ranges is an important determinant of rainfall, and the more northerly a province, the greater is the precipitation. When the

rain-bearing winds are obstructed by impassable mountain they
give rainfall but on the lee-ward side, the amount of rainfall
diminishes considerably. He argues that it is with this reason
that the foothills or the regions close to it receive copious
rains while the other side of the hills the rain bearing clouds
are not able to give sufficient precipitation. Kashmir is one of
the examples he cites which receives a lesser amount of rainfall
by virtue of its mountain-locked situation. As a matter of fact
Alberuni notes that Kashmir has no varehakala and the meagre
amount of precipitation that comes to it during the two and a half
months, beginning with Magha and lasting up to the middle of Caitra,
is entirely in the form of snow. Of course, just after the middle
of Caitra, Kashmir does receive a few showers but that too is limited
only to few days. However, this period of the climatic regime
of Kashmir is the season when the valley is washed and cleansed.
As exceptional cases, certain parts of Kashmir rain falls in
abundance between Dunpur and Barshawar up to the peak of Judari,
i.e., during two and a half months beginning with the month of
Sravaṇa.

He observes that in northwest India, around Multan, there is
no rainy season.55

As far as the physics of the mechanism of rain is concerned,
Alberuni's grip of the problem seems loose. He holds the view
that when the rain-bearing clouds approach a high mountain the
clouds press against the obstructing wall of the mountain and are

55 Ibid., Vol. I, pp. 211-2
crushed like grapes to yield rain. This notion has both the elements of strength and weakness.

It is evident from Alberuni's accounts that he found that the Indian rainfall was monsoonal as well as orographical with a definite regime. He also notes the fact that the rainfall is neither uniform throughout the country nor the time of its incidence is the same all over. He observes that although the entire country experiences the same seasonal regime with a definite order and regulation, 'a certain amount of extraordinary meteorological occurrences is peculiar to every province of India.'

It is strange that Alberuni who so minutely studied the climate of India, fails to give attention to aspects of climate other than rainfall, e.g., temperature and wind-system. One reason which may be advanced for justifying Alberuni's attitude in this respect is that the climate of India is predominantly humid, and the rainfall phenomenon is its the most striking feature. Moreover, in an agrarian country like India the economic importance of rainfall cannot be over-emphasized, more so in the Middle Ages when rain was the main source of irrigation. Another aspect which one finds missing in his accounts of climate is the discussion of the southern and also the eastern part of India. Again this is because Alberuni did not visit the regions the east and south beyond the Sutlej. Nevertheless if he wanted he could have acquired information from the travellers or pilgrims or even from the soldiers.

56 ibid., Vol.I, p. 211.
Animal Life

Alberuni describes a number of aquatic as well as land animals found in India. From his discussion it is evident that he found Indian fauna and flora rich in all respects and the wild life very fascinating. He mentions some of the practices the indigenous population employed in trapping wild animals. One interesting example may not be out of place here. Alberuni reports that he himself was an eye witness to a hunting scene somewhere in India (probably in the northwestern part of the country because he himself says elsewhere that he never went beyond that part) where a wild animal like gazelle was caught bare-handed. He reports that one enthusiastic Hindu offered him his services to catch the gazelle without even using his hands and driving it direct to the kitchen. Such practices did not impress him much because he himself had seen his own men hunting ibex and was also aware of the rhythmic charisma of music whose regular beats charm the animals so much that they are easily caught or trapped.

The individual animals which are described by Alberuni are not many. A scrutiny of his list of animals brings out the fact that he attempted to describe only those animals which were unfamiliar or peculiar and presented an interesting subject for study. In this connection, he describes an animal, called shraya which inhabited in the Daraś plains of Kuska (Konkan Coast). Shraya (or more correctly Sarabha) is a peculiar animal, as described by him, being a strange combination, one may say, of

60 loc. cit.
rhinoceros, elephant and buffalo. In physical build and structure it resembles the buffalo but is larger than a rhinoceros, having a small proboscis like an elephant but two big horns over the head. The most strange bodily character is the presence of four feet-like organs on the back of the body besides the four below. The animal, according to Alberuni, is powerfully built and very easily over-powers an elephant and cleaves it into two. The upper feet-like organs are used for killing the hunt. Another very interesting trait of the animal is that when sharava hears the sound of thunder, it mistakes it for the sound of some animal and consequently sets out to chase the animal and reaches the top of the hill, from where it takes a leap over the precipice and dashes to its death. 61

Ganda (rhinoceros) is another animal which is extensively found in India, specially in the Gangetic Basin. Alberuni gives an accurate and elaborate account of the animal and from his description it appears that he has seen the animal from very close quarters and that too very thoroughly. He found the ganda more powerful than an elephant for he himself saw a young ganda wounding an elephant and throwing it down on its face. Alberuni thought that the Indian ganda was actually rhinoceros but he was told by someone who had visited Sufala in the country of the Negroes that impala comes much closer to it than the rhinoceros. 62

Alberuni reports that the Brahmins used to eat the flesh of the ganda. 63

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63 loc.cit.
Besides these two animals which receive his attention, Alberuni describes some aquatic animals found in the major rivers of India. Of these, the most common is the crocodile which is found in great numbers in almost all the rivers of India. Crocodiles are also found in the river Mihran (Sindh) as they are found in the Nile and this coincidence, according to Alberuni, caused Aljahia to think that the river Mihran is a tributary of the Nile. This was of course a wrong notion and Aljahia has been strongly censured by Alberuni for his shortsightedness.\(^6\)

There are other animals in Indian rivers which he mentions. Some of them belong to the crocodile family and some are fishes. There is a peculiar animal, called burla (porpoise?), which is like a leather-bag and appears to be a dolphin. Like the dolphin, it has a hole through which it breathes.

Alberuni had reports from some informers of the existence of a still more curious animal which is found in the rivers of southern India. The animal was known by different names such as graha, jaletantu or tandua. It was described as a thin and long animal having a head like that of a dog and a tail 'to which there are attached many long tentacles'.\(^6\) The animal was alleged to be cunning and dangerous and killed its prey by using its tail.

Besides describing these unfamiliar animals, Alberuni also takes stock, here and there, of common animals and reptiles. Venomous serpents and snakes find a special place in his descriptions, and he notes the fact that they are also worshiped. He also notes

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\(^6\) loc. cit.
\(^6\) loc. cit.
that the cow is held sacred and in high esteem by the Hindus and they consider gosutra (cow's urine) as the greatest purifier.

Aspects of Human Geography

It is in the sphere of human geography that Alberuni shows his real genius. He takes into account the most significant facts of the Indian ways of life as it existed in the Middle Ages and considers them in great detail. He leaves little to his readers speculation and his accounts are significantly concrete. His interests in human affairs in general, and in those of Indians in particular, are purposeful. He seems to have an unabiding enthusiasm in the comparative study of ancient as well as contemporary human civilization. It would not be out of context here to note that his Kitab Athar ul-Baqiah wa'l Quran al-Khaliyah (Chronology of Ancient Nations) was written under this very seal.

In Tahqiq fi ma'ilil-Hind (Alberuni's India) he dwelts at large on Hindu culture and civilization and though he does not very explicitly elaborate the idea but one does get the impression from his writings that he held the view that the differences in the lives of people are not entirely arbitrary or accidental but are found in accordance with the laws of nature. It is in this light that he seeks to explain the great differences between the customs, manners and traditions of the Indians on the one hand and those of his own people on the other.

People; Their Manners and Personal Habits

As stated above, Alberuni finds the indigenous population of
India dis-similar in habits and manners from those his own people. Even where he does observe outward similarities in manners, their meanings are just the opposite. In other words, Hindus and Muslims are antipodal in personal habits and social behaviour. Such differences in habits and manners are more discernible in food habits, sartorial practices and in other aspects of daily way of life. He even goes to the extent of recording that the Hindus write from left to right while the Muslims begin writing from right to left.

