A. NEED AND PURPOSE :-

The need of present type of study in the field of 'Industrial Geography' from Geographers' angle is quite common and essential to focus the spatial distribution of industries and the factors operating in their location. Manipur, though, is a backward state but a conducive zone for developing the existing as well as prospective industrial units, may they be small or medium.

This type of study is further essential because the evaluation of the developmental stage of a country or a region can only be judged when the appraisal of its industrial development is already taken into consideration. Moreover, the industrial development is the true index of modern development and civilization.

The present study is mainly concerned with the analysis and interpretation of the various geographical aspects of the industrial units, ranging from small cottage industries to medium and large scale industries, both existing and prospective of Manipur state.

This is an important aspect of industrial geography which has been reflected elsewhere in case of Manipur. The remarkable growth of industrialization in India, specially after the independence has resulted more congestion in some industrial regions of the country leading to regional industrial imbalance. Thus, large industrial cities in India are becoming larger and more congested day by day. It has been disturbing the ecological conditions of the area and has polluted the atmosphere of the larger cities to a large extent.
The growth of small industrial centres alone can serve as an antidote to this problem.

Consequently, the idea of bringing balance in industrial growth has drawn the attention of planners, administrators, sociologists, economists and geographers and the analytical study of such industrial growth and possibilities caused specially by the marked development in transport facilities, urbanization and general economy since independence. Besides these, the planners and researchers have also thought of such studies in the field of industrial geography for solving the growing unemployment problem in any region of the country.

This type of study is quite purposeful from the point of view of understanding the relation between industrialization and its impact on the standard of the life of the people of the region concerned. This type of study is also relevant, purposeful and inevitable in the present economic and political set up of our country because of the following reasons:

1. Since, even the 1981 census has not prepared any specific data in respect of viable industrial units of the state, the present study has become a must for suggesting some views on the regional development of this state.

2. The physical materialization of various programmes of industrial uplift in a neglected and backward state like Manipur, can only bring the state of balanced regional and industrial growth in the country like India.

Therefore, the study of present and prospective potentialities of industrial growth as well as their deficient infrastructures in case of Manipur is to get utmost importance and should be
undertaken without further delay, it is also essential to make an extremely useful inventory of the various types or grades of industries located at various places. So that their implications may be understood and kept in view while making a planned economic development of the area under study.

The present study is not about planning, but it is certainly connected with certain aspects of innate spatial or geographical structure of the society upon which regional planning must be based.

3. The development of small industrial units are the only hope for solving the growing unemployment problem and to minimise the growing burden of large industrial cities.

Though it is generally agreed that the large cities have clear cut advantages over small centres for the location of industries, but today the country is committed to a policy of dispersal of industries leading to widespread rural industrialization, specially in the field of small scale and cottage industries as well as decentralisation of large scale industries for achieving a balanced economic development throughout the country.

The small and medium sized industries are the best alternatives for this purpose and they ought to be promoted as counter-magnets to large industrial units and as nurseries of over all industrialization of a region or country as a whole.

4. Lastly, a specific analysis of the industrial man-power in the state is also of some practical value to the planner as well as to the administrators engaged in developmental programmes of the region.
The industrial potential of Manipur is satisfactorily high both in natural resources as well as human resources. Inspite of these resources there is hardly any large scale industry. So, Manipur remains one of the economically backward states.

There are only some cottage and small scale industries with a few medium sized industries, worth the name. So, the purpose of this study is not only to study the existing geographic, economic, social and cultural factors regarding the industrial development of Manipur state but also to analyse its prospective backgrounds industrial aspects.

B. SCOPE:

In view of the above general backwardness, the industrial development in Manipur would be mainly oriented to the local market and the regional market rather than the national or international markets.

Due to the limited possibilities of growth of national market, there will be always conscious effort on the part of the local elite to promote industrial development, mainly through indigenous entrepreneurship.

