CHAPTER I

INTRODUCTION
Physical anthropology of human populations from its neontological point of view is no longer restricted to description of populations on various physical traits - morphological and genetical. With the advancement of population genetical theories physical anthropology has diverted the attention to problem oriented research to decipher the mechanism involved in the dynamism of ongoing evolution. Following the rediscovery of Mendalism, Fisher (1930), Haldane (1932) and Wright (1931) developed the mathematical theory of evolution, and showed that many of the puzzling phenomena of evolution could be explained in terms of Mendelian inheritance. All succeeding theoretical speculations, fortified by assumptions based on the foundation mostly laid by them.

Demogenetical approach, which considers family as the unit of information, provided a great relief to the problem and directed all such scientific exercises to base on empirical situation. The approach advocated the means to examine the validity of the theoretical models at both micro and macro levels. The effort was a success as Hardy-Weinberg theorem came into prominence. Past few years have produced a group of theoretical models suited for contemporary human populations.

Roberts (1973) ascertained that Murch's (1941) effort to establish the uncertain nature of inheritance of several
conditions of achondroplasia was probably the first systematic step to utilize the demographic information relevant to human situation. Consideration of demographic variables, in unfolding the problems of human population genetics, gained prominence during the two subsequent decades. Sutter (1953, 1963), Spuhler (1959), Bodmer (1965 a & b, 1968), Bodmer and Cavalli-Sforza (1966, 1968), Cavalli-Sforza (1962 a & b), Freire-Maia (1974), Roberts (1965, 1973) and others through their works have stressed the need for paying adequate attention to the demographic aspects of the population genetical studies. Demographic factors generate necessary perspective for observing genetic phenomena specific for a population. Subsequently various attempts helped to identify the limitations of the models and intensity of complexities in dealing with human populations. Notwithstanding the limitations of the approach (Horton 1968, Baker and Dutt 1972 and Baker and Sanders 1972) demogenetical method is adjudged as the most informative and powerful approach in recent times to studies on microevolution and structure of populations.

Review of a few important and pioneering studies will reflect upon the usefulness of this approach. The problem of local differentiation under the pressure of genetic drift was studied by Wright (1943, 1946). Malecot (1955) applied correlation approach to deal with the problem. Later Kimura and Weiss (1964) introduced the 'Stepping-stone model' to improve upon the results obtained by Wright and Malecot, to deduce that
genetic correlation decreases with distance. Yasuda and Horton (1967) have shown that coefficient of kinship decreases with distance. Action of natural selection and its effectiveness was investigated by Roberts and Boyo (1962). Crow (1959) and Spuhler (1961) partitioned natural selection into the components due to fertility and mortality to measure the respective and total intensity. Method for the calculation of extent of genetic drift per generation was investigated by Lasker (1954) and Roberts (1956 a,b). Crow and Mange (1955) introduced the measurement of isonymy for the estimation of inbreeding. Possible effect of assortative mating on the genetic composition was examined by Crow and Felsenstein (1968). Boyce et al. (1967) first recognised the neighbourhood knowledge and its influence on the distribution of marriage distance and gene flow in the populations. Many investigations explored the possibility of occurrence of mutation, selection, drift and hybridization through the application of various models on demographic materials (Roberts 1956 b, Crow 1958, Reed and Neel 1959, Norton and Chung 1959, Roberts and Hiorns 1962 and others). Demogenetical approach can also be applied in testing the hypotheses built by the cultural anthropologists on population origin (Roberts 1962).

Evolutionary significance of the studies on small populations has drawn much attention of the recent workers in the field of population genetics. Small populations are particularly interesting for the limited size and less of intricacies in their social structure. The usefulness of studying
small populations has been emphasized by an international group of experts (WHO 1964). Last three decades have registered various investigations that aimed at recording the genetic consequences of evolutionary forces on small populations. An attempt is being made here to list some of the important contributions in this field.

