

SOCIAL HISTORY OF MALARIA IN MANIPUR: 1835-1947

*Dissertation submitted to Jawaharlal Nehru University in partial
fulfillment of the requirements for the award of the Degree of*

MASTER OF PHILOSOPHY

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2007

Dedicated to my Mom and Dad



CERTIFICATE

The dissertation entitled, “**Social History of Malaria in Manipur: 1835-1947**”, is submitted to Jawaharlal Nehru University in partial fulfillment of the requirements for the award of Master of Philosophy of the University. This dissertation has not been previously submitted for any other degree of this university or any other university and is her own work.

We recommend that this dissertation should be placed before the examiners for evaluation for the award of M.Phil Degree of this university.

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ACKNOWLEDGEMENT

Words are not enough to express the gratitude that I feel for my supervisor, Associate Professor Rajib Dasgupta. He was the driving force behind my work, guiding me, supporting me throughout the most difficult times of my academic career. As a supervisor, he has been extremely patient with me, especially during those occasions when I was not able to meet his expectations. Without his support, I would have never succeeded in this effort. I sincerely thank him for his immense help and cooperation.

I express my gratitude towards all the teachers and staffs for steering me to a work largely devoted to understanding the enthralling history of malaria in Manipur.

I also thank the documentation staffs of CSMCH, library staffs of National Archives, Manipur Secretariat, Manipur State Archive, Manipur University, National Institute of Communicable Diseases (NICD) and JNU.

I would like to thank my friends whose support greatly facilitated my work.

Many thanks to my parents and my siblings - Ulian, Khup, especially Ukim - for all their constant inspiration in bringing this dissertation to completion.

May God Bless all.

T. Khanching

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CHAPTER 1

MALARIA IN MANIPUR: CONCEPTUAL FRAMEWORK AND DESIGN

Malaria – Major milestones

Malaria parasites have been with man since the beginning of time. They are likely to have originated in Africa (along with mankind). The fossils of mosquitoes upto thirty million years old show that malaria vector was present long before the earliest history. Hippocrates, an ancient Greek physician, known as the “The Father of Medicine” and probably the first malariologist, described the various malaria fevers of man by 400 B.C. *Hippocratic Corpus* distinguished the intermittent malarial fever from the continuous fever of other infectious diseases and also noted the daily, every other day, and every third day temperature rise. The *Hippocratic corpus* was the first document to mention about splenic change in malaria and also attributed malaria to ingestion of stagnant water. Before the discovery by Hippocrates about the role of mosquitoes (malarial vector) spreading of the disease it was associated with supernatural beings, the evil spirits of or malaria gods were believed to live within the marshes.

The recurrence of malaria was known to the ancients and first recorded by Roman Poet Horace (December 8, 65 BC - November 27, 8 BC) in his third satire. A number of Roman writers attributed malarial diseases to the swamps. In ancient Rome, human habitations in mosquito-infested districts were routinely prohibited. In the first century A.D., Roman scholar Marcus Terentius Varro (116-27 BC) suggested that swamps breed

"certain animalcula which cannot be seen with the eyes and which we breathe through the nose and mouth into the body, where they cause grave maladies." By about 30 A.D., Celsus described two types of tertian fevers and agreed with the views expressed by Varro.

Claudius Galenus of Pergamum (131-201 AD) recognized the appearance of fevers with the summer season and jaundice in infected people. But he believed that malaria was due to a disorder in the four humors of the body. Vomiting accompanying malaria was believed to be the body's attempt to expel poisons. The bleeding supposedly rid the body of "corrupt humors." These tenets were accepted without question for the next fifteen hundred years.

The first records of the treatment dates back to 1600 when the bitter bark of the Cinchona tree in Peru was used by the native peruvian indians. By 1649, the bark was available in England as "Jesuits Powder", for the benefit of those suffering from agues (English word for malaria). In 1889 Alphonse Laveran discovered the protozoal (single-celled parasite) which was the cause of malaria. In 1897 Ronald Ross discovered that *Anopheles* mosquito was the vector for the disease.

The first scientist to discover that man and mosquitoes are joint hosts to a parasite was Sir Patrick Manson in 1878 (Beelay. 1943).

Before the fifth century B.C., Greece was a mosquito ridden country, but was free from malaria. The disease was likely introduced by immigrants. A number of Roman writers on agriculture and architecture associate malarial disease to swamps, to the

emanations from them, and to the small living creatures found in them (Georgas, Garrison. 1916).

In the Vedic (3500 – 2800 years ago) and Brahmanic (2800 – 1900 years ago) periods of Northern India (Indus Valley), the scriptures referred to fevers similar to malaria. The *Atharva veda* specifically mentioned that fevers were particularly common after excessive rain or when there was a great deal of grass cover. In 800 B.C., the sage Dhanvantari wrote, “Their bite is as painful as that of serpents and causes disease ...” *Charka Samhita* one of the ancient Indian texts on Ayurvedic medicine which was written approximately in 300 B.C. and the *Susruta Samhita*, written about 100 B.C., refer to diseases where fever is the main symptom. The *Susruta Samhita* even associated the symptom of malaria fever to the bite of certain insects.

In 1618, the wife of Viceroy of Peru was healed of an intermittent fever by the use of Cinchona bark, which was introduced into Spain in 1640. The medicinal properties of Cinchona bark motivated the study of disease, which was carefully followed in England by Sydenham and Morton in the seventeenth century, by Lind and Pringle in the eighteenth century and in Italy by Lancisi and Torti, the two great physicians (Georgas, Garrison. 1916).

