It is a well known fact that man in his effort to utilize the gifts of nature and to make a living on the earth leaves lasting impressions on it considerably, modifying the physical features. The term settlement has been used to point out to dwellings which are connected with the satisfaction of essential human needs. There are several geographical factors which effect the settlements, their location and site, distribution and pattern. The main factor which determines man's choice of a site for location of settlements is the nearness of the place of work. Here majority of population is engaged in agriculture hence the settlements are located near the agricultural land but avoid the cultivated land as such. The rural settlements directly or indirectly are influenced by the agricultural land, soil, topography, availability of water, local building material and transport facilities in the region. Besides,
the sites are also chosen above the level of floods of the adjoining rivers or 'nalas'. Therefore, we should take into account the following factors, viz. availability of water, nature of the topography and the availability of cultivable land, availability of high land, free of natural calamities, the system of communication and the tradition of the people.

Generally two important factors, namely the extent of agriculture land and the availability of water determines the location, size, and density of the rural settlements of the region. It has already been discussed in the previous chapter that in the region 80% of the population is engaged in agriculture for its livelihood, naturally the settlements are located near of agricultural land. The hilly west and south-east, with its rugged topography, its agriculturally negative character and lack of sufficient water does not allow the growth of large settlements. The extensive nearly flat plain on the north and east on the other hand, with all these advantages, are areas of attraction for rural settlements. Blache (1950) has stated that "The scattered manner of grouping suits localities where, as a result of the dissection of relief, soil and hydrography, the arable land is itself divided up. The clustered village is indigenous, on the other ahdn, in districts where the arable area is continuous admitting of uniform and extensive exploitation". It is noticed that if the land of varying relief is found the settlements are found constantly avoiding the rugged
topography and are located on comparatively flat lands.

This is due to the fact that whole of this plain is well-supplied with water and a large part of it is under cultivation. Predominant type of settlement in the Chhatarpur upland is agglomerated type; each village being composed of some such agglomerations over the hillocks which rise from the nearly flat lands like islands. Brunhes, J. (1920) has suggested that "All isolated elevations whatever their origin or character, have a topographical value that appeals to men who seek to defend and fortify themselves". Obviously such highlands are free from the danger of floods as the rain water is drained away quickly. Although, this location of settlements however, makes the availability of drinking water rather difficult but other advantages outweigh this defect. For example, such settlements are found in the north-eastern upland especially at Mahoba and Banda tahsils (Fig. 24).

In the region under study the settlements are mainly sited in terms of nearness to the drinking water which varies from place to place. In this region one of the major sources of water supply is the perennial tank and reservoir. The presence of lakes and tanks are the most characteristics of the Bundelkhand region. It has already been discussed in the previous chapter that in the country of granite and gneisses the surface is irregular and streams have been intercepted by quartz-reefs and dykes and starting the rain-
fall very easily. A large number of tanks and reservoirs are found scattered throughout Chhatarpur, Mahoba, Charkhari and Maudha tahsils. During the field work it has been observed that every village has its own tank, not so much for irrigation but for the use of cattles' drink water and for domestic use.

In the region wells are also important sources of water supply, throughout the year. In this area, wells are the cheapest source of water supply due to the sub-surface clayey rocks and high water table. In Chhatarpur and some parts of Mahoba tahsils, wells are the most important sources of water supply. In the northern part of the basin especially in Hamirpur and Banda tahsils wells are few in number. The main difficulty in the northern part of the basin is the low water table. As mentioned earlier Chhatarpur tahsil has favourable spots where wells can be dug and they may replace the tanks as a source of water supply.

