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GEOGRAPHY ASSOCIATION OF MIZORAM

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EDITORIAL

Geography as a science of spatial organization is concerned with the understanding of places; environments and distribution of phenomena that make the planet earh the abode of man. It embraces within its scope the whole geoshere (Balchin, 1970). The focus of the study has to concentrate on man's occupation of the area, his relationship and interaction with dynamic phenomenon of space (Misra , 1996). 'No one', however, 'who aspires to change the way we think about and understand the world can do so under circumstances of their own choosing' (Harvey 2001,vii). It is, therefore, advisable to seek relationships and magnitude of interactions through classes of data from within and amongst the components that are critical to spatial organization (Schaefer, 1953,226-49) and provide tools for objective description and interpretation to the 'variable character of places of the earth as the world of man' (Hartshorne, 1959). The very nature of geography, therefore, makes it essentially multidisciplinary in scope.

Geography even in modern periods has undergone phase changes from a discipline of mere collection of 'new information about the world (an outgrowth of classical period and evident in explorations of areas little known to west European and North American centers of power) to propagating its knowledge and relevance in academia (about economic and resource endowments) to environmental preoccupation during the early decades of the modern period (environmental determination, genre de vie, human ecology and their extension) to establish facts through the collection of data and their interpretation (Chrorological approach) to the 'uses made of geographical expertise' to more integrative but specialized and applied branches (Social, political, urban, rural, gender, regional, development geographies) in an era of ever expanding knowledge (Freeman, 1961). The discipline has graduated in its methodology from collection of data to universal interpretation (Colonial geographies of west European Countries and the USA) to particular geographies of spatial complexes. Reassertion of space/ region in cotemporary times (Post- modernistic approach) and emphasis on micro level regional

studies and geographers training in 'fusing the results, if not, the methods, of a host of other subjects' (Wooldridge and East, 1958,25-6) and their ability to understand the whole of regional complex through the study of its constituents parts (Stoddart, 1990,159) and their independencies, bestow upon them unenviable responsibility. It also offers geographers a role to be an ideal resource analyst and professional advisor to policy makers (Mitchell, 1979,00.2-6,301-304). They are supposed ' to gather up the disparate strands of the systematic studies, the geographical aspects of other disciplines into a coherent and focused unity, and to see nature and nurture, physique and personality as closely related and inter-dependent elements in specific regions' (Wooldridge, 1956,p.53). This entrusts them with the task ' to identify how and why does one part of the earth's surface differ from another (Wooldridge and East, 1958,p.28). This also makes geographers an ideal choice for planning purposes on global, national and sub-national levels.

Role of geographers as analyzer and synthesizer (Hagget, 1983,Darby, 1983,14-26) has been gaining recognition, as the protagonists of existing models of economic growth and development have increasingly been getting disillusioned with the growing interregional and interpersonal disparities as well as deteriorating environmental conditions. This has necessitated the evaluation of the components of a regional landscape and the total combination of phenomena in each place…(Agnew, 1990,463) It also requires the analysis of the processes that affect such combinations. Therefore, geography must always have an evolutionary approach giving due weightage to temporal sequence without obscuring the existing spatial patterns (Wooldridge and East,1958, 47)

It is in the light of the above that when Geography Association of Mizoram (GAM) was formed in 2001 and persuaded the Mizoram University authorities to establish the Department of Geography under its umbrella, it also took up the responsibility of publishing a journal devoted to applicability and development of regional studies. The Association also took upon

itself the responsibility to nurture ' raw materials of the intellect at hand' free of 'presumptions, prejudices and political predilections that at any time constrain thinking in ways which may at best be understood a repressive tolerance and at worst as merely repressive (Harvey, 2001,vii). The basic aim of the GAM has been to encourage the local academics and scholars to the well being of the society through their researches and to break the shell of self-complacency to focus on the 'realities' of the region. For, they are supposed to be the best judges of processes and structures that have evolved in the region. They are also believed to be equipped to know and evaluate the aspirations of the people.

As the editor appointed by GAM it has been my humble but earnest desire to bring the first issue of GEOGRAPHIC out of the hazy conceptual arena to 'objectively definable reality' and provide a common platform to the colleagues, scholars and different functionaries of the society. It is for this view that the journal has been named GEOGRAPHIC, for all the disciplines dealing with phenomena influencing human life must take cognizance of space, interlinkages, interdependencies interactions and relationships.

It is, thus, natural that most of the articles in this first issue of GEOGRAPHIC deal with the issues relevant to this part of the country. Though it is a much belated issue (the first issue was supposed to have been brought out in 2004) I believed it will be able to enthuse scholars to contribute to this annual journal, in the larger interest of the academia and the society as a whole, by exploring, analyzing interpreting and synthesizing the regional realities objectively. Naturally my reliance will be greater on colleagues from our fraternity and researchers who are actively involved in endeavors of understanding and defining reality.

I as the editor of the journal also invite comments and suggestions to remove the shortcomings and to improve upon the quality of the journal and its articles in forthcoming issues.

I'll fail in my duties if I do not acknowledge the support and encourage rendered to me by my associates in the Association and from Colleague of the Department. I am particularly indebted to my sub- ordinate staff Ms Kapthangi, Mrs Labiakdiki and Vanlalhmuaka who found time outside the office hours to finalize and arrange the manuscripts for final publication. I also extend heartfelt gratitude to Linkman Publication, Titagarh. (West Bengal) for sponsoring the printing of this first volume of Geographic. I hope all the endeavors will encourage the users of this journal to provide essential support for the continuance of this journal

GIRINDRA KUMAR

Aizawl

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CHAIRMAN'S ADDRESS
3rd ANNUAL CONFERENCE

GEOGRAPHY ASSOCIATION OF MIZORAM

Dear Colleagues,

It gives me immense pleasure to get this opportunity to welcome you in this 3rd Annual Conference of Geography Association of Mizoram (GAM) even though it is by default .I, at this point, must inform you that Our President, Dr. Rualkhuma Colney who should have been chairing this session, could not come prepared for the event due to familial obligations which took him out of the town. He entrusted me to address you instead. I, to the best of my ability, will try to discharge my responsibility as Vice-President of this association.

All of you are aware of the circumstances under which this association had to be formed. We succeeded in our attempt, with the cooperation from Geography Student Association then formed, to persuade Mizoram University to establish Geography Department at P.G Level under this University. With the success on this front, GAM must now make efforts to attain goals that it set before it and which are enshrined in its constitution. It will not be possible without your active participation in the matters of the Association. I, therefore, urge upon you to justify our existence in the larger interest of the discipline of Geography and fulfill our obligation towards the people.

It will not be out of place here to mention that in the world of academia there are many who believe that Geography does not have any specific subject matter. Therefore, it should be done away with in this time of super specialization. However, little is realized that this is the only subject, which specializes in comprehending the spatial organization i.e. not only the distribution of phenomena but also the processes, resultant of which distinguishes one area from the other, a region from the other.

Geography has graduated from a subject of simple description of distribution of phenomena to interrelationships to the understanding of interactive processes that not only impinge on distribution of phenomena but also on their nature and magnitude. The methods and approaches to the subject have also been undergoing changes. Though they are complementary, the focus in recent times have increasingly been shifting from systematic approach to the understanding of structure and processes in different areas that helps in the evolution of regional complexes. It is this context that provides students of geography a special role, for; governmental/administrative explanations generally betray the objectivity in

favour of strong interest groups at the cost of the people and their habitat. With training in understanding spatial organization and its analysis with the help of field studies and developing survey techniques, geographers are endowed with unique capability of interpreting phenomena and synthesizing the information objectively. This, I believe, helps policy makers and planners to suggest more rational strategies for development in larger interest of the people.

It is in this light that I urge upon all members, particularly the teacher members from different colleges, who in part fulfillment of the courses help their students to undertake micro level studies and also guide them in processing the information obtained from primary unadulterated sources, not to allow such endeavour to go waste. Let us join hands and try to assimilate such information and explanations under the aegis of our Association – the GAM. That will be our one positive contribution towards the fulfillment of our obligations to the Association that we have formed.

It will not be impertinent to mention the role that a teacher is assigned to undertake. Generally in common parlance people consider the job as soft. I perceive it differently. There are very few non-teaching professionals as well as the commoners who will be able to understand the agony that a teacher has to suffer. A teacher as a member of the family and the society is expected to discharge his duties within the norms laid down by the society. At the sometime, he is expected to be the conscience keeper of, philosopher and guide to the society. He, thus, has to live two lives simultaneously. He has to be within and without the society at the same time. Not only this, a teacher also has to undertake three diverse functions –to quote Johnson- teaching, administration and research within the same frame of time. Teaching and education administration being common it is research works that distinguishes one teacher from the other. We have opted for this profession. We will have to live with it.

GAM provides us a forum where we may be able to resolve our problems as practitioner of the discipline of geography. It also provides us a platform through which we may be able to exhibit our utility to the people of Mizoram at large. As you are aware, we have committed ourselves to bring out a journal based on research papers to inculcate a habit of inquiry amongst the teachers and students alike and possible resolutions of the problems as perceived by them. This may also help in the evolution of social choice and democratization of developmental processes and their resultants. This gives me pleasure to inform you that the first issue of the journal that I prefer to name **GEOGRAPHIC** will be ready for publication by July 2006. We, the office bearers of the Association will like the publication to continue as our effort at least once a year. I invite you to write papers based on your investigations and research for this journal of yours.

I once again welcome you to this General Conference of the GAM. I also hope that this Conference will lay the foundation for greater interaction amongst us to make ourselves more and more useful. It is possible only through your active participation.

Thank you.

G. Kumar

Dated Aizawl
The 19th May 2006.

IMPACT OF MORPHOMETRIC ATTRIBUTES ON LOCATION AND DISTRIBUTION PATTERN OF SETTLEMENTS IN NORTH EASTERN PART OF MIZORAM

-P. Rinawma

ABSTRACT

(*The study of settlement is important as the various aspects of settlement in a region reflect man's relationship with the environment. Settlements have gradually evolved over a large period of time and by analyzing their sites, types, spatial pattern and functions, one could decipher the history of man's exploitation of the surrounding environment and resources. Morphometric analysis is essentially needed for identification of terrain characteristics of a region like North Eastern part of Mizoram. The present analysis is based on the results of some of the morphometric techniques, which have been applied to bring out the nature of terrain as morphometric methods and techniques are of great significance from the point of view of terrain evaluation. Attempt has been made here to examine the impact of some of the Morphometric attributes on location and distribution pattern of settlements in North Eastern part of Mizoram. The Study of some of the morphometric attributes shows negative as well as positive sites, which favours as well as hinders the growth of settlements. The settlements are located along the ridgelines where initially availability of drinking water was sufficient for small settlements. No settlements are located along the river valleys. The location of settlements in the hill slopes or watershed areas in this region is also to climatic factors as well as cultural factors.)*

INTRODUCTION

Terrain evaluation has its importance not only as an academic discipline but also have more importance in the field of soil science, economic geology and for land use and landscape planning, for development of agricultural resources in the present world. Terrain evaluation has special significance. Regional terrain studies have many importances in agricultural planning, land utilization, forest development, selection for construction of dams, transport and

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communication networks and settlement patterns. The knowledge of terrain has helped very much in solving practical planning problems like construction of dams, airdrodrome, railways, construction of building and construction of bridge. The application of the detailed geomorphological maps, other map can be compiled providing information's about landforms, favorable or unfavorable for agricultural land use, housing, and settlement etc. of any region. Therefore, the importance of terrain evaluation is many in everyday life of the people.

The study on morphometric attributes has been of great importance as morphometric analysis of maps aims at the distinctive discloser and precise definition of the form of land as depicted on the map. The techniques of morphometry are of great use in the rapid exploration treatment of large areas in helping the map interpreter to reduce the forms of diversified country to some kind of order and in the treatment of certain class of data, which are not well derived from the field study. The study of settlements is important as the various aspects of settlements in a region reflect man's relationship with the environment. Settlements have gradually evolved over a long period of time and by analyzing their sites, types, spatial pattern and functions one could decipher the history of man's exploitation of the surrounding environment and resources.

OBJECTIVES:

A preliminary attempt has been made in the present exercise to outline the impact and influences of some of the morphometric attributes on the location and distribution of settlements in the north –eastern part of Mizoram. Since the area is a rugged hilly terrain represented by youthful topography, the litho logical and structural characteristics of rocks has an ample scope for the investigation into geomorphological processes and its impact on human life. It is interesting to note that morphometric attributes has greatly influenced the way of life of the tribal population living in the area.

STUDY AREA:

The study area lies between 92º 50'- 96º E Longitudes and 24º-24º8' N latitudes and spread up in the survey of India topographical Sheet No. 83 D and forms part of administrative

regions of Darlawn block of Aizawl district of north-eastern part of Mizoram state. The area is lying between the Tuirial river in the western side and Tuivawl- Tuivai in the eastern side. Within the area there are two settlements Darlawn and Ratu villages with a total population of 6129 persons. The study area consists of entirely of hilly rugged topography with deep and narrow V- shaped valleys. The hill range is running from north to south and is occupied by sedimentary rocks of conglomerates, sandstones, shales etc and their various inter-mixtures. The physiographic expression of the area imported mostly by N-S to NNE trending steep longitudinal hills and narrow valleys. The area is characterized by a number of hillocks. The eastern flank of the ridge is steeper compared to the western flank. The difference of elevation from the valley floor to the hill tops 1200 is meters.

SOURCES OF DATA AND METHODOLOGY:

The required data for the study have been gathered from both primary and secondary sources. Some of the informations were collected from Statistical Hand Book of Mizoram (2003), published by Economics and Statistics Department, Government of Mizoram and topographical sheet prepared by Survey of India on the scale 1:50,000, various Morphometric techniques has been applied. The morphometric techniques, which have been applied for the study, are the characteristics and nature of average slope, drainage density, and stream frequency. The above-mentioned methods and techniques have been applied to compare the results and for further generalization and correction of accuracy, extensive field works have been undertaken. It is a recent phenomenon that geomorphologists have started using the quantitative techniques in analyzing the various geomorphic features of the surface of the earth. The analysis was largely related to slope and flurial and is now known as Morphometric techniques.

SLOPE ANALYSIS:

The analysis of slope and its representation on a map has been the subject of much research throughout the world. The calculation of average gradient either along the steepest slope or along a road is a simple matter. But to workout some representation of average slope

particularly in area of complicated relief and to express this on the map to provide a clear picture which may help the geomorphologists to make important deductions, is a much more complicated affair. There are different methods suggested by many geomorphologists for the study of average slope of an area. Some methods are tedious and a time consuming and the results obtained are also not satisfactory. So, the method suggested by G.K. Wentworth to determine the average slope of the region has been used. This method is simple and the results obtained are also encouraging to get the general picture of the region.

From the average slope map of the north-eastern part of Mizoram, one can recognized that most of the area is covered by steep slopes. The slopes of 30-40 degrees are found in a small pocket in the valleys side. The average slope map of the area revealed that it is mainly dominated by the slope degrees ranging between 40 –60 degrees. The slope of 60 to 70 degrees occupies very less percentage of the area. It covers the south western corner of the area under study. The study of slope and its functional relationship with causative factors seems to be inevitable in existing nature of land configuration. It is particularly so in Mizoram, where both exogenetic and endogenetic forces are still in operation, simultaneously.

DRAINAGE ANALYSIS:

Interest in drainage basin morphometry has since R.E. Horton drew attention in 1945 to certain basic laws. The work of Horton has been built upon and extended since then and knowledge of mathematical properties and channel of drainage basins greatly extended. The channels of the drainage network and the landforms they drained are bound together in a close relationship.

DRAINAGE FREQUENCY:

Stream frequency or drainage frequency is the measure of number of streams per unit area. It shows the number of streams per unit area. For the computation of the stream frequency, the basin is conveniently divided into grid squares of one kilometre. The number of stream in each grid is counted, tabulated and quantified. In order to simplify the analysis, all these figures are group into three categories as follows.

Texture	Steam Category	Frequency
Corse	Below 6	Low
Medium	6-9	Moderate
Fine	Above 9	High

The choropleth map is drawn according to the above class group to study the spatial variation of streams frequency over the surface at different part of the region

A glance at the Drainage frequency map of the area understudy, it can be seen that most of the area is covered by the category of 6-9 streams per sq. km. The category of below 6 streams per sq. km covered mostly of the main ridges of the area from north to South. The high frequency group covered almost the whole river Valley of Tuivawl river in the eastern part and Tuirial river in the western part of the region. It is interesting to note that the frequency of streams in the area depends upon a number of factors. Such as climate, litho logy and structural characteristics of rocks relief and infiltration capacity or the permeability of the mantle rocks and bedrock. It is noticed that the regions of moderate and high frequency have the relief of fully dissected terrain. It is observed that the major drainage lines follows the lineaments indicating direct structural controls on the fluvial morphology. From the above facts, it is clear that the drainage evolution in the area is guided to a large extent by the nature of rocks strata occurring in the area. The adaptation of the major streams to the lineaments does indicate the structural dictation on drainage lines.

DRAINAGE DENSITY:

Drainage density refers to total streams lengths per unit area. RE. Horton (1945) defined drainage density as a ratio of total length of all streams segments in a given drainage basin to the total area of that basin and thus it can be derived as follows:

$$Dd = \frac{Lk}{Ak}$$

Where Lk = total lengths of all stream segments of the basin.

Ak= total area of the basin.

Using the above formula the drainage density of the study area is calculated. Basin with steep slopes and considerable relative relief will have a greater drainage density than low land basins of small relative relief. The calculated value of the drainage length of each basin are divided by the calculated value of the area of the basin. The drainage density is group into 3 categories.