Lancisi in 1717 published a large treatise on the noxious airs of swamps where he shared the same opinion with the earlier roman writers about the insects arising from them, in particular the mosquitoes. It gives a naturalist account, even suggesting their possible agency in inoculating disease. Lancisi also shows that good drawn age drives away fever (Ibid).

Torti introduced Cinchona bark in Italy and also introduced the term 'malaria', from the Italian word, *malaria* (bad air).

The Italian term malaria is still used to describe the intermittent and remittent fevers sometimes called ague, marsh fever, hill fever, paludism, etc. Some writers claimed that malaria was a contributory cause of the decay of Greek and Roman civilization (Beeley. 1943). The transmission of human malaria by the *Anopheles* mosquito was established in 1898 in Italy.

Long before the British colonized India, malaria was a serious problem for the country which resulted in great economic loss and human misery. In 1852 malaria epidemic wiped out the entire village of Ula and then spread across the Bhagirathi to Hooghly and continued to devastate populations for many years in Burdwan. The British administration contributed to the spread of malaria as the British rule resulted in the development of railways. The construction of railway embankment provides as a breeding site for malaria vector, the construction of railroads on bridges were associated with malaria may be due to the imported labour from malarious area, the labourers probably introduced different strains of the parasite to the areas in which they worked.

In India malaria control activities were initiated in the first half of the twentieth century in the areas of political military and economic importance to British rulers like cantonments, tea, coffee, rubber plantation and port areas for purpose of protection of the armed forces, plantation workers and commerce and trade respectively. From 1900 to 1936, anti larval measures were used in different parts of the country. Larvicidal chemicals were used for control of mosquitoes. The use of Parisgreen brought a positive

result as it contributed towards control of *Anopheles* mosquitoes in different parts of the country (National malaria eradication programme. 1988).

J.A Sinton in 1935 discussed the malaria problem in a health bulletin “What malaria cost India”. He estimated that “at least 100 million individual suffer from malaria every year in India”. As attacks of malaria lead to lowering of the resistance of the patient to other diseases, so it is indirectly responsible for a rise of in the morbidity due to other causes (Health Survey Development Committee Vol-1, 1946) which is indirectly said to be responsible for between 25 and 75 million cases of illness each year.

Malaria has been the greatest cause of suffering in India. Sinton believed that malaria was the cause of one million deaths in British India, while epidemic outbreaks of the disease may raise the figure by one quarter to half a million deaths, including the indirect effects of malaria in raising the general mortality rate in the community (ibid). Considering the morbidity and mortality in the population and the economic losses due to inability to work suffered on account of this disease. Malaria can be considered as one of the public health problem in India.

Eminent scientist like Christopher and Sinton studied the impact of malaria on the Indian economy in the early twentieth century.

Christopher in 1926 remarked that “Whether from the point of view of enhanced mortality, sickness and individual suffering or sapping the vitality of the nation or the paralyzing effect on the industry or exploiting the mineral or other natural wealth of the country, or the indirect loss to government in a variety of ways, malaria is universally recognized as the most important sanitary problem India has to cope with”. While Sinton opined in 1933 that, “The problem of existence in very many part of India is the problem

of malaria. There is no aspect of life in this country which is not affected either directly or indirectly by this disease. It constitutes one of the most important causes of economic misfortune, engendering poverty, diminishing the quantity and quality of food supply, lowering physical and intellectual standards of the nation and hampering increased prosperity and economic progress in every way” (Malaria as a disease entity in India. 1933).

Malaria is a disease of great public health importance. By undermining the health and capacity to work of hundreds of millions of people, it is closely linked to poverty which results in hindrance to social and economic development (Ghai, Gupta. 1999).

The British impact on India perhaps might have a profound effect on the death rate and population growth as on political and economic development, but it had been less thoroughly examined the disease like malaria. In the late nineteenth and early twentieth century millions of Indians perished in an epidemics due to the new economic conditions, ineffective village sanitary practices, the impact of modern transport and irrigation works, population pressure and poverty all helped in the spread of disease even if the British government made a serious efforts to improve Indian Public Health. But the effort proved ineffective in the late nineteenth and early twentieth century. The mortality from malaria increased. The damage cause by endemic and epidemic diseases and the rise of death rates can be seen in the stunting of India’s population growth. In the year between 1871 and 1821 India’s population expanded only at relatively slow rate of 4% year. Modern transport resulted in the new breeding ground for insect carrier of diseases, and also increased in the mixing of different people from different places, scarcity, etc., trigger the waves of epidemic and death. Among the epidemic diseases malaria was the

greatest destroyer of lives. From the mid 1890's to 1921 it probably took twenty million lives. Illness was most fatal among the impoverished agriculturalist and artisan, the poor weaver, menial servant etc. The new laws of tenure and assessments and tariffs and transport increased on agricultural export, may have helped some merchants, civil servants to gain land but on the other hand it also contributed to declining agriculturalists, increased tenancy and landless class. In the nineteenth century peasant indebtedness increased.