Rivers are also used in the region as a source of water supply, especially along the Ken river due to its perennial character. Almost all the streams in the Bijawar and Panna tahsils have an intermittent drainage in their course which appears at short distances. In the lower courses they have developed intricate and complex belts of ravine lands, which also do not attract the settlements. Thus it may be said that with the exception of the main consequent, streams, almost all the others preclude of growth of permanent settlements.
Types of Settlements on the Basis of 'Distance between shelters':

Two types of settlements are considered on the basis of distance between shelters in the region:

1. Dispersed or scattered or isolated type and
2. Compact or agglomerated or nucleated type.

The dispersed type of settlement is guided by the topography of the land. The western and south-eastern part of the basin has rugged terrain hence the dispersed or isolated type of settlements is common (Fig. 25). For example, the Bijawar and Panna range have dispersed settlements. Cultural factors also affect the types of settlements in the region. Mukerjee, R.K. (1940) has also suggested that "There is mostly cultivation by the spade and hand labour rather than by plough, it is horticulture rather than farming and their disseminated pattern of rural distribution is in contrast with the neighbouring compact village of the upper Hindu castes and is well adopted to their intensive and meticulous exploitation of the land". It is clearly seen at the north-eastern low land where on the fertile soils which offer real basis for support of the inhabitants (Plate 21, 22).

Agglomerated settlements are characterized by a well system of streets and houses. Finch and Trewartha (1957) have called it as 'nucleated' settlement. According to Aroussean, M. (1920) "Agglomerations are of different kinds
and in each case they owe their existence to some important social or geographical factor and in themselves exhibit an infinite variety or character or build with changes from region to region. It is noticed that when agricultural communities have settled fixity on the soil, they have done so by choice and in most cases in the form of agglomerated settlements. The plain on the north-eastern part of the basin where all the advantages are found the areas of great concentration of rural settlements. Blache has (1950) also suggested that "The clustered village is indigenous in districts where the arable area is continuous, admitting of uniform and extensive exploitation". Such compact villages may be seen in the irrigated tracts of the Banda and Maudha tahsils.

The Census (1971) which shows the spatial distribution of the rural settlements reveals it clearly that in most part of the basin some 22 settlements or less per 100 square miles of the total rural area are found. But it is as high as 24 for the Banda (Baberu, Naraini) and Panna (Ajaigarh, Panna tahsils) districts and as low as 19 for Chhatarpur (Bijawar and Nowgaon tahsils) and Hamirpur districts. Generally these are those areas of the region where a forest hilly or dissected plateau features are predominant, while in the plain areas and foot-hill tracts of these same districts the settlements are more closely spaced. Thus the type of settlements are depend on the nature of topography and availability of cultivable land in the region.
Types of Settlements on the basis of location: The types of settlements on the basis of location in the region may be classified as follows:

- The settlements near tanks and reservoirs,
- The settlements along the hill slopes,
- The settlements at the foot of the escarpment,
- The settlements along river valleys.

The Settlements near the tanks and reservoirs: The settlements along the tanks and reservoirs are quite large in number in the northern part of the basin, especially in Mahoba and Chhatarpur tahsils (Fig. 24). The field study and one inch toposheets show that the settlements are of the agglomerated type. The Bundelkhand region of the north-western on the other hand is mostly settled, near the lakes and tanks. There is no distance of the two miles where one will not find a tank or reservoir. In this region, full advantage has been taken of the regional topography which is suitable for such reservoirs and tanks by throwing dams across the chenels. Another favourable condition for the construction of the tanks are the crystalline base which does not permit much under ground filtration of water.

Mahoba and Chhatarpur tahsils have a number of surface water bodies such as Madan Sagar, Kirat Sagar, Belatal, Jagat Sagar and Gora Tal etc. It is observed that every fillage has its own tank for the use of entire village community. Construction of tanks and ponds had considered as a pious duty in Bundelkhand in the past. These are,
therefore, found in large numbers in the region. Thus the cause of great concentration of rural settlements may clearly be analysed in terms of the supply of water of the region which has direct impact on the location of settlements. In the historical past the people of the basin built their houses near the tanks in order to have facility of domestic water supply. The important settlements near the tanks and reservoir are Mahoba, Ranguli (54 0/13 and 54/P14).