A note of caution should be added. Alberuni considers such strangeness in customs and behaviour of a nation as the inevitable result of one's own unfamiliarity with them. He says that 'The strangeness of a thing evidently rests on the fact that it occurs but rarely, and that we seldom have the opportunity of witnessing it.' In order that he may not be misunderstood, he clarifies his position and says that such obnoxious practices as are prevalent among the heathen Hindus have their counterparts among the heathen Arabs. He points out that before the emergence of Islam the social conditions in the Arab world were very similar to that found amongst the heathen Indians. He is optimistic that as Islam brought civilization amongst the Arabs, so it would do for the Hindus of the region which has been Islamised.

**Personal Traits of the Hindus**

It is quite obvious from Alberuni's writings that he considered the Hindus as a simple living people with easy going manners. He

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66 Ibid., Vol.1, p.179.
67 Ibid., Vol.1, pp.185-6.
believed that they loved idleness to the extent that they used to
grow long nails with which they searched lice in their hair. They
wore moustache with pointed ends and let the hair grow on their
body, on the head and as well as on their genitals. As far as
the keeping of long hair on the head is concerned, its purpose
was to protect the brain from heat-stroke. The reason why they
let their pubic hair grow was their belief that such a growth
suppressed the carnal desires. Those who are endowed with a strong
desire for cohabitation and want to suppress it seldom remove
the hair on the genitals. Before cohabitation they wash themselves
but start washing from the feet working upwards to the head. A still
stranger practice which he observed amongst them was that of
pushandilas, i.e., the sucking of semen. They generally have a
preference for the second child amongst their children, for the
first, according to them, is the result of "dominant lust" while the
younger one is the product of "mature reflection and calm
proceedings". 68

As for their other personal habits, he writes that they sit in
their meetings cross-legged and while shaking hands they grasp
the hand from the convex side. They do not seek permission while
entering the house but do so when they leave. In their personal
exchanges of articles they expect that it should be thrown to him
not being handed over. They ride their horses without saddles but
if they used one, they mount the horse from the right side. In
travels they prefer to be accompanied by someone riding behind.

Alberuni notes a matriarchal touch in the Hindu society of his times when he says that in all consultations and emergencies the advice of women is sought and honoured. But he also notes the fact that at the time of child birth it is the man rather than the woman who get particular attention. He further notes that the Hindus consider some physiological acts as good one and some as bad. Sneezing is a bad omen while passing wind is auspicious. Spitting and blowing the nose are not considered bad manners and killing lices in a respectful company is not a rude act.

Food habits

He found that the Hindus were basically vegetarian. However, he also notes that they used to take some kinds of meat. As has been noted earlier, the flesh of ganda was relished by the people even by the Brahmins. Alberuni elsewhere draws a list of animals for which there was socio-religious sanction to kill and the eating of their meat was permissible. These animals were sheep, goats, gazelles, hares, rhinoceroses, buffaloes, fish and birds such as sparrows, ringdoves, francolins, doves, peacocks and so on. The animals whose meat was forbidden were cows, horses, mules, asses, camels, elephants, tame poultry, crows, parrots and nightingales. All kinds of eggs were also prohibited. It is to be noted that there was taboo on the meat of an elephant but not on the juice which the elephant emits from its cheeks and which has a horrid smell. Also they drink the urine of cows. In older

69 ibid., Vol. I, p. 204.
times, Alberuni notes, the Hindus used to take beef but they abandoned this practice later. Alberuni does not agree with the explanation as was offered by some of the Hindus, that the eating of the cow's meat was given up because they found it heavy on their stomach. On the contrary, he believes that the giving up was an entirely economic measure. He found that the cows were most useful in the operational economy of the land for a number of reasons and that their destruction could be only harmful. He observes that as the Hindus forbade the use of cow's meat so did Alhajjaj in his own times when people complained that Babylonia was gradually going through a process of desertification. 73

Alberuni reports that the killing of animals for eating purposes was done by the method of strangulation. 74

As to the drinking of wine, he gives contradictory versions. At one place he writes that the Hindus used to drink wine before their meals 75 but at another place he only allows the right of drinking to the sudras. 76 The sudras may drink but they cannot sell it as they are not allowed to sell meat. 77 This distinction may suggest that the sudras were prohibited from selling these commodities because higher castes must be using it for their benefits.

Another significant practice which Alberuni observes relating with the eating habits is the use of betel-leaves along with

77 ibid., Vol.II, p.152.
areca nuts and lime.\textsuperscript{78} He was told that the practice was very common and it was common belief that taking of betel-leaves, nuts and lime was conducive to digestion. Moreover, the betel-nut acted as astringent for teeth, gums and stomach and the lime helped reducing the excessive moisture in the body.\textsuperscript{79} The use of the betel-leaves, however, discours the teeth.\textsuperscript{80}

Mentioning the dining etiquettes of the Indians, Alberuni observes that they usually take their dishes separately and one after the other. They use a spread soiled by dung upon which the food is served. After they have eaten, the left over is thrown away with the dishes, which, of course, are earthen.\textsuperscript{81}

Sartorial Practices

Alberuni gives a very clear account of the dresses used by men and women in India. Amongst the men he finds two classes. There was, on the one hand, those who are very scantily clothed. Probably, this class consisted of the poor, downtrodden and low-caste people. They use just a piece of rag some two fingers wide which they bound over their loins with two cords. In the other class, that of the upper, a person would use so much cotton for his trousers that it could have sufficed to make several 'counter-panes and saddle-rugs'.\textsuperscript{82} These trousers, says Alberuni, are comparable to turbans and they are wrapped in such a fashion that they covered the whole body from the waist down to the feet. They

\begin{itemize}
\item \textsuperscript{78} Ibid., Vol.I, p. 180.
\item \textsuperscript{79} Ibid., Vol.I, p. 152.
\item \textsuperscript{80} Ibid., Vol.I, p.180.
\item \textsuperscript{81} loc. cit.
\item \textsuperscript{82} loc. cit.
\end{itemize}
tied their trousers on their hind and from Alberuni's description we can infer that he is speaking of the dhoti which is really a plain sheet of cloth and which can be tied very skillfully into various shapes. Alberuni is, however, wrong when he says that it is kept tied by means of a string.

Besides the dresses which were worn to cover the lower portions of the body, they used to wear sidar and kurtaka. The former had buttons at the back and the latter had slashes on both the sides of the lappets. The description and the names of these two dresses remind one of the modern wears of sadri and k服ra.

Their foot-wear consisted of shoe.

It is interesting to note that men wore several articles which are supposed to be the part of a female ornament, e.g., ear-rings, arm-rings, golden rings for the fingers, as well as for the toes. Males used cosmetics just as females do. Apart from these luxury items, a dagger, called kuthara, is fastened on the right side of their waistes.

Men also wear a girdle called vajnopavita, passing from the left shoulder to the right side of the waist.

Indian Languages, Scripts and Writing Materials

Alberuni noted that Sanskrit was the language of the Indian elite and that it was very rich, highly cultivated and well developed and the repository of most of the ancient Indian knowledge.

Alberuni observes that one who wishes to gain access to the bounties of the Indian literature has to master the complexities and delicacies of the Sanskrit language. Moreover, the Sanskrit literature is written in the form of a meter, called sloka. This renders the understanding of the language more difficult because for the introduction of rhymes a rich vocabulary is needed for the same meaning. This, he says, often makes the text unintelligible.

According to Alberuni the masses generally used a kind of a debased vernacular for mutual communication.86 He seems to refer to the \textit{abharamh} or the \textit{prakrit} which were the current vernaculars of those times.