The shift from ancestral villages to factories in Bombay, Calcutta and also to the tea plantation in Assam helped in the spread of epidemic and endemic diseases. Disease was promoted directly and indirectly by the building of transport and irrigation facilities in an attempt to modernize the economy. In 1860's when fierce malaria epidemics, raged in Hooghly and Burdwan, a government inquiry the disaster was caused by embankment including raised roads and railways and by 'silting', and also due to poverty. Sir Richard Temple, Lieutenant governor of Bengal, noted that the great number of people who died belonged to the poor classes. A. Bentley, Director of Public Health in Bengal and S.R. Christopher of Punjab Health Services simultaneously attributed malaria to crowding and poverty, but more immediately the environmental changes and the 'opening of the soil in the tropics' to economic development.

In 1942 Paul Muller discovered the insecticide property of DDT in 1942 and it was first used in Italy in 1944, which gave the impression of the possibility of eradication of malaria. As a result there widespread systematic control measures were adopted such as spraying with DDT, coating of marshes with paraffin (to kill anopheles mosquito larvae), draining of stagnant water, use of nets and the result was quite impressive.

Despite the initial success, the mosquito eradication program failed in many countries. One of the reasons for the failure to reduce the disease may be probably due to social and political factors preventing sufficient application of control measure.

In India DDT was first used later on it was used by the civilian for anti- malaria operations in 1945. The initial operation yielded a good result, but a glance at the malaria situation shows that the effort of eradication malaria proved futile as there was resurgence of malaria in the country with a forceful vengeance. The most dangerous form of malaria i.e. *Plasmodium falciparum* developed a resistance to chloroquine.

Malaria is a disease closely associated with international travels, trade and human migration, deforestation, expanding agriculture, building of dams, unplanned urban development. The conditions in which the insects (mosquito) flourish are humidity heat, poverty and overcrowding. It can also survive in but a sultry condition and also can survive in higher attitudes as well (Ghai, Gupta. 1999). The breeding sites for different species include pools, irrigated fields, lakes, temporary rain water, puddles, cut bamboos, paddy fields and well etc.

Biology

Malaria is a vector-borne infectious disease that is widespread in tropical and subtropical regions including parts of the Americas, Asia and Africa. It is a protozoan disease transmitted by the bite of *Anopheles* mosquito. Malaria parasites are transmitted by female *Anopheles* mosquitoes. The parasite multiplies within the red blood cells, causing symptoms of anaemia (light headache, shortness of breathe), as well as other general symptoms such as fever, chills, nausea, flu-like illness, and in severe cases coma

and death .The generic name of *Plasmodium* was coined by WHO in 1963 and Garham in 1966. The life cycle of *Plasmodium* requires two separate stages of development - one which take place in particular species of anopheles mosquitoes (the vector) and the other in human (the reservoir of infection). Humans are infected through the bite of infected mosquito, the parasite being coincidentally injected along with saliva (which acts as an anticoagulant) during the insect's blood meal. Once inside the human blood stream the parasite develops further in the infected person's liver and red blood cells. After one to two weeks fever and chills began to appear as successive hatches of the malaria parasite break down blood cells and are released into the circulation. After a week, occasional sexual forms of the parasite also began to appear in the blood when ingested by a subsequent feeding mosquito, they continue the second (vector) phase of malaria life cycle, developing in the wall of the mosquito's stomach from where they migrate to the insect's salivary glands and begin the cycle once again (Zurbrigg.1992).

The incubation period of malaria varies between 9 and 10 days, least for *P.falciparum* and the maximum for *P.malariae* infections. Malaria can afflict any age, but in new born it is rare due to the presence of foetal Heamoglobin (Hb F) and maternal immunity (Ghai, Gupta. 1999).

In nature, malaria is transmitted from man to man through the bite of female *Anopheline* mosquito. Another important mode of transmission is accidental inoculation by intramuscular or intravenous injection of blood or plasma e.g., by blood transfusion or unintentional infection in drug addicts. Most infection occurs when blood has been stored for less than five days. Such infections are frequently due to *P.vivax* or *P.falciparum*.

Malaria can also be transmitted from mother to foetus. Congenital malaria occurs in less than five percent of those newborn whose mother are infected (ibid).

In a given population, malaria can have different manifestation :a) Acute febrile illness, which may lead to severe disease and risk of death. b) Chronic persistent asymptomatic malaria, which may lead to anaemia or may contribute to chronic malnutrition. c) Perinatal malaria leading to 1) maternal death, abortion or still birth in women with little or no immunity or 2) low birth weight babies born to women with higher level of immunity. The initial symptoms of malaria are non-specific and may imitate viral fever. There is sudden onset of fever, headache, loss of appetite, lassitude, abdominal discomfort and muscle pain. The classical triad is characterized by a cold stage (feeling of chills and rigor, headache and nausea, malaise and anorexia.), a hot stage (dry flushed skin, rapid respiration, and marked thirst), and sweating stage when temperature falls by crisis. Fever occurs on alternate days in case of infection with *P.faciparum* and *P.vivax*, and on the fourth day in case of *P.malariae*. (ibid)

Anopheles is a genus of mosquito (*Culicidae*). There are approximately 400 *Anopheles* species, of which 30-40 transmit four different species of parasites of the genus *Plasmodium* that cause malaria which affects humans in endemic areas. *Anopheles gambiae* is one of the best known, because of its predominant role in the transmission of the most dangerous *Plasmodium falciparum*. There are 120 plasmodium species of which *P. falciparium*, *P vivax*, *P. malarie*, *P. ovale* are harmful to humans. Among the fever species, *P.falciparum* is the most serious and the most widespread.