In the north-western part of the basin the extensive areas are also suitable for agriculture and naturally the settlements are attracted there. The attraction of settlements in this region may be attributed partly to the facility of irrigation either from wells and tanks, but mostly for the availability of fertile agricultural land. This region comprising of a plain area, the soil here is coarse and is suitable for cultivation. Being the plain area, construction of roads, cart-tracks, and foot-paths is easy. Hence all the settlements of this region are connected with each other and also with roads by at least a cart-track or a foot-path. Besides this, because these tanks are very suitable for settlements as one moves from the Chhatarpur upland outwards a large number of villages are found located near the small ponds which formed at the north-western plain.
The settlements along the hill slopes: In the hilly region where available land for agriculture is limited, the settlements are forced to develop along hill slopes. The study of the one inch toposheets and field observations in the region, clearly show the next to river valleys the second most important site for settlements is along the hill slopes. Above the settlements the higher slopes of these hills support forests. According to Spate (1960) "Settlements lines tend to occur also at the marked breaks of slope, where steep residual hills grade into a fan, which has usually a fairly high water table". Such quartz-reefs in the Bundelkhand country. A few of the villages on the hill slopes show distinct semi-circularity in their pattern (Fig. 24).

In the region the degree of slopes varies from place to place. It is noticed that agricultural activities take place at slopes of low angles but land is used at higher angles for the settlements (Plate 20). It is seen that the hill slopes are covered by thin layer of soil which gradually decreases with the angle of slope. The soil is transported, which is most fertile and is best suited for the production of crops. Due to the comparatively plain region, water is also easily available. Due to the high watertable the wells are also found in quite a large number. The topography of the region is not much undulating so transport facilities have developed even from early times. This type of settlement is common in the Chhatarpur upland
such as Utiyan, Ganj, Kabra, Narayan pura are good example (54 0/15).

The settlements at the foot of the escarpments: The term scarp itself indicates that this is the marginal zone of the basin or it is the highest part of the basin, although the height of these scarps gradually decreases. The settlements at the foot of the escarpments are found along the Vindhyans scarps as well as the Bijawar hills. The study of one inch topographical sheets reveals that the settlements are of dispersed nature. The topographical features of the region have influenced the settlements of the region to a great extent. In this area the settlements are located at the foot of the escarpment bordering the cultivated land. It is noticed that above the settlements the higher slopes of these escarpments supports dense forests (Plate 18, 19).

Much of the topography of the region is dissected into sharp ridges. These ridges are separated by deep narrow valleys. Although these sharp ridges have limited land for agriculture but at the foot of the ridges the only extensive area suitable for cultivation and naturally for the settlements are attractive for inhabitants. Due to the escarpment, the soil here is coarse and is hardly suitable for cultivation. It is generally seen in the region that the settlements occupy the higher spot of the landscape and lowlands are invariably under agriculture. At the foot of the escarpments many springs or 'nalas' are found which
are the source of water for these regions. The example of settlements at the foot of the escarpments are Shahgarh (54 P/11) and Dilar (54 P/10) (Fig. 24). The number of settlements in this region is rather quite low in comparison to the north-western part of the region. Due to the hilly terrain and thick forests one has to traverse for miles together through hills and forests to find a single hut.

Another difficulty in this region is infertile soil with a coarse texture and a high percentage of sand. In the rainy season much of the surface soil on the sloping land is removed by the sheet and gully erosion. The settlements are, therefore, found only where these could command a panoramic view of the country and protection from the running water. The dispersed nature of settlements may clearly be analysed in terms of the geomorphic characteristics of the region which has great impact directly or indirectly on the human inhabitants.

The settlements along river valleys: The settlements along the river valleys are quite large in number and distribution varies from place to place. The important settlements in the region are Ganeshpura, Kurrana (54 O/12) and Rarapura, Samai (54 P/10) (Fig. 24). Due to the plain areas, much of the land in this region is available of cultivation. The source of water is the most favourable factor. The development of roads is another favourable factor in the river valleys.
In this region two types of settlements are predominant. Firstly, a large number of settlements are found near the major rivers and secondly, upper part of the valleys or on the tributaries. The first type of settlements are found above the flood plains and ravine lands. This type of settlements is common on the outer side of the meander. Such example is found above the flood plains and rainy lands (63 C/5). The second type of settlement which is found near the river is in region of flat-topped hills intercepted by valleys. Here there is little scope for cultivation. This type of settlement is common in the valleys of Urmal and its tributaries (54 O/12) (Fig. 24).