The population of Paracho island was subjected to study on admixture and genetic drift (Lasker 1952). The Yanomama Indians of southern Venezuela were studied to reveal the level of microdifferentiation (Neel and Chagnon 1968). Formation of sub-groups among the Dinka was investigated by Roberts (1956). Salzano (1961, '62, '63a and '64) studied the genetic aspects of demography of different sub-groups of the Caingang Indians. The Xavante Indians were studied for their genetic structure (Salzano et al. 1967), on the basis of which a fission-fusion model has been proposed (Salzano and Neel 1967). Bio-social aspects of Tarana Indians of Brazil and Maca Indians were dealt by Salzano (1970) and Salzano et al. (1970) respectively. Extent of consanguinity was measured in the Eskimo isolates of Thule (Sutter and Tabah 1956) andNama Navaho population of New Mexico (Spuhler and Kluckhohn 1953, Spuhler 1962). Study of Ivd isolates helped the redefinition of isolates, and showed gradual opening up of the group (Nemeskeri and Thoma 1961). The Dunkers (Glass et al. 1952) and the Samaritans (Bonne 1963) were covered for their demographic aspects to assess the occurrence of genetic drift. Importance of drastic reduction of population size in defining
the genetic constitution of Trisan da Cunha and the aspect of genetic drift among them were studied by Roberts (1963). The populations of Cocos-Keeling island (Smith 1960), Sanguina Chezle Wayana (Sutter 1967) and Jicauque Indians of central America (Chapman and Jacquard 1971) were studied from demogenetical point of view. Subgroups of Hutterites were investigated for their differences to the phenomenon of genetic drift (Mange 1964). The Bedik population was studied for the cultural barriers and biological heterogeneity among them (Gomila 1971). Cause of formation of sub-divided isolates was identified in Saint-Barthelemy island (Benoist 1964 and 1966). Role of random genetic drift in local genetic differentiation has been studied among the northern Peruvian communities (Lasker and Kaplan 1964), and the Cashinahua (Johnston et al. 1969). Tchen et al. (1979) have reported genetic drift to be the probable cause for the low degree of genetic variability in the small isolated population of Cuiva Indians of Venezuela. Many other similar situations were studied with different theoretical perspectives on the Eskimo (Laughlin 1950), the Naskapi and Montagnais Indians of Quebec (Blumberg et al. 1964), the Yanomama (Arends et al. 1967), the Xavante Indians (Neel et al. 1964) and on the Old order Amish (McKusick et al. 1964). Semi-isolate Mayan Amerindian population of Aguacatanango was studied with the aim to contribute to the studies of divergence among related groups (Brickson et al. 1970). Small communities having historical background were subjected to test of population genetic models on the basis of
though the genetic traits do not confirm the view, these certainly suggest that the Bhol division deviates significantly from the other Khasi sub-divisions (Das 1973). But similar attempts have not yet been made on small populations of the region.

One such small population of this region of India is the Mām, which is met with in the West Garo Hills district of the state of Meghalaya (Fig. 1). They are of Burmese origin, and their ancestral stock has been ascertained to be the Shan. They are surrounded by certain populations like the Garo, Hajong, Rabha, and Koch, who on the basis of language belong to a bigger group Bodo. This small population could be fruitfully and meaningfully studied keeping in mind some aspects of population genetics already discussed above.

THE POPULATION

The Burmese did not cherish any friendly inclination towards the Ahom King of Assam. During the late 13th century Surananda Buragohain, the Premier of the Ahom King had helped a Shan chief of Hakong who rebelled against the King of Burma. On the other hand, the hostile tribes, like Singpho and Khampti bordering Ahom Kingdom had sought Burmese assistance, that added to the inimical attitude of the Burmese. During this time internal chaos, arising out of infighting among the high officials of the State of Assam, reached its peak. Furthermore, having denied of English assistance, because of the British policy of non-intervention in the affairs of Assam, a fugitive viceroy afraid of
the data on migration, consanguinity and founder effect (Cavalli-Sforza et al. 1964 and Roberts 1968). Several studies have shown significant difference in gene frequencies between isolated groups and their populations of origin and also between sub-populations showing a microevolutionary trend (Glass et al. 1952, Lasker 1969, Lasker and Kaplan 1964, Benoist 1964 and 1966, Cavalli-Sforza et al. 1964, Giles et al. 1966, Cavalli-Sforza 1969 and Salzano 1963).

In India studies on small populations are limited. A few attempts on the Pahira of West Bengal and Bihar (Basu 1969, 1974), the Kota of Nilgiri hills (Ghosh 1976), the Mandiwala of Maharashtra (Malhotra 1978), and the Dule Bagdi of West Bengal (Talukder 1979), presented exciting results. The studies through demogenetical approach revealed the dynamism of the phenomenon of microevolution.

Region of North Eastern India, the hailed 'heaven' for anthropological studies, accommodates a good number of small populations. Thereby the region offers unique opportunity and potentiality for formulating appropriate research design to demonstrate the microevolutionary trend in the region. The very trend can be better experimented when a small mendelian population is involved in the process (Das 1979). So far, two well-designed studies have demonstrated the phenomenon of microevolution. The populations involved in the studies are numerous and spread over wide geographical areas. In one study the stages of detribalisation of the Bodo populations on the basis of somatometric parameters were highlighted (Das 1964). The other one recognizes the inter-division variability among the the Khasi through metric traits. Even
Fig. 1  The map showing the ancestral home of the Shan (Shan) in Burma and their present habitation area in West Garo Hills, Meghalaya.
political apprehension appealed for Burmese (Māntārā) assistance to execute his retaliatory design. These conditions inspired the Burmese to gratify their ambition of invading Assam without any risk of British enmity. Within the period from 1816 to 1821 the Burmese forces invaded Assam in three successive waves (Barua 1930, Bhuyan 1949).