Manipur

The native state of Manipur is situated between 23 50' and 25 41'N and 94 41E. and covers an area of 8,456 square miles. During the British era, it was bounded on the north by the British district of the Naga Hills, on the west by Cachar, on the South by Lushai Hills and Burma, and on the east by Burma (Allen. B.C.).

During the year 1763 the territory of Manipur extended upto Brahmaputra valley and controlled the entire south Cachar up to 1832 and entire Kabaw valley and some portions of southern China and Chittagong hill tracts. In 1834 Kabaw valley was given to Burma under the provision of the treaty of 1834 (M.T.Laiba. 1992). Geographically, the state is divided into hills and valley.

Manipur was one of the ancient trade routes between India and south-east Asia and different waves of migration of Aryans, Mongolians and even Dravidians had passed through Manipur. The state was one of the trade routes between India and south-east Asia (Kabui.1995). Manipur came into contact for the first time with the British during the reign of Jai Singh. The British rule became acquainted with only in 1824-26 during the First Burmese war. The Burmese after their retreat, occupied Manipur Valley. At that time a large British force assembled in Kachar with a view of entering Manipur and invading Burmah, but they met with so many difficulties on account of the jungly and swampy nature of the country, they got no further than Jiri river. Finally, after great losses, from sickness, the force returned, never having even entered the Manipur Hills (Brown. 2001). Earlier, the policy of the British government towards Manipur was that of non-interference. Later on due to the strategic location of Manipur, the British

government showed little interest in Manipur and in 1835, British Political Agent was appointed in Manipur. In 1891 the British government took over the sovereignty of the state.

After 1891 there was an improvement in transport and communication. Interaction increased with the neighbouring states.

Climate

The rainy season commences in April and last till the end of September. July, August and September are the wetted month. Cold seasons commences in October and last till the end of February. The hot season commences in March and continues until the end of September. The climate rainy and temperate covers the hill in the western portion with thick forest and induces the inhabitants to grow rice, causes numerous streams marbles.

Houses

The houses of well to do Manipuri are contrasted of wood, bamboo while the poorer class construct the framework of bamboo and walls are usually of need plastered with mud and cowdung. The roofs of all the houses are that red with grass (Dun.1992). The hill men set up their villages on the top on slopes of high hills covered with forests. In selecting of the sites the hill tribes must have been guided by two considerations. Firstly, it might be due to security reasons and secondly, it might be due to health reasons. The houses of the hill tribe are made are made of bamboo. Rice being the staple

food, it encourages the breeding of large number of mosquito species that are vector of malaria. Paddy is grown at the risk of malarial infection (Bhattacharyee, Talukda. 2003).

Malaria in Manipur

Malaria is emerging as a major public health problem in all seven states of north-eastern India. Focal out break due to malaria are of frequent occurrence and morbidity and mortality associated with the disease is quite alarming.

In older days malaria was known as *aroom apumba* or *aroom laihou*. The chronicle records the malarial fever which was known as *aroom* or *kabaw lai* (fever of *kabaw*). During fourteenth century and fifteenth century the king established *Ametpa Loishang*, the department of medicine men and the queen was made the head of the department (Kabui. 1995).

Manipur is 3500 feet above sea level; the climate of Manipur is suitable and favourable to Europeans and natives of India throughout the year. Below 3500 feet above sea level it is good only from the 1st January to 30th March. During the rest of the year persons other than natives of the country are very liable (below 3,500 below) to malarial fever. The month of October, November and December are worst for fever (Dun.1992). Precautionary rules were made for troops regarding movement in Manipur might be due to fear of malaria. It is said that if possible troops should moved along Cachar road before 1st December. The deep narrow valley retained their malarial character till late in the season. The roads and forest retain their dampness almost till 1st December. It was made necessary to wear warm clothing at night and light clothing by day. Troops should not be required to march before the fog has cleared especially in the hills. To descend rapidly in

the early morning into the cold damp mist, is to make sure of cases of cold, fever and pneumonia. Starting late enables the men to prepare and eat a meal before exposing themselves to a climate which in always to a certain extent malarial (Dun E.W. 1992). Major H. Maxwell, the then Political Agent of Manipur in the Administration Report of 1892-93 remarked, "Fever is not in Manipur the scourge that it is in the other parts of the province. Both the native and immigrant population enjoy, as compared with that of either the Assam or Surma Valley, a most remarkable immunity from this disease." In contrast to the statement given by the then Political Agent there was a record of influenza invading the valley, killing a number of the aged and the very young in the Administration Report of 1895-96. In the following year there was another recurrence of influenza claiming many victims in the state. In 1897-98, fever in an epidemic form and a fatal type was prevalent throughout the valley during the rainy season. At the beginning of the cold weather, the Naga valleys on the Northern Frontier near Mao, was attacked with epidemic fever and a great mortality. In 1899-1900 in the middle of the year there was an outbreak of influenza in the State. In the valley the patients could get rid of the sickness, but in the hills the mortality was considerable, the reason attributed by the then Political Agent was due to the draughtiness of the houses as well as the people were ill-clad and ignorant.