Apart from these major locations of the basin there is one minor area where settlements are found, the settlements along the roads. Although the communication system have little influence on the general layout of human habitation but in the case of a few trade centres, which have a comparatively recent origin, the settlements is attracted by the lines of communication. The important settlement along the road is Gari Malehra (54 O/12) (Fig. 24). The railways have otherwise no direct influence on the location of settlement in the region in general. It may be said that in such cases the physical conditions noted above do not cause the location and growth of the villages. The important factor which indirectly affect
PATTERNS OF SETTLEMENTS

FIG. 25

COMPACT PATTERN 63C/3
NEBULAR PATTERN 63C/6
SEMI COMPACT 54Q/16

SEMI CIRCULAR 63C/2
ARROW PATTERN 63C/2
STAR PATTERN 54Q/16

CIRCULAR PATTERN 63C/4
TRIANGULAR 54Q/2
LINEAR PATTERN 54P/9

LINEAR PATTERN 54P/13
ARROW PATTERN 54P/10
DISPERSED PATTERN 54P/11
is the availability of communication facilities for the growth and development of large villages.

**Settlement Pattern**

The settlement pattern is a shape and framework of village which is the result of the arrangement of streets and roads in certain fashion. In any study of the settlement pattern of an area where agriculture is the primary economic activity, we must take into account the following factors viz. the nature of physical features and social and cultural traditions of the people. According to Ahlman H.W. (1978) the factors which influence the pattern of settlements are climate, geologico-topographical conditions and the degree of material culture.

The people of the Lower Ken basin largely dwell in villages, majority of which are small. They represent a number of patterns of settlements such as compact, semi-compact, circular, semi-circular, star, linear and nebular pattern (Fig. 25). In the region tradition is an important factor in controlling not only the types of houses, but also reveal a very important part in recognising the village pattern. This fact is revealed by the existence of linear settlements near the middle-western part of the region (54 P/13). A few of the villages at the hill slopes show distinct linearity in their pattern (54 P/5). But in the hill girdled basins show peculiarity of circular shape in their pattern (63 G/4). Similarly, in the northern plain
where rivers meander villages have been located in their vicinity in semi-circular pattern (63 C/2).

In the northern plain areas where the compact and semi-compact settlements developed the actual arrangement of streets and roads may be one of several types, the village may have a star or compact pattern (63 G/3, 540/10). In the region nebular pattern of settlements is also revealed. Kaushik has suggested (1959) that a few of the villages around the tanks show distinct nebularity in the pattern (63 G/6).

Scattered settlements may also show certain pattern in the arrangement of the dwellings. The former villages, particularly near the escarpments, tend to be located on their foot. Such villages show a good picture of arrow pattern (54 P/10). Another such settlement is found at the bend of Ken river (63 C/2).

In the northern part of the basin which is traversed by several important roads, the villages located along them have a triangular pattern, where the minor roads have met with main roads (54 C/12). Mostly in the region under study the pattern has found shapeless cluster. According to Buschmann, K.H. (1954) villages surrounded by wall are still to be found in Assam, Rajasthan, Maharashtra and Mysore, and that the open of villages with detached hamlets are the characteristics feature of the Ganga plain. This fact may be accepted for the region under study. Sometimes, villages are found in linear shape on the two sides of the
east tracks and foot paths. Thus the study of the pattern and location of rural settlements of the region brings us to the conclusion that there is a close correspondence between the topographic feature and the pattern of settlements.

Size of rural settlements: The rural settlements of the region may be classified according to population size also. There are 962 settlements with less than 200 population (class I), 1196, settlements with 200 to 499 population (class II) 1027, settlements with 500 to 999 population (class III) 652 settlements with 1000 to 1999 population (class IV) 235 settlements with 2000 to 4999 population (class V) and 22 settlements with 5000 and more population (class VI) (Table 13).