This would inhibit flow of interentrepreneurial skill and investment from other parts of the country. Later on, this will lead upthrust to the other demand based industries and boost the economic condition of the masses.
Since there is also possibility of large scale industrial development especially in paper, cotton-textile, Handloom and sericulture industries, the bulk of production will be exported outside the state rather than being used in fulfilment of local demands. Thus, there will be similar dilemma of choice in respect of the other industries also which will have to be examined in detail.

Moreover, in view of the dichotomous nature of the physiography of the state and the pattern of concentration of population, the industrial development will also have to take place by balancing economic and political interest of the hills and plains both.

So, an intensive research in the field of industrial geography for future development is deemed necessary by the researchers.

C. A SHORT BIBLIOGRAPHIC NOTE ON PREVIOUS LITERATURE IN INDIA :-

The work done by Indian geographers in the field of industrial geography can be traced back to the early forties only. A few geographers have been able to free themselves from the economic theories of industrial location and have produced a true geographical analysis of locational aspects as well as spatial distribution of industries. The future of industrial landscape in the context of the modern societies, is systematically analysed.

In the early forties the work of Loknathan, P.S. Location of industry in India, 1932 "The industries at Madras, 1939" and Recent trends in the distribution of cotton Mill industry in India, 1936 are worth mentioning.

He also studied the problems of migration of labour in south India and it played a useful role in the problems of Indian industries.

In a subsequent study Loknathan, P.S. reviewed the role of various locational factors in the establishment of cotton and jute textiles, sugar, iron and steel, paper, cement and heavy chemicals industries in the country.

Rao, V.L.S.P. studied, 'The geographer to the localization of industries 1942; and geographical factor to the ship building industry, 1941.

Moreover, he tried a serious attempt to analyse the geographical factors in the location of industries and he also disagreed with Alfred Weber who had given weightage to the economic factors only and he (Alfred Weber) had regarded the geographical factors as merely secondary or subsidiary. He further presented an appraisal of the role of geographical factors in the location of the shipbuilding industry. He also pointed out the major problems like the shortage of power, which make a great hinderance in the growth of industry in our country.

Rao, R.H. another geographer, in his study 'A note on the home industries of coimbatore district', 1930; presented an intensive survey of the cottage or home industries of the Coimbatore district, which included hand-spinning, handloom weaving, khadi, sericulture, silk weaving, carpets and metal industries.

2. Ibid, P.63.
3. Ibid, P.64 & 69.
4. Ibid, P.72.
Rao, R.S., in his study, 'Cottage industries of Malabar' 1932, has pointed out the problems of the cottage industries of Malabar and there he has listed the major problems, viz. handicapped in capital, and disorganised in market and he dealt more critically on 'coconut fibre industry', 'handloom weaving', 'mat-making' cabinet and soap-industries' etc.

Ghosh, S. studied, 'spatial distribution of industries in India', 1946; pleading strongly for the decentralization of industries rather than their indiscriminate concentration in a few favoured pockets, such as Bombay and Bengal for balance regional and economic growth.

Moreover, he stressed the need of planning for the spatial distribution of industries, giving fundamental importance in the balanced development of resources for every sectors.

Ganguli, B.N. studied, 'Iron and Steel industry in Bengal Bihar industrial Belt' 1949, and has presented there a survey report of the Bengal-Bihar industrial belt, pointing out a marked concentration of mining and metallurgical industries, which was a significant aspect of India's industrial growth. He has worked out three important raw materials of the iron and steel industry, (viz, iron-ore, coal and limestone) and showed their flow, cartographically, from the mining areas to the site of steel works at Jamshedpur, Hirapur and Kulti.

5. Ibid, P.72.
6. Ibid, P.64 & P.68.
7. Ibid, P.64 & P.68.
Karan, P. P. 8 has studied, 'Patna and Jamshedpur', in 1952 and identified the main patterns of the industrial landscape of Jamshedpur.