Density	**Category**
Low	3-3.9
Moderate	4-5.9
High	6 and above

The drainage density map shows the low drainage density is found in the north eastern part of the area. The low density may be due to less dissected terrain of the area in the lower drainage basin of Tuivawl river. Generally, drainage density rises with increasing relief. The medium density category covers the whole central ridge and whole of southeastern part of the area. The high drainage density 6 and above dominates the whole western part of the area under study.

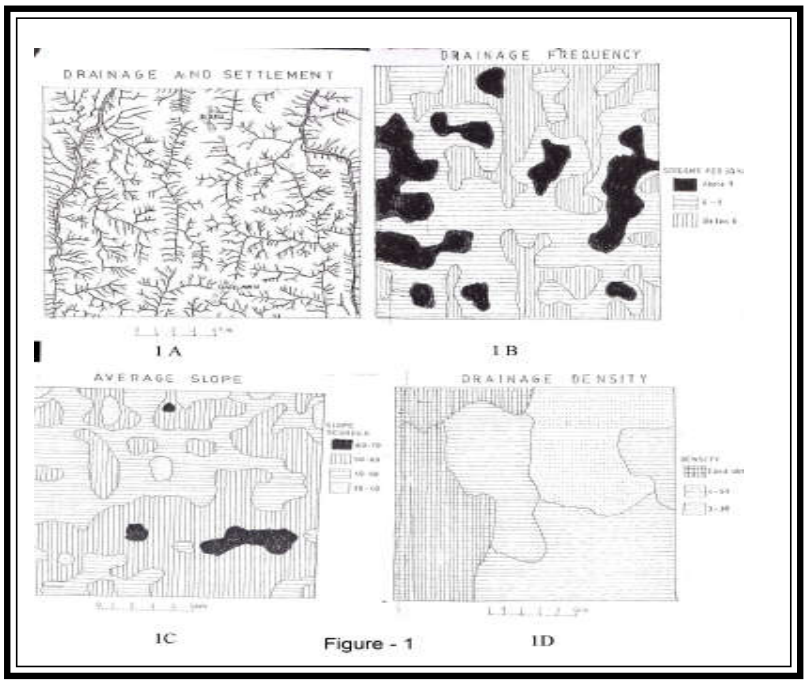

Figure - 1

MORPHOMETRIC ATTRIBUTES ON THE LOCATION AND DISTRIBUTION PATTERN OF SETTLEMENTS:

The location and distribution pattern and types of settlement are related by physical and socio- cultural processes, but the major factors which govern the distribution pattern of settlement are the relief, gradient of slope, drainage system, nature of the soil for cultivation and to some extent micro-climatic condition of the region.

The study of some of the Morphometric attributes of North-eastern part of Mizoram revealed very interesting characteristics of location and distribution of settlements. Attempts have been made here to choke out certain links between the Morphometric attributes of the region and the location and distribution of settlement. The impact of underlying rocks structure has indirect relation on settlement. The shapes of the landforms are the outcome of the inner structural and geomorphic processes such as elevation, depression and flooding. The structural of the landform influences the availability of building stone, soil metals, coal, salts, stable and unstable foundation, transport routes, or few spring, good or bad drinking water and unstable foundations, transport routes. It forces streams into regular or irregular flow, promotes or hinders navigation, increases or decreases the usefulness of water for power and produce various pattern of streams.

Surface form, soil fertility, availability of drinking water, nature of rocks or minerals deposits are the most important deciding factors for the location, distribution and pattern of settlements. Some of the favourable factors are regular surface, solid ground, space for expansion of settlements, presence of springs or rivers, accessibility from one place to another, protection against climatic hazards or biotic enemies, nearness to construction materials

The study of some of the Morphometric attributes of northeastern part of Mizoram shows negative as well as positive sites, which favours as well as hinders the growth of settlement. In the study area all the settlement are located along the ridgelines where initially availability of drinking water was sufficient for small settlements. No settlement is located along the river valleys. The location of settlements in the hill slope or watershed areas in this

region is due to climatic factors as well as cultural factors. As stated above, generally settlements are located in conformity with geomorphic characteristics, avoiding steep slope, slope instability area, poor foundation or swampy ground, limited availability of space for settlements, insufficiency of water, extreme altitude, non-availability of constriction material, lacks of fertile soil for cultivation and lack of transport facilities.

The first inhabitants, with their limited knowledge, made more or less rational judgment concerning choice of sites for their village. Important to them was the availability of cultivable land and close supply of drinking water. In addition, building materials and fuels are also important. The first settlers of this region must have are close by. In similar way, mistakes might have made which could be seen clearly in the light of later development. As the early inhabitant were head hunting tribe before the advent of the Britishers to the area defence could become the determining factor in deciding the site for settlement. They normally selected hill ridge slopes and hilltops as the site for settlement. It is believed and accepted that in the 17th century the Mizos, a mongoloid group of people, came to this region from the center of Asia China through Mekong valley (Myanmar) and probably settled down in groups at different places, forming villages. They were predominantly agriculturists and their method of cultivation is shifting cultivation. They reside usually in a single collection of houses, situated on the hilltops and hill slopes than a low level ground with a view to secure easy defence purpose as Mizos were head hunting tribes. The selection of sites for settlements was always on the hilltops where they could have a better defence of their village. To some extent, cultural and social factors play important role in the location and distribution of settlement in this region but the more important factors are nature of slope, drainage, and the more important is climatic factors. The river and stream valleys are in hospitable due to their harsh climate. On the other hand hillcrests and hill slopes offer good sites for settlement. The river valleys of Tuivawl are favourable for the growth of human settlement but due to harsh climatic conditions like hot saulty weather and malarious, people preferred to settle in the higher altitude where the climatic conditions is much more congenial for human settlement.

CONCLUSION:

Northeastern part of Mizoram is predominantly of rugged terrain. The hill ranges are running from the north to south with deep and narrow valleys in between the hills. The complex Morphometric attributes have been controlled by the geologic structure like folds and fault. Further litho logy of the rocks have great influence on the drainage pattern- parallel and sub-parallel on the one side and on the drainage and stream frequency on the other side. The structure and slope of the landforms in the area with its steep slope, deep narrow V-shaped valleys, parallel and sub-parallel pattern of drainage express the chronology of their evolution. Analysis of average slope, drainage frequency and density indicate its youthful stage. The study of some of the Morphometric attributes shows negative as well as positive sites, which favours as well as hinders the location and distribution of settlements. In the study area all the settlements are located along the ridgelines where initially availability of drinking water was sufficient for small settlement. No settlement is located along the river valleys. The location and distribution of settlement are related by physical and socio-cultural processes, but the major factors are relief, gradient of slope, drainage system and to some extent climatic condition of the region.

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SPATIAL ANALYSIS OF VILLAGES IN MIZORAM

Rintluanga Pachuau

ABSTRACT

(Since modern geography is mostly based on theories which attempt to explain spatial patterns and processes, the present paper attempts to test various scientific theories and models pertaining to spatial organization of settlements in Mizoram. The study reveals that not only the physical factors have exerted influence upon the pattern of settlements, but the socio-cultural as well as political factors have played significant role in the establishment and the process. The analysis of spatial distribution and dispersion at block level, using r_n value shows that the settlements in Mizoram at large, depicts a high random pattern only with few exceptions which, of course, have their own attributing factors locally.)

INTRODUCTION:

The factors that affect spatial aspects of settlements are as complex and varied as are the patterns and distribution. It is important to realize that the pattern so produced is a result of a number of forces, working either in conjunction or in opposition, over a long period of time. Not only the physical environment is operative in determining location of settlement, but cultural environment socio-political factors also play a vital role in determining the establishment and type of settlement and shaping the patterns. However, the role of physical factors is more pronounced in this respect, which is specially true in the case of Mizoram where application of modern technologies are limited and economies are predominantly agrarian nature. In Mizoram there are 817 villages in 2001, following an increasing trend if compared with the data of 1991, which has 785 inhabited villages.

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SPATIAL ANALYSIS

The spatial distribution of rural settlements shows that the average number of villages per 100 Km² of rural areas comes to 3.47, which is very low as compared to the density figure of the other states of the country. Out of 20 blocks in Mizoram, only 7 blocks have a density figure higher than the average. Chawngte block has the highest density of settlement, ie.,7.28 per 100 km² as against only 1.91 settlement per 100 km² in Ngopa block which is the lowest in the state.

The inter -village distance or spacing is calculated at 2.71km. The highest village spacing is observed at Ngopa block, i.e, 3.87 km. The lowest spacing, i.e., 1.96 km is observed at Aibawk block. If the average number of 3.47 villages is supposed to be uniformly distributed over 100km² forming a hexagonal pattern, the average theoretical distances between adjacent villages in the region should be about 2.71 kms.

The gross pattern revels certain striking facts of the space –size relationship of rural settlements. It may be seen that the universal application of the rural spacing and size relationship (Higher spacing between larger settlements and lower spacing between smaller settlements) can be applied only in eight of the twenty blocks, i.e.,Ngopa, Serchhip, Khawzawl, Hnahthial, East Lungdar, Darlawn, Reiek and Chawngte- all having related values between size and spacing.

Taking village spacing and size of settlement as yardsticks, the following categories have been identified:

1) Areas with Low Spacing and Size of settlements (More than 2.50 kms)

Under this category, there are eight blocks namely, Aibawk (1.96 km), Tlangnuam (2.01 kms), Lokicherra (2.07 kms), Chawngte (2.11kms), Thingsulthliah (2.52 Kms), West Phaileng (2.38 Kms) Lawngtlai (2.41kms) and Reiek (2.41kms). These blocks have population sizes of 583, 688, 453, 354, 794, 543, 331,and 392, respectively. It is observed here that the space-size relationship is applicable to only four blocks namely, Lokicherra (453), Chawngte (354), Lawngtlai (331) and Reiek (392). West Phaileng, in spite of its low

spacing, has large population size, i.e., 543 persons due to the fact that it is well served by good transport route. The influence for large size settlements in the blocks of Tlangnuam (688) and Thingsulthliah (794). They are well connected by transport links and share the urban economy to a considerable extent that keeps the size of settlements large. Topographical influence is an attributing factor for large size settlement in the case of Aibawk block. An elongated watershed, which featured the block in a north-south direction, serves as the only alternative for human habitation. The settlements so located on the watershed are connected by roads with Aizawl town.

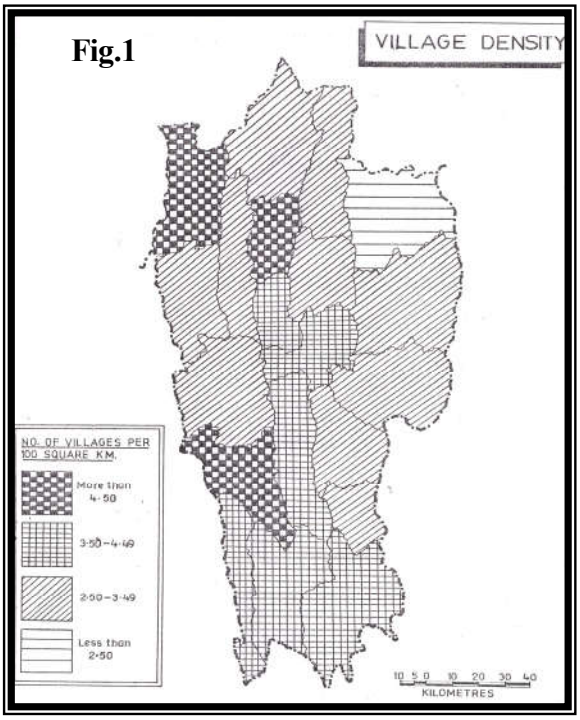
2) Areas with Moderate Spacing and Size at settlements (2.5-2.99 kms)

Seven blocks are identified under this group of spacing. They are Thingdawl (2.60 kms), Lungsen (2.66 kms) , Darlawn (2.67 kms) , West Bunghmun (2.69 Kms), Lunglei (2.70 Kms) Tuipang (2.74 kms), and East Lungdar (2.82 kms). Again in this category the universal application of the rule of spacing and size relationship can be applied only in the two blocks of Darlawn (583) and East Lungdar (687). The function of complex interplay of physical, economic and social forces are reflected in these areas into reverse space- size relationship. In spite of their respective moderately spacing, Lungsen, West Bunghmun, Lunglei and Tuipang have lower population size than they are supposed to. Another inverse relationship is observed in the block of Thingdawl where the size is much higher (644) if considered in terms of its spacing. Good communication network (NH No.54 and others) as well as availability of cultivable fertile river plains along river Tlawng has led to large size settlement in Thingdawl block. In the blocks of Lungsen (391), West Bunghmun (314), Lunglei (412) and Tuipang (302), either geographical (natural) or social factors are responsible for lower population size in spite of moderately high spacing. The dominance of Chakma population in the blocks of Lungsen and Tuipang with small but numerous scattered settlements have led to lower size of villages. In West Bunghmun, improper transport route and diverse climatic condition has been responsible for smaller population size; where steep slope and scarcity of cultivable land may be the influencing factors in Lunglei block.

3) Areas with Higher spacing and size of population (3.0- 3.4Kms)

Only two blocks, i.e.,Khawzawl and Hnahthial are identified under this block. They are both linked with good transport routes and having moderate climatic conditions. Moreover, these two blocks are well drained by river Tlawng and its tributaries, which provide cultivable fertile plots at several places. These factors favour the development of large village size. As a result, Khawzawl has an average population size of 674 and Hnahthial has a size of 716 persons per village.

Fig.1



4) Areas with High spacing and size of population (More than 3.5 kms)

Under this category falls three blocks, namely Ngopa (3.87 kms), Serchhip (3.78 kms) and Sangau (3.72 kms). The space-size relationship is best suited to the blocks of Serchhip (794) and Ngopa (776). Ngopa block, located on a huge Sialkal range that forms the watershed, is well drained by river Tuivai. Availability of cultivable land for jhum and moderate slope support the growth of settlement size. Serchhip block, which is located at

the heart of the state, has always enjoyed positive character such as good road network, moderate climatic condition and easy availability of cultivable land. Sangau block, in spite of its extreme location and difficult terrain, has a high village size due to socio- cultural factors.

DISPERSION ANALYSIS

Dispersion analysis of several attributes is influenced by physico-cultural environment and evolution with the changing pattern of socio-economic forces working with the development of science and technology. The actual distribution is settlement can be predicted through any statistical analysis with every unit having its own trend and identity considering the distribution in general as random. To measure the deviation from such distributional pattern is termed as ' Dispersion Analysis' (King, 1988; 445-453). In fact, the settlements are not always evenly spaced, nor on the other hand, they are spaced strictly in random pattern.(Dancy, 1966;527-542)

In the present analysis, the concept of nearest neighbour analysis has been adopted. The nearest neighbour statistics (R_n), applying the index of randomness, shows the level of association between observed mean spacing (r_o) and expected spacing (r_E) in random situation* which has been computed with the statistical expression advanced be Clark and Evans (Clark and Evans, 1954; 445-453) as :

$$R_n = \frac{r_O}{r_E} = 2r_O \quad d \quad \text{where} \quad r_E = \frac{1}{2\sqrt{\frac{N}{A}}}$$

Where d denotes density of villages per square kilometer, N is the number of settlement, and A is the area of the place.

***The deviation formula is taken from Mahmood, Aslam (1977) :Statistical *Methods in Geographical Studies*., New Delhi**

1) **Clustering (R_n Value less than 0.89)** This category covers an area of 23.19 per cent of the total rural area of Mizoram and contains 19.45 percent of the total rural population. It consists of five community development blocks, namely, Aibawk, Thingsulthliah, West Phaileng, Reiek and West Bunghmun. The index of randomness (R_n Value) ranges between 0.701 in Aibawk block to 0.867 in West Bunghmun block showing a clustering pattern of settlement . The observed mean inter- village distances of Aibawk , Thingsulthliah, West Phaileng, Reiek and West Bunghmun comes to 1.96 km, 2.25 kms, 2.37 kms, 2.41 kms and 2.69 kms respectively. Among these blocks the village density is lowest in West Bunghmun (0.026/km^2), and highest in Aibawk (0.032/km^{2-}). Apart from physical factors, socio-economic factors have a remarkable influence on this pattern.

2) Random (R_n Value 0.89-1.11) :

This group covers an extnsive area covering as much as 62.96 per cent of the total rural area of the state. It contains 63.61 percent of the total rural population of the state, This group consists of eleven different blocks, namely, Thingdawl, Lokicherra, Lawngtlai, Tlangnuam, Darlawn, Hnahthial, East Lungdar, Tuipang, Lunglei, Ngopa and Khawzawl. Index of randomness ranges from 0.900 to 1.093 showing a more or less random pattern of settlement distribution. Among these blocks, the observed mean inter-village distance is lowest in Tlangnuam, i.e., 2.01 kms ; it is highest in Ngopa, i.e., 3.87 kms. The density of villages ranges from 0.019 km. per square kilometer in Ngopa to 0.056 per square kilometer in Tlangnuam block.

3) **Moderate Dispersion (R_n Value 1.12-1.34)** This category includes three blocks , such as Chawngte and Sangau in Chhimtuipui district and Lungsen in Lunglei district . As the index of dispersion varies from 1.176 in Chawngte to 1.213 in Lungsen , and to 1.244 in Sangau block, it appears that the villages are moderately dispersed. The mean observed spacing of villages is 2.11 kms in Chawngte, 2.66 kms in Lungsen and 3.72 kms in Sangau block. The

village density varies from 0.028 per square kilometer in Sangau block to 0.078 per square kilometer in Chawngte, whereas Lungsen block has a village density of 0.052 per square kilometer. This category, which covers only 11.06 per cent of the total rural area of the state, contains 12.60 per cent of the total rural population of Mizoram.