From the table it is clear that the share of the different classes in the total villages vary from one district to another. The census data shows that the (Census 1971) 3246 rural settlement have found in the Lower Ken basin. It is calculated that a normal village in the region is not very large; more than 29.2% of all the villages have a population each less than 200. While 31.5% of the total villages have a population each 500 to 999. On the other hand, the big size settlements having a population each more than 1000 are 20%.

It is clear from the table that the number of village decreases with the increase in category in the classes. It is interesting to note that the villages of II category are
Table 13
Villages Classified by Population (1971)

<table>
<thead>
<tr>
<th>Category</th>
<th>Chhatarpur</th>
<th>Panna</th>
<th>Hamirpur</th>
<th>Banda</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of inhabited villages</td>
<td>Percentage</td>
<td>No. of inhabited villages</td>
<td>Percentage</td>
</tr>
<tr>
<td>I</td>
<td>260</td>
<td>24.3</td>
<td>336</td>
<td>34.0</td>
</tr>
<tr>
<td>II</td>
<td>362</td>
<td>34.0</td>
<td>344</td>
<td>36.5</td>
</tr>
<tr>
<td>III</td>
<td>291</td>
<td>27.2</td>
<td>179</td>
<td>19.4</td>
</tr>
<tr>
<td>IV</td>
<td>131</td>
<td>12.1</td>
<td>56</td>
<td>8.3</td>
</tr>
<tr>
<td>V</td>
<td>31</td>
<td>3.0</td>
<td>17</td>
<td>1.9</td>
</tr>
<tr>
<td>VI</td>
<td>2</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>1017</td>
<td>100%</td>
<td>932</td>
<td>100%</td>
</tr>
</tbody>
</table>
common in the districts of Madhya Pradesh (Chhatarpur, 35.5% and Panna 34%). While in the districts of Uttar Pradesh such villages are almost absent. On the other hand, big villages are more numerous in parts of Uttar Pradesh (Hamirpur 24% and Banda 19.2%). While in Madhya Pradesh it is 12% in Chhatarpur and 6.3% in Panna district.

It is clear from above analysis that geomorphic features are the main factors responsible for settlements. In the districts of Uttar Pradesh, where physical features is favourable for agriculture and settlements, has found to cluster together in large number. On the other hand, in the Madhya Pradesh where the rugged topography is found settlements are in small size.

Houses, their shape, size, function and building material

According to Brayon, P.W. (1933) "The house denotes all human structure whether they are meant to live in, work in, or store things in". Houses in the region under study are built very peculiarly in their shape. They generally built very closely, on the both sides of narrow gaps which may be called 'roads'. These 'roads' are broad enough only to allow one cart to pass at a time. The houses have very primitive looks, irregular in shape, crude in construction and rough in outlook. It is usually small and height is hardly more than 8 feet, and it is no wonder to find houses as low as 5 feet.
Singh, R.L. (1957) has also suggested about the house types, in his study of the um land of Varanasi in the Ganga plain, found that the rural house was well-adapted to the physical and cultural environment of the region. He has studied that houses have rectangular shape and layout of an open courtyard surrounded by rooms on all side are the most common feature. According to Spate (1960) "Villages are small, stoutly built, often of stone outer walls are blind and door ways massive and low" relics of the old insecurity visibly attested also by the hillock holds which are easily the most striking features of the cultural landscape.

The building material of houses is generally local in nature. Newbiggin, M.I. (1952) has suggested that "Man is always and everywhere, in some sort a Robinson Crusoe using as he can what tales within reach of his hand". During the field study, it has been seen that the mud is most commonly used to construct houses. The use of mud is done in two ways, to arrange layers of mud one after another. These mud layers become very hard after they get dry and save the inhabitants from heat, cold and rain. Another way is to make large blocks of mud mixed with some straw so that the mud of the raw bricks is kept bound. After drying these raw bricks are used for walls. Due to the more labour consuming process this brick making is adopted by those well to do cultivator who can afford to
employ labourers. Mostly, the 'layer method' is adopted to build the walls especially in the northern plain areas.