Krishnan, M. S. in his study 'Geographical control of mineral industries' in 1952 has picked up the example of iron and steel industry and emphasized the role of geographical factors such as proximity to raw materials and sources of power in the location of mineral based industries.

Ahmad, E. 9 in his studies 'Industrial zones and centres of India' 1956 and 'Bihar-A physical, Economic and Regional geography' 1956; has worked out the bases of delimiting industrial zones in the country.

He studied the main distributional patterns with their future prospects and distributional patterns of major industries and employment in each factory in the large industrial establishments and identified eighteen chief industrial zones in the country. He (Ahmad, E) has also critically examined the industrial policy of the Indian Govt. during the first five year plan and disapproved the current trends of concentration of industries and suggested a balanced regional industrial development in the context of planned regional division of the country without regional bias. Otherwise all planning would have been haphazard.

8. Ibid, P. 64.
9. Ibid, P. 64.
10. Ibid, P. 64.
Deb, A.K. has studied, 'Location of a new steel plant at Rourkela in 1953 and orientation of Industries in Howrah in 1957 and suggested the establishment of an industrial estate at Howrah in the view of the growing population and the consequent unemployment in "Howrah" region, which have prospects and possibilities of industrialization.

He (Deb, A.K.) has also studied the main aspects of urban planning in relation with employment problems of the city dwellers. Proposals of the first iron and steel mills in the public sector were made to the state Governments of West-Bengal, Bihar, Orissa and Madhya Pradesh by him after a deep geographical analysis.

Shreevastava, M.P. in his study 'Industries and employment' 1958, has analysed, the employment potential of the major industries of India.

Sinha, B.N. has presented his works on 'Heavy Industries: their problems and possibilities in Orissa,' 1959 (March), and 'Large scale, Medium and cottage industries in Orissa,' 1960.

There he has analysed the heavy industries in Orissa, mainly in the context of the state's agrarian economy and the prospects of the availability of cheap hydel power from Hirakud and Machkund projects and assessed the major locational factors such as raw materials, power and labour in the establishment of cement, iron and steel, ferro-manganese, aluminium, galvanized pipes and refrigerator industries.

11. Ibid, P. 64 & 68
He (Sinha, B.N.) has also analysed the problems and prospects of industrialization in Orissa special reference to the small scale and medium size industries of the state and has studied the total employment, present structure and the prospects of growth of a large number of industries like glass, paper, sugar, rice and pulse mills, ceramics, jute-pressing, bailing and weaving, and leather.

Banerjee, M. 14 has presented 'A preliminary study of Maikal plateau of Madhya Pradesh' 1960 and in her study of the Maikal plateau has referred to the problems and prospects of industrial growth of this area.

Kuriyan, G. 15 in his studies, 'Industrial development in India since independence,' 1958 and 'An analysis of the spatial distribution of industry in India with special reference to population, 1962,' has presented a survey of the industrial development of the country in relation with the first two plans of the national reconstruction and there he has drawn our attention towards the uneven distribution of industrial activity in the country, causing regional economic imbalances. He has also analysed the present structure of Jute and Cotton textiles and iron and steel industries and has suggested expansion of many other industries.

Chaudhari, M.R. in his studies on Indian industries; Development and location; An economic and geographical appraisal; Calcutta 1962; and 'Iron and Steel industry of India,' Calcutta 1964; and industrial estates in West-Bengal,' 1965 and 'problems and dispersal of industries in West Bengal,' 1968', has traced the interesting history of industrialization in India, and its

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15. Ibid, P.65.
development during the first two decades of planning. He has further analysed various theories of industrial location, which are basically influenced by geographical factors. In a separate study, he has also presented an assessment of the growth of iron and steel industry in India.

17. Hameed, S.A. has studied 'Industrial pattern of Telangana' in 1962, wherein he has analysed the causes of Telangana's industrial backwardness and suggested measures for removing the existing regional imbalances in economic development of Andhra Pradesh. He has also attempted an appraisal of some of the main industries of the Telangana region.