Regarding Sanskrit, Alberuni points out that the language presents many handicaps in pronunciation and writing to the Muslim Arabs because many of its sounds are unfamiliar to the Arabs and they cannot reproduce them correctly. Moreover, in Sanskrit two or three consonants may follow in succession without any intervening vowel. The Arabs find great difficulty in pronouncing such series of consonants.87 A further difficulty arises out of their careless scribes. Moreover, the Indians write from left to right and they do not write on the basis of a line, as Arabic or Persian is written. They use a ceiling-line which runs above the letters and all the letters hang from it. He points out that only a few vowel marks are put above the ceiling-line.88

\begin{itemize}
\item 86 \textit{Ibid.}, Vol. I, p.18.
\item 87 \textit{Ibid.}, Vol. I, pp. 18-19.
\end{itemize}
Alphabet

Alberuni notices the numerosity of Indian letters of alphabet. He finds them exceptionally large. The number of alphabets was then 50 but in the early stages of the development of the language the number was much less. It so happens, he explains, that the Indians forgot their language and science and became illiterate. They were rediscovered by Vyasa through an inspiration from God. Alberuni suggests that the increase in the number of alphabets of a language is a natural course and a developing language must pass through this phase. He gives the example of Greek alphabets which gradually grew from 16 to 24.89

He states that the numerosity of the Sanskrit alphabets is due to two reasons: firstly, the language has a separate sign for each of those letters which are followed by a vowel or a diphthong or a hamsa (visarga). Secondly, the number of consonants is exceptionally large.90

Script

Alberuni realizes the importance of script and considers it as the greatest achievement of human civilisation. He reasons out that it was with the help of the art of writing that ideas and concepts of the preceding generations could spread in time and space. He says that the oral communication of thought is temporary and limited to a narrow range of space and is embedded with the possibilities of alterations and amendments.91

Alberuni was aware of the prevalence of a number of scripts in India. He discusses them on the basis of their regions. It would be seen that the regional diversities in the script, as accounted by him, are very near the truth. His proto-regions may be grouped as follows:

(i) Script of North and North-Western India
(ii) Script of Eastern India
(iii) Script of South-Western India
(iv) Script of South-Eastern India
(v) Script of Southern India

Alberuni discusses eleven scripts in all. These are Siddhamatrika which was used in Kashmir, Varanasi and the country around Kanoj. (He calls it Madhyadesa and synonymises it with Aryavarta). Nagara, which was used in Malva. Ardhanagari which is a mixture of the above two and is in vogue in Bhatiya and other parts of Sindh. Malwari which was used in Malwashau (Malvadesha?) and in Sind near the coast, Saindhava which was also used in Sind in the parts of Almansura (near modern Hyderabad Sind). Karnataka which was used in Karnataka whose men are called Kannara (modern Mysore). Andhri which was used in Andhradesa (coastal region of Andhra Pradesh). Dirvari, which was current in Dirwaredesa (Dravidadesa, a vast region of Southern India focussing around Tamil Nadu). Lari, which was commonly in use in Laradesa (the coastal country around the Gulf of Cambay). Gauri (Gaudi) which was current in Purvadesa (Eastern country, may be identified with modern Bihar and nearby region). Bhaiyshuki which was current again in Purvadesa and in particular in Udunpur region (Audandapur,
modern Behar Shafif).

From a scrutiny of the above description, it is possible to locate three types of regions: (i) the mono-scriptural, such as Kashmir, Karnatakadesa, Andhradesa and so on, (ii) the biscriptural, as for example Purvadesa, and (iii) the multi-scriptural such as the region of Sind.

Our modern researches are still incapable of throwing any light on the reported three scripts of Sind, namely, Ardhangari, Malwari and Saindhava. At the utmost we can say that recent discoveries made in the Bhanbhor excavation in Sind found a script tallying in description with Ardhanagari. In the same way little is known about Bhaikshuki. At present it can only be conjectured that this script was specially in use amongst the Buddhist monks of Behar and it would not be surprising if Bhaikshuki derived its name from Bhiksha, the Buddhist monk. The rest of the scripts are, however, easily recognizable, though there is some confusion about Siddhamatrika and Nagara. The former suggests a close affinity with the Kutile script which in the tenth century A.D. gave way to Nagari in the Ganga Valley and to Sarada in the Kashmir Valley. Nagara, in all probability, is a derivative of Varna-naga Kripa.

**Writing Material**

Alberuni reports that the Indians did not write either on hides or on paper but preferred to write on leaves or barks of trees. Although writing on hides of sheep was common amongst the Muslims and Jews (copies of the Koran and Thora and the copies of treaty
between the Prophet and the Jews were written on the hides of gazelles), the Hindus, like the Greeks adopted this practice. This is understandable because the killing of animals in the Hindu society was generally forbidden. So far as the use of paper is concerned, one gathers from Alberuni's writings that the Hindus were unaware of it, though the paper had already been invented in China and the world was generally benefitting from this invention. Alberuni may not be right in his observation in this regard, for we have on record that at the time of Alexander a kind of paper made from cotton was already in use.

Alberuni informs us that in Central and Northern India the bark of the tug tree was largely in use, while in Southern India the leaves of tar (Borassus flabelliformis) were current. These leaves, he writes, are made one yard long and three fingers broad. The Hindus write on one side of the leaf and for compiling them together in the form of a book they tie it by means of a cord going through a hole in the middle of each leaf. The barks are also arranged in the same way, the only difference being that the sheets are much broader, the width being one outstretched fingers of the hand. The leaves are numbered and fastened together by means of a cord placed between two tablets of the same size. This form of book is called pathi which the Hindus keep wrapped up in a piece of cloth. Alberuni furnishes an account as how the bark pieces are prepared for the purpose of writing. He says that these are oiled and polished before being used for writing.

93 loc. cit.
The puthi so arranged, Alberuni says, begins with the sign Om, which is not a word but a symbol being considered as highly auspicious. The title of the book is at the end of the book. He emphasizes the fact that the Hindus instead of writing the title of the book in the beginning used to write it at the end.

School-going children, Alberuni informs us, used to write on a black tablet with a white material. The long side of the tablet was used for writing. It may be noted that the black tablets are still used in India the same way. They are commonly called as takhti in northern India.

Indian Numerical Signs

Alberuni presents an elaborate account of the numerical system as was prevalent in India and admits their superemacy in the field of numerical notations. He has, besides writing a good account in Kitab fi Tahqiq ma'l-Hind on the subject, written a full length treatise commenting on the advantages of these notations. He discovered that in India there were three systems employed for the expression of numerical notations. The first consisted of numerical signs, anka, which are generally used throughout the country although their shapes and forms are sometimes altered. This is mainly because they have to accord with the different scripts found in the country. In the same context, he brings out that the numerical signs which the Arabs used, i.e.,

95 Ibid., Vol.I, p.182.  
96 loc. cit.  
97 Ibid., Vol.I, p.177.  
the Arab-Hindu numerals, were derived from the finest forms of the Hindu signs. This statement leaves little room for the controversy regarding the source of the now largely known Arab notations.

The second system employs the use of words expressing numbers, for example, Ekam, Dokam and so on. The third is a symbolic method in which words or names are chosen in such a way as to express the quality of the number. For instance "one" can be appropriately expressed by anything which is unique and solitary in existence in such a way as to suit the meter of the sloka (e.g., the earthy the moon). Likewise, "two" can be expressed by anything which is in pair, (e.g., black and white) similarly "three" can be expressed by anything which is threefold. Zero was symbolised by heaven.

A fourth method, which was not very uncommon, was to express the numbers by a blending of the latter two systems.

In the same connection, it would be interesting to note that the Hindus, like the Muslims who themselves got the tradition from the Jews, did not use the letters to their alphabet for numerical notations. It would not be out of place to state that in their scientific works the Arabs invariably used the Greko-Jewish system of alphabetic notations, commonly known in Arabic as Muruf al-Jumal. Alberuni further notes, by citing an

99 loc. cit.
100 ibid., Vol.I, pp. 177-79
101 ibid., Vol.I, p. 174
102 loc. cit.
example of Kashmir, the tradition of the usage of sand-notations. One may recall here that amongst the Arabs the system of notation known as Huruf al-Gubar (Dust numerals) was very much in vague.

Writing about the order of numbers, Alberuni points out that generally all nations, with whom he had come in contact, conclude their direct reckoning at one thousand, but he finds that the Hindus go up to the 16th order and there are some of them who maintain there is a ninth order as well.

Weights and Measures

Alberuni furnishes a good and comprehensive note on the systems used in India for measuring linear distances, units of time, days, months, years and kalpas and weights.

Alberuni points out that counting is innate to man. According to him, the measurement of a thing or substance can be obtained by comparing it 'with another thing which belongs to the same species and is assumed as a unit by general consent.'

As regards to measure of distances, Alberuni submits an account from Varahamihira. According to this authority, as quoted by Alberuni, the smallest unit of measure is the yava, i.e., the barely-corn and the largest unit is krosa.