In the south-western and south-eastern part of the basin, houses have been found made of locally obtained wood, leaves and grasses which is a hut rather than a house. Roofing is done mostly by tiles but in the villages to the south-west of the region thin square slabs of slate are also used for roofing. It is noticed that clayey soil needed for making tiles and is scarce due to the rocky character of the region.

Thus from the study of the rural settlements in the Lower Ken basin it is concluded that there is a close relationship between the natural conditions and the distribution and types of settlements and the house types. The study shows that the cultural factors have otherwise no direct influence on the rural settlement pattern and types in the region under study. If the industrial development takes place in future the age old traditional system may undergo a change, both in terms of location, pattern of settlements and house types as well. The rural settlements may also be changed accordingly in the region.

**Urban Settlements**

Urbanisation in the Lower Ken basin is very slow due to slow pace of development. There are only 20 towns in the region according to the 1971 Census. Among major
towns are Banda, Hamirpur, Chhatarpur, Panna, Mahoba, Charkhari, Maudha, Chitracut Dham, Bijawar, Nowgaon and Ajaigarh. These are districts or tahsil headquarter. These urban centre together have a total population of 321809 persons in 1971 or 9.5% of the total population of the region. According to Finch and Trewartha (1957) "Such a community is fundamentally a trading centre for the farmsteads of the surrounding country side". Except a few centres, no settlement worthy to be truly, 'Urban', majority of them are subjected to rural conditions. During the field study, it has been seen that they are not planned and roads are narrow and mostly unmated. The towns are essentially administrative headquarters except Banda and Panna town which have some characteristics of urbanism based on industries and mining respectively.

**Banda Town**: Banda is situated in 25°28' N and 80°20' E near the river Ken on the midland section of the central broad gauge railway line. The town stands at the banks of the Ken river which flows on the western side about 1 mile away from the main town. At the south western part of town a hill of granite rises abruptly from the plain which is called as Bambesur pahar at height of 643'. It is the first large town in the basin with a population of 50575 persons according to the 1971 Census. Banda was mere a village till the commencement of the nineteenth century when the Nowab Shammer Bahadur settled down here. Its important increased when it was made a district head-
quarter and became a commercial centre of the adjoining area. In 1858, after the removal of Nawab, owing to his disloyalty in the mutiny, the town began to decline while the growth of Rajapur and then of Karwi has largely deprived Banda of its principal trade. After that British regime the town has grown up very rapidly, both in area and in population. At present it is the headquarter of the district. Besides, the usual public offices, there are dispensaries and station of Church missionary society of American methodist mission. More recently the importance of Banda has considerably increased with the establishment of the district court and other numerous colleges and teaching centres. Apart from its administrative importance Banda now has many industries such as textile industry and shoes industry etc. A mile from Banda stands a fort called Bhuragarh, which was built in 1784 and stormed British levies in 1804. Besides, this town provides abundant facilities for water supply. A large number of tanks were constructed by the kings in the old time. The surrounding area provides a very rich hinterland for the town. All the agricultural products come to Banda, which provide a very good market for these commodities. People also get opportunities of employment in the town. It is noticed that Banda has not been planned. Most of the roads are narrow and unmetalled.
Panna Town: Panna town is situated in latitude 24°43' 30" N and longitude 80°13' 55" E on the route from Banda to Jabalpur, 62 miles south of the former and 169 miles north of the later of the elevation of 1147 feet above the sea level. Historically Panna town is an important settlement. "The chief of Panna is descendent of Hardisah one of the sons of the former Maharaja Chhatrasal, when the British entered Bundelkhand Raja. Kishor Singh was the chief of the state, which was then in a State of complete anarchy. He was confirmed in his possessions by Sanads grantee in 1807 and 1811. As reward for services rendered during the munition of 1857 the Raja received the privilege of adoption, dress of honour of the value of £2000 and a personal salute of 13 guns". (I.G.I.). Agricultural production comes to the town. Besides food grains many other products come to the town. Its historical importance is also due to the diamond mines. The diamonds were found in several places especially on the south-western part of the town. At present it is the only one centre of the diamonds which is working under Central Government. More extensive and important than the tract just referred to is another extending from 12 to 20 miles north-east of the town of Panna and worked in the localities of Kamariya, Brijpur and Etawo. Apart from its mining importance Panna is also noted for its many industries, such as related to diamonds. In the present day it is the headquarter of the district. Besides the public offices there are dispensary and colleges and many other educational
institutions and several Hindu temples are also found.