3) High Dispersion (R_n Value more than 1.34) Only one block falls under this category namely, Serchhip. It has an R_n Value of 1.454, which is the highest among all the blocks in Mizoram. As it consists of only one block the area covered is also very small-only 3.77 per cent of the total rural area of the state, but it has a high mean observed inter village spacing which is 3.78 kms. The high spacing of villages is correlated by high population size: the average population per village being 847 persons. The density of villages per square kilometer in this block is 0.037.

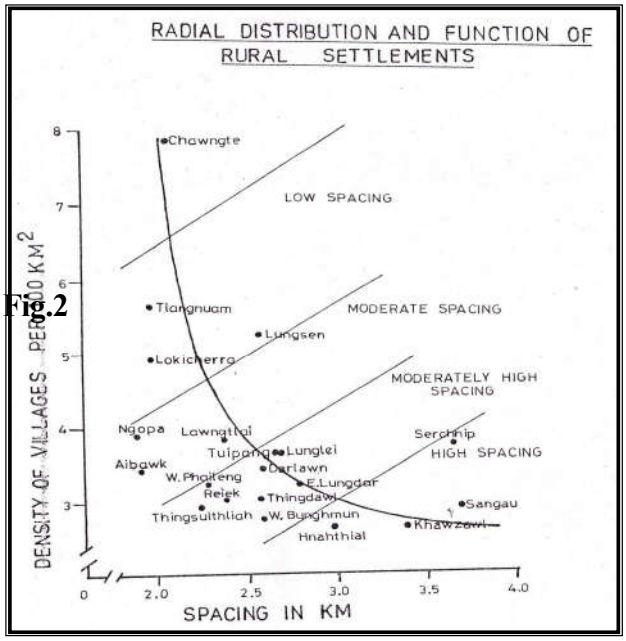


Fig.2

The dispesion analysis of villages by R_n value reveals that the distribution of villages in Mizoram as a whole depicts a random pattern except in the case of Serchhip and Sangau which show a high dispersion pattern.

Thus, based on the above analytical classification, majority of the rural settlements in Mizoram constituting 11 blocks fall under the random pattern. It is followed with a wide gap

by clustering with 5 blocks. There are 3 blocks classified as moderate dispersion, while only Serchhip block falls under high dispersion of settlements.

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MIZORAM : SPATIAL DISTRIBUTION OF URBAN POPULATION

Charles Romalsawma

ABSTRACT

(Today, there is an increasing awareness of population explosion and its consequences on the socio economic development. The relationship between population and resource is greatly hampered by this phenom-enon, and its one of the main issues of the national as well as international scenario, largely because of rapid population growth in the post–independent period. It is certain that population does not distribute itself equally on a given area because of topography, social, cultural and economic factors. Therefore, the study of the popula-tion distribution and the factors governing them gain importance for it gives an understanding of the geo -economic prospect and potentiality of an area. Hence, different methods have been employed for the investigation of this phenomenon. However; simply measuring the man -land ratio does not portray a clear picture of the future potentiality of an area. Therefore, the present paper attempts to investigate the distributional pattern of popula-tion spatially by employing suitable statistical techniques.)

Urbanization, in the most simple term may be put as 'the concentration of population in some favourable places, attracting people from the surrounding areas, the hinterland'. The urban centres have evolved 8S the growth poles because of the advantages of its location and serve as the storehouse for the development and diffusion of innovations. They differ from the rural areas in that, they provide a number of facilities to its surrounding hinterland, thus, creating core – peripheral interaction. This interac-tion, which is called the spatial linkages interaction between 1be core and periphery is inversely propor-tional to distance - the closer the settlement the higher is the degree of interaction and the further the settlement the lower is the rate of interaction., and withered with the increase in distance from the core and finally faded at some point of time.

Urban centres always tend to compete with the other centres - by providing specialized facilities/ services to the rural fringes. It always exert gravitational forces to the surrounding areas, trying to develop the economy at the cost of other urban centres and settlements. This gravitational pull forces might have been so powerful in case of Mizoram that, after attaining the statehood by the year 1987, it has experienced a rapid urban population growth. The state has only 11 % of its population living in the two urban centres - Aizawl and Lunglei town in the year 1971, this figure rose as high as 46% with a total of 22 township in the year 1991 and again this figure increases to 49.49% in the year 2001. The figure in the year 2001 is nearly half the total population the state. Whereas the number of urban centres still remains the same as in the year 1991 with a total of 22 towns – 8 nos. in class VI town, 7 nos. in class V town, 4nos. in class IV town, 2 nos. in class III town and 1 no. in the class I town.

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Mizoram still remains one of the 1east developed state in regards to transport network. Due to unfavourable topographical conditions, transport facilities like - airways, waterways and railways is hardly to be observe in the state except the road transport, and became of this the spacio - functional -integration is Road -route biased. Functional integration is linked by these 22 towns and services facilities have been channelised through these centres. Therefore, accessibility might have played an important role in the distributional pattern of tile population. This necessitates tile understanding of the distributional pattern of the urban population in Mizoram.

STUDY AREA

Mizoram is the 23rd state of the Indian Union, with a total geographical area of 21087 Sq. kilometres lying between 93° 15' to 93° 26' East longitude and 21° 56' 'to 24° 31' North latitude. The state shares an international boundary (722 Kms) with Myanmar and Bangladesh. It has a total population of 891058 persons with 441040 urban populations and 450018 rural populations. The state registered a 29.18% growth rate of population during the year 1991 - 2001 and having a literacy percent of 88.49 in the same year. The state is divided into 8 districts, 22 Rural Development Blocks and there are 22 notified towns locating at least one town in each and every district.

METHODOLOGY

Distribution of population over space has been studied with the help of 'Potential model', graph is prepared to show the relationship between the population and the space. With the help of this, a potential surface of Mizoram has been prepared to show the population potential distribution.

'Potential Model' postulates that interaction between any two points or a location increases in proportion to the size of the groups. Potential at a point is simply an aggregate measure of the influence of all different places on that point. Mathematically the potential (*Vi)* created at 'i' by each point 'j' divided by its distance (d) from 'I'. The symbol is - .

$$Vi = Pj / dijj$$

The expression of the functional diversification of the urban centres has been tested with the help of Rank Size Rule. According to Zipf (1949), rank size regularities evolving in the distribution of town size are logarithmically marked as :

$$Pr = PI (r-q),$$

Its linear form is :

$$Log\ Pr = log\ Pl - q\ log\ r$$

Where, Pr = Population of town rank r, PI = largest where r = 1, and q = constant. If q = 1.0, then established relationship, as Zipf further asserts, is simply reciprocal which follows the best condition of settlement (town) sizes distributed in whole of the system.

The spacing of the urban centres has been studied with the help of Nearest Neighbour Analy-sis. Nearest Neighbour Analysis is calculated by dividing the measured mean distance between the nearest neighbour points

observed in a given area (rA), by the mean distance expected from a similar number of points randomly distributed in the same area (rE) or R = rA/rE,

Thus, rA = Er/N, where is the distance between each point and its nearest neighbours divided by total no. of points (N) while rE = l/NA, while N is the total no. of points and A is the given area. The R- value ranges between 0 and 2.1491, while the extreme value points to the clustered and the even/uniform distribution pattern respectively the random distribution is denoted by the R value of O.

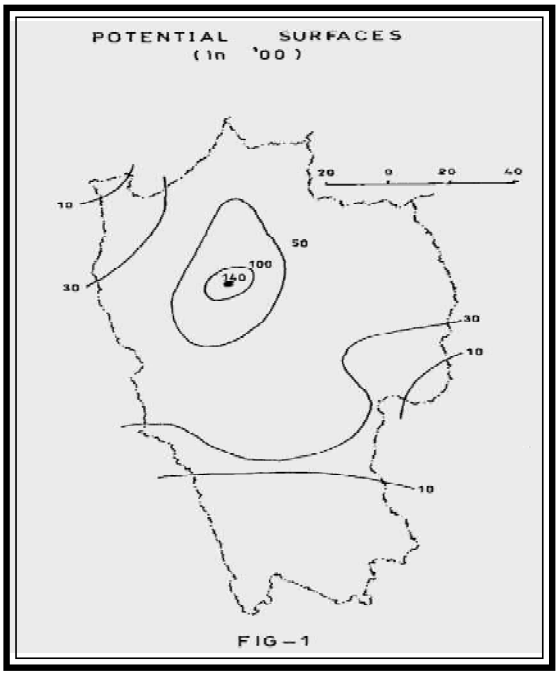

FIG – 1

SPATIAL DISTRIBUTION OF URBAN POPULATION

The urban population of Mizoram is concentrated in the 22 notified towns, which is unevenly distributed in the state. But the urban centres is distributed in such a way that at least one urban centre is situated in each of the eight (8) districts. However, a metre 22 centres/towns is not sufficient to a region of 21087 Sq. Kms with an uneven topography, levels of economic development and unubiquitous endowment of resources, because of these factors the gravitational force exerted by the urban centres to the peripheral hinterland cannot be the same. Hence, in some district there are many urban centres whereas in some district there are only one urban centre. The difference in the distributional pattern over the space has necessited an in depth study of this phenomenon at various levels.

Application of population potential model in case of Mizoram reveals that the maximum number of people are concentrated within reach of Aizawl town, the state's capital, situated on the north central part of the state. The urban population potential ranges from 14096 in Aizawl town to 1339 in Khawhai town. On the other hand, the actual urban population ranges between 229714 in Aizawl town to 2422 in Lcngpui town. The ratio between the actual and the expected population, as a whole depicts a positive deviation with a total f1gure of

349297 in favour of the actual population. The total expected urban population, according to population potential is 91743 which is only 10.29 % of the total popula-tion of the state.

An equipotential line has been drawn with the help of the population potential, starting from the highest population potential centre Aizawl, with 14000 and above potentials. This is surrounded by an equipotential line of 10000 coveting the Sairang town and adjacent areas of Aizawl town (Fig 1). Another equipotential line of 5000 runs in the north – south direction in the Aizawl and Kolasib district, covering Lengpui and Kawnpui town. This is followed by another, equipotential line of 3000 in the north - west, south and south- east. In the extreme north – west another line of 1000 is visible covering the Zawlnuam town. In the south also, it is followed by 1000 potential line covering Saiha town.

A comparative analysis of the actual and the expected population of urban centres reveals that a total of 18 urban centres has a positive deviation over the expected population. Among the positively deviated urban centres. Aizawl happens to he the most pronouncedly deviated from the expected popu-lation with a figure of 349297. Thus may be because of its status as the state's capital, administrative head and transport terminal of the entire state. Hence, it stands out as the unchallenged primate town accommodating a population of 2*5,77* % of the total state "s population. On the other hand, among the urban centres, there are 4 centres that are negatively deviated from the expected population. Among them, Khawhai is the most pronounced with a deviation of 12757, which may be attributed to its inaccessibility.

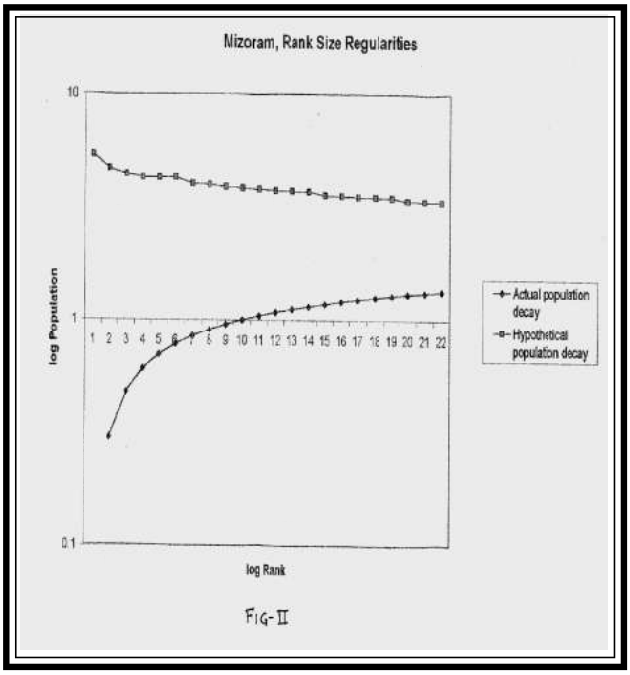

FIG-II

Economic development and urbanization is inter dependent and their growth is simbiotic in association. The frequency distribution of the urban centres of Mizoram on the basis of actual nearest neighbour distance (NND) reveals that the distributional pattern is irregular, indicating that the urban centres evenly distributed over space. The actual mean nearest neighbour, distance is 22.32 Km, whereas the expected mean nearest neighbour distance is 15.4Km. The ratio between the actual and the expected mean nearest neighhour distance is 6.84 Km and the Variance Index stand at 6.9122.

It is observed that the expected nearest neighbour distance (15.48) is bigger than the Variance Index (6.9122) which confirms that the urban centres in Mizoram arc evenly distributed. The actual distribution of urban centres on the basis of nearest neighbour distances are deviated to a considerable extent from the expected distribution of the urban centres under normal condition. This signifies that the spacing of the urban centres is not satisfactory to serve the people of the area.

The state, as a whole portrayed an Rn value of 1.4419,, which shows that the spacing, is approaching a *Uniform* pattern. On an average the urban centres has 31.19 hinterlands, which may be quite sufficient, but almost all of the urban centres were of the lower size/class town as seen in Table I.

Table – 1

No. and Size/Class of Different Towns

Size/Class	**No. of Towns**	**Total**
I	Aizawl	1
II	Nil	Nil
III	Lunglei, Champhai	2
IV	Saitual, Serchhip, Kolasib, Saiha	4
V	Sairang, Hnahthial, Thenzawl, Khawzawl, Kawnpui, Vairengte, Mamit	7
VI	Darlawn, Tlabung, N.Vanlaiphai, Biate, Khawhai, Bairabi, Zawlnuam, Lengpui	8
	TOTAL	**22**

These urban centres, especially class iv-vi, lacks potentialities for further development on its own, so they have to depend on the larger/higher order urban centres for their development.

Application of Rank Size Rule confirmed the fact that distribution of services/facilities is very much diversified as q = 1.1069(Fig II). The functional diversification of verticle complexities of system integration reveals that that – (i) there is a strong tendency of primacy distribution due to differential articulation of the highest order centre, (ii) there is a persistent of weak system integration which manifested in the poor verticle linkages between the primate urban centre and the lower urban centres. The diversification of services/facilities

are the implication of all higher order facilities in the primate centre, which create greater attraction than expected and has resulted in the wider verticle functional gapping and greater concavity in the distribution of urban population even in double logarithmic scales. (Fig III)

A comparison of the urban centres classified by actual and expected urban population with the help of Rank Size Rule(Table II) reveals that the classification are overlapping, specially in the III and the IV size/class. On the basis of actual distribution, there are only one centre in the class I size whereas according to the expected distribution there are two centres - Aizawl and Lunglei in this class. In addition to this, there are no centre on the class II size/class in the actual population distribution, whereas on the expected population distribution there are two centres, namely – Champhai and Saiha in this category.

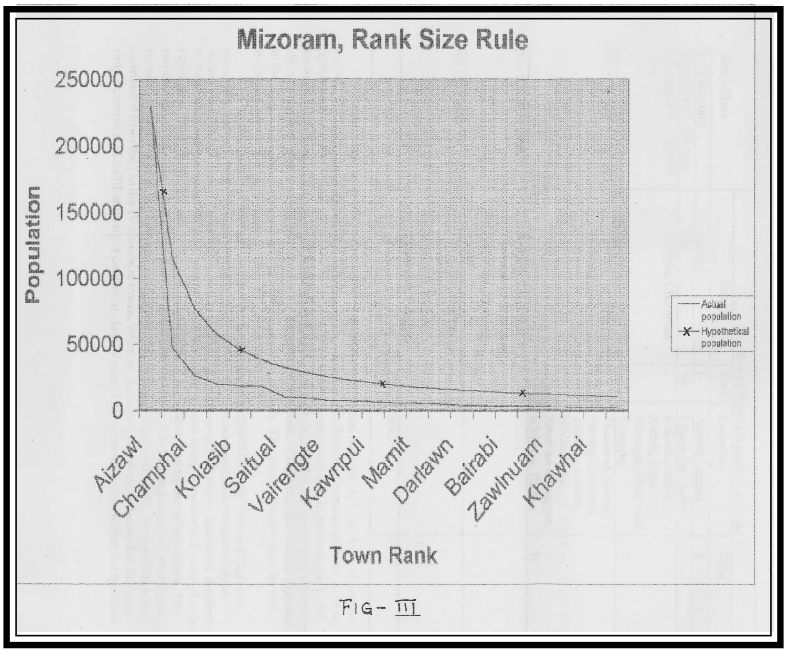

FIG- III

TABLE – II: No. of Actual and Expected towns in different Size/Class

Size/Class	No. of Towns in each Size/Class			
	Actual	**Total**	**Expected**	**Total**
>100,000	Aizawl	1	Aizawl, Lunglei	2
-50,000-99,999	Nil	Nil	Champhai, Saiha	2
I-20,000-49,999	Lunglei, Champhai	2	Saitual, Kolasib, Serchhip, Khawzawl, Vairengte, Hnahthial, Kawnpui	7
/-10,000-19,999	Saitual, Serchhip, Kolasib, Saiha	4	Thenzawl, Mamit, Sairang, Darlawn, Tlabung, Bairabi, N.Vanlaiphai, Zawlnuam, Lengpui, Khawhai, Biate	11
-5,000-9,999	Sairang, Hnahthial, Thenzawl,Khawzawl, Kawnpui, Vairengte, Mamit	7		
I-<5,000	Darlawn, Tlabung, N.Vanlaiphai, Biate, Khawhai, Bairabi, Zawlnuam, Lengpui	8		
	TOTAL	**22**	**TOTAL**	**22**

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LITERACY AND WORKFACE STRUCTURE OF RURAL AND URBAN SETTLEMENTS IN AIZAWL DISTRICT

G. Kumar

ABSTRACT

(Developmental studies invariably focus on redistribution of resources and their efficient use be it natural or human to bring about a parity in quality of life in a developed and underdeveloped regions/areas. Most of the developmental strategies embracing the goal of economic growth as a means of diffusion of developmental processes have essentially been found to accentuate interpersonal and inter as well as intra-regional disparities. The problem probably lies in the fact that powerful groups/sectors/regions have been found to appropriate the resources to the disadvantages of the commoners. Though the strategy especially in third world countries appear to show the positive signs at national levels they have not been able to transfer the same to regional /sub regional levels. Results are reflected in non-diversification of productive activities in rural areas despite growing facilities in social sector. Greater emphasis on generation of disposable income to enhance consumerism is found to lead to marginalization of productive labour force and their compulsive migration bringing down the wages in the urban centres. A vicious circulation sets in negating the benefits of developmental processes.