The entire scale of measurement is as follows:

8 barley corns put together endways = 1 angula (finger)
4 fingers = 1 rama (the fist)

103 loc. cit.
24 fingers = 1 hattha (hand, dastu, yard)
4 yards = 1 dhantu (arc - a fathom)
40 arcs = 1 nalva
25 nalva = 1 krosa

Alberuni points out that the kroh of the Indians is equal to 4,000 yards which is equal to 1 Arabian mile. Their hattha is the stretch between the thumb and the small fingers. He compares this unit with the Arab measure and says that amongst the Arabs the yard is equal to 2 miqvas, i.e., 24 fingers. There are some other terms which are used in India for measuring distances such as vitasti or kishku, gokarna, karabha and tal. All these measures denote the stretches between the thumb and other respective four fingers, i.e., the small finger, the ring-finger, the middle and the index-fingers. An interesting information which Alberuni provides in this connection is that the Hindus maintain that the height of a man is eight times that of his tal, i.e., the distance between the top of his middle finger and the top of his thumb. He also notes that some people suggest that the relation between the foot of a man and his height is in the ratio of one to seven.

In the same connection Alberuni points out that the Indian yojana is equal to 8 miles amounting to 32,000 yards and that there are two kroh in a yojana.

Regarding the units of time, Alberuni mentions two different

107 loc. cit.
systems in detail. In the first system the time taken by one breath itself a very small unit of time, is divided into smaller units on a scale of eight. These units are prana, nimasa, lava, truti and any (sic). The other units of time larger than prana are cashaka or vinadi or kala, kashana and ghati or nadi, in the ascending order. Alberuni observes that as far as the names of the smaller units of time are concerned almost all ancient Indian sources and authorities are in agreement but there is difference of opinion as regards to the relationship that exists between fractional units. 110

The second system is based on a sexagesimal scale. According to this system, one nyathemeron (al-voom bi lailihi) is equal to sixty ghatis. A ghati is equal to sixty cashaka or cakhaka or vighatika and each of this unit is equal to six small fraction called prana. Explaining ghati, Alberuni quotes srudhava of Utpala and emphasises that a ghati is the time taken by a pintful of water of the size of 12 fingers in diameter and six fingers in height to flow through a whole of the size of six plaied hairs of a young woman. The prana means the breathing time of a normal undisturbed man relaxing in his sleep. 111

Speaking about mahurata, Alberuni says that they do not always have the same span of time because hours of day and night differ not only at the same place but also with the latitude. He says that it is only at the time of equinoxes that the day and night

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are of the same length and it is only at this time that the mahurata would be equal. According to Alberuni one day is equal to 30 mahurata but this should not be taken as precise.

The Indians use a definite system for measuring weights. The most prevalent units were suvarna, masha, andi, yava, kala, pada and mdri (sic). According to Alberuni, 1 suvarna = 16 masha; 1 masha = 4 mandi; 1 mandi = 4 yava; 1 yava = 6 kala; 1 kala = 4 pada and 1 pada = 4 mdri (?). Discussing the comparative values of masha and mithkal he says that 1 mithkal is equal to \( \frac{55}{7} \) masha. Furthermore 1 suvarna is equal to 3 mithkal.

Alberuni notes that different units of weight measurement were used for dry and liquid substances. It may be mentioned that though the nomenclature of units in both cases is identical their fractional values in the lower orders differ. For example, in weighing wheat or barley 1 pala is taken as equal to 4 suvarna, while in the case of water and oil it is equal to 6 suvarna.

Towns and Routes

A very important and valuable discussion exists in Alberuni's accounts of India and this is related to routes, towns and their location. He takes up about 87 towns placed on 16 itineraries. A simple glance over the discussion shows us that all the towns mentioned are important as centres of either ancient or medieval

113 loc. cit.
115 loc. cit.
117 loc. cit.
urban activity. They were either places of religious significance or centres of trade and commerce. It should be borne in mind that in that period of history towns were generally small and generally mono-functional. If a town had more than one function, those other functions were usually secondary. The 82 towns of which we are speaking do not exhaust Alberuni's knowledge of Indian towns and their activities, for there are other towns which he mentions in his discussions elsewhere in Kitab fi tahqiq mal'il-Hind and in other works, specially al-Qanun al-Mas'udi. In the last mentioned book, a separate list of towns with their latitudes and longitudes is given in a tabular form. Though the number of towns of India (excluding Sind) is only 63, there are a few new names which occur.

The importance of the itineraries cannot be overemphasized in that they furnish a very graphical and accurate account of the lay out of the medieval routes. All these 17 itineraries have been chosen in such a manner as to cover all the cardinal directions within the country. As a matter of fact Alberuni's itineraries represent nothing else but the important trade and pilgrim routes connecting ancient and medieval towns. Indeed, in some cases, these routes were trunk lines joining centres of religious and commercial importance and converging at the northern big urban centres of the country. A scrutiny of these routes would reveal that most of them had been in existence since ancient times, for besides their mention in Chinese and earlier Arab accounts they

118 Alberuni, al-Qanun al-Mas'udi, pp. 550-74.
119 loc. cit.
had been named and sometimes described in Buddhistic as well as Puranic literature. It is possible that Alberuni may have received some preliminary information about these lines of communications from these sources and got them verified from oral sources, for we may recall that a considerable amount of Alberuni’s information regarding India is of a tangential nature.

Itineraries:– As has been noted above, Alberuni gives a detailed stagewise description of the 17 itineraries. The pivotal places in these itineraries are six in number, namely, Kanoj, Mahura (Mathura), Anhilwara (Patan), Dhar in Malwa, Bari (the alternative capital of Madhyadesa for Kanoj) and Basena (Narayan).

The itineraries are as follows:

1) The route from Kanoj to Kanchi (Kanjivaram) on the coast and further south. This route first passes through the Yamuna-Ganga Doab and then proceeds to Orissa (Urdaibishau). From thence it takes a southerly turn and goes to Kunk which, according to Alberuni, is the outer-most town included in the territory of Jaur (i.e., Gaur Kingdom of the South). The whole route covers a distance of 290 farsakh (2,320 kilometers) and passes through Jajjamau, Abhapuri, Kuraha, Barhamshil and Prayaga (Allahabad). Here, after covering a distance of 48 farsakh (about 384 km) the first leg of the itinerary ends and paves the way for the next track towards the south. This southward route from Allahabad first takes a southeasterly direction towards the Orissa coast, covering a distance of 102 farsakh (816 km) and passing through
three noteworthy stations of Arku-tirtha, Uwaryhar and Urdabishau on the coast. The last leg of this itinerary passes through the territory of Gaur by taking an almost southerly course along the coast. The distance from Urdabishau to Kunk comes to 140 farsakh (1120 km) and the intervening stations are Daraur, Kanji and Malaya.

(ii) The route from Bari to Banarasi (Varanasi) and then swinging towards the east up to the Ganga delta (Gangasayar, i.e., Gangasagar). This route has a total length of 225 farsakh (1800 km), out of which the first part of the track, i.e., up to Varanasi covers, is only 45 farsakh (360 km), and passes through lone intermediary stage of Ajodaha (Ayodhya). The stations eastwards are Sharwar, Pataliputra, Mungiri, Janpa and Dugampur. It will be noted that this route passes through some of the very famous ancient towns of great religious, political and cultural significance and signifies one of the ancient trade routes of India.

(iii) The route from Kanoj eastward as far as Assam (in the neighbourhood of Kamru or Kamroop mountains) and then swinging northward to Nepal and Tibet. Alberuni reckons the first leg of this route, which lies in the plain, in farsakh, while the second leg going uphill from Nepal to Bhoteshar is reckoned in farsakh as well as in days' march. Reckoning from Kanoj via Bari, Dugum, Shilahat and Bihat the total distance amounts to 77 farsakh or 308 Arabian miles (616 km). Beyond Bihat to the right is Tilwat (Tirhoot) which is a country of black, flat-nosed, Turk-like people.