The last wave of invasion under the leadership of Mingimaha Bandula, marked the end of Ahom authority in Assam. On capturing Assam the Burmese initiated a reign of terror by imposing unjust and arbitrary taxes, and committing manifold atrocities on the people of Assam. Consequently the Assamese nobles sought shelter in the British territory, and they were granted refuge at Singimari (Barua 1930).

The Burmese occupation of Assam and Manipur, their infiltration into and invasion of Cachar and Jayantia hills during later part of 1823; preparations of Assamese refugees in British territory to invade Assam; and additional chaos caused by marauding tribes of the adjoining areas posed a positive threat to the British in Bengal. The overall situation then prevailing in Assam compelled the English Government to abandon the policy of non-intervention towards Assam in March 1824 (Bhuyan 1949, Barooah 1970, Bhattacharjee 1975). The British therefore forced the expulsion of the Burmese from Assam.

During the gradual retreat of the Burmese from Assam, a phase of strong dissension developed among them. Mingimaha Kurd
Kroden, the then Burmese Governor of Assam and Sham Phukan, the next in order and leader of the 'Burani Mān', were respectively the Raja of Mogaung and a principal chief of Munkang state of Burma. On the question of continuance of certain privileges on the part of 'Burani Mān', who had lived long in Assam and served the Burmese interest, a grave dispute cropped up between them. A battle ensued between the adherents of Mund Kroden and those of Sham Phukan, the former was defeated and executed.

Being constantly chased by the British the Burmese thereafter evacuated Jorhat and concentrated at Rangpur, the then capital of Assam. A large stockade was built to resist the advance-ment of the British but without any success. Ultimately, the mediation of Sharanananda Brahmacari, the chief priest of the Shan and Burmese commanders in Assam, effected the surrender en masse of the Burmese through a term of truce. With that the Burmese supremacy in Assam virtually ended, though Assam was ceded only after the treaty of Yandabo in February 1826 (Bonnison 1970).

At the fall of Rangpur fort, the last strategic point of defence, the faction of the Burmese army, numerically strong and unwilling to come to an understanding with the English, were permitted by treaty to return to Burma via Singpho route, while Sham Phukan by executing Burmese Governor Mingisaha Mund Kroden had committed an act of open rebellion against the king of Ava (Burma), and as such he had no way out but to ask for British protection along with his adherents. They were styled by David Scott as Shan Musketoera and were settled at Singimari on the bank of
the river Jinjiram in the present day Goalpara district of Assam (FPP 25 Feb. 1831), in 1826 (Bhattacharjee 1975).

Following an agreement between David Scott and Shan Phukan the Shans were exempted from paying rent for the land they cultivate. The condition was that one-fourth of the population will remain bound to act, as and when required as soldiers against the Caro (a tribe of Meghalaya state) and others who may prove troublesome. The Shans were self-sufficient and never required commissariat, carriage or coolies on the account of the Govt. They had always acted with strict propriety in all their military executions. The English admired their martial quality and acclaimed their industrious and peaceful nature. The Shans were repeatedly and successfully employed against the Bhotia (of KUTAI), Caro and Khasi (a tribe of Meghalaya state) (FPP 25 Feb. 1831, Bhattacharjee 1978).

Though several of original settlers have died from natural cause or otherwise, a few bad characters deserted (FPP 25 Feb. 1831) and some in groups were employed in other strategic points (Bhatacharjee 1978), the whole of the Shan colony was in a thriving state as they stood the climate even better than the original inhabitants of the area (FPP 25 Feb. 1831). The original Shan settlements were Rambalapara and Masakpara in Goalpara district and Ronkhuila, Shyamdinga and Bangalkhata in presentday Caro hills. Following reorganisation of the administrative units these Shan settlements came under the district of Goalpara. The guns in their possession raised the point of option as to either to deposit the
guns with the Government and remain there or to shift to the
district of Garo hills with their guns. However, they decided
even to deposit the guns and to be in the settlements undisturbed.
In the early part of 20th century the Shans finally migrated to the
present abode in Garo hills district due to excessive pressure of
muslim refugees on their erstwhile land, as claimed by them.