18. Ganapathy, V.S. and Bhanumati, I.V. have studied 'Manufacturing industries in and around Poona' (1963) focussing the attention on their survey of the manufacturing industries in and around Poona.

19. Dayal, P. has studied on 'Location and Development of aluminium industry in India 1958, 'Industrial location in India 1964'', and 'sugar industry in India, 1968' and therein he has presented a geographical survey of the raw materials and analysed their role in the location of the industry. He also pointed out the new trends in the development of India's aluminium industry which has rich resources in the country.

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17. Ibid, p.65.
He (Dayal, P.) has thought that the inadequate supply of cheap power, was the main defect which hampered the full growth of industries. But, he has also realised that the home market possesses great possibilities for stimulating the rapid growth of the industry which should be exploited. He has made strong plea for the geographical factors in the location of industry and proposed sites for location at Salem, Hospet, Vishakapatnam for iron and steel plant in south India, favouring Salem as a perfect site.

Moreover, in his separate study on 'the major trends in the development of sugar industry,' he has pointed out some problems like irregular supply of cane, low-yields, low sugar content and a short crushing season.

20 Durrani, P. K. has studied 'Industrial development and locational factors in Rajasthan' 1965 and 'Location of Cement industry in Rajasthan, 1967' wherein he has examined locational factors and the industrial development of Rajasthan and has given a sound base for establishing chemicals, fertilizer and woollen and cotton textile industries, though power resources are being seriously handicapped. He has also made a detail study of the cement industry in Rajasthan, which are located close to the limestone deposits and the market centres but far away from the coal fields.

Tiwari, R.N. has studied the 'Location of Sugar Mill 1961' and 'Glass industry of U.P. 1962', 'Industrial prospect of U.P., 1965', and 'Dispersal of industries in Uttar-Pradesh, 1968' wherein he has analysed the significance of vast population and sound resources base in Uttar-Pradesh and concentration of cotton textile; minor engineering; food; chemicals; ceramics; and metal industries in Delhi-region.

He (Tiwari, R.N.) has also worked out the operation of economic factors such as freight charges, distance from the cane supply centres and the mode of transport, in the selection of a site for the sugar factory and has concluded that the proximity to the supply zone is the major attractive force in the location.

Tiwari, C.B. has also studied 'Prospects of small scale industries in Eastern Uttar Pradesh' 1967, and 'Sugar industry in Eastern Uttar Pradesh' 1968', wherein he has analysed the current trends of the small scale industries in East Uttar Pradesh and suggested the possibilities of future development of a large number of small scale industries in the context of the availability of raw materials and a ready market in the region. He has discussed the sugar industry's problems in Eastern Uttar Pradesh and suggested that the dispersal of sugar mills is essential for striking an economic balance in the region.

22. Ibid, P.71-72.
Singh, R.L. and other prominent geographers have contributed their studies on the various regions of India, touching briefly on the existing set up and the future prospects of industrialization in 'India Regional Studies', edited by R.L. Singh.

Singh R.P. has studied 'Bokaro-the future steel Town' 1961, and surveyed the prospects of iron and steel industry centre of Bokaro.

He has studied the problems associated with the evolution of the steel town and its main features of industrial landscape. In the absence of a large number of iron and steel industries, a large quantities of iron-ore are exported to other countries. So, he has provided a sound base for the location of iron and steel industries at Anantapur, Kurnool, Cuddapah, Khamman, Krishna, East Godavari, and Vishakapatnam after looking the vast reserves of iron-ore deposits in Andhra Pradesh.

Singh, J.P. studied 'The prospects of the Textile industries in Punjab and has suggested a rich agricultural resource based industries in the region.'

Tripathi, V.B. in his study on 'Trends and planning of industrial location in the Kanpur region', 1968', has pointed out the industrial landscape of the Kanpur region as well as stressed on the fact that the national planning for industrial location was vital for balanced economic development.