The present study is an attempt to understand the causes of underdevelopment in a relatively simple economic system ready to embrace complex developmental processes. If the experience in other parts of the world is taken as a lesson attempt may be made to evolve a better strategy for equitable spread of the benefits of development both at regional and personal levels.)

SEARCH FOR THE CAUSE OF RURAL UNDERDEVELOPMENT

The studies on development and development planning generally focus on regional disparities and ways to reduce, if not eliminate, them. They are, therefore, mostly concerned with the appraisal of resources, their development and enhancement of productivity through appropriate investments. The process of economic growth thus started in sectors is believed to set stages of growth (Rostow, 1960) and development through certain growth poles leading to growing interactions between core and periphery and diversification of productive activities in regional context (Perroux -1955, Myrdal -1957) Hirschman – 1958 .Such views invariably are based on belief that investments in sectors – topical or otherwise, will lead to ultimate convergence of or reduction in regional differentials or disparities as economies mature after initial hiccups.

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(Wiliamson, 1965). They are, thus, expected to bring about a balanced economic growth hence development in national as well as regional/sub regional contexts, for it is believed to be the growth of economic processes that would be able to generate income to be invested in social sector. In turn it would be able to increase economic opportunities and their diversification. Development, thus, has become almost synonymous with economic growth reflected in GNP, GDP, per capita income, per capita consumption and index like of them, at least on national levels. Even the rate of investments in social sector and choice of opportunities are dependant variables to the level of economies. Little is realized that most of the economic activities and their expansion, at least after the industrial revolution in Europe have been driven by market forces that have caused redistribution of the labour forces in a fashion that have led to growing demand for freer world market by interested operators. It generally appears to have provided buoyancy to the developing economies of the third world presently. It is reflected in rising GDP and per capita income at national levels. For example, India registered a rise of over 57% and 23% in 2001-02 over GDP and per capita income in 1991-1992. Yet inter personal as well as inter regional disparities appear to have remained unabated. If anything, they have been growing to the great dismay of the protagonists of trickle down theories of development (Mishra-1982, 145-'46). This instead has come to reinforce view of 'cumulative causation' (Myrdal, 1957) which suggests that poor became poorer and rich richer. The view has further been reinforced by the growing economic inequality caused by the exchange of 'over priced goods' from the developed economies with under priced goods from less developed countries of the third world (Emmanuel, 1972) widening the economic gap between them. The same type of 'unequal exchange' appears to be existing between growing and stagnant regions of a particular country (Patnaik, 1981) leading to shift of labour force capable of diversifying the economy in rural areas to supposedly greener pastures in urban areas.

Development economists views on stress upon education and educational facilities, health care and 'gender bias free' society (Sen, Haq) in order to enlarge the scope of economic opportunities and social choice also by implication appears to require the adoption of the path of economic growth, at least at national levels, to generate capacity for investment at sub national and micro regional levels. In developing countries it does not appear to be forth coming . Sectoral investments in less developed areas have been found to lead to concentration of developmental processes in pockets, in the hands of a few at the cost of equitable distribution of the benefits and social justice. It is reflected in deliberate attempts by the protagonists of existing models of economic growth to equate the level of development with levels of living standard measured mostly in terms of the amount of 'disposable income' (Haggendorn, 1987) and level of 'consumerism' (Singh, 2005) both at regional and personal levels. Experiences in developing regions however have shown that economic growth does not necessarily induce development (Clower et.al, 1966). It also does not appear to generate capacity for diversification of rural economy. The present study is an attempt to understand the impact of spread of education on economic diversification in a remote area like Mizoram, exposed to developmental processes in accordance with the accepted models, relatively late in national context.

The state with an area of 21087 sq. km and a population of a little over 888000(2001) appears to have in general terms relatively positive land-man ratio (42 persons/sq.km2) and 6.9 hectares of agricultural land if jhum areas are also taken into account The state boasts of a very high effective literacy rate(over 88%) a very high per capita income (Over Rs.19600/ -) and much better health care facilities(One health care facility for every 1916 persons; Health care facilities include Hospitals, Community Health Centres, primary and Sub-Health centers and sub-Centres all together) for its inhabitants. In fact, the state ranks 7th on development index for the country (Dev.Report-India-2004). Yet the rural settlements do not appear to have been able to broaden their economic base between 1993 –1994 and 2001-2002 despite appreciable rise of over 74 % in its NSDP and 36% of rise in per capita income. It clearly suggests an unequal distribution of state income to the disadvantage of the people.

There should exist a positive correlation between the growing rate of literacy and diversification of economic activities. Present endeavor is to test the hypothesis in rural parts of Aizawl District. One may expect that with the state capital's location in the district that accounts for over 67% of its total population the rural settlements have potentials for diversification of productive activities particularly when the literacy rate there, is at par with their core- the city of Aizawl.

METHODOLOGY*:*

In order to test the hypothesis five villages with medium size population ranging between 650 and 900 persons and, located in five R.D. Blocks that comprise the District have been selected for the study. (Fig 1). The data for different villages are available in the census Reports. Further detailed survey has been conducted by adopting random sampling method for 30 households in each village with regard to literacy and occupation status of their members.

The study has also been conducted to measure changes and its magnitude in relation to literacy and occupation over a period of 10 years i.e. between the census years 1991 and 2001.For the purpose of convenience the effective working population has been computed by discounting the population below 6 yrs of age. Distribution of workers by categories has been calculated in terms of total working population. Explanations have been made keeping in view the possible impact of distance from the main town –Aizawl. The figure for Aizawl District in table has been given to facilitate comparisons and its impact on distribution of workers by categories.

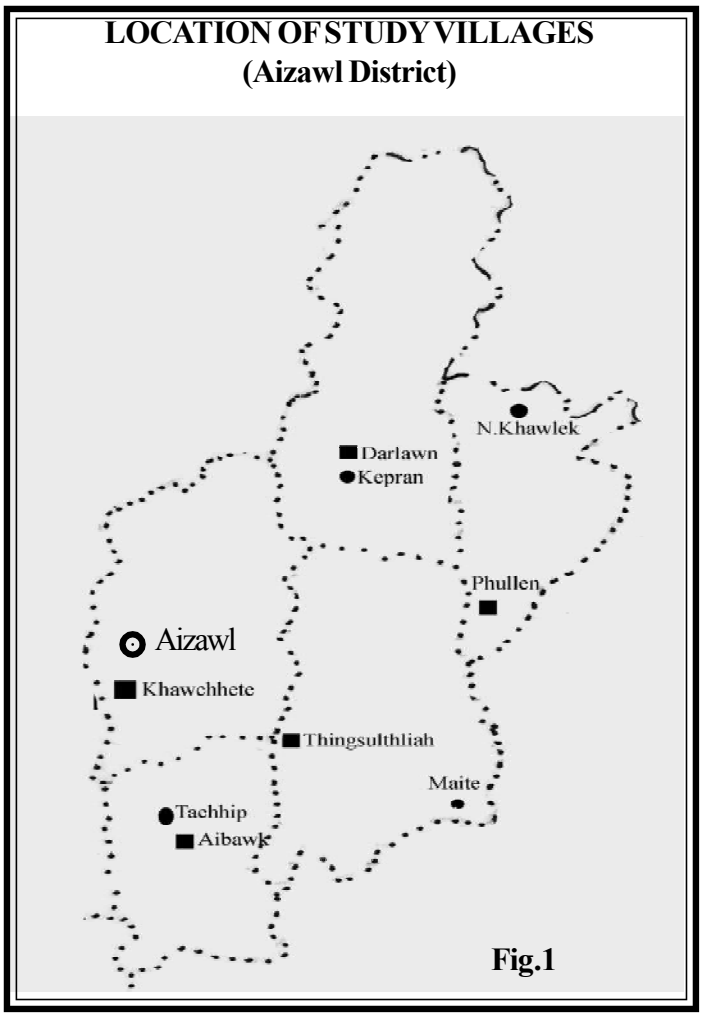

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Table: 1 shows the status of the villages under study with reference to the total population, child-population, literacy, working population and its distribution by broad categories.

It is obvious from the table that the growth of population in the rural settlements have generally been only moderate to negative with the exception of Tachip village where the inter censusal growth has been recorded to be over 25%. On the other hand, there are villages like Khawchhete and N. Khawlek where population growth has been negative to the tune of -11.67% and -2.68% respectively. Though the explanation of the causes of such phenomena is beyond the scope of the present study, it may safely be assumed that a large proportion of population from Khawchete at the urban fringe might have either been classified as urban or people might have migrated to the main settlement of Aizawl. The case of negative growth at N.Khawlek may be attributed to ethhic troubles that have been disturbing the North-Eastern part of the District since1991. Even the population growth rate in Tachhip Village though very high (25.07 %) is much below the district and state average of 40.38 % and 28.8 % respectively.

The declining trend of population growth with the exception of Khawchhete is also evident the population figures in the age group below 6 Yrs of age and which necessarily has been added during the intercensusal period. Higher proportion of population in Khawchhete may be attributed to the fact that persons working at Aizawl might be leaving their family members and offspring's in the village with their own accommodation in the town. This appears to be an obvious conclusion when the population growth rate of Aizawl City which is spectacular by any definition, at over 47% during the period (even after 50 years of its categorization as urban), is taken into consideration in relation to the percentage of population under 6 years of age which is only 13.61 % of its total population against the district average of 14.2%.

The above discussion though is beyond the scope of the present study, it is believed it will help in understanding the demographic characteristics of the rural settlements

atleast partly. It is also considered to have a bearing on the relationship between literacy and workforces in the village.

Literacy rate in Mizoram is very high and villages under study are no exceptions. In most cases, it is comparable with the city of Aizawl, which has an effective literacy of over 97 % (2001). In fact, the village of Tachhip (Aibawk) has recorded even higher literacy (98.58%). The village of Kepran (Darlawn) and N. Khawlek (Phullen) have almost comparable literacy figures of over 96% . Conversely, however, the villages of Maite (Thingsulthliah) and Khawchhete (Tlangnuam) have the lowest literacy figures of about 94% and 92% respectively though they are closest to the city of Aizawl. They apparently should have relatively higher literacy due to "spread effects", of the urban facilities than the distant villages.

Most of the villages have recorded an appreciable rise in literacy during 1991-2001. Highest growth of literacy is recorded in Kepran that has registered an increase from 75.27% in 1991 to almost 97% in 2001. This is despite the fact that the village has recorded a meager growth of population of 0.67% only. Such a spectacular growth of literacy (about 23% in a decade) may be attributed mostly to the state governments attempt to invest in social sector. Partly, it may also be attributed to the awareness of the people in a hostility prone area who probably view education as a means to extricate themselves from the existing social and economic malaises but are still not able to take advantages beyond the village boundary. Situation in N.Khawlek and Maite, however, is different. Both the villages have recorded a decline in the proportion of their literates of about 2% and 1% respectively. But the reasons appear to be different. N.Khawlek (Phullen) has been facing turmoil recently. Moreover, during the recent reorganization of RD Blocks (in 1998). The settlement of Phullen was given a status of Block Headquarters. It is quite probable that few of the educated ones found better avenues there and shifted. This is also reflected in the negative population growth of the village. Maite (Thingsulthliah) on the other hand is closer to Aizawl and many of its literates have found better opportunities there. Hence decline in the proportion of literates. Khawchhete

(Tlangnuam), which has registered a negative growth of population, has registered an increase in the number of literates to the magnitude of about 8% over 1991. Rise of literacy in this case may be attributed to the influence of Aizawl city and its educational facilities, which can easily be used by the villagers even for primary level.

The rise of literacy, however, does not appear to have much influence on the composition of working population in these villages. The effective workforce in these villages have certainly increased substantially during the last decade. (The increase ranges between minimums of about 9% in N.Khawlek to a maximum of 35% in Kepran). The rise in workforce appears to be a commentary on the level of education in these villages. It is reflected in the incidence of rising number of marginal workers and in most cases increasingly rising engagement in primary sector only with the exception of Tachhip and N.Khawlek, which have experienced an insignificant decline in primary sector employment by only 1.02% and 0.04% respectively. At the same time these villages have registered substantial increase in the number of marginal workers from 0.28% and 0% in 1991 to 31.86% and 11.88% in 2001 respectively. As a matter of fact, all the villages have shown drastic rise in the incidence of marginal workers (Table –2).

The following table shows the changes in percent in literacy and in the composition of workforce in the villages and Aizawl city between 1991 and 2001.

TABLE – 2

Settlements	Literacy	Working Population	Main Workers	Marginal workers	Workers in Primary sector	Workers in secondary	Workers in tertiary sector
achhip Aibawk)	2.0	31.58	26.28	31.58	(-) 1.02	0.76	0.26
epran Darlawn)	21.61	34.85	(-) 12.80	14.03	11.04	(-) 1.09	(-) 9.96
.Khawlek Phullen)	(-) 2.40	8.51	(3) 3.37	11.88	(-) 0.04	0.75	(-) 0.71
laite Thingsulthliah)	(-) 1.44	16.94	13.14	3.79	0.46	(-) 0.17	0.48
hawchhete	8.41	15.88	(-) 20.96	20.96	21.42	(-) 0.69	(-) 20.73
izawl city	1.91	7.21	5.17	2.04	(-) 13.0	(-) 6.64	(-) 3.51

The rise in the number of marginal workers in general and particularly in case of Kepran N.Khawlek and Khawchhete suggests appropriation of local resources and functions by relatively powerful groups in respective localities. To this the proportion of marginal workers in Aizawl city appears to be meager compared to the size of the town. It may be said that the town as a multifunctional centre has been able to provide full time employment to most of its people and immigrants so far. But in terms of absolute numbers the problem of marginalization may be foreboding.

It is evident from the above Table that primary sector (dominated by agriculture) continues to be the mainstay of the rural people with nominal decline in Tachhip and N.Khawlek. Tachhip however shows that decline in primary sector is compensated by the rise, though nominal, in secondary and tertiary sector. In N.Khawlek also situation appears to be similar where decline in primary and tertiary sector appears to be compensated by the rise in secondary sector mostly in household/cottage industries. More problems, however, may be encountered in Kepran and Khawchhete where employment in secondary and tertiary sector has shown a negative trend. In both the cases decline in the proportion of main workers appears to have totally been absorbed by the rise in proportion of marginal workers. In fact, in Kepran the rise in the proportion of marginal workers is more than the decline in the proportion of main workers. This suggests that the people in working age group generally do not have assured income for their sustenance. Logically then people might be opting for activities that are unaccounted and may be bordering the legitimacy of functions.

In case of Aizawl city the problem may be more aggravating with the decline in all the three sectors of economic activities presently and rise in the proportion of people in working age group. It is believed that migration of people to the 'core' and pull factors of Urban centres in third world (Lipton 1980) may be a significant contributing factor to such growths. Comprehension of such processes of agglomeration becomes all the more important when one considers urban and rural settlements as 'unified field' of concern in regional context. This

also necessitates diversification of economic activities in rural settlements to maintain and improve upon the quality of life not only there but also at the urban core.

CONCLUSION:

In Mizoram particularly in Aizawl district it is obvious that spread of and rise in literacy do not appear to have much bearing on diversification of economic activities. This also raises a question about the level of education in inculcating capability amongst the rural populace to create employment opportunities in tertiary and quaternary activities. So far the Government of Mizoram has been acting as the biggest provider with over 44% of the total working force engaged in tertiary jobs at state level – the highest in the country. But with New Economic Policy being implemented and Economic Reforms continuing the state government may find it difficult to generate and sustain employment opportunities in governmental sectors. It may, however, play a role of facilitator in capability generation through education to its people who may be able to create opportunities for themselves locally or at state and national levels. They may also help the government to play its role as facilitator for sustained growth and development.

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PROSOECT OF URANIUM MINERALIZATION IN MIZORAM: AN APPRAISAL

Shiva Kumar and Rahul Verma

ABSTRACT

(The area of Mizoram state is covered by green capped hilly terrain and consists of Sedimentary rocks of Oligocene to Miocene age. The rock types include thickly bedded sandstones, shales and mudstones of various colours. The high content of Radon in the soil and Vegetation of the area have opened the possibilities of Uranium mineralization. The present work is an attempt to explore this possibility for which a detailed geological fieki work was performed in an area around Aizawl, Mizoram.. Several favourable indications for such Uranium mineralization were found in the area).