The exact number of individual forming the ancestral and
founder population, is very difficult to ascertain. It is claimed
by some of the members of the presentday Nan population, that
during the end of 19th century there were about 200 members in the
party led by one Subedar Nao. There were four Havildars named
Natu, Dukhi, Dhubala and Aipon, in addition, to assist the Subedar.
As per one record Mr. C.G.M. Kennedy, the then Deputy Commissioner
of Garo hills allowed the Shans to keep 36 out of 41 guns originally
issued to them as a privilege on the application filed by Aipan
Havilder dated 2nd Feb, 1895. In accordance with the earlier
agreement with Scott if armed personnel were to amount to one-fourth
of the total members, the ancestral population should have been of
around 200 individuals. Out of them a few died of malaria and due
to administration of poison by enemies, mainly Garo, a few didn't
marry and a considerable section merged with other neighbouring
communities following marital relations, as reported by the infor-
mants during the course of investigation. Those who continued to be
in the group procreated through conjugal relations with mates from
other communities, and finally resulted into a flourishing and
distinct community of Nan.
The word Mān was used to refer to the Burmese as a whole by the Assamese. The Shan also came from Burma and accordingly were designated as Mān since their first infiltration into Assam. Their immediate neighbour in the settlement of Singimari were again the Assamese refugees, the sufferers of Burmese tyranny settled by Scott (Bhuyan 1949). So, the very name Mān continued to be applied to them, and the Shans got naturalised to accept the same. Now the community is proud to be titled by the appellation of Mān, because of their remarkable valorous heritage.

The Mān and their socio-cultural profile:

The present habitation area of the Mān is distributed into two clusters: I. Covering three villages of Haldibari, Sankarpara and Rajongola under Selsella Development Block; and II. including other three villages of Beldella, Bangalkhata and Shyamnagar under Dadengiri Development Block of West Garo Hills district of Meghalaya (Fig. 2).

The cluster I is surrounded by hillocks all about in contrast to the II which is beyond the hills and scattered on a flat area. The stream called Kolenga or Galwan flows below Haldibari serving washing and bathing purposes. Sankarpara and Rajongola shares the stream Singol. The whole of the cultivable land in cluster I gets submerged in water drawn by these two streams during rainy season disrupting inter-village links, though receding water leave much silt revitalising the fertility of the soil. In cluster II the river Rongal passes from northeast to west curving convexly the village Bangalkhata as the main water source.
Fig. 2 The present day habitation area of the Man distributed in two territorial clusters in West Garo Hills.
Wells are the only source of water in DeMella and Shyamnagar villages.

Among the Mān descent is patrilineal. Marriage rules are governed by the Kinship system. Consanguineous marriages are not prescribed. Matings between individuals having relations through any of the male ancestors, and that through female ancestors within three generations are strictly forbidden. Deviations are, however, agreed upon on expiation, payment of fine and giving of a feast to the society. Though the society has no sanction of marriages with individuals from other communities, conversion of the presumptive mates to Buddhism, expiation, payment of adjudged fine and giving of a feast to the society allow the mates to live like husband and wife. All cases of deviations are looked down upon by the society. Detected premarital sex relations are never followed by marriages, consequences are same as in the cases of inbreeding and outbreeding. Howbeit, love affairs without sex relations can be followed by marriage. Remarriage of widow or separated woman is not treated at par with marriage, and is called 'Kain'; on the contrary this rule does not apply to males. Residence is patrilocal and neolocal. Delivery cases call for the expertise of the elderly women of the society. Sons are preferred for their expected contribution to the economic subsistence of the family. Nuclear and extended are the prevalent family types. The authority is vested upon father or the eldest male member in his absence. Property is inherited by the sons, in absence of sons daughters can also inherit, failing both the nearest male relative attains the heirship. The population on the whole is an endogamous unit
without cleavaging into any exogamous subdivision like clan.

A council, called 'Samaj' formed by the elderly members of the village serves as the political organisation, under the leadership of an unanimously elected Headman. The council also serves as the court of arbitration, punishment, and a body for the necessary execution. Dishonour of the council leads an offender to cessation of all cooperation on the part of the villagers, or excommunication as an extreme case. Disputes among the villages are settled by a council formed at intervillage level.