In 1903-04, malarial fever was prevalent; the reason was accounted as being due to the short rainfall. In 1909, according to Christian missionaries, malaria fever was rampant in a Tangkhul Naga village (Pettigrew. 1910). In the report of 1911-12 there was prevalence of malaria but was not recorded to be virulent. In 1916-17 malaria and pyrexia of uncertain origin broke out in an epidemic form throughout the valley which was

unusually prevalent. In 1918-1919 it was recorded that Manipur did not escape from the widespread of influenza which caused so much havoc in other countries. There was great loss of lives. The Civil Medical Officer gave precautionary measure against it. In 1919-20 malaria in an epidemic form was prevalent in the valley. In Kakching dispensary alone 2972 patients were treated. Dr. Crozier (1921) during his stay at the Kangpokpi Mission Hospital reported, "Malaria on the compound has been very bad this year largely because of not getting mosquito breeding places cleaned up. This cleaning up can be done effectually but the difficulty of doing a lot of work with no money has not been yet been fully solved! During the first year here the Kuki girls suffered greatly with malaria, but this year but little. The Tangkhul girls suffered almost continuously this year, partly because their houses were badly constructed." In 1923-24 there was record of slight outbreak of influenza in the latter part of the year. It was also reported that, if dispensary was closed, the manipuri cultivator will again will resort to *maibas* (local physicians) who treated malaria by stomach pounding. In 1931 the medical report of Christian missionaries in Kangpokpi reported, "Since the month of August there has been much sickness on the compound. Influenza laid low nearly every student in the three hostels, and this year, in common with the valley, malaria has been very severe. No dead have occurred so far owing to these diseases but many have been incapacitated for long period." A medical survey of the boys' school conducted by Dr. Werelius revealed large spleens and bad cases of anaemia. Many of the patients were from outlying villages, as well as villages far removed from Kangpokpi. They were considered as easy carriers of malaria bug.

In 1923, the Christian missionaries in Kangpokpi took up precautionary measures for eradicating malaria. The water courses were enlarged and tanks were filled in, half the population of Kukis sent elsewhere, and their hut burned down, and those remaining settled in more substantial buildings and some distance from the swampy and low-lying land adjacent to the main stream. Jungle and undergrowth kept low by cutting down twice during the rainy season; thus exposing stagnant and other kind of pools; regular systematic treatment with kerosene and linseed (Pettigrew. 1923). In 1931-32 a systematic anti-malaria and anti-mosquito campaign work started in the state for the first time.

Historical approach to studying Malaria

George Rosen in his book, "A History of Public Health" has done a comprehensive review of public health and medical pattern beginning from the pre-historic periods. Rosen has written about the public health from the last three thousand years, about the medical care, with social, implications the environmental aspects of health, about the epidemic and endemic diseases, the status of occupational health and the general level of public health administration. In the Hellenistic period he discussed about the Hippocratic teaching and about the initial usage of the term epidemic and endemic. Rosen mentioned about the Roman period where great importance were given in the provision safe water supplies, public hospitals and effective public health administration. In one of his chapters 'Mercantilism Absolutism and Health of People, he has discussed about various diseases including malaria. He has written that the epidemic of malaria visited England in the second half of the seventeenth century particularly in 1657 and

1664. According to him the flare up of malaria was due to the continual war as well as great extension of maritime trade. European made contracts with the some of the worst foci of the disease in Africa, India, East Asia, the new strains might have been imported and the parasite carriers spread malaria through out Europe. In 1849, Rudolf Virchow elaborated a theory of epidemic disease as a manifestation of social and cultural maladjustment. In the chapter, "Industrialism and the Sanitary Movement", Rosen discussed about the expanding transportation and new means of communication. With the increase in factories more and more workers were needed. With the new industrial civilization brought into being, the health problems of the people increased. Epidemic of typhus fever drew attention in Manchester, the first industrial city which had brought sharply to the notice of the community the significance of factories and congested dwellings as providing conditions in which such disease could flourish and spread. Modern public health took its origin in England because it was the first modern industrial country. Rosen has also discussed about the sanitary reform and mentioned "...the impulse to sanitary reform did not come from medical profession, even though some physicians played significant part in calling attention to the community problem of ill health. Furthermore, medicine had little real knowledge to contribute toward a solution of the major problem which concerned the transmission of communicable disease. Thus, he emphasised the importance not only medical but the social and political action in public health.

According to George Rosen, a meaningful understanding of the present requires that it be seen in the light of the past from which it has emerged and of the future which it

is bringing forth. Every situation that man has faced and every problem that he has had to solve have been the product of historical developments.

History illuminates the public concern with health. Man is a social being. It is characteristic of human beings to associate with each other for mutual protection and advantage. Throughout known history, men living in communities have had to take account in one way or another of health problems that is derived from biological needs and attributes their fellow. Out of the need for dealing with social life, there has developed with increasing clarity recognition of the signal importance of community action in the promotion of health and the prevention and treatment of disease. This recognition is summed up in concept of public health.

David Arnold in "Introduction: Disease Medicine and Empire" discussed about history of medicine and mentioned that there are two approaches of seeing history of medicine. Some see history of medicine as an unfolding story of scientific discovery and declining death rates and there are those who see medicine as a 'cultural artifact' and a reflection of a society total being. David gave information about the relation between epidemic diseases and colonial rule. He has written that epidemic diseases were introduced by Europeans and unleashed on societies without prior experience of them. European trade and transportation helped the spread of disease vectors, the mosquitoes, fleas and lice by which epidemics were communicated. Moreover Arnold further emphasised that due to high morbidity and mortality the production in mines, plantation and factories suffered. In the late nineteenth century in India the state revenue was threatened due to the epidemics and famines. Medicine was used as a demonstration of their

benevolent and paternalistic for winning support from a newly subject population. It was used as a 'tool' to 'know' the people and established its authority over them.