INTRODUCTION

Despite the facts, that the average Uranium content in the earth crust is 2 ppm, in granitic rocks it is as high as 4" ppm and its occurrence is in the form of large variety of minerals (Table - I), Uranium is still rarely found as an economic deposit (Keller, 1985). It has been generally observed that major Uranium deposits are associated with the rocks or Precambrian age. However, Bowie (1970) has pointed out that Uranium may occur in younger sedimentary rocks as weft, where it is derived from the older magmatic rocks. The redistributing agents may be mallow groundwater or surface water.

The aim of this paper is to seek the possibility of the Uranium occurrence the sandstone and shale of the Bhuban formations in Mizoram State, since more than 40 % of the presently available low cost Uranium and more than 95 % of tile USA resources are contained in detrital Sandstones of fluviatile, littoral, or lacustrine origin. Moreover, Uranium is also reported from Middle Siwaliks in the vicinity of Power locality in Pakistan, where it is found associated with woodlogs, c1ayballs, fossils *etc.* (Qureshi *et. al.,1988).*

The Mizoram state (latitude 22° 00'- 24°00' and longitudes 92°15' – 93°25') lies in the northeastern part of India, bordered by Myanmar in the southeast and Bangladesh in the west (Plate 1). The area comprises hilly terrains exhibiting sub meridional trend and is covered with green vegetation (plate IT). The rock types are dominated by sandstones, shale with minor limestone of Barail, Surma and Tipam Groups.

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TABLE – I, MINERALS OF URANIUM

MINERAL	CHEMICAL COMPOSITION	COLOUR	SPECIFIC GRAVITY	TYPICAL OCCURENCE
Uranite	UO^2 (contains Th and REE)	Black	8-10.6	Arendal, Norway
Pitchbledne	UO^2	Black	6-8	Sinkollowe, Zaire
Eurexinite Polycrase	(Y, Ca, Ce, U, Th) (Nb, Ta, Ti)$_2$ O_6	Dark Brown	4-6	Nippssiang, Ontario
Samarskite	(Y, Ce, Fe, U, Th) (Nb, Ta)$_2$ O_6	Black	5-6	Mitchel Co. N.C.
Brannerite	(Y, Ce, Fe, U, Th)(Ti, Si)$_5$ O_6	Black	4-5	Blind River, Ontario
Davidite	(Fe, Cu, U)$_3$ (Ti, Fe, V, Cr)$_3$ (O, OH)$_7$	Black	4-5	Rum Jungle, Australia
Coffinite	$UsiO_4$	Black	5-6	Colarado Plateau
Camotite	$K_2(UO_2)_2$ $(VO4)_2xH_2O$	Yellow	3-5	Colarado Plateau
Tyuyamunite	$Ca(UO_2)_2(VO_4)_2xH_2$ O	Yellow	3-4	Fergnana, Turkistan
Autunite	$Ca(UO_2)_2$ $(PO4)_2xH_2O$	Gr. Yellow	3-4	Autun, France
Tobemite	$Cu(UO_2)_2(PO_4)_2$ x H_2O	Yellow	3-4	Erzgebirge, Saxony
Uranophane	$Ca(UO_2)_2(Si_2O_7)xH_2$ O	Gr. Yellow	3-4	Congo Republic

GEOLOGICAL SETTING:

The rocks exposed in the area are sandstone, shale, silt, and rare pockets of shell limestone and is divided into four major stratigraphic units. The stratigraphic succession as worked out by G.S.I (1974) and Ganju *(1975)* is presented in the Table.

The spatial distribution of various Who-units indicates the dominance of Tipam Group in the western and northwestern parts of Mizoram only in the cores of me synclines. The Bokabil rocks also follow the similar distribution pattern. The Upper Bhuban rocks occupy the anticlinal position in the western Mizorarn. The Middle Bhuban succession is exposed generally on the limbs of the folds but they also occupy the core of the low amplitude anticlines.

The Lower Bhubans are confined exclusively to the anticlinal cores of high amplitude fields (Jokhan Ram *et. al., 1984)*

TABLE II STRATIGRAPHIC SUCCESSION DAH TUR

GEOCHEMISTRY:

Uranium occurs in form of three natural isotopes ^{234}U (99.2739 %), having half-life of 4.5x 10^9 years, ^{235}U (0.7024 %) with half-life of 7.3x10^8 years and ^{234}U (0.0057 %) with a half life of 2.48x 10^5 years. The isotopes ^{235}U and ^{238}U are generator of two radio active series. The natural decay of ^{235}U produces a series of Uranium family consisting of protactinium, thorium, radium, astatine, polonium, bismuth, mercury, thallium and finally terminates into stable isotope ^{2O6}Pb. The ^{235}U series forms actinium family consisting of protactinium, thorium, radium, actinium, francium, astatine, polonium, bismuth and helium and finally terminates into the separation of stable isotope ^{207}Pb.

Uranium occurs in form of four valance states of 3, 4, 5 & 6. Out of these valance states the tetravalent and hexa-valant states are more stable in nature. The trivalent Uranium reduces water to form UIV and hydrogen, penta-valant Uranium exists in aqueous solutions in the form of ion $UO_2^{+..}$ It is unstable in solution because of the decomposition in the pH range of 2 to 4. Studies were made for complex formation involving $U0^{2++}$ and to the lesser extent U^{4+} with many anions *viz.* floride, bromide, chloride, oxalate, Sulphate, thio-cynate,

nitrate, bisulphate, citrate, carbonate, and acetyl *etc.* Generally, the strength of the complex is inversely proportional to the strength of the acid from –which the complex is derived.

DISCUSSION:

Uranium in d1e sandstones is often found in form of lenses inter-bedded with mudstones. Further, it is hypothesized mat that Uranium in these forms of deposits was driven out by leaching from volcanic glass or from granitic rocks exposed along d1e margins of sedimentary basins (Finch *et al.,* 1973).

The exposed surface readily facilitates oxidation of Uranium into tetra and hexa-valant oxides. Among me two, hexa-valant forms are sufficiently soluble in water and thereby, easy to be transported by geological agents. Green solution of tetra-valant Uranium is readily oxidized, its existence in acidic solutions has been proved through the ion of U^{++} and it is also extensively hydrolyzed. Ground or surface water is the main geological agents. Which are responsible for the transportation of this leached Uranium from its sources towards the depositional basin. These transported Uranium may be seized from the aqueous solutions, gets accumulated in various horizons under favourable conditions.

Sedimentary mineralization can be originated through the reduction and absorption of mobile Uranium compounds in depositional environments. The principal reducants or absorbents are carbonates. phosphorites. Zeolites, hard bitumen. cabonaceous matter and plant detritus. The sedimentary diagenetic Uranium deposits of these kinds are known to occur in the strata of Palaeozoic, Mesozoic and Cainozoic age (Smimov 1983). Uraniferous conglomerates, sandstones and clays occur in thick sequences of alluvial - proluvial facies, which get accumulated in the pedimont area. Uranium ores are confined to 1he carbonized plant remains. Uranium found in such strata are of two types- one is as absorbed state in urano-organic compounds; and other in the form of minerals like uraninite and coffinite. It can be generalized that the concentration of Uranium mineralization is directly proportional to the amount of organic matter.

ROCKS OF MIZORAM VIS - A - VIS URANIUM MINERALIZATION :

The Tripura Mizoram basin is the southern extension of the Surma Valley and forms a part of the Assam-Arakan basin. Palaeogene and Neogene sediments were filled into mobile geosynclinal trough and deformation of that basinal prism was brought about by bo1h horizontal compression as well as vertical movement The transportation direction is deduced from palaeocurrent structures and the palaeoslope can be determined by the slump fold axis orientation and the facies gradients are parallel to the longitudinal axis of the basin (Sarkar and Nandi. 1977).

The Tipam Group is exposed only in the northeastern part of Mizoram. while the Barail sediments are available in the eastern part. The rest of the area is covered by Surma Group of sediments and shale. These beds contain organic matter in sufficiently huge quantity and also the fossil and Central Myanmar basins resemble close connection between the two during the Neogene times (Das Gupta, i98-.2). The following are the observed evidences favourabie for me Uranium mineralization in the Surmas –

The higher concentration of Radon 222 in the soils and vegetations of the neighbouring states of north eastern India, such as 0.25 ppm in cereals, 0.44 in fruits, 0.77 ppm in leafs and 2.67 ppm in soils.

Mogak Group consisting of Gneisses, schist and Kalibag Granites are exposed in the northern Myanmar, which may be the source region of these Uraniferous sediments. The various primary sedimentary structures characterizing the Surma sediments are indicative of shallow marine to detail environment of deposition with a constant south worthy palaeoslope (Satkar and Nandi. *op. cit).* The heavy mineral assemblage in the Surma sediments suggests a mixed provenance of acid igneous rocks and high grade metamorphic rocks.

The presence of carbonaceous shale with fossil wood and clay balls in the Surma Sediments in Mizoram is suggestive of strong reducing conditions at the time of deposition. This inference is further supported by the thickly bedded sandstones which is exhibiting gray colour at places due to me presence of carbonaceous matter and also containing organic matter in it. The Uranium mineralization is always expected to occur at great depths and may be indicated without a detailed geochemical search. The Chhimtuipui River drains water from Arakan-Yoma Hill Ranges of Myanmar. The root of vegetation in the Mizoram area is also act as Uranium- seizure in presence of mobile water.

CONCLUSION :

Thickly bedded sandstones and males of the Surma Group are widely exposed in the state of Mizoram The lower and Middle part of the groups seems to be most probable host rock for Uranium mineralization. For further exploratory programme, a more sensitive technique is desirable, since the mineralization is expected at moderate to great depth and the radiations, which are reaching to me, surface may not be as strong as that of a near surface Uranium deposits.

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GENESIS AND EXODUS OF THE MIZOS : A CASE STUDY OF HMARS

L.Khuma

ABSTRACT

There is no reliable written record of the ancient history of the Mizos. As such, one have to rely on the folksongs, lyrics and chants. Of all the Mizo tribes such as Gangte, Hmar, Paite, Pawih, Lusei, Ralte, Zo etc. the Hmar historytrace deepest into their origin and migration. This is because, most of the folksongs, lyrics and chants were composed in their ancient language, and the Hmar language is nearest to the ancient language. In studying the Historical Geography of the Mizos, therefore, it is very important to be acquainted with the Hmar ancient history of the Mizos as a whole.

There are many theories regarding the origin of ithe Mizos, and all these theories regarded Sinlung/Chhinlung as the place of their origin, although none is sure as to where is its exact location and when did they leave the place. But their traditional folksongs clearly shows that Sinlung must be somewhere beyond the Himalayas (i.e. in Central China), and they left the place before the 8th century A.D.

1. Their route and nature of migration can be determined by tracing the nemaes like Hihmalawi, Airawdung, Kachinlei, Missimi, Chindung, Kawlphai, Thantlang, Lentlang etc. which are found in their traditional history and folksongs. The same source also tells us about their political, religion and their socio-economic life. The practice of head-hunting and independence of every village led to the evolution of the Mizo tribes, and these are much older than the term 'Mizo'. The nature of their socio-political and cultural practices in association with the impact of geographical factors greatly moulded their settlement pattern and their present cultural and political ideologies.

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ORIGIN OF THE MIZOS

The Hmars are one of the many tribal groups of the North Eastern hill regions of India, inhabiting the northern Mizoram, southern Manipur, North Cachar Hills of Assam, eastern boundary zones of Meghalaya, and some scattered areas in CacharDistrict of Assam the state of Tripura.[1] Of the Mongoloid stock, all the Mizos belong to the Tibeto-Burman group; they are all the "*Kuki*" tribes of Mackenzie.[2] Roy Burman further classified the Kuki tribes into Old and New, perhaps according to the period of their migration into the North Eastern India, Hmars in his opinion are in the Old Kuki group.[3]

Hmar is a recognized Scheduled tribe under the Constitution (Schedule Caste/Tribe) Order, 1950; The Constitution (Schedule Caste/Tribe) Union Territory Order, 1951, as amended by the Scheduled Caste and Scheduled Tribe (Modification) Order, 1956.[4] But this recognition is just by the Constitution of India and not in the Tribal lists of Assam, Meghalaya and Tripura, it is recognized only in Manipur where they constitute the sixth largest out of twenty eight Tribal groups of the states.[5]

Having a distinct tribal characteristic, they mostly select the peaks of hills for their settlement.[6] The Linear pattern of their settlement followed the hill ranges, where in the villages the Chief and hid Councilors reigned supreme in the historical past.[7] But this does not men that they were not Democratic. Their geographical conditions however did not provide them much scope for their socio-economic development.

Being one of the most backward tribal groups, the Hmars do not have written record of their history and as such, the present study is mainly based on oral traditions, folklores, lyrics and charts, traditional songs and few secondary sources.

THEORIES AND BELIEFS

There are no reliable records of the Hmars with regard to their origin. However, there are some theories and beliefs depending on the folklores and traditional songs as to how they originated. Whether these are believable or not, it might be worthwhile to discuss them. While discussing their origin, as there are other tribes who claimed to be of the same origin with the Hmars, the term '*Mizo*' will be used to denote all these tribes.

Each of the Mizo tribes like Hmar, Lusei, Pawih, Ralte etc. are again divided into different clans, sub-clans and families, and the Hmars are the most numerous. There are also other tribes from the same ethnic group (Chin-Kuki-Mizo) such as Gangte, Paite, Thado, Vaiphei, Zo etc. This classification of the tribes into two groups is according to dialects. The first group have 'R' and the second group uses 'G' or 'L' instead of 'R'.[8] It is the belief of all these tribes that they originated from a place called Sinlung or Chhinlung.[9] In their traditional folksongs, Sinlung is very often referred to as a place from where they originated, but the exact place of location is not certain as it is never mentioned in their traditional songs. One of the Hmar traditional songs goes as :-

Kan siengna Sinlung ram hmingthang;
Ka nu ram, ka pa ram ngai.
Chawngzil ang ko kir thei chang sien;
Ka u ram, ka pa ram ngai.

(*Famous Sinlung my motherland,*
Home of my ancestors.
Could it be called back like Chawngzil;
Home of my ancestor.)[10]

There are many other songs which mentioned Sinlung and the following is one of them.

Tiena raw khuo an sienga, khaw Sinlungah,
An tuk an tha um naw ro, kan khuo a nih.
Tiana raw khuo an sienga, khaw Zielungah,
Hrangkhup le thawnglaiin laitha lo siem.
Simbupa laitha tira awnthing lerah,
Tlangchawi lo lam, va tin lu bing ang lo khai.[11]

We vowed not to fight or kill each other in Sinlung. But in Zielung, Hrangkhup and Thawnglai started head hunting and danced over it like an owl dancing over its prey.)[12]

From the ancient songs/poems, it is obvious that the Mizos very often mentioned Sinlung (Chhinlung) as the first known place of their settlement, and so we call it their original home, although the exact location of that place is not known.

There are many theories and beliefs regarding what and where was that Sinlung. Roy Burman believes that Sinlung must be the present Sinlung in China bordering the Shan State to the east of Burma.[13] This is accepted by many writers although it is impossible, but its impossibility will be discussed later. Let us now put forth at least some of the theories regarding the Sinlung origin of the Mizos.

I. Some writers believe that Sinlung might have been a cave from where they came out.[14] The argument with them is that the word 'SIN' or 'CHHIN' means 'cover' and 'LUNG' means 'stone', and thus 'SINLUNG' means 'covering stone'. But this theory do not help us much since it does not indicate the location of that cave which have a stone cover. Even if it can locate Sinlung, there is no possibility for a cave to give birth to human beings. However, this is quite common among some tribes like Lusei, Paite, Ralte etc.

II. During the reign of Shih Huangti (228 BC) in China, when the Great Wall of China was started, the ancestors of Mizos were used like slaves in the construction. They were under such hardship and oppression, that they were very eager to leave that place. The military forces of the Emperor was cruel enough to separate the men from their families and put them in Forts. In a word, they were prisoners. Many of them died under such hardships. A new day dawned in 22 B.C., when Shih Huangti died. Seizing this period of Chaos, before a new government could be formed, the Mizos escaped they place. Since then they started moving in different directions. Some of them headed towards the northern Burma (present Myanmar). These people (later Mizos) called those stone walls (the Great Wall of China) as Sinlung. If this is true, the Sinlung settlement must be before 22 B.C.[15]

This is too far back a period and that cannot match the present size of population of the Mizos. The Mizos usually have as many children as they could in the historical past.

III. Some writers contended that the name Chhinlung (Sinlung) must be a corrupted form of a great Chinese Emperor Chienlung who once ruled over some of the predecessors of Mizos. Having forgotten the actual name of their Emperor, they simply must have handed down their origin as from Chhinlung.[16]

There are some difficulties in believing this theory. Firstly, the folksongs clearly indicate that Sinlung is the name of a place and not the name of a person.

Secondly, Chienlung was born in 1711 A.D., he ruled China from 1735 upto 1795.[17] By this time the Mizos had already settled in the north-eastern India and Myanmar. Some of them had already reached Tripura. It is recorded that Raja Dhanya Manikya, with the help of Kuki troops, conquered Roshnabad in 1512 A.D.[18] Therefore, the Mizos' Chhinlung and Emperor Chienlung could not have connection.

Besides the above theories there are some others who traces the origin of the Mizos into the history of the Israelities. It may be worthwhile to discuss too.