24. Ibid, P.68.
25. Ibid, P.70.
Verma, P. in his study on 'Location of Industries in Madhya Pradesh', 1968 has examined the importance of locational factors of primary, secondary, and tertiary industries of the state.

Chatterjee, A.B. has presented the 'Changing spatial pattern of industries of Howrah' in 1968, in the Howrah region and concluded that a bead like structure of industrial region has developed due to the initial concentration on the Hoogly river bank and a considerable shifting has taken place inland with the development of rail and road transportation.

Karannavar, M.F. studied 'Industrial landscape of Bhadrawati town', 1968, where he has analysed the industrial landscape of Bhadrawati, the second largest industrial centre of Mysore, with a unique concentration of iron and steel, cement, paper, and other allied industries.

Lal, R.S. in his study on 'Industrialization and its socio-economic impact in lower Ghaghara-Gandak Doab', has analysed the process of industrialization in the lower Ghaghara-Gandak Doab and traced its impact on the development of the transport system, employment structure and the general economy of the region.

27. Ibid, p.66.
29. Ibid, p.66.
30. Service centres of the lower Ghaghara-Gandak Doab (A geographical study) - by Rama Shanker Lal.

31. Mishra, S.M. in his study 'Industrial prospects of Uttar Pradesh' 1968, has investigated into the industrial prospects of U.P. and found out some complexities of social, political, and economic factors which are responsible for the industrial backwardness of the state.

32. Pathak C.R. has presented in his study on 'the Industrial growth dynamics in the Damodar Valley region,' 1968, the dynamics of industrial growth in the Damodar Valley.

33. Ram, L.N. has analysed the role of regional factors in the industrialization of the south-eastern part of the Chhota Nagpur plateau (Bihar) in 1968.

34. Sinha, V.N.P. has studied 'Ranchi-Industrial complex in Bihar' 1968, wherein, he has presented a survey of the recent trends in the distribution of industries in the Ranchi industrial complex and traced the role of geographical conditions in the industrial setting.

35. Gadhshubli, R.G. presented a topic on 'The role of iron and steel industry in the development of economic regions in India and Soviet Union' 1968: wherein he has compared the role of iron and steel industry in economic regionalization in India and in the Soviet Union.

31. Ópiditi (A survey of Research in Geography-ICSSR) P.66
32. lbid, P.66.
33. lbid, P.66.
34. lbid, P.66.
In location of industries and regional studies, the researchers have discussed the location of industries from micro to regional levels, based upon natural resources.

Here, according to Chakrabarty (1975), the attention of the progressive entrepreneurs could be drawn towards these factors of industrial location.

According to Desinga Rao, 1975, 'The provision for electricity could positively affect the location of industries in the rural areas'.

Again, Mukharjee, 1974 has stated that many of the industrially backward areas have good potentiality for industrial growth, viz, Nagaland having tribal and meagre skilled labour with little investment and power-supply, possess a considerable potential for agro-based. (Sugarcane manufacturing, etc.) and forest based industries.

Vasudev Rao, 1975 has also stated that a region could be developed only by decentralizing the industries from the urban areas and bringing them to the doorsteps of the rural people and there is a close relationship between the size of the settlement and that of industries. A higher order settlement would attract large industries. Thus, a large industry itself is a promotion to urban growth.

36. Ibid, P.27
37. Ibid, P.27.
Lastly, according to Seth & Gulati, 1975, 'Sometimes a new industrial node emerges at the response of physical resources and more than that due to increasing capital investment and expansion of skilled labour markets. In addition to the above stated studies in the field of 'Industrial geography', a large number of Indian geographers have recently studied in different branches of geography including industrial geography in our country.

During the last few years, a number of papers have been contributed and several research projects have been in progress in the field of industrial geography.

D. STATEMENT OF PROBLEMS

Manipur has two distinct regions of culture with different demographic, social and economic characteristics. Firstly, the central valley, which is characterised by a high density of population, a developed social set-up, using better techniques of production.