David indirectly emphasized the importance of social science in studying or understanding disease by remarking that "...the history of disease is more than just a history of microbes, mortality and medicine, in every society, present as well as past, disease, especially epidemic disease, takes on a wider social, political and cultural significance...".

For a proper understanding of any disease it should be explored in its cultural and political context rather than in strictly epidemiological terms. In the words of Arthur Beelay (1934), "...the presence of malaria in any community is evidence of a social and economic difficulty rather than a medical one is a statement no one can deny..."

The study of social history helps in the study of evolution of disease process due to its holistic approach. If a disease is looked at in the social historical point of view a whole host of significant problems come quickly to mind like how disease patterns vary by class, race, sex or ethnicity? What was the role of urbanization in altering disease process? How did technology and new occupational structure transform disease pattern? Is there evidence that changes in morbidity may have occurred because of changes in bacteria organisms and viruses rather than in human susceptibility? Methodological approaches are not required to answer such question. Disease pattern can be studied by matching manuscript, census schedules, registration report, etc. and other sources that will provide information relevant to the disease (Grob. 1977).

In the study of malaria in the upper Mississippi valley in the nineteenth century, H. Ackernecht traced the subtle relationship between population, migration movement, land use patterns and the appearance and eventual decline of a disease (ibid).

Racial background may help to explain the prevalence of a particular disease among certain populations. Economic factors influence the accessibility to health care, the type of occupational related disease encountered, etc. So, illness must be considered by both historians as a process which is as much social as biological (Shortt. 1980).

Social history began as an attempt to view “history from below”, i.e., to dispense with kings and statesman in preference for the “poor or lower classes”. There is also an assertion that social history is not a part of history, but all of history looked at from a social point of view.

Conceptualization of the Problem

Malaria might have been prevalent in Manipur long before the Colonial rule in the state. Due to the absence of any written record the endemicity of the disease could not be studied. Before the Colonial rule Cases of fever was mentioned in the Royal Chronicle of Manipur (*Cheitharol Kumbaba*) but it did not mention the epidemics of malaria in the state. After the Colonial rule epidemics of malaria were recorded by the government officials as well as by the Christian missionaries. Till today malaria is one of the major health problems of the state. The prevalence of *P.falciparum* poses great challenge in solving the problem of malaria in the state. Severe form of malaria is almost always caused by *P.falciparum*, any system of the body can be involve. The mortality rate is very high in severe forms of malaria. Is Colonial rule responsible for epidemics of malaria in

the state? Or was it prevalent in the state before the Colonial rule? It is difficult to understand the real reason behind the epidemics of malaria in the state. So in order to have a meaningful understanding of the problem of malaria in the state the different determinants are analysed historically to develop an understanding of the problem of malaria in the state. These determinants include agriculture, transport and communication, troops and wars, trade and exports, labourers and migrations, land revenue and taxes.

Objective

In the present work the objective of the study is to construct the social history of malaria in Manipur during 1835-1947 and to study the response of colonial administration to malaria in Manipur.

Design

In conducting the present work, data has been drawn from both primary and secondary sources. The primary sources consisted of published as well as unpublished documents and data such as official documents, order and ordinance issued by authority, correspondence between the authority of Manipur and Government of India, Annual Administration reports, political agents tour diary, memoirs, missionary work

The research work has been divided into three periods i.e., the first is the period from 1835-1897, the period has been chosen as the British government appointed Political Agent in the state for the first time. The state was still free from the Colonial yoke during the period. The second period is from 1891-1907, the year 1891 was an



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epoch making event in the history of Manipur as the sovereignty of the state came to an end. The British took over the administration of the state and introduced administrative changes as well as revenue changes. It was a period of regency rule as the *Rajah* was very young. And the third period is from 1907-1947. During this period the authority of the state was taken up by the native (Raja Churachand) ruler. The rajah was installed again to the throne in 1907. Though native ruler was appointed in the state he was a puppet king as the real power was concentrated in the hands of the Political Agent and the Vice-President who exerted tremendous influence over the proceedings of the durbar. The British rule came to an end in 1947.

CHAPTER 2

1835-1891

Population

In 1859 McCulloch estimated the population of Manipur Valley at 30,000 persons and 65,000 to 70,000 persons in 1868.

According to R. Brown the total population in 1873 was 1, 39000, out of which 74,000 was the tribal population living in the hill tracts and the rest (65,000) constituted the population of Manipur valley.

The first regular census of the territory was carried out in 1881 and the total population was 221,070, out of which the tribal population was 85,288 and the population of the Valley was 135,288.