Chhatarpur Town: The Chhatarpur town stands at the end of the Central upland at the height 1000 feet above sea level. This town is situated in 24°35' N and 79°36' E at the junction of the roads from Banda to Sagar and Nowgaon to Satna. Chhatarpur is a fine town surrounded on three sides by a wall and contains many well built houses. "The town is named after Chhatrasal of Panna by whom the town was founded in 1707. Its appearance is enhanced by numerous hills erected by croasons who settled here nearly two centuries ago under the protection of Raja Paharsingh of Panna and are said to have assisted Sone Shah in acquiring Chhatarpur". (I.G.I.).

Presently the town is the headquarter of the district. The town is very densely populated and has developed in an unplanned way along a narrow road, which is the major thoroughfare of the town. Mostly, the houses in the town are low but a few residences of the more wealthy inhabitants are spacious and well-built. This town was an important trade centre of salt, sugar, soap and brassware. The surrounding area is a extensive agricultural track. This surplus production comes to the town. Besides the food grains many other regional products come to the town. The chief commodities are the forest produce, building material from forests. But at present the town is the major distributing centre of the region and has not developed as a manufacturing centre.
Hamirpur: Hamirpur town is situated in 25°57' N and 80°8' E, on the route from Banda to Kanpur with a population of 14783 persons. Hamirpur is the smallest town of the region according to the 1971 Census. Historically Hamirpur was not an important settlement. It has only an administrative importance. The town has developed in an unplanned way along a narrow road, which is mostly unmetalled. Besides the public offices, there are civil facilities like hospital and schools and Missions are also found.

Charkhari: The town is situated at 25°24' N and 79°46' E, 10 miles by metalled road from Mahoba station on Jhansi Manikpur section of the central broad gauge railway line. The town stands at the foot of the hill called the Ranjit Pahar, which rises abruptly from the plain to a height of 950'. It is of commercial importance and chief imports are sugar, salt, cloth and kerosene oil, the exports are grain, cotton, til, linseed and ghee. At present it is the headquarter of the tahsil. The town rose in importance after 1765, when Raja Kumar Singh made it capital and since the opening of the railways it has become an important trade centre. The town is very closely populated with 15776 population according to 1971 Census.

Mahoba: Town stands on the Jhansi–Manikpur railway line. It is picturesquely situated at the foot of the hills near the lakes. Mahoba has been the seat of several dynasties and was founded in the 11th century at a strategic place
commanding the western route from north to south. Many battles were fought in and around Mahoba which reduced its population from time to time. Presently it is the headquarter of tahsil with a population of 29707 according to 1971 Census.

Other towns of the basin are Rath (23061), Chitsamcut Dham (17794), Attara (17221), Rajpura (5844), Naraini (17731), Maudha (14629), Bijawar (8875), Ajaigarh (6095) and Nowgaon (10248) etc.

As a whole, above discussion led us to the conclusion that throughout the region, urbanisation has been an extremely slow process. In the southern part of the basin except for district headquarters, there are no other town. The two are characterised by rural activities, very little urban facilities and functions exist in them. Industries are not only few but also small sized and are largely rural oriented.

Transport and Communication

The means of transport and communications are one of the important factors for the development of the region. It is noticed that in case of large villages the physical conditions alone do not cause the location and growth of the village or cities. There lines of communications are also directly or indirectly guided of physical factors like slope, drainage and so on. Due to the rugged topography, presence of a large number of rivers and escarpments, the
development of roads and communication lines is still obstructed. Longmans (1966) has suggested that "The most notable places that have induced traffic to converge in this way are naturally mountain passes, cols, river valleys, and crest lines on tablelands with wide, flat surfaces". In the region under study roads have been constructed through some natural gaps especially in the southern highland areas.