Secondly, surrounding the valley, is the hill region, which is sparsely populated with economic and socially backward tribals. They have traditional mode of production in unorganised sectors and hardly there is any surplus which could be traded. For sometime to come, this dual economic characteristics of the state is likely to continue inviting tribewise and areawise solution among the inhabitants of the state.

Therefore, any developmental programmes for the state should aim at improving the economy of both these sectors separately.

Consequently, some objectives of this type of study in the state are:--

1. To assess the Industrial potentialities of the state in relation to (a) Physical or natural resources and (b) human resources.
2. To understand the problems and prospects of industrial development on the basis of its available resource potentialities, socio-economic conditions, and other infra-structural activities.
3. To find out the constraints on the industrial development by analysing its past and present industrial development of the state.
4. To understand the feasibility of future industrial development of the state in both sectors of cultural and physical entities—plain and hills.
5. Lastly, to focus the final shapes of viable industrial units in the state to the local planners, entrepreneurs and administrators.

E. THE WAYS OF APPROACH AND NATURE OF FIELD WORK:--

The data have been collected from various sources including published and unpublished, official and unofficial records, published literature and from personal field investigation where
the data has been found deficient and out of data for the purpose of study.

The only secondary data available in published form have been the census figures of 1981 and of earlier periods. The economic and cultural tables at village and sub-division level, statistical handbooks, district census handbooks, Economic Review etc. published by statistical department of Manipur have been consulted for necessary data.

Data regarding annual plan outlays for 'five year plan periods', available from state planning department, Govt. of Manipur have also been taken into consideration.

Moreover, Data regarding the establishment of industries, industrial production and employment etc. have been taken from the Industry department and D.I.C.s, Govt. of Manipur. Various other economic data such as list of industrial units, markets, and vocational institutions etc. have been collected from concerned districts and sub-divisional offices and various agencies in the field.

Sources of Maps:— The following maps which were available from different sources have been used in the present study:

1. Scale 1:1,000,000 (State map of Arunachal-Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland & Tripura) second edition, 1984 by printing group of survey of India. (Projection international: polyconic)
2. 1" = 4 miles
3. 1" = 6 miles or 1 cm = 6 kms.

As mentioned above, data are mainly based on secondary data. Primary data are also collected. Thus basic findings have been systematically and critically analysed.

As a local man, the author being intimately acquainted with the area, has successfully interviewed several persons who were engaged in different small industrial units and has been able to collect lots of information relevant to the present study. Detailed field data have been also collected for sample studies of different types and grades of industrial centres, selected from all parts of the region. Before compiling and computing data and preparing the maps on their basis, utmost care has been taken in checking the accuracy of the data.

So far as the general geography of the region is concerned, on the physical side, attempt has been made to study the typical features of all the physical aspects of the region and on economic and cultural side, the maps have been prepared on agriculture, extension of cultivation and distribution of crops, industrial employment and distribution of industries, growth and distribution of population and other demographic characteristics.

In making all these maps, specially the isopleth and choropleth techniques have been used. Some graphical and cartographical representation are also used while making these maps. The main source of the data used in this thesis have already been indicated earlier.
Most of these are unpublished data which have been gathered from official agencies in the state.

The compilation or computation of these relevant data has involved a lot of mathematical calculations and process, particularly in the data relating to landuse, agriculture, population, industries, etc.

F. METHOD OF ANALYSIS :-

'Any data that cannot be subjected to cartographic analysis may not be treated to be geographical.' Therefore, a systematic approach on firm statistical data, with cartographic analysis and representation has been made up in the greater part of this study.

Besides, published and unpublished literature, reports and Government's papers, pertaining to the region under study; have been supplemented and checked by personal field observations. Thus, the entire study is based on two types of works:-

Interpretation of maps mostly showing cartographic representation of the data and the analysis of the data and their correlation. Moreover, the census reports, the feasibility reports for all the various industrial projects, the resource based existing industries of the state and other infra-structural potentials have been collected and critically analysed with an awareness of the local socio-economic setting.