In 1835, the first Political Agent of the British Government was posted in Imphal. The British policy was largely dictated by Burma phobia, as Manipur was situated on a strategically important zone between Burma and Assam (Chakravarti. 1964:65). The Political Agent was posted by the British Government “for preservation of friendly intercourse and as a medium of communication with the Manipur Government and as occasion may require, with the Burmese authorities on the frontier and more especially to prevent border feuds, which might lead to hostilities between the Manipuris and the Burmese” (Bhattacharyya. 1963). During the early period of posting of British Political Agent, the Political Agent was dependent on the maharaja for everything; he was under the close observation of the Maharaja of Manipur. Thus during 1835-1891, the British Government did not bring about any administrative reforms except for interfering in the conflicts of Princes for the throne as well as for maintaining each with neighbouring

state. Major McCulloch in 1861 forwarded his Communication with the Rajah of Manipur to the Governor General saying that the Rajah Considered the appointment of Political Agent results in the peaceful settlement of Manipuri from the Burmese. "...The inhabitants of Bengal, Nagas, Burma, and Manipur and are now trading to different places in safety; but if there be no Political Agent at Manipur, the people there of will not, from fear, be able to enjoy peace and tranquility..."(Bhattacharyya. 1963). Manipur prior to 1891 had trade relation with Burma, Bengal, Naga Hills. Bengal and Burma seemed to be a highly endemic area. Sir Gordon Covell, one time head of the Malaria Institute of India, recorded epidemics of 'great intensity' in Murshidabad (Bengal) in 1821. Burma was also a highly malarial endemic zone. As Rev. East in the 'Burma Manuscript' mentioned that wherever he go he had to procure large amount of quinine from the government. Thus, though during the period from 1835 to 1891, the British did not introduce metalled road or any other improvement in the infrastructure in the state, it is possible that malaria might have spread due to trade relations of Manipur with her neighbouring state.

Prior to 1891 there was no hospital for the treatments of patients. The local physicians treated the patients (Ibobi. 2003:p.119). As there was no hospital the people of Manipur might have suffered from malaria but did not come to the knowledge of British Government as it was unrecorded so they must have thought that malaria was not prevalent in Manipur. David Arnold (1890) in the "Introduction: Disease, medicine and empire", pointed out that the pre colonial societies were not free from endemic diseases. The epidemic which affected many societies following white man's arrival may be due to the records done by them. Though there was no hospital before 1891, the local physicians

of Manipur might have been highly qualified as in 1848-49, in the last kingdom (Royal Chronicle of Manipur) recorded that the Raja of Assam asked for the Manipuri physician, but it did not mention from what disease the king was undergoing treatment from the Manipuri local physicians and was completely cured. Thus, it shows that the Manipur local physicians were quite competent. The local physicians might have treated people suffering from malaria but it could not be traced back due to absent of any written record of the cases of malaria being treated by the local physician before the British rule in the state.

To understand the problem of malaria in the state prior to Colonial power, it is being discussed under different subheadings:

Trade

During the year from 1835 to 1891, the government of Manipur exacted heavy duties on all exported and imported articles. Sir James Johnston, the Political Agent of Manipur (1877-1186), was of the opinion that high tariff was good in one sense and that “the duties supplied almost the only money revenue the maharaja had, and also to some extent protected Manipuri industries. (Johnstone.1971:116). The trade between Cachar and Manipur was the most important but trade was hindered due to the poor communication. During the period from 1837-1844, road which existed between Cachar and Manipur was in a bad shape and was peddle road. Bullock carts were used as a means of transportation and coolies were used for carrying goods from one place to another. The exports items were categorised under three headings i.e., the jungle product, textile products and livestock. Before 1891, it seem that there was over exportation of livestock,

Sir James Johnston remarked that there was a drained of ponies due to their exportation to Cachar. The exportation of livestock might have resulted in the movement of people from the place to another which might have also resulted in the spreading of the disease from one place to another. Jungle products like honey, wax, wood oil, ivory, India rubber, timber, etc., were exported but there was no record of any regular income before 1891 from forest (Ibobi. 2003: 157). So, the chances of occurrence of malaria due to the destruction of forest might be lesser. When forests are destroyed indiscriminately people are more exposed to forest malaria as the dwelling places of mosquitoes are destroyed in that process. Malaria also spread through deforestation, due to indiscriminate exploitation, forest is more accessible and the movement of population with low immunity in such areas results in malaria epidemics. Silk was also exported to Burma through the Kubo valley. According to Brown (1873) “the Burmese traders who frequent Manipur buy up greedily all the raw silk they can” (Laiba. 1992: 360). This shows there was a trade relation between Burma and Manipur prior to 1891; the trade relation between the two states might have resulted in the spread of disease from one place to other. Malaria was considered to be brought from Burma during the medieval times. According to the chronicle records the malarial fever was known as *Arum* or *Kabaw Lai* i.e., fevers of *Kabaw* (Burma) (kabui. 1995). Thus, it is possible that Burma was an endemic area and malaria was brought through trade relation between the two states. Though there was export and import of articles, food grains was never an item of export prior to 1891. Moreover it was more or less a self-sufficient economy as the food habit was confined to rice, fish, common vegetables and animal flesh which were locally available, and moreover they depended on dresses made by themselves from cotton and

silk. As rice was not exported before 1891, it was never insufficient in Manipur; one of the reasons for not exporting rice was due to the absence of proper road for communication. Allen, Gait, Allan, Howard, in an article "Manipur" observed that 'famine has not occurred in Manipur for many years, though a poor harvest sometimes causes slight scarcity. Prior to the construction of the cart-road, it was almost impossible to export grain from the state, and there was nearly always a large supply in hand. These stocks have now been to some extent depleted, and a complete failure of harvest would be attended by serious results, as it would be impossible to throw much grain into the valley'. The chances of a serious famine occurring are, however, slight (Sanajaoba. 2003: 172). In early 1879, there was some discontent on account of the dearness of rice, owing to deficient crop, but there was no real anxiety as to stock of rice in hand was sufficient (Johnstone. 1971). Thus prior to 1891, the people of Manipur rarely suffered due to shortage of food grains. So it is possible that the natives were less susceptible to infectious disease due sufficiency of food grains. The increase in food supplies in Europe between the end of the seventeenth century and the mid-nineteenth resulted in the increase of population and coincided with a substantial reduction of mortality from infectious disease (McKeown. 1976: 142).