See Appendix II for details of distances between intermediary stages.
Further on, towards the east are Kamrud(p) mountains which stretch as far as the sea\textsuperscript{121} (Bay of Bengal). Alberuni does not provide any information as how far from Bihat these two last mentioned places lie.

From Tilwat (Tirhoot) onward to Nepal and Tibet the reckoning of distance as well as their directions were reported to Alberuni by some astute traveller who had himself done the reckoning. According to that information Nepal lies to the left, i.e., northward of Tilwat (Tirhoot) at a meagre distance of 20 \textit{farsakh} (160 km). From Nepal to Bhoteshar the distance could be covered in 30 days. The distance in \textit{farsakh} is about 80 (640 km). Here it may be noted that the country around Tibet gains more height when it is approached from the side of Nepal. Another valuable information which one gets from his description of the route to Tibet is that at several places it crosses huge bodies of water, presumably lakes or wide rivers, by bridges made of planks tied with cords and fastened to milestones constructed on either side. Alberuni notes that the bridges are only a 100 yards above the turbulent watery surfaces, the water sometimes running with such a tremendous speed that it appears to shatter the obstructing rocks.

On the track to Tibet, Alberuni chooses to discuss the animal life at that high altitude. He informs us that goats are used as beasts of burden, for they carry loads up to the bridge points from where the load has to be transported overbridge by the people themselves. Another animal which is found in this area is the gazelle. Alberuni is rather doubtful of the authenticity of his

informer's statement, for the latter informed him that the gazelles he saw had four eyes. He, however, gives some credibility to the statement by his remark that the animal in question may have been suffering from natural deformity.  

From Boteshar, which is the frontier town of Tibet, the highest peak of the region is only 20 farsakh (160 km). As this peak lies above the climatic belt Alberuni's is about right in his assertion that below this height all the landscape is invisible.

(iv) The road from southeastward (sic. southwestward) to Banvas on the sea coast. This route, which had partially been measured, passed through Gwalior and Kalanjar (two famous fortresses), Jajahuti (old name of Bundelkhand whose capital was Kajuraha), Dahala (capital was Tiauri whose ruler was Gangeya), Kannakara and Apsur. Apsur and Banvas were situated on the sea coast. On this route Alberuni mentions only two distances. One is that of Jajahuti which is 30 farsakh (240 km) from Kanoj and the other is Kannakara which is 20 farsakh (1960 km). In the later case, however, distance is ambiguous as Alberuni forgets to mention the place from where the distance is to be reckoned.

(v) The road from Kanoj to Başana or Narayan (Narayanpur in the

122 loc. cit.
123 loc. cit.
124 The direction of the route given in the itinerary is not correct. Moving from Kanoj towards the western coast of India taking enroute Gwalior would mean travelling in a south-westward direction and not southeastward as noted by Alberuni.
neighbourhood of Jaipur). This route, which is 68 farsakh long, moves southwestward touching Aśi, Sahanya, Jandra, Rajauri and ultimately terminates at Bazana, the capital of Gujarāt (which should not be confused with modern state of Gujarāt).

(vi) The road from Mahura (Mathura) to Dhar, the capital of Malva. The route has a total length of 73 farsakh (584 km) and passes through some important Hindu places of worship, e.g., Bhailsan and Ardin. Both these places, which are at a distance of 57 and 66 farsakh (456 and 528 km) respectively from Mathura have been famous for sculpturing idols. Other places of note on this route are Dudahi and Bamarhur. In this section of the road Alberuni notes a heavy concentration of rural settlements and remarks that as one moves from Mathura in the direction of Ujjain he comes across a cluster of villages just within a range of 5 farsakh (40 km). Dudahi itself is a large village.126

(vii) The road from Bazana to Dhar and Ujjain and onto Bhailsan (Bhilsana). This route takes a southerly direction towards Meiwār which Alberuni reports is only 25 farsakh (200 km) away from Bazana (modern Narayanpur). From Meiwār to Dhar (the capital of Malva) the distance is 20 farsakh (160 km). Ujjain is only 7 farsakh (56 km) to the east of Dhar and Bhailsan (Bhilsana) is 10 farsakh (80 km) from the former. The total length of the road from Bazana to Bhailsan, is 62 farsakh (496 km).

(viii) The road from Dhar towards the river Godavari (Godavari). The

126 loc. cit.
route begins from Dhar and takes a southerly direction towards Mandagir on the bank of Godavari crossing the Narmada at Namavur. This part of the track is 130 farsakh (1,040 km) and passes along the stations of Bhumihara, Kanal, Namavur, Alispur (Ellichpur) and Mandagir.

(ix) The road from Dhar southward to Thana (Thana). As would be seen from a comparative study of this itinerary with that above (No. viii), there are two routes which bifurcate from Dhar and lead to south. One takes an inland course while the other goes towards the coast. The latter, which heads towards Thana, is only 50 farsakh (400 km) and passes over Namiyya and Maharatta-Desh.

(x) The road from Bazana to Somnath. This route runs in a southwesterly direction from Bazana and passes through Anhilwara Somnath on the sea coast. It is only 110 farsakh (680 km) long.

(xi) The road from Anhilwara southward to Lardesh. On this route lie Bihroj (Broach) and Rihanjur, both being capitals and both lying on the sea coast east of Thana. In the description of this route there is some ambiguity, for Alberuni gives only one distance and names only two places. The distance noted is 42 farsakh (336 km).

(xii) The road from Bazana to Bhati. This route takes a westerly direction and passing over Multan reaches Bhati after covering 65 farsakh (520 km).

(xiii) The route from Bhati southwestward to Leharani at the mouth of the Sindh. This is a very important route in Sind and connects
several important towns of that country. The big urban centres are Aror and Samghanva (Almansura). The total distance between Bhati and Loharani is 65 farsakh (520 km).

(xiv) The road from Kanoj to Kashmir. In the north-northwest of Kanoj, there are a number of hill-towns such as Pinjaur, which is situated on a mountain side, and Dahmala, the capital of Jalandhar, which lies at the foot of the mountains. The fortress of Rajagiri is also situated on this route. Other intermediary places are Shirsharaha, Ballawar and Ladda. The total distance from Kanoj to Kashmir comes to 142 farsakh (1,136 km) which works out to be more than the present distance. The reason is that Alberuni gives a zig zag course. First he takes us from Kanoj to Ballawar in a north-northwest direction for a distance of 96 farsakh, then with a change of direction towards the west for a distance of 21 farsakh and then having reached the fortress of Rajagiri, turning northwards for Kashmir.

(xv) The road from Kanoj to Ghasna. Along this route, west of Kanoj, are Diyamau, Kuti, Anar and Mirat (Meerut), and after crossing Jaun (Yamuna), there are Panipat, Kawital, and Sunnam. The total distance is 70 farsakh (about 560 km). From here the route swings northwestward and crosses the rivers of the Panjab and Sind. The rivers which are crossed are Irawa (Ravi), Chandraha (Chenab), Jailam (Jhelum) and Biyaha (Beas). Important places on this route are Adittahaur, Jajjanar, Mandahukur (capital of Lashkawar), Wadhind (capital of Kandhar). After crossing the river Sind, the route leads on to Purshawar (Peshawar). Towards the
west of the river Sind and after Peshawar, the towns are Dunpur, Kabul and Ghazna. The distance from Sumnam to Ghazna is 121 farsakh (968 km).

(xvi) The route from Babrahan to Addishtan, the capital of Kashmir. From Babrahan, which is the best known entrance to Kashmir, to the bridge on the confluence of Rusnari and Mahwi, the distance is 8 farsakh (64 km). From the bridge on Addishtan, Alberuni reckons the distances in marches. He says that it takes five days to reach the gorge from where the Jhelum emerges and further two days to reach Addishtan. The total of seven days' march, according to Alberuni's own calculation given elsewhere, 127 amounts to about 140 or 147 km. Therefore, the total distance from Babrahan to Addishtan may be taken as about 204 or 211 km.