In the region under study roads are much more important than railways (Fig. 26). It is clearly seen in the case of Chhatarpur and Panna districts where all administrative headquarters are connected only by roads. While only one railway line runs through Hamirpur and Banda which is a broad gauge line from Jhansi to Manikpur. The main purpose of transport is to provide linkage to central places so as to facilitate the easy movement of people and goods from one place to another. These roads have a great significance in the economic development of the region.

**Railway Lines**: The effects of physical conditions may be clearly visualised in the construction of railway line in the region under study. Only the northern plain provides conditions for the construction of the railway line, due to the near flat plain. A branch of the east central railway from Allahabad to Jhansi has a length of 175 miles in the region. At Manikpur this is met by the midland section of the central railway line from Jhansi which passes through Banda and Karwai. Banda is the only railway centre in the
region. It is a big junction of Central railway and is located on the cross road transport linking the city with Kanpur, Lucknow, Varanasi, Delhi and Bombay etc. Manikpur town which is situated on the main route between Allahabad and Bombay is purely a rail transport centre. Other main railway stations are Mahoba, Attara, Kulphar and Chitrakut Dham etc. Mostly the agricultural products are moved by this line. The commodities which are carried along this line include food grains, forest products and mineral ores viz., limestone, clay etc.

**Metalled and Unmetalled Roads:** It is clear from the Fig. (26) that the southern part of the basin lacks modern transport facilities such as metalled roads, however, there is sparse network part in the north. In the region the roads were numerous today, when road construction has kept pace with techniques by adopting itself to the needs of the vehicles in use. Communications and transport have been greatly improved in the recent years and the region contains several miles of metalled and unmetalled roads. Some of them metalled roads are: Sagar to Chhatarpur, Damoh to Panna, Satna to Chhatarpur, Chhatarpur to Mahoba and Hamirpur, Jhansi to Banda and Chitracoot Dham (Fig. 26).

The chief routes are from Banda town to Jhansi, from Banda to Sagar and from Mahoba to Hamirpur through Chhatarpur to Garhi Malehra. Banda town is situated at the junction of roads from Fatehpur, Kanpur and Mahoba to Chitracoot Dham.
While the Chhatarpur town is situated at the junction of roads from Banda and Mahoba to Sagar and from Nowgong to Rewa through Panna to Satna. Other chief towns connected with the metalled roads are Charkhari, Maudhah, Rath, Nariani, Rajpur, Ajaigarh, Pawai, Bijawar and Laundi etc.

As mentioned above it is clear that in the region a subsistence rural economy exists and, the communication systems have little influence on the distribution of settlements. Except in the case of a few trade centres, which are of comparatively recent origin the settlement pattern and distribution of rural areas is guided much more by other factors than the system of communication and transport. But the influence of transport and communication system is seen in the urban-agglomeration of Panna and the semi-urban agglomeration of the mining and trading centres. Thus Kulphar, Halparpur, Maharajpur etc. grew up as centres of trade and as well as transport. As they are also route centres, the criss-cross formed of the elongated belts of houses has led to the development of an apparently agglomerated pattern, and linear pattern is also developed according to the road system.

Thus it may be concluded that the development of transport and communication and also settlements may be correlated with the topographical conditions of the region. It is noticed that the northern plain reveals a net work transport and communication system, the southern hilly tract
however is empty in this respect. Besides, the hilly tracts are thickly forested and have poor sandy soil. Settlements are also very sparse. The organisation of traffic routes and means of travel is therefore essential for human beings in exactly the same way as the cultivation of land or the development of trade, which are after all effected by the geomorphic features. Thus the effects of geomorphic character may be clearly visualised on the construction of communication lines and similarly on the settlement distribution in the region. Hence the communication system is a faithful indication of commercial activity and the State of civilization in the region in which it has been developed.
References:


Aime Vincent Perpillon (1966) 'Human Geography' Translated by the late E.D. Labarde, p. 311.