IV. Some Hmars believe that their progenitor was Manasea, [19] his name was very often mentioned in the chants and lyrics of their religious and cultural rites. His name holds an important place in their culture and no ceremony could be finished without mentioning his name a in –

Chunga pathian, leia pathian,
Kan sualte thupha chawinan
Sa thin, sa lung kan rawn hlan e,
Leia Manasea fate tan.

(*God of heaven, god of the earth,*
we, the children of Manasea on earth,
Sacrifices the heart and liver (of animals)
For the forgiveness of our sins).

They believe that Manase was the chosen one of the gods and by just revealing his name their prayers would be fulfilled. They prepared alters for their burning sacrifices like the Israelites did as found in the Bible. The priest occupied an important place in the society, blood of animals was sprayed around the altar in their worships, flour was also used and burning sacrifices were performed by the priest for the whole society and individuals.[20]

While selecting their jhoom plots, they did not like the area where abnormal tree or a peculiar shape of boulder stone/rock was found as they believed them, to be against Manasea as reflected in the following chart.

Kan pu Manasea chaw zawnna I dal e,
Chunga pathianin a rem ti lo ve,
Tunah hian kan paih dawn che.[21]

(*You are in the way of our progenitor Manasea searching for food. The god above do not approve of your presence here. We are now going to cut you down/throw you away*.)

There are many lyrics and chants of ancient times, which mentioned the name of Manase or MANMASI. They sometimes performed their religious rites outside the village. In the aftermath of such rites, they gathered in front of the Chief's hut and recited the following verse –

Kan lo thleng, kan lo thleng,
Manasea fate kan lo thleng e.
Khual tha kan ni, Manasea fate kan ni;
Khawlhring* kan ni, hrinna kan hawn.
Malsawmna tinreng kan hawn,
Pipu te malsawmna tinreng kan hawn.

(*We have come, we have come,*
We, the children of Manase, have come.
We are good people, the children of Manase,
We are Khawlhring, we bring home life.*
We bring home all kinds of blessings,
We bring home all kinds of our ancestors' blessings).

Almost all their socio-cultural activities were associated with lyrics and chants. Even when they were constructing a new footpath or road, the priest or if the priest was not available, the eldest of them cried –

E khai, lam thlang lam chhak sul lo kiang rawh u,
Manasea fate kan lo kal dawn e.
(*Lo, all obstacles get aside,*
We, the children of Manasea are coming)

Likewise, if they found a new spring for the village or near their jhoom fields, they never drank the water without chanting the name of Manase with prayers. When they went out into the forest they usually took with them a package of food (tiffin). As they were about to eat, the oldest of them first of all offered a handful of food to the spirit of Manase and chanted the following verse, and then only they could eat.

Khuatlaiah, khuatlaiah,
Kan pu Manasea tan, khuatlaiah.[22]

Though nobody is sure as to who was this Manase, it is clear that his name was very well known to the ancient Mizos. Many interpreters believe that he must be the son of Joseph and the grandson of Jacob (Israel) as found in the Bible. Those who believe the Bible quoted Genesis 48:20, "And he blessed them that day, saying. In thee shall Israel bless saying, God make thee as Ephraim and Manaseh; and he set Ephraim before Manaseh". Ephraim and Manaseh were the sons of Joseph.

Opinions are divided among the believers of this theory : a section believes that their progenitor was Ephraim and the other section says it was Manaseh. In the Hmar history it was MANMASI. Many Hmar historians believe that Manmasi must be Manaseh and this leads to the theory that all the Mizo tribes are the descendants of Israel. All their religio-cultural activities and practices which were similar with those of the Israelites were practiced before they know anything about Christianity. How can this be possible had they not been the descendants of Israel, is their argument.

Pi Zaithanchhungi,[23] who is working on the "Origin of the Mizos", firmly believes that all the Mizo tribes are the descendants of Manaseh". She has attend the 'Exhibition for the lost ten tribes of Israel' conducted by the AMISHAV in Tel Aviv; she says " we are truly the descendants of Manaseh and they (Israelites) also agreed to this... But the Chief Rabbi, first of all had to accept it oficially'. Pi Zaii hopes that the chief Rabbi will accept her findings.

V. There is yet another theory which traces the origin of the Mizos to as far back as 2170 B.C., the Exodus of the Israelites from Egypt. The theory contends that the ancestor of the Mizos were among the Israelites when they left Egypt.[24]Of course, it does not say that they were Israel, but there were other tribes among the Israelites,[25] and the ancestors of the Mizos might have been one of these other tribes. This is supported by many of their traditional songs and lyrics which were passed down from father to son, and which they now find difficult to understand the exact meaning of these ancient songs. One of such goes as –

Sina lunga kan zuong in zira,
Tuonni ka rel, umni kan khama e.

(*We jumped and danced after the stone of sin,*
Creating days of work and days of leisure)

This can be interprete as "Our daily life became systematic after receiving the stone plate in Sin". After receiving the stone plate (the Ten Commandments),[26] the Israelites were said to have changed their social and religious life according to the commands of God. One of the commands of God said – "Six days shall thou labour and do all thy work; but the seventh day is the Sabbath of the Lord thy God, in it thou shall not do any work, thou, not thy son, not thy daughter, thy manservant, nor thy cattle, nor thy stranger that is within thy gates".[27] Thus, Sinlung might be Sin in between Sinai and Elim, or Sinai in the way of the Israelites' exodus.[28] The argument for the theory, therefore, is that if this is not true, how could they have folksongs as follows :[29]

1. Sikpui inthang kan ur laia,
   Changtuipui aw sen mahrili kang intan.
   (*We waited for the famous winter festival,*
   Tuipuisen (Red Sea) stops flowing)
2. Sun razula ka lei do aw,
   Laimi sa ang Changtuipuiin lem zo a.
   (*Fighting my enemies the whole day,*
   Men (enemies) were devoured by tuipui (the sea) like meat).[31]
3. Ke ralawna ka lei do aw,
   Sunah sum ang, zana mei lawn invak e.
   (I walked on foot, he (it) fought my enemies,
   Like a cloud in the day and a walking fire at night).[32]
4. A va ruol aw la ta cheh,
   Suonglung chunga tui zuongput kha la ta chah.
   (You have taken the flock of birds,
   You have taken the water that came out the boulder).[33]

The Hmar folksong, lyrics and chants are so valuable that they are the source of history for all the Mizo tribes. These folksongs reveal the names like Sinlung and Manmasi. These traditional folksongs also reveal their similarities with the history of the Israelites as it is found in the Bible. The Israelites are said to have crossed the Red Sea led by God in the form of cloud pillar during the day and a pillar of fire at night in the course of their journey towards exodus. The promise

land, they were given flocks of quails for their food, they were supplied with water from a boulder in the wilderness, and so on, all by miracles. This theory cannot provide any link between Canaan and the Sinlung (of China).

Some verbally acquired opinions however, try to provide links between Canaan and Sinlung. It is suggested that the Chinese, during their expansion by around 10th to 3rd Century B.C., might have been invaded Palestine and brought home captives whom they enslaved afterwards. In the earlier period of their captivity, these people might have married one another with the Chinese. Due to this and other environmental impacts, their descendants acquired their present stature, form, shape and language which we now call Tibeto-Burman. Since they were originally slaves, these people were re-enslaved during the construction of the Great Wall of China and faced such hardships (as stated in the second theory).

One is almost inclined to believe this theory as it also states the importance of environment in shaping the characteristics of man and China's unquestioned greatness during the Confucius and Chou Dynasty.[34] But, problem still stand as to which year or who of the Chinese Emperors really invaded Palestine and brought home captives. This theory could have been quite convicting anybody rightly answered this question.

Although there are number of theories regarding the origin of the Mizos, none of these are reliable since writers put forth only some possibilities and they do not have proofs for their theories. Bur one can say that, with confidence, their first settlement was in Sinlung, that they came across in China and faced oppressions, and that they considered Manmasi as their progenitor.

This Manmasi might or might not be the Manaseh of the Israelites or, perhaps, a person with a similar name, or he might be the founder of the ancient religion of the Mizos, one thing is clear that his name occupied a very important place among the ancient Mizos and among the Hmars in particular. Even in the modern times it led some section of the Mizo population to the faith of Judaism and they no longer wanted to be called Christians. They wanted to discard Christianity as it was brought to them by the white people of the west. As the Israelites thought that Yaweh was only for them, this section of the Mizos also believe that religion should not be westernized but that they should worship God according to the Mizo culture.

Whatever theory might have been appeared among the present Mizos, it is a general belief that they are one of the Tibeto-Burman group. Of this group, one may find the Ch'iang tribe of ancient China to have some linkage with present Mizo tribes. In other words, the Mizo tribes may considered as the scattered groups of the Ch'iang tribe. The Ch'iang tribe, called the Tanguts (Tibetan Tribal Federation) during the Han Dynasty, had conflicts with the Chinese in 73 A.D., in which the Chinese had the upper hand.[35] Many of the Tanguts (Ch'iang) were killed in the fight, some of them were captured and some of them were driven towards the south. They were driven to the south to TSIN (Chin) province through the mountains.[36] It can be guessed that this Tsin (Chin) might be the Sinlung (Chhinlung) of the Mizos. The possibility of the Mizo(Zo) as the descendants of the Ch'iang tribe is described by Vumson as :[37]

"The Ch'iang tribal structure was always week, as leadership arose among them only in times of war. Their society had a military rather than a tribal structure, and the continuation of these states depended entirely upon the personal quality of their leaders. The absence of writings among most of the Tibeto- Burman tribes suggests that their separation must have begun at a very early date perhaps before the Chou Dynasty, whose rulers were Tibetans. Except Tibetans, none of the Tibeto-Burman groups had writings. The Chou Dynasty came to an end around 200 B.C. During the 3rd Century A.D. Buddhism was introduced into Tibet and China but none of the Tibeto-Burman groups, except the Tibetans, were affected. They had been shifting their villages often in connection with their slash and burn method of cultivation. Civilization, therefore, did not penetrated them".

"The southward movement of the Tibeto-Burman groups took many years, perhaps several centuries. Recent migration of Zo (Mizo) people to the Kale-Kabaw-Valley has taken a century and there is no sign that migration is completed. The same pattern was very likely the case with the Tibeto-Burman group. The Kachin, for example, were still moving towards the south until very recently. As they slowly moved through the hilly regions some settled in one location and some moved on. The result was their separation as different groups. Those who separated last remain closely related…..".

"In moving towards the present Burma, Zo (Mizo) people separated into two groups. One group moving southward between Chindwin and the Irrawady. The

other group moved to the west of the Chindwin and reached Zo country and Arakan before 1000 A..D.".

"Zo Country" as called by Vumson includes all the Mizo inhabited areas of Myanmar, India and Bangladesh. He called the Myanmar portion as East Zoram whereas the India and Bangladesh portion as West Zoram.

The darkest area with regard to the origin of the Mizos is about Sinlung. It was, of course, their first known place of settlement. One may simply conclude that it must be somewhere in China, though no one can so far be sure about its location. Dr. R. Buragohain writes –

" Recently (May 1990), I had been to China to participate in the 4th International Conference of Thai studies at Kunming. I discussed with the Chinese scholars with regard to the Sinlung origin of certain tribes. This theory still remains a legend and yet to be historically established. Moreover, there is a yet to be a place in China to be identified as Sinlung. At best, some similarities on ethno-cultural aspects such as with the nationality of China could be traced. I feel, there is enough work to be done in this regard".[38]

Since all the Mizo tribes have this popular theory, and also the name Sinlung is very often mentioned in their folksongs and tales it cannot be simply ignored as a mere legend.

MIGRATION

It has already been stated that the Mizo comprises of several tribes such as Gangte, Hmar, Lusei, Paite, Pawih, Ralte, Vaiphei, Zo etc. Writers often tried to separate these tribes by creating separate histories although they are from the same ethnic group and the same origin. The 'Old' and 'New' classification[39] of these tribes clearly indicates that the period of their migration into India was different, with regard both to time and space. In other words, each group or groups followed different routes and in different periods.

Although it is difficult to ascertain as to when did these different groups became separate tribes, but it is clear that they were originally one and spoke the

Although it is difficult to ascertain as to when did these different groups became separate tribes, but it is clear that they were originally one and spoke the same language before they separated from one another. By comparing the richnesses of their folksong, lyrics and chants, one may conclude that the Hmar language is nearest to the ancient language. Moreover, of their separate histories, the Hmar history may be traced deepest into the ancient settlements. As such, one can say that the Hmar history is the most reliable source of the Mizo ancient history (i.e. before they separated from one another), particularly with reference to migration and settlement, religious and other cultural activities. The Mizos started to have different tribes or they started to separate from each other during their settlement in the northern and western Myanmar, and it is from here that they have separate histories.

The origin of the Mizos is, of course, considered to be Sinlung although the exact location is not known. Some have inferred their subsequent nomadic life to have stemmed out of their inability to repulse their enemies in Sinlung. One of their poem is significant - [40]

Khaw Sinlungah, kawt sielang ka zuong suoka,
Mi le nello tama e, Hriemi hraiah.
(Out*of the village Sinlung I jumped out like siel,**
I numerable were the encounters, with the children of man)

Poetical explanation of the above verse indicates that they left Sinlung in a hurry (I jumped out like a siel). There could be two reasons why they left Sinlung. Firstly, they might have became fed up with the place and wanted to search for new fertile lands.[41] Secondly, they might have been pushed out by a stronger power.[42] It is also possible, if their oppression under Shih Huangti was true, that they wanted be free of their slavery and hardships. Whatever might be the reason, the Mizos left Sinlung in a hurry and one would guess that their number was not large at that time.

In China, the Chou Dynasty was followed by the Ch'in Dynasty. The Ch'in Dynasty "violet all the rules of courteous warfare, triumphed and took over the territory and symbols of the rule of the Chou Dynasty.[43] The Ch'in Dynasty absorbed many of the tribes that were already in the land. Those who refused to be absorbed were pushed out and "the pressure which forced these tribes to the south western coast and drove the Mizo to the mountains came from the north west. The successive

waves of Chinese immigrants drove the earlier colonists to the south. The earlier colonists, such as the Shans, pushed the Mioa and other tribes still farther south".[44] A similar story of tribal movement is told of Cambodia, on the eastern side of the Indo-Chinese Peninsula. Colquhuon mentions six other tribes that are found there, which before 200 B.C. had been located in the province of Kuongtong and Kuongsi, and were forced out of China in two migrations.[45] Graham also observes, "it is now a very accepted theory that, during the last few thousand years, Siam and in fact the whole of further India, has been subjected to periodical flooding by successive waves of humanity, set moving by natural or social upheaval of population far the north of Central Asia.[46] Clark also mentions movements of tribals "from the north-southward into the Mediterranean basin, into India and into China".[47]

It is possible that the Mizos have been moving along with one of these successive waves of humanity. Whether or not we are able to trace the exact location of Sinlung, it appears historically evident that the Mizos originally came from central China, following one of these mass migrations, specially those of the late pre-Christian and early part of post Christian Era.

Rochunga Pudaite suggests that the Hmars left Sinlung because "the waves of Chinese immigrants and political pressure drove them away to the south".[48] The exact time of departure from Sinlung and the original route they followed is not known to this day. However, traces have been found in their ancient poems and legends that they came to the Himalayas. The lefty great mountain made it impossible for them to continue their southward journey and so they said, "Ei hmaa tlang hi chu lawi el ei tiu"(Let us circumvent or circumambulate this mountain).[49] Then they turned south-eastward and crossed the mountain on a lower altitude in the east.

If they circumvented the Himalayas, the only possible route for them towards Myanmar was through one of the passes in the northern side of Myanmar and Yunnan Province of China. They might have followed the Hengduan Shan, crossed the Diphu Pass (4353m) and entered the northern Myanmar called the Triangle. They could have also passed the Namni Pass and Yanwa Pass which are to the west of Gaodigong Shan range. The Shan state of Myanmar, as believed by Rochunga Pudaite as their next settlement after Sinlung could be reached through along the eastern slopes of Gaodigong Shan, following the Salween river downward. But it is difficult to believe this, whether the Shan of the Hmars in the Shan State of Myanmar. Of course, their

first known settlement after Sinlung was in Shan. Since there are so many mountains or regions which bears the name 'Shan' in China and eastern Myanmar, nobody is sure which is the Shan of the ancient Hmars. Rochunga Pudaite suggests that it must be the present Shan state of Burma.[50] Traditional history tells us that their settlements were in the order of Sinlung, Hihmalawi, Shan, Hukwang valley, Kawlphai (Kabaw Valley), Lentlang and Thantlang, Champhai region, and then to the present settlements. The Hmars had already reached and settled in the Champhai region of India by around the 15th century, and the other Mizo tribes occupied it much later, the present permanent occupation continue only after Vanhnuailiana's 'Chhak nawr'.[51] The opinion of Pudaite can be criticized over the following points :

2. Shan State is in the eastern side of Myanmar. It is unbelievable that they would first cross Kachin state, went to south (to Shan State) and then came back to Kachin in the north. If Kachin had been more favourable for them, there is no reason why they should proceed to Shan State.
3. If Sinlung was in China's a bordering region of Shan State as suggested by Roy Burman,[52] the opinion of Pudaite is easy to accept. But both of them can be criticized in that, why should they moved so far into the Tibetan regions of the Himalayas and then come back to the south over such a difficult route.
4. If they had settled in the Shan state of Burma, it is much more possible that they crossed the central plain of Myanmar (Burma) and came to the Kawlphai, then to the Thantlang and Lentlang ranges. In this case, they would not know anything about Kachin, the Missimi and the Himalayas, but traditional songs and tales (history) tell us that they came across these places and people. Moreover, if they has crossed the central civilized plains, there would be signs of Buddhism in their religion and culture.
5. In all the traditional songs, their Shan was referred to as 'Shan khuo'(khuo means village or town). Pudaite said that Shan was a City-state. Would there can be a city inhabited by such undeveloped tribe? They were so undeveloped that they just know to make a tobacco pipe.