The native states were very much concerned about the shortage of food grains. When Mr. Damant speculated about the supply of rice from Manipur for the Naga Hills it was objected for fear of famines. According to Johnstone, the then Political Agent, the import during scarcity was impossible due to the cost of transport. Thus, Manipur during 1835-1891 might not have experienced high price of rice during the year from shortage of

food grains as foodgrains were not exported so the life of landless labourers might not be that deplorable and hence making them less susceptible to infectious disease.

One very strange practice was trading of slaves. Major W. McCulloch the Political Agent in Manipur (1844-1862) mentioned about trading of slaves. Formerly slaves were taken into Burma and they were exchanged for ponies. Manipuris from Cachar sometimes came to Manipur and claimed people as their slaves (Mackenzie, 2004, p.157). The trading of slaves can also be one of the causes for the spread of malaria in the state as there was movement of people from one place to another, and there were chances of slaves coming back to Manipur bringing back malarial parasite as some of them might have gone to malaria endemic region.

Labourers and Migration

During the period from 1835-1891, there were numerous invasion and migration from the neighbouring states. Mr. H. Baveridge, the officer deputed to remove the records to Sylhet (when the question of abolition or retention of Political Agent was raised in 1863), was of the opinion that an agent was required to reconcile the disputes on Burmese frontier. Manipur being surrounded by hill tribes several princes (in Cachar and Sylhet) were ready to re-enter Manipur and renew their conflict whenever they got the opportunity. Moreover, the increased intercourse between Manipur and Cachar and the presence of the planters increased the desirability of the presence of political agent in Manipur (Mackenzie. 2004: 159).

Thus, during the period from 1835-1891, there was migration and invasion from Manipur neighbouring state as well as Manipuri rebel princes settled in the neighbouring

states like Cachar, Sylhet and Tippera and sometimes come back to Manipur for aggression which results in movement of people from one place to another and when invading a place many people like soldiers, potters to carry things are required. Movement of population from one place to another is conducive for the spread of malaria from one place to another. Population movement led to changes in the biological pattern affecting the transmission of malaria by increasing the exposure of the population vectors. In some instances the population movement resulted in the establishment of new pattern of malaria transmission (Kondrashin. 1986: 75-80).

Between 1830 and 1840, Kukis wandered in Manipur as, “their original home cannot be correctly ascertained but there seem to be traces of the as far south as the Malay Peninsula” (Roy. 1973:79). During the time of the Political Agent Mc Culloch, a large number of new immigrants started to come into the hill tracts of Manipur from the south. It was possible that they might have been driven away by more powerful tribes. Mc Culloch settled them down in the different places on exposed frontiers. In 1855, Kukis were made to settle in the neighbourhood of Langting to act as a barrier for the north Cachar against the raids of Angami Nagas (Johnstone. 1971: 26). R.B. Pemberton (1998), described that the people inhabiting the valley were hardly estimated to be 20,000 souls of which two-thirds consist of those who escaped from Burma provinces since the war and of returned emigrants from the British territory. Thus during the native rule lots of people emigrated from neighbouring country(s) and settled in Manipur. Some of them might have come from malaria endemic areas. According to Verrier Elwin (1968), the modern raiding Kukis seem to have come from Burmah to Manipur. In the Administration Report of 1877-78, 2000 persons belonging to the sooties (Neueites or the

Simtes) in the Chin Hills of Burma, migrated to Manipur due to pressure on land in their old villages (Bhattacharyya. 1963:170). Again in 1880, the sooties committed a number of atrocities on Manipur frontier, but at the same time a considerable number of them migrated to Manipur took to cultivation as subjects of Manipur (Chakravarti. 1964: 68). Mark Harrison (1999), in his book, "Climate and Constitution", pointed out that the climate of densely forested hill tracts of Burma and north-eastern India were harmful. Thus the migration of people from Burma might have resulted in the transmission of malarial parasite to Manipur from Burma. In 1871, the Kamhows were carrying 957 captives from Lushais villages and later on they (kamhows) went to the camp of Manipur contingent. The Kamhows were jailed while the captives were settled in the valley (Mackenzie. 2004: 116). During the period from 1835-1891, many people from neighbouring states migrated and settled in Manipur and some of the neighbouring tribes were settled down in the frontier so as to protect the frontier. The settling down of different people from different places might have resulted also in introducing of a new species of parasite. David P. Adams, in the article, "Malaria, labour and population distribution in Costa Rica: A Biohistorical Perspective", opined that, "The importation of West Africans not only introduced a new working population into the region, it also happened to introduced new species of parasites. European land clearing practices further complicated the situation, creating ideal breeding sites for anopheles mosquitoes and increasing the need for African laborers on the coast even more". Likewise the emigrant who settled down in Manipur might have resulted in the clearing of land for cultivation as well as for construction of houses, creating an ideal breeding site for the anopheles

mosquitoes. From 1835-1891, there was not only emigration from the neighbouring country but there was migration from Manipur to Cachar.

In 1844, the Maharani staged a conspiracy to