(xvii) The road from Tiz, the capital of Makran, leading southward to Setubandha, opposite Ceylon. This route covers the entire length of the western coast of India. Important coastal towns on this route are Al-Daibal, Kacch (Cutch), Baroi (Baroda), Somnath, Kambayat (Cambay), Bhroj (Broach), Tana (Thana), Kanji (Kanjiesvaram), Ramsher (Rameshwaram) and others. The distance on this route up to Tana comes to about 261 farsakh (about 2,088 km). Other places not falling on this route but situated close to Ramsher are Ummalnara and Panjayavar. The latter towns is only 40 farsakh away from Ramsher which itself is 2 farsakh (16 km) away from Setubandha. 128

The Road System

Alberuni's seventeen itineraries provide a good and detailed account of the road system as it existed in the medieval period. As has been mentioned elsewhere, most of the roads and their lay-out had evolved over a long period. In fact, even today we find that in certain parts of India at least the trunk roads are on the same medieval pattern. One should not be astonished to find in the accounts of Fa Hian or Huen Thang almost identical versions of lines of communication and they, in turn, are very much in accordance with the descriptions given in Hindu Sanskrit and Pali writings. The reason for this perpetuity is not far to seek. The roads in the ancient times were laid for the sake of communication in accordance with the natural lines of flow. Later on, there were very little deviations, except where hinderances were put by relief or where the shifting of the bed of the river itself forced the roads to deviate from their original course. A study of the ancient or medieval lay-out of the roads in the Ganga Valley or in the Upper Sind Valley would indicate that generally the roads still follow the original pattern. The rivers, moreover, provided excellent links between various Janapadas or communities lying on either side of the river and connected them with the roads and to a greater world.

A comparative study of Alberuni's itineraries with those of earlier Arab travellers, e.g., Sulaiman Tajir, Ibn Hauqal, Ibn Khurdadhbih and Al-Mas'udi, or with those of Hian and Huen Thang brings out the significant point that the Indian rivers, for
religious as well as socio-economic reasons, have always been the sites for human congregation. The sites of old towns did not change much over the centuries. This fact again suggest that the medieval road pattern, as described by Alberuni, conforms to the natural conditions of relief and drainage. The lay-out was generally based only on two criteria: first, the ease of construction and, secondly, the ease of accessibility and approach.

The chief strength and value of Alberuni's descriptions of the roads, their bearing and distances, lies in his objective and painstakingly personal approach. He was very fastidious and knew how to sift the exaggerated figures of distances brought in by his Hindu informers. To meet this end, Alberuni employed a number of measures, the most frequent of which was to drop a fraction, one-sixth to one-tenth of the reported distance making allowance for terrain and other factors.

A survey of Alberuni's writings on routes brings the following points to light regarding the location of roads:

1. The network of roads was rather elaborate in the Ganga Valley. There were three or four nodal points, e.g., Kanj, Bari, Mathura and Varanasi, which were joined to almost every serviceable part of the country. The fully developed road system of the Ganga Basin not only points to high concentration of population there, but

130 Alberuni, Tahdid, pp. 202 and 222.
also to the prosperity that the Madhyadesa enjoyed. In the same way, the convergence of roads at the bigger towns of the north indicates the political as well as cultural supremacy which this region wielded over the others.

2. In the Ganga Valley the roads generally followed the courses of the main rivers and their major tributaries. Crossings were afforded only by minor rivers or nallahs and at a few suitable points of bigger rivers. The route from Mathura to the mouth of the Ganga bears testimony to this fact. However, the route from Bari to Ajodha (Ayodhya, the earlier capital of Kosala or Saket, which is now Faizabad) and thence to Sharwar (Saryu-par or Sarvasti on Rapti?) and Varanasi could not avoid the crossing of some major rivers.

3. The roads of the northern India, specially those of the Indo-Ganga Basin, barring the route to Kashmir, avoided the cumbersome and difficult sub-mountainous and terai region of the Himalayas. They were laid down far to the south of the piedmont belt.

4. There were three road connections to mountainous regions. Two of these were in the west, while one in the east. The two western routes joined Kanoj with Kashmir and Ghasna respectively. The Kashmir road was not as difficult as the latter which had to cross most of the rivers of the Panjab and the upper Sind at various points and then had to negotiate a trek through the Peshmwer Valley to turn into a still more difficult route to Dunpur (Udympur), Kabul and Ghasna. This was the road which was
frequently made use of by Mahmud Ghasnavi and his army. Alberuni's version of the road to Kashmir is not direct. He connects Kanoj first with the old kingdom of Jalandhar (Kangra Valley) and then taking a piedmont course encircling the Salt Ranges reaches Margalla Pass and following the course of the Jhelum reaches Addhishtan, the capital of Kashmir. From Babraham (identified elsewhere as Babbar-khana close to Margalla Pass) to Addhishtan the passage was difficult as it had to pass through the ravines along the course of the Jhelum.

The eastern hilly track runs through Shillong Plateau (Meghalaya) and crossing the hills of Assam moves over to Nepal and Tibet. The route was cumbersome and hazardous.

5. The southern links of the main Ganga Valley road reached the remote religious and cultural centres through the highland regions of Central India. They traversed through Mewar and Malwa in the west and the uplands of Bundelkhand and Vindhyachal in the east.

6. The road from Allahabad to the Mahanadi Basin avoided Rewa hills in the south and instead moved further east and probably afterwards occupied the levelled part of some river valley crossing the Chota Nagpur Plateau. This river seems to be either Brahmani or Subarnarekha.

7. Northern India was joined to Southern India through Central India by an elaborate road system. Kanaj, Dhar and Basana were linked to the interior as well as the coastal regions. Allahabad was joined through the Mahanadi Basin, as noted above, and
thenceforth to some coastal towns of the Eastern Coast. This road passed through the coastal plains of the eastern sea-board up to Kanjivaram. Likewise Kanoj and Dhar, on bypassing the Vindhyan scarps, were connected with the Deccan in the interior and Maharashtra in the southwest and to its coast. The last road crossed Narmada at some negotiable point referred to by Alberuni as the valley of Namiya.

8. Western India, which was known as Sind, had a good system of roads. It was connected with Basana and Kanoj. The internal roads, however, ran along the main course of the Sind up to its delta where a number of entrepots were situated. The latter centres were again linked with the coastal towns of India proper.

9. A very well connected and developed land route was available from the Makran coast to the Konkan and Malabar coasts. This was the route which passed through the southern coastal towns of Sind and Saurashtra.

10. The road system in the interior of Peninsula was thinly developed.

11. Most of the roads described by Alberuni seems to be the forerunners of our modern trunk routes.

Regional Survey of Roads

The total mileage of all categories of roads in India, including Sind, was, on the authority of Alberuni, about 2,108 farsakh (16,864 km). Out of this total, Northern India had the lion’s share of
1,616 farsakh (12,928 km). This amounted to about 76.4 per cent of total length of roads. In Southern India the roads were only 3,936 kilometer (492 farsakh), representing a meagre share of less than a quarter (or 23.6 per cent of the total mileage). The smallness of the share of Southern India seems to be the result of Alberuni’s lack of acquaintance with that region rather than actual paucity of communication. The fact, Alberuni’s informers were mostly Northerners who had scanty knowledge of Southern India. Moreover, the political and cultural supremacy of the north and its domination over the south more in the medieval period, was also one of the reasons which put a check on free cultural mobility and exchange of ideas from the south. Very few pilgrims then used to visit holy places of the far north. Since Mahmud Ghaznavi and his army could not make much inroad beyond the Vindhyas, Alberuni was deprived of direct and authentic information on the Deccan.

In addition to the regional classification of roads as attempted above, another category of roads needs to be mentioned separately. These were the roads which were located in mountainous and hilly parts of India. Their contribution to the total surface length was only about 15.8 per cent as their actual length was 340 farsakh (or 2,720 km). Nevertheless, their importance cannot be underestimated. They linked the Plains with the remotest interior parts of the Himalayan region, so much so that one road ran as deep into Tibet that the highest peak of the region was only 20 farsakh away. It may be noted that these roads were not confined to Nepal, Tibet, Kashmir and Kabul Valley but existed in Central
Highland region of India as well. Of course the hill roads of the north were of comparatively greater importance for they joined ancient Hindu pilgrim points.