Darliensung says "There was a Shan town named Magoang near the amber mines…. The Burmese called Magoang as Shan town".[53] This is quite possible because the next settlement of the Hmars (in fat all the Mizos), Hukwang valley, it is not far from Magoang, there is only the Kumon range in between the two regions. Moreover, it is known that their socio-economic life started to develop to a certain degree in Shan.[54] Their development in mental works and ornaments started here. Darliensung also mentions that amber was one of the most popular products of the regon.[55] Amber necklace was and is one of the most precious ornaments of all

the Mizo women. Development of mining in the region was of great help to them. We, therefore, conclude that the "Shan khuo" of the ancient Hmars was located in the present Magoang region in the Irrawady valley of Kachin State. Their posts sang of the land as –

Tiena Kachin lei, Ka pu leilung Hihmalawi

(*Ancient Kacchin, And the Himalayas where my forefathers lives*)

Traditional history tell us that the Hmars roasted crabs for food by the banks of Irrawady during the Thingpui – Intam (tree famine), and they called the river as "Ai-raw-dung". "Ai" means "crabs", "raw" means "roast", and "dung" is any elongated valley of streams/rivers or mountain ranges as in Chindung (Chindwin), Rundung(Manipur river), Tuiruangdung (Barak valley) etc. and Tlangdung (mountain range). Some people contend that they must be the first to give a name to the river as "Airawdung" and this might be wrongly pronounced and written by the later migrants.

As to the date of their migration to Shan, nobody is sure about it, therefore, one simply has to assume by finding a reason to believe so. According to Soppit the Buddhist faith was "firmly rooted throughout Burma and China" by the 8th or 10th centuries, and those who settled within Burma during or after that would be more or less influenced by the faith.[56] The fact that any of the Mizo tribes did not adopt Buddhism, or none of them have any sign of it in their socio-cultural life, this pointed to the possibility of their migration to have taken place before this period.[57] This is believed to be reasonable by many historical writers. But one has to remember that the Hmars were hill dwellers while Buddhism might have spread in the civilized plain settlements; they might not have been reached by the faith even if they were within the political boundary of Myanmar.

Hranglien Songate contends that they must have cone to Burma with the Tai or Shan by around 1228 A.D.[58] Many writers believed that the Shan of the ancient Hmars must be the name of a race/tribe, but the traditional songs clearly indicates that Shan was the name of a place/village (Shan khuo means Shan village).

Ka pa lam tlak a tha'n dang,
Sinlung lam tlak aw a tha'n dang;
Shan khuo ah tha po in vang,
Tuoichawngin hranlu a thlunna;
Thlomu sieka kemin hril
Zainghawngah hranlu bah kan sal.

(My father's steps were remarkably good,
Singlung's steps were, indeed, remarkably good;
Few were good men in Shan village,
Where Tuoichawng brought the enemy's head;
You talk of tips with eagle's paws (meaning war),
And we hang the heads (of enemies) high.

Their entrance to Shan was probably met with strong opposition and they finally fought their way through. Their success was so great that one of their poets put their successful encounter in the following verse –

Shan khuo thlangfa pu tlingtleng e,
I do thlunglu bah ken sal,
Kan sawmfa thlaw, ka laimi tha,
Thal khatah lan ei de ning.
(*Men of Shan look great,*
You proudly hang the heads (of the men you fought),
With my abundant harvest and heads (of enemy),
I will make a springtime festival of my victory).

The Hmars enjoyed a time of prosperity and success in Shan.[59] The Shan settlement was mark with overall socio-economic prosperity and the starting of festivals such as Khuonglawm (spring festival), Lunglak (Autumn festival), Se-sun (Solemn celebration) etc. seem to be associated with the Shan settlement.[60] of their stay in Shan, Songate writes –

"In Shan, their civilization advanced much farther than Sinlung; and the people showed greater intelligence. They know how to celebrate agricultural prosperity, learned better art of war, and made festivals of their victories. Furthermore, they learned the use of iron implements and moulding of pipes (out of brass). The first man associated with iron work was Sozam, and Tomlopa was the first to mould and use tobacco pipe".[61]

But this prosperity could not last long and they unwillingly had to leave Shan because of a great famine called Thingpui Intam (Tree famine).[62] It is said that all the buds and tips of trees bore balls of fruits which contains germs/insects; the whole vegetation died and became dry due to the disease and this include their jhoom fields. No one had anything to eat and many of them died due to hunger and diseases. The famine was so severe that a prized gong, ordinarily sold for a hundred bushels of rice, was exchanged for a handful of unhushked rice.[63] It is said that the men became so weak that two men did not have enough strength to catch hold of a dying pig, and the animals could stand only by leaning on standing objects. After having stayed for about two generation (about 150 years) in Shan the survivors of be Thingpui Intam had to leave the place in search of more fertile lands.[64] One of their poets revealed the reason why they left Shan in the following verse –

Shan khuoah a tla,
Mi raza tlan thiera e;
Chung pathienin Shan zuk siema
Shan khuo lung ang ngir na e.[65]
(*A great famine visited Shan,*
People left the place (in a hurry);
God, thou havecreated Shan,
Let it remain as thou created)

The nature of their semi-nomadism was such that they did not move straight towards their present settlements; it was rather a search for better lands. They did not aim for any particular direction. In course of their movement, they stayed in a particular place for some years (50 to 200 or 300 years), they then moved again in search for better lands. Traditional history tellers says that they first selected hill or mountain tops, the priest set out a cock free and if the cock scratched the ground and crowed they considered that place suitable for their settlement; the priest then offered sacrifices, and then they set up their village in that place.

With a heavy heart, the survivors of the Thingpui Intam had to leave Shan for better lands. Crossing the Kumon range in its southern lower ranges, they moved towards north for a short distance and entered the Hukwang valley. Before discussing about the Hukwang valley settlement it might be worthwhile to reiterate that their all round development in Shan included their administrative system. One can mention that one of their leaders/chief was Ropuithang. Before Ropuithang became the Chief in Shan, the allotment of Jhoom lands were by means of lots for all including the Chief. But when he became the Chief, he and his Councilors chose the best parts of lands for themselves. From then onwards the selfishness of the Chiefs and their Councilors continued. One of their poets sang this incident as –

An lal hmangpa Ropuithang Shan khaw zawlah,
Thadumdur vanglai lienlo sie hmangin chang na e.
(*Chief Ropuithang in the plains of Shan village,*
Keeping a side the most fertile part, let him have it)[66]

From this, it is clear that their administration was quite systematic even before Ropuithang became Chief of the tribe and that their village (Shan) was located in a plain or leveled area (Shan khaw zawlah). The Shan village must, no doubt, be quite a large village with large population, many writers referred to Shan as a town or city. This is because their traditional songs and stories referred to Shan as Khawpui (town or city is "Khawpui"). This is quite possible since they could separate themselves into several villages in Hukwang valley, their next settlement.

With the increase of population and development in their administrative systems, they started to have Rengpui, a chief over several villages. Their migration from Shan was originated in groups, each having separate leaders. These separate groups set up independent villages; their leaders became their Lal (Chief). This could have resulted out of the selfishness of their Rengpui in case of the distribution of jhoom plots; the separated groups must have been eager to have new administrators from within their own group. Although these villages became economically independent, they were politically under the Rengpui. Censuses were taken and taxes were collected. The existence of such an administrative system can be equated with a kingdom. R. Vanlawma contends that there was a Zo kingdom in the upper Chindwin valley before the Burmese people came to the region.[67] The Hmars called the Chindwin as "Chindung" and some writers believed that they were the first to name the river and which might have been wrongly pronounced by other people. Luce also says that the Chins were in Hukwang valley by the middle of the 4th century,[68] the Chins and other Mizo tribes are of the same origin. The other Mizo tribes call them "Paite".

Sura, who now became a legendary hero, was a bachelor during the Hukwang valley settlement. He felt in love with a Missimi girl whom he courted with the help of his three best friends – Devanngul, Devanthang and Sevanlal. When they got married they changed her Missimi name and called her Thairawnchaawng. Sura left his people many wonderful and funny stories. Some people called him a fool while some remembered him as the wisest man of a tribe, and some people called him a politician. Whatever may be the truth, he was a wonderful man. He is the ancestor of some Hmar clans such as Khawbung, Lawitlang, Ngurte and Zote.[69]

Although the term "Mizo" refers to the hill dwellers,[70] they did not use it as the name of the whole tribe by this time. The term "Zo" was, of course, very common in their language specially with reference to the components of physical environment as in "Zo-tui" (a clear and cool water of mountain springs and streams) and "Zo-thlifim" (the refreshing cool air of the mountains) and so on. The term "Mizo" was used to call themselves only after 1833, when the British separated their inhabited lands.[71] Written records of the term can be found only in documents of post 1950, in the wake of political activities among the tribe. During their course of semi-nomadism, they sometimes called themselves as "Manmasi hai"(the people of Manmasi) or "Sinlung suok"(people that came out of Sinlung). This means that the name of the sub-tribes such as Hmar, Lusei, Paite, Pawih, Ralte etc. were older than the term "Mizo", we came to know that the evolution of these sub-tribes started during their Shan settlement.

It has already been mentioned that their population was quite high in Shan as compared to the time of their Sinlung settlement. Their Shan village was a large one, having two localities – one in the north and one to the south (northern and southern). This marked the beginning of the evolution of the sub-tribes and clans; the Hmar tribe started to evolve during the Shan settlement.[72] Settlers of the northern Shan were called Hmar (Hmar meaning north). Their

migration were organized in groups – one group following the other – perhaps a year or two after predecessors, under different leaders who became their Chief in their next settlement. The emergence of head-hunting with all its ugliness divided these separate groups to a greater degrees. This compelled the separation and independence of each group to be more permanent and so, the sub tribes like Hmar, Lusei, Paite, Pawih, Ralte etc. came into being. But none of the groups forgot that they are one.

After staying for almost a decade in Hukwang valley (Kachin) they started to move southward, following the Chindung(Chindwin) downwards, and their next known settlement was in Kawlphai (Kabaw valley).[73]

As they were moving in groups stayed for some years in different localities in between Hukwang valley and Kabaw valley of western Myanmar. Zawla and Darliensung contends that some groups once settled for some years in Chinlua before they reached the Kabaw valley and the Chin hills.[74] Traces of the tribe can be found among different tribes in many places of the region. Many similarities can be found in case of socio-cultural activities and languages, type of houses as they are also hill men. This suggests that they lived together for generations, or perhaps, they are remaining groups of the tribe in their course of semi-nomadism, i.e. during their search for better lands. R.Vanlawma talks about their similarities with the Konyak, Lisu, Zhou/Zo/Djo/Jo etc.[75] But this must have been before they left Hukwang valley. The Konyaks also know about the story of Sura.[76] Darliensung also talks about similarities in language with some tribes who are found in between Hukwang valley and the Kabaw valley as in the following table showing linguistic similarities amongst the settlers between Hukawng valley and Kabaw valley.[77]

Hmar	**Sorde**	**Patbung**	**Nambasi**	**English**
Lu	Lu	Lu	Lu	Head
Chung	Chung	Chung	Chung	Above
Hungrawh	Hungrawh	Hungrawh	Hungrawh	Come
Bu	Bu	Bu	Bu	food
Ar	Ar	Ar	Ar	Fawl
Ahnuoi	Ahnuoi	Ahnuoi	Ahnuoi	Under
Na	Na	Na	Na	Ear
Ke	Ke	Ke	Ke	Leg
Kut	Kut	Kut	Kut	Hand etc.

We do not know when or where or how they separated with these kindred tribes, but they must have separated from each other somewhere in the northern side of Myanmar and before any of the Mizo tribes reached the Kawlphai (Kabaw valley).

It is now difficult or rather impossible to know the exact date as to when did any of the Mizo tribes reached Kabaw valley and the Chin hills (Thantlang). It has already been mentioned that their migration was organized in groups over different periods of time. As such, the date of their settlement in a particular region could not be the same. Moreover, some of the present Mizo tribes and clans had nor yet come into being, they were, by the time of Kabaw valley settlement, a member family of a particular group. Again, some of the group did not settle in Kabaw valley, but proceeded towards the south, the Thantlang and the Arakan hills.

With the increase of groups and strength of population in each group, the Mizos now spread over the Kawlphai regions where they settled for centuries. Some of them proceeded towards the Chin hills and the Arakan hills, while some of them proceeded towards the east and towards the west (India), but in different time periods. The westward migrants entered India by crossing Thantlang and Lentlang, and these are the people whom we call "Mizos". The different Mizo tribes have already been mentioned and, of the Mizo tribes, the present study tries to trace mostly the history of Hmar tribe. The following account concentrates on the westward migration of the Hmar tribe from Kawlphai, evolution of its different clans.

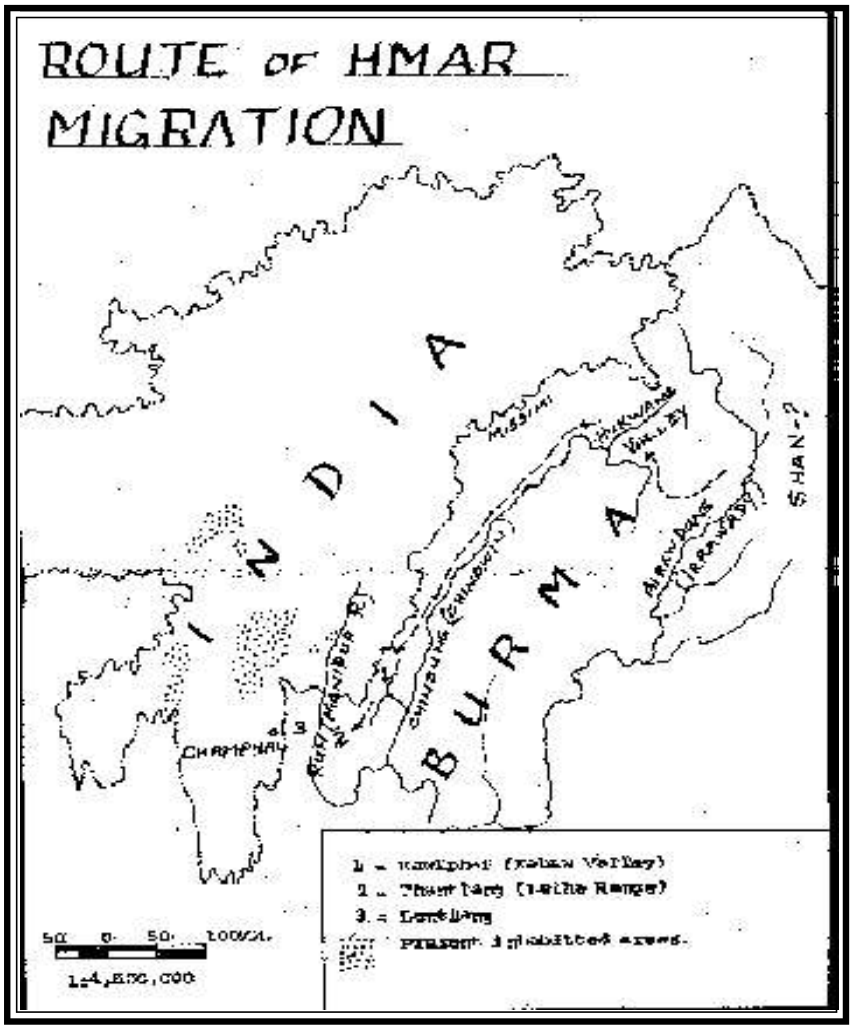
WEST-WARD MIGRATION OF THE HMARS AND THE EVOLUTION OF ITS CLANS :

Of all the Mizo tribes, the Hmar first came into being and that was during their Shan settlement. It has already been stated that in Shan the Mizo ancestors settled in two groups – one to the north and one to the south. Chief Ropuithang, who had his residence in the north, was the supreme ruler over all the northern and southern settler. The southerners called the northerners "Hmar" which means "northerners", and it was from then onwards that the Hmar tribe came into being.

There is another theory regarding the origin of the term "Hmar". Typing of the hair (in knot) at the back of the head is called by the Pawihs as "Hmar", and some writers' contends that the term must be a Pawih word indicate all those who tied their hair at the back of their head. Whatever may be the truth, the Hmar tribe came into being much earlier than the other Mizo tribes.

Chief Ropuithang must have favoured more of the northerners than the people of the south. It is not surprising that an imperfect Chief should show favouritism even within his own village. Revolutions and separations automatically arose within the tribe, and this was the beginning of the formation of separate tribes and clans. Even within the Hmar tribes, separate villages were set up in their next settlement under separate leaders and these automatically became clans and sub-clans of the tribe. The inter village wars/head-hunting, with all it ugliness, added to the separation and etc. came into being. But the differences in these dialects are merely in tune, pronunciation and accent. Some of the Hmar clans have now forgotten that

they are of the Hmar tribe. There are more than 200 clans and sub-clans within the Hmar tribe, but these cannot be listed in this short study. Those clans, which practised headhunting, have more number of sub-clans.



It is known that they have already bore the term "Hmar" during their Shan settlement. Their next settlement was in the order of Hukwang valley, following the Chindung, they entered the Kabaw valley where they stayed for about two generations. Still moving south, they spead over the Thantlang and Kale regions.