The Mān are Buddhist by religion subscribing to the Hinayana denomination. During early period of their settlement the Mān had abandoned their faith in Buddhism and embraced Hinduism performing idol worship. The source of this change in religious faith is believed to be the influence of Assamese culture, because female partners of their founder members were Assamese and their immediate neighbour at Singimari were also the Assamese. However, soon different Buddhist missionaries from Bura led by the monks Urisala, Unandra, Uchandra and others in succession came to Garo hills to make the Mān realise their state of apostasy and to preach the revival of their faith in Buddhism. Since then they continued to observe Buddhist rites in religious sphere (Kann 1969). Now there are four Buddhist temples in Haldibari, Shyamnagar, Bangalkhata and Deldella villages. There is also one monk from among the Mān, Rev. Gyanasara Thera, to look after the religious interest of the community.

The Shan ancestors of the Mān are referred to as 'Bumani Mān' as they came to Assam along with the first wave of invasion
serving the Burmese interest in Assam for a longer period. During this prolonged stay they acquired Assamese females as mates by force or by intimidation. Uncertainty on returning to Burma and subsequent settling at Singimari provided them with a ground to stabilize a suitable social and cultural atmosphere to live with as an organized group. At Singimari again Assamese refugees formed the immediate neighbourhood, who continued to supply female conjugal partners to the Mān. This state of matrimonial link continued up to at least two initial generations. Male members being constantly engaged, initially in serving the Burmese cause and British cause thereafter, left the task of building and shaping the socio-cultural setup to female members. The initial female members of the society, being Assamese in origin introduced their socio-cultural system uncontested, which is reflected in most of the existing socio-cultural practices of the Mān.

Though census of India has described the Mān as a Tai-speaking group, their dialectical similarity with the people of lower Assam is striking. The Mān vocabulary has only a few residual Tai words, like 'Ama' - mother, 'Selei' - cigar, etc. The kinship system resembles that of the people of lower Assam except the term used for mother. Modes of acquiring mates and prevalent marriage custom minus religious rites cast a shadow of Assamese usages.

The Mān are Buddhist in every respect, still the worship of few gods and goddesses like SriKrishna, Lakshmi Devi, and Manasa Devi are quite in practice for specific reasons. Buddhism has certainly played a significant role in remoulding the society.
Celebration of Bihu festival undoubtedly bears the Assamese influence, but the 'Bengali' or 'Bohag' Bihu called as 'Pani' Bihu involves Buddhist rites in a significant proportion. However, religion has nothing to do with the 'Magh' Bihu and it is celebrated as such. In contrast to cremation practices in earlier days dead bodies are buried involving much of Buddhist rites. Even though the society sanctions cremation, its costly nature ensured the burying to be a general practice.

On settling at Singimari in 1826 the Mān started acquiring female counterparts from original settlers of that region formed by the populations like the Garo, Hajong, Rabha and Koch; in addition to those form the Assamese refugees who later on went back to their original homes after the annexation of Assam by the British. The intensity of marrying local girls, from the Garo, Rabha, Hajong and Koch societies, increased along with their shifting of habitation area to Garo hills. Acquiring mates from these populations was a positive step to maintain the rigidity on consanguinity. Notwithstanding the fact that females from the above-mentioned societies contributed to the formation of the population, there has been little or no influence of the said cultures on the Mān (appendix No. 1).
This Han population evolved by the processes already mentioned, has been undertaken for study in order to describe them from the demogenetical point of view, and to look into the micro-evolutionary trend, if any, among them. While highlighting the above-mentioned aspects perhaps a few important points may also be investigated into. For example, because of the small population size do they constitute a breeding isolate with high degree of inbreeding? Or, have they avoided inbreeding by being flexible on receiving mates from surrounding populations resulting in regular gene flow? If the gene flow is a continuous phenomenon, is the genetic equilibrium maintained in the population? Is the population maintaining a separate genetic identity distinguishable from other surrounding populations?

The collection and analysis of the data:

The present project was executed during the year 1977-’80. The actual field work was conducted in two phases, one in the winter months of 1977-’78 and the other in summer months of 1978. The specific field areas of data collection have been shown in Fig. 2.

The whole population, composed of 128 families consisting 703 individuals (347 males and 356 females), was covered for collecting demographic materials; while for genetic markers a representative sample of 82 (60 in case of secretor status, because 2 blind individuals were excluded) comprising of almost all unrelated and
distantly related individuals, was examined. Demographic data were collected through a schedule, designed for the project. The mode of obtaining samples and data on genetic marker, and the method of analysis and statistical treatment of the data have been described in the respective chapters.

It is proposed to display the materials in the present thesis in the following manner. In the initial chapter the subject and the population have already been introduced with necessary background. The population structure on basic demographic variables will be analysed in the second chapter. The third chapter will deal with the genetical structure of the population, based on marital practices. The genetical composition of the Man will be discussed in the fourth chapter; and in the last chapter an attempt will be made to draw a conclusion by the way of summarising the results obtained.