Another class of roads which may be mentioned are the coastal roads. These roads were found on the Eastern and Western Coasts. They ran almost parallel to the coast in a north-south direction, controlled by the topography of the region. The total length of these roads amounted to 21.2 per cent of the total mileage. The actual length being 453 farsakh (3,624 km).

Road Zones

There are eight zones which stand out as far as the Indian roads are concerned. These zones are as follows:

a) The piedmont and mountainous zone of the north.
b) The northwestern and western zone, i.e., the Sind and trans-Sind Basin and the adjoining parts of Makran.
c) The Ganga Basin as a whole.
d) The Mahanadi Delta.
e) The Malwa Plateau.
f) The coastal zone from Cutch to Konkan.
g) The southeastern coastal plain.
h) The plateau region lying between the Nerbada and the Godavari.

Towns and Cities

As has been discussed above Alberuni gives an interesting graphic account of the medieval towns. The list is certainly not comprehensive, but it does present a very satisfactory urban picture of the eleventh century India. It contains regional capitals.
religious and commercial centres; coastal towns and entrepots. It also mentions some less important towns and villages. The inclusion of such insignificant towns and villages in a list where generally only important towns have been taken up shows that at the time of writing Alberuni must have found them of regional importance.

A study of Alberuni's discussion of towns brings the following facts:

1) Practically all capital and important towns were located on major rivers occupying favourable sites on high banks or levees. The reasons for selecting these sites must have been protection from floods as also from attacks from the outside. The rivers must have provided cheap and easy facilities for transportation. Moreover, they must have been a guarantee of a perennial source of water for irrigation. The following table gives an extract of Alberuni's riparian towns and capitals:

<table>
<thead>
<tr>
<th>City</th>
<th>Capital of Town</th>
<th>River on which the town stood</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bari</td>
<td>Madhyadesa</td>
<td>Ganga</td>
<td>Bari became the capital after Kanoj was taken over by Mahmud's army.</td>
</tr>
<tr>
<td>2. Kanoj</td>
<td>Madhyadesa</td>
<td>Ganga</td>
<td></td>
</tr>
<tr>
<td>3. Mandhukur</td>
<td>Luhawar</td>
<td>Irawa (Ravi)</td>
<td></td>
</tr>
<tr>
<td>4. Waihind</td>
<td>Kandhar</td>
<td>Sind</td>
<td></td>
</tr>
<tr>
<td>5. Multan</td>
<td>-</td>
<td>Sind</td>
<td></td>
</tr>
<tr>
<td>6. Aror</td>
<td>-</td>
<td>Sind</td>
<td></td>
</tr>
<tr>
<td>7. Samhandva</td>
<td>-</td>
<td>Sind</td>
<td></td>
</tr>
<tr>
<td>8. Jailam</td>
<td>-</td>
<td>Jhelum</td>
<td></td>
</tr>
</tbody>
</table>
ii) Besides these riparian towns, there was another category of towns which were located on or near a mountain. Though such towns were few in number, their significance was no less than those of the towns situated on the plains or on the coasts. Some of these towns occupied a prominent place in the history of the country. A few which were situated in the intermontane valleys had such a strategic location that they flourished for centuries on account of this advantage. Peshawar, Waihind, Dahmala and a few others may be cited as examples. Peshawar was not only the ancient capital of the kingdom of Kandhar (Gandharva) but also controlled the gate to Sind and India from the Central Asia. Dahmala was the capital of Jalandhar and was situated in the foothill of the Kangra Valley. Other towns which may be cited as examples were Pinjaur; Addhishtan (capital of Kashmir); Ushkara and Dwar (both in Kashmir); and Bhoteshar (on the border of Tibet).

iii) Another class of towns, sizeable in number, consisted of those towns which had a coastal location. Alberuni gives a long list of such towns which were situated on the western or the eastern sea-board of India. These towns, as we may learn from their history, played an effective role in the economy of the country. It was through them that India established its trade relations with the outside world. They also played a very significant role in the dispersal of culture and knowledge. Some of the well known towns situated on the western coast were Baroi (Baroda), Asawil (Ahmedabad?), Bihrej (Broach), Subara (Sopara), Tana (Thana), Jiul (Chaul) and Jimur (Chamur). All these towns were located close to
the Gulf of Cambay on the Konkan Coast. North of this coast in the west towards the Sind delta the noteworthy coastal towns were Somnath, Vallabhi (near Bhaonagar), Baga, Twalleshar, Loharani, Debal (near Karachi) and Tis in Makran. On the eastern coast Alberuni takes note of Kanji (Kankeewaram), Mundari (Madurai), Panjyaver (Tanjore?), Ramsher (Rameshwaram), Ummalnara, Dravad and Kunk. It should be noted that Alberuni does not mention any significant town on the Malabar coast. The reason is obvious. Malabar coast was colonised by the Arabs at a late stage in the medieval history of India and, therefore, Alberuni's ignorance with that part of the country is understandable.

iv) A group of towns which may be called plateau towns were situated on the Deccan Plateau in the north and northeast, especially between the headwaters of the Narbada and the Godavari. Namavur (Nemur), Alispur (Ellichpur), Mandagir and Urdabishau are a few notable examples of such towns.

v) There is a rather large number of towns in Alberuni's accounts which cannot be classed as riparian or hill or coastal towns but form a separate class by themselves. These towns were widely distributed throughout the country and their association with any topographical or hydrographic feature was only incidental. Basana, Ladda, Dugam, Anar, Dhar and Jattaraur (Chitoor) and others belong to this class. It should be noted that the location of these towns was dependent upon a number of geographical and cultural factors.

To sum up the locational categories of the towns described by
Alberuni, we have the following four classes:

a) Riparian towns  
b) Hill towns  
c) Plateau towns  
d) Inland towns

**Spacing of Towns**

It can be easily seen from Alberuni’s accounts of towns and villages that the distribution of settlement was spatially uneven. In some regions settlement was close and compact, while in others it was scattered or very dispersed. The Ganga Basin as a whole was the most populated and it was from this region that largest number of towns were reported by Alberuni. Not only had the region a large number of towns but they are also in close proximity. However, within the Indo-Ganga Basin itself as is evident from Alberuni’s records, there were great variations in the distributional pattern. On examination it is found that the Ganga-Yamuna Doab was the most congested area. The towns were generally eight to ten farsakh or 64 to 80 km away from each other. Estwards or westwards from this region the spacing between the towns become considerably greater. Beyond Allahabad towards the mouth of Ganga the towns were widely apart. This picture can well be visualised by noting the distances between the towns of Ajedha, Banarasi, Sharvar, Pataliputra, Mungiri, Janpa and Dugumpur.\(^1\) Towards the southeast of Allahabad the spacing was still greater. In the west beyond Panipat the settlement was again dispersed and similar was the case in the Sind basin and in the Mewar, Alwar and Malva regions. This becomes clear

\(^{132}\) For actual distances between the towns see Appendix II.
when one looks at the region lying between Dahmala, Bazana, 
Lauhevar, Lohararani and Dhar. The piedmont Himalayan region, the 
cis-Indus region, and the Deccan Plateau, were even more sparsely 
settled regions.

Alberuni notes that the villages in Central India are more or 
less five farsakh or about forty kilometers away from each other.
It may be conjectured from other sources that the picture in the 
entire Ganga Valley, as far as the distribution of villages are 
concerned, was not much different from central India. The villages 
and smaller towns were numerous and actually contained the bulk of 
the Indian population. The hierarchy of Indian settlements as one 
may infer from Alberuni's notes, consisted of a four tier pyramid. 
The villages constituted the base. Over them were smaller towns. 
Over them were bigger cities and still higher up were placed the 
large cities which were often capital towns.

Functional Character of Towns

From the material available in Alberuni's various books on 
India, it is easily recognisable that the towns were bestowed with 
one or the other urban functions. They were mostly monofunctional, 
each performing its own. According to their activities these 
towns may be classed into five groups, namely:

a) Administrative or capital towns.
b) Trading and port towns.
c) Religious towns.
d) Garrison or fortress towns.
e) Educational towns or seats of ancient learnings.