Many of the Hmar clans evolved during the Kabaw-Thantlang-Kale settlements. During this period, the Hmars already had many clans and these clans were in separate villages. It can also be said that each villages was named after the name of the clans.[78] Each village have their "Lal" or "Rengte"(Chief of a village), and the emperor over all these villages was called "Rengpui"(Chief over all the Hmar villages). [79]

The westward migration started from the western Burma. Crossing the Thantlang and Lentlang ranges, following the Rundung (Manipur river) for some distance, they entered the present Mizoram state of Mizoram. Some of the Hmar clans, particularly the Champhai settlers, followed the Rundung together with the Raltes.

Runtui kawi e, Ralte nu leh, Ralte pa leh,
Kan in kawia, Runrui kawi e.[80]
We winded along the meanders of Runtui (Manipur river) with the Ralte men and women).

Their westward migration was organized according to clans, and all the clans did not followed the Rundung. Even while following the Rundung, it was a shift of village rather than a migration. They stayed un a particular place for some years and then they moved on. They came to the Lentlang (the northern ranges of the Chin hills) and many villages were set up and the whole region was covered by the Hmar villages. Some of the Hmar clans did not stayed long in the Thantlang-Lentlang regions; they crossed the Tiau River, entered the present Mizoram and set up their villages in the Champhai area. When the Lawitlang clan first entered India, Champhai was occupied by the Anal tribe. Lawipa, the leader of the Lawitlang clan, invited his best friend Hriler, the leader of the Zote clan who was still in Lentlang, to come down into India. Together they fought the Anal tribe and pushed them away. From then on, the fertile plains of Champhai was in the hands of the Hmars.[81] This must have taken place by around the 14th century.

Traces of the Hmars can be found in the present Mizoram, and these are mostly the names of their clans which became the names of their villages, or, some village names have become the name of a clan. Some of such names are Bapui, Chawnsim, Lawitlang, Khawbung, Leiri, Darngawn, Ngente, Arro, Neibawm, Thingphun, Thiek, Khawzawl, Tualte, Vankal, Vangsie, Zote, Biete, Puilo, Darlong etc.

The date of their entry into India bears a large question mark. Moreover, each clan or two or these clans together formed a group of migrants, and each group entered India in different time periods and in different routes. C.A. Soppit contents that those who settled within Burma by the 10th century should have signs of Buddhism in their culture, and since the Hmars do not have any such sign, they must have left Burma before that.[82] This theory is accepted by writers like Lal Rinawma[83] and Songate[84]. Darliensung says that they entered Champhai area by around 1000 AD.[85] Although it is now difficult to mention the exact date, the Hmars must have entered India during the period between 1000 to 1400 AD.

All the present Mizo tribes were classified under "KUKI" by former writers, and mention of the Kuki people can be found in the history literatures of the neighbouring races. L. Keivom mentions the Raj Mala (Tripura Chronicles), in particular, as mentioning about the love story between Siva and a Kuki girl. He also talks about the presence of Kuki troops in Tripura in 1512.[86]

Of course, the Raja of Hill Tippera, Dhanya Manikya, has conquered Roshnabad in 1512 with the of Kuki troops.[87] These Kuki's who migrated from the east were the people of Rengpui Chawnhmang (Chief over all the Hmar villages). He established his Capital at Rapho (its modern name is Rengdil), and the whole of the present northern Mizoram was a Hmar country. This was an independent country and was called 'KUKIDESH' by the Bengalis.[88] But, as time passed, those who migrated to the hill region of Tippera adopted Hinduism and became more and more Tripuris due to the impact on their social and cultural life,[89] and some Hmars like Darlong and Hrangkhawls ultimately belonged to the Raja of Tippera who used them in the army. If all these could happened in the 1500's, their first entry into the hills of Tippera must be at least fifty years before that. As their Rengpui had migrated to the region, the other Hmars till today called Tippera as "Rengpui Ram"(the land of Rengpui).

THE HMAR KINGDOM

The Hmars, since their Shan settlement, had Rengpui (Chief over all the Hmar village) until their dispersion after 1500's in India. Their first leader after they left Sinlung was Singlu.[90] and Singkaihmang became their Chief after the death of Sinkaihmang. It was since the time of Ropuithang that the Hmars started to settle in

different villages, each village having a Rengte or Lal (Chief of the village) and the successors of Ropuithang became their Rengpui (chief over all the Hmar villages).

Although each village was more or less independent, their Rengpui bored the responsibility of defending these villages in times of tribal wars and not in the inter-village wars. House censuses were done and taxes were collected every year. This means that the people had to pay taxes to both their Rengte and their Rengpui. The Rengte had to administer the village affairs and was responsible in defending his village in the inter village wars. If a village was attacked by other tribes (non-Hmar), the village chief would sought the help of their Rengpui. The Rengpui could collect warriors from all the Hmar village to help their brethren village.

During their Kabaw-Thantlang-Kale settlemnt, their Rengpui was Luopui. He had his capital at Khampat and divided his country into three divisions – north, central and southern. He was in the central division (at Khampat) and he kept Governors in the two others; Zingthlo to govern the north, and Lengrei to govern the south.

Aw iai e, Simah Lersi, hmarah Zingthlo,
Khawmalaiah Luopuia.
Aw iai e, Luopuiin lenbung a phun,
Luopui a phak in bo e.[91]
Aw iai e, Lersi in the south, Zingthlo in the northan Luopui)

The above poem is as long as six verses, and since it expresses the greatness of Luopui it is called "Luopui a Hla"(the song of Luopui). Luopui was said to be very rich and a wise ruler. He planted a banyan tree at Khampat and the Hmars stayed there until the tree bored fruit. Traces of this banyan tree can be seen even today at Khampat.

Another remarkable Rengpui was CHAWNHMANG who was one of the successors of Luopui. The ambitious young Rengpui tried to construct a fortress around his capital at Khampat. But, as this angered the Ava rulers of Burma, he also started to move towards the west. By this time, the Champhai settlers of the Hmar clans like Lawitlang (which include Sungte, Chawnsim and varte), Zote, Khawbung, Ngurte, Khawzawl etc. have already entered India. Rengpui, Chawnhmang also entered India and established his capital at Vanlaiphai of the present Mizoram.[92]

Dissatisfied with the location of his capital, Rengpui Chawnhmang brought with him some of the Darlongs and Hrangkhawls, and still moved towards the northwest. He ultimately reached and established himself there. He dugged lakes there and so, the place is now called Rengdil (dil means lake). Chawnhmang was a very ambitious and able ruler. Before he left for Rapho, he divided his country into six divisions and appointed Rengtes (Governors) to administer for him each of the divisions.[93]

DIVISION OF THE HMAR COUNTRY(KUKIDESH)

	Rengte	**Division/Region**	**Capital**
1.	Demlukim Hrangkhawl	North	Mawmrang
2.	Fiengpuilal Biete	South	Biete
3.	Lawipa Varte	East	Lawitlang, Champhai
4.	Neilal Thiek	Central	Sawrtui
5.	Tusing Faihriam	North East	Zampui, Burma
6.	Tanhril Saivate	West	Tanhril

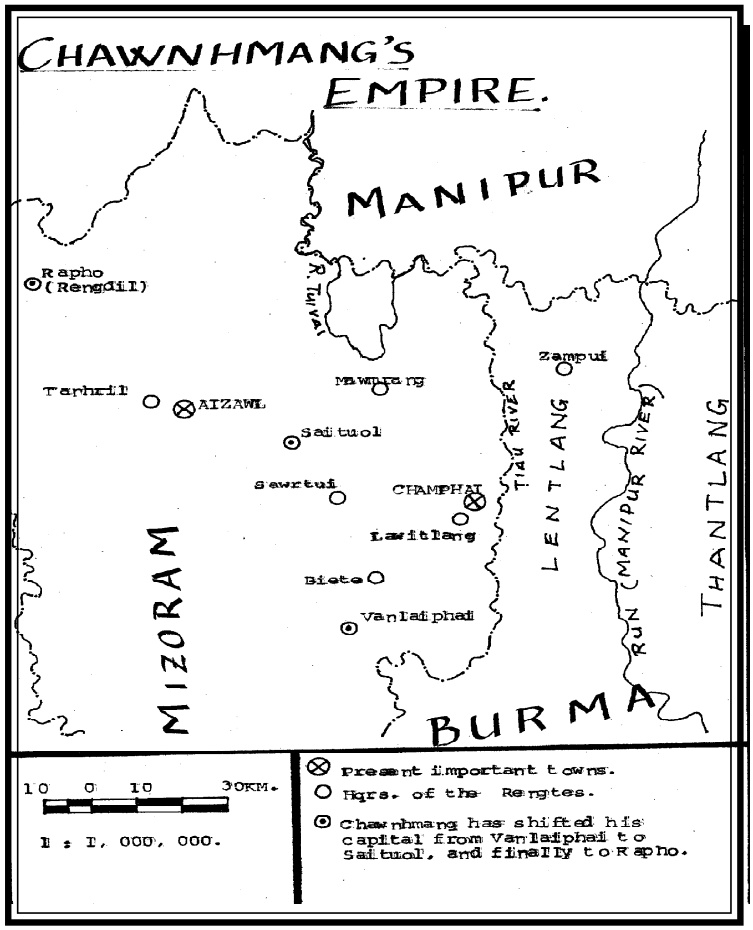
The Rengpui was Chawnhmang and his capital was Rapho (Rengdil).

Before he left Vanlaiphai, Chawnhmang distributed presents to each of these Rengtes, a gong and a horse to Lawipa, a golden plate and an ordinary plate to Tusing, a silver bowl to Neilal, a gong to Fiengpuilal, a horse and a gong to Demlukim, a Reng clock and a necklace to Tanhril. He also presented a Reng headgear to all of them.[94] He reminded them that he would still be their Rengpui and would continue censuses and collect taxes although he would be far away.

The other Hmars who did not migrate towards Tippera were very satisfied with the administrations of their Rengtes, and they ultimately became fed up with their Rengpui who was now very far away. They no longer wanted to give taxes to the Rengpui. Instead, they captured and tortused the Vai servants (vai means any plain people of India) of their Rengpui who came to collect taxes. They said –

Vai an hung, vai an hung,
Rengpui thalhlawm vai an hung,
An tawng fang ang hawi lo va,
Ta puon ang la khawng ta rei aw.[95]

(*Vai are coming, vai are coming,*
The servants of Rengpui, vai are coming,
What kind of language are they speaking,
Hit them like a weaver cloth)



And the women beat them up with their Tliem.[96] This marked the beginning of the disintegration of the Hmar people. When the Rengpui heard about it, he gathered his warriors and invaded his own eastern lands.[97] As he was helped by the Vai's, he was successful in his conquest of his own people, some of the Rengtes were killed and some were captured alive and later set then free on an agreement to pay taxes. This invasion by the Rengpui with the help of the Vai's was called in the Hmar history as "Takam Vai Lien".[98] Although he was successful, his successors -

could not put the Hmars together and their dispersion started. The Champhai area inhabitants left for the eastern hills of Meghalaya, the Thieks left for the North-Cachar hills, and so on, and the Rengpui with the Darlongs and Hrangkhawls continued to stay in Tripura.

Although the Hmars had a very good political system, the centrifugal forces were much stronger than the centripetal forces. As such, their dispersion or the downfall of the Hmar kingdom was inevitable. One of the most important centrifugal forces was their nature of headhunting or the inter-village wars. The second was the independent nature of every village, each village was independent of one another in their economic life. This led to the unnecessity of inter-village roads/paths, inter village communication was very rare, rather it wa dangerous. Every village became more and more independent, long periods of isolation led to their difference in pronunciation and accent which further tended to creat different dialects and cultural practices.

Every Hmar village, then, became independent. No village or clan invited another village for their next move/migration. Some village/clans moved towards the south-western hills of Manipur while some of them moved only up to the northern hills of the present Mizoram. Some, particularly the Koms, moved up to as faras the Jaintia Hills – Cachar boundary zones. Some Hmars stayed on in the present Mizoram proper and are absorbed by the Duhlian speaking Mizos. This Duhlian (Lusei/Lushai) language is now the national and official language of all the Mizos.

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(* Khawlhring is one of the clans of the Hmar tribe)
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PROBLEMS OF DEVELOPMENT IN N. E. INDIA AND PRESCRIPTION FOR THEIR RESOLUTION: An Overview

A. K. Agarwal

Abstract

(The paper aims at identification of problems and over view of situation in an area, which has been exposed to developmental processes relatively recently. Keeping in view spatio- temporal characteristics it also attempts to prescribed steps, which may be better suitable for regional development. The thrust is on making people at grass root more responsive to and responsible in the formation and implementation of development plans.)

The region comprising of 8 states including Sikkim suffers from certain constraints such as difficult topography, geographical location, varied and rich socio- cultural diversities along with bare subsistence productivity of jhum based cultivation particularly in hills, which inhibits investment due to community ownership of land and also limits choice of crop pattern, and incomplete development of labour market and entrepreneurial skills. The whole region is prone to frequent seismic influences. Majority of the N.E. states are facing a problem of militancy except Mizoram-a peaceful state.

The decadal growth rate of population in general is high than the national average. There is a demographic change particularly in Assam and Tripura due to continuous inflow of immigrants from neighboring countries. Cheap migrant labour is one main reason for which local populace is giving shelter to them. Female work participation is quite high though they are engaged mainly in agricultural activities in rural areas and govt. jobs and handloom sector in urban areas.

Agriculture and its related activities are the backbone of the economy of all the N.E. States coupled with its strong human and social capital. The jhum system sustains itself even in absence of government assistance, market accessibility and technological upgradation

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without bothering about ecological and environmental carrying capacity. The last part is more important from viewpoint of increasing pressure of population on land resources.

The customary land rights does not confer incentive to invest in land, generation of marketable surplus, individual initiative and entrepreneurship development. Updating land records along with village surveys for resource mapping is very important from view point of village level planning and introduction of technical expertise will definitely boost the productivity associated with higher growth which in turn calls for the need of market. Hence another major thrust should be on private enterprise development which will provide the market to the farmers / producers. Formation of co-operat8ves can help in operationalising the market mechanism and building the credibility.

To reduce the dependence on food import from other parts of the country, productivity of land should be increased through extensive use of HYV seeds, fertilizers, insecticides and pesticides, extension of irrigation facilities and double cropping and so on. Stress should be on value addition of locally produced goods and their effective marketing to fetch a better price for the producer/ farmer.

Some of the states like Mizoram, Manipur and Sikkim are ranked high in terms of Human Development Index. On the other hand Tripura, Meghalaya, Assam and Arunchal Pradesh rank below 20 among all the states of India. At the same time, the social and economic infrastructure index is lower in all the NE states than the national average. It may be noted that per capita income in hilly tribal states is higher as compared to Assam but lower than the national averages. Another notable feature is that the secondary sector is lagging behind as compared to tertiary and primary sector in terms of share in total SDP. This missing link needs attention of the planners of North Eastern States.

Available potential areas for achieving the growth target are agriculture and its allied activities besides horticulture, floriculture & forest based activities, sericulture, silviculture, handloom and handicrafts. For a paradigm shift involvement of various sections of the society in the entire planning process is essential. Fortunately public participation exists as local

communities have age-old traditions of participative democracy and self- governance. The need of the time is to involve them since the formulation of plan; implementation and maintenances of projects run at the village level. For the purpose extension of community based activities through estate farming/ contract farming, plantation, and horticulture, dairy, generation of renewable energy in remote and small villages, implementation and maintenance of water-shed development projects are the areas where this spirit of self- governance and co-operation can be fully utilized.

There is a problem of unemployment being faced by all the states besides shortage of technically skilled professionals in many areas like health, technical education and other professions. Besides there is a problem of high rate of dropouts particularly in the primary level and post matric level. Child labour problem has not been noticed in hills in particular but child participation in household or business activities cannot be ruled out.

To tackle the problem of depending more and more on government to facilitate jobs to the educated youth it is desirable to develop skills for creation of self-employment opportunities through change in educational policies, stress on vocationalisation aimed at upgradation of relevant skills. It will promote the capacity of human capital to take up the new challenges. Extension of tertiary health care facilities will certainly encourage the establishment and expansion of technical education services.

There is a tremendous potential to harness available water resources, flora and fauna, forest wealth in terms of aromatic and medicinal plants, and other natural resources like minerals, oil and natural gas. Generation of hydropower through mini- micro and mega hydel projects, thermal energy generation using gas and coal can definitely generate employment opportunities besides a source of earning revenues to the producer states.

It may be noted here that for any optimum utilization of available resources, development of physical and financial infrastructure is very crucial. In absence of it developmental activities cannot be implemented and executed properly. Another area of importance is generation of reliable database, and its updation of database. High-speed Data communication services

with better connectivity are the need of the hour to exploit the available opportunities in terms of information technology based services.

Certain sectors have now assumed tremendous potential for creating trade and commerce. Opening of trans-border trade with neighboring countries, South East Asian countries in particular, resuming the traditional border- trade, regulation of unrecorded / informal trade will be helpful in generating income and employment opportunities to the local populace. It may be done through export of value –added products. Value addition may be either into a finished product or even semi- finished intermediary industrial input. It will provide better opportunities of appreciation and better margin to the people engaged in such activities.

Other area of importance is the strict vigilance and accountability through objective monitoring and periodic evaluation of the developmental schemes and social welfare schemes implemented by NGOs, government and semi- government organizations. Unless we observe it with full honesty, ultimate spread and beneficial effects of any development projects cannot reach to the society in an effective manner.

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