133 See map of towns (Fig. 3).
Administrative or Capital Towns

Alberuni's itineraries, his Table of latitudes and longitudes in *al-Qanun al-Mas'udi* and other incidental references found scattered in his works mention a large number of towns which served as capitals of the ancient janapadas or communities or realms. Of course the status of a town sometimes changed as a result of political changes. At other times the status remained unaffected. Kanoj is one of such towns which preserved its political supremacy as the capital of Madhyadesha or Aryavarata till it was over-run by Mahmud's army in the eleventh century and the capital was transferred to Bari, a remote place to east of the Ganga. Other towns which find mention in Alberuni's descriptions are, Dahmala (capital of Jalandhar), Uddhishtan (capital of Kashmir), Waihind (capital of Kandhar), Dhar (capital of Malwa), Jattaraur (capital of Maiwar; the town has been identified as Chitoor), Kajuraha (Khajrahu; the capital of Jajjahuti, i.e., the ancient kingdom situated around Bundelkhand), Tana (Thana; capital of Kunkan, i.e., Konkan), Bihroj (capital of Lardesh), Mandahukur (capital of Lauhawar, i.e., Lahore), Basana (capital of Guzrat) and Tiaur (capital of Dahala) and so on. There are some other prominent towns in Alberuni's descriptions which, though not mentioned as capital towns, were -- as we know from other sources -- of great significance. In this connection the most obvious examples are those of Peshawar, Multan, Bemhanva or Bahmanva, Ajodha, Sharwar (Shravasti), Anhilwara (Patan), Jandra (Hindon) and Sahaniya (Sahina).

The political and administrative functions of a town were usually symbiotic in the Middle Ages, and so it is rather difficult to draw a sharp line between the purely administrative and capital towns. A town being the seat of the head of a province or realm or kingdom, automatically became the seat of administration. As such Alberuni's capital centres may be considered as administrative centres too.

Trading and Port Towns

In the preceding pages a large number of examples have been given with reference to coastal towns. All these towns by virtue of their being close to the sea served as ancient or medieval entrepots from these ports, lying mostly between the Sind delta and the Gulf of Cambay, Indian goods were exported to West Asia and to Eastern and Northeastern Africa. Some of the inland towns also were engaged in the transaction of Indian products. A good example of such towns may be taken from the Makran province or the piedmont region of Upper Sind. Armayel (Bela), Siwistan overlooking the narrow trade routes in the west of Sind and Peshawar and other small towns situated in the Peshawar Valley were already famous for their external trade. For instance, high-breed horses, precious stones and gold from the Panjhir Valley were traded between India and Central Asia. There must have been other more inland towns engaged in trade and commerce but we do not have any positive account of such towns in Alberuni's account. We can only conjecture that internal trade in indigenous products such as spices, cotton, sugarcane and grains was carried on by some inland towns. It would
not be unrealistic to think that such towns must have had a location close to a river. The towns situated in the Ganga-Yamuna Doab must have enjoyed this advantage.

**Religious Towns**

The medieval period was characterised by the revival of the Hindu culture and tradition and thus we find that there were a number of urban centres which were engaged in Alberuni's times in religious activities. Alberuni provides a long list of such towns where religious rituals, feasts, fasts, sacrifices and periodic or casual baths were held. As noted by Alberuni, the Indians held in high esteem the rivers of north India, specially the Ganga. This river therefore had a large number of religious towns located on it. Mahura (Mathura), Kanoj, Assi (Assi Ghat), Barhamshil (i.e., Brahma Shila, the stone of Brahma, a place where Brahma was worshiped about 48 km slightly north and west of Allahabad), Prayaga (Allahabad), Ajodha (Ayodhaya), Sharwar (Shrawasti near Balrampur in Gonda), Arku Tirath (near Mirzapur), Varanasi and others are a few examples from the Ganga Valley. It should not be held however that all religious centres were located in this Valley. Some were located beyond it. Taneshar (Sthaneshwar, Kurukshetra), Lauhawar (Lahore, named after one of the sons of Rama, Lauva), Mulistan (Multan), Bahmanva and Pursavar (Peshawar) were some towns in North India which were highly venerated by the Hindus. In the Central and South India also, there were similar holy and sacred places of worship. Shailsan (Shilsa, ancient Vidisha), Ardin, Somanath, Ramshar and Setubandha were famous for their idols and associations
with Hindu deities. For instance, Somnath was frequented by Hindus from all parts of the country and the linga in the temple was highly venerated. In the same way as Multan was famous for its gold and emerald idol so were Bhailsan and Ardin for their idols of Bhailsan and Mahakala. Setubandha was famous for its association with Rama who built it to pave his way to Lanka to regain his wife.

Garrison or Fortress Towns

In Alberuni's accounts there are a large number of towns which were developed as cantonments. The construction of a castle or a fortress in it was the inevitable part of the strategic build up of the town. The fortress in such towns was generally built on a higher ground overlooking the main road or pass. From Alberuni's accounts we gather that these garrison or fortress towns were usually located in the mountainous or sub-mountainous region of northwestern India. Prior to Muslim inroads, these fortress towns were built to guard against local rival kings or tribal chief and from external invasions. But when Muslims came to India they found these garrison towns very useful for their own purpose. Some of these towns therefore continued to flourish with minor adjustments. The towns in the north which have specially been mentioned by Alberuni for their fortresses are Rajagiri, Luni, Nandana, Lohagarh in the mountains of Kashmir, Kabul and Sikawand. Besides these fort towns of the north, central India had also had fort towns. Some

notable names in this connection are those of Bhalmal (northwest of Patan), Kalinjar and Gwalior (Gwalior).

Educational Towns

One expects from Alberuni to have written at least a chapter on educational institutions and their centres but it remains an expectation. His comment on Indian seats of learning are scanty and casual and at one place he himself shows his utter helplessness in getting an access to Hindu educational centres. He writes that as a result of Mahmud Ghaznavi's indiscriminate attack on Hindu shrines and seats of learning these centres have been taken to such remote places in Kashmir, Varanasi and elsewhere that he cannot reach them. In this connection it should also be borne in mind that ancient Buddhist seats of education had already been completely obliterated under the Brahmanic puritan cult which was dominating the Indian society when Alberuni came to India. This fact again deprived him from having first hand and exact knowledge of those centres. Nevertheless, Alberuni gives a high opinion of Kashmir and Benaras where, according to his descriptions, a great many disciplines were taught. He specially commends the achievements of Kashmir and of their scholars in the field of science, script, grammar and Vedas. He affirms that they were the high schools of Hindu sciences.

Negative Areas

An interesting finding can be had from Alberuni's various

139 Ibid., Vol.I, p.22.
references of routes and roads, towns, kingdoms and janapadas of India to identify the negative areas unsuited for human settlement. Such a finding would, however, be indirect as it can generally be inferred from the distribution and location of towns and the bearings of routes.

A thorough study of topographical and hydrographical conditions may reveal the fact that in Alberuni's times a large tract of the country was inhospitable for human settlement. Thus, only a small portion of the country was inhabited. It stretched from the Sind river in the west to the edge of the Shillong Plateau in the east and was compressed between the Tarai and submontane forests in the north and the forest and the rugged relief of the Central, Uplands and Highlands. Within this narrow elongated belt there were patches of unhealthy climate, dense forests and deserts which isolated one janapada from the other. On the west of this belt, for instance, was a broad stretch of a desert whose boundaries and extent are discernible from the location of towns and the direction of the routes which move in that direction. All the towns of Panjab, Sind, Bawarij, Cutch, Mewar and Alwar encircle this patch of desert.

From south of the Vindhyas and adjoining uninhabitable parts of the densely forested Malwa right up to the Cape Comorin, only small tracts close to the river valleys appear to have been hospitable areas. In the southwest along the Malabar coast the forests were exceptionally dense, as were the hilly tracts of Assam, and thus were negative areas from the point of view of human occupation. The coastal area of the Eastern Ghats extending up to
Gangasayar (Ganga Sagar) was the only continuous belt in the south which may be said to have been outside of the negative area. The towns which Alberuni selected for his itineraries from the south offer a very accurate picture of the negativity of the country. Barring the region lying between the headwaters of the Godavari and Krishna and the eastern coast, the rest was simply covered by forests. They occupied both the plains and the hills. (Fig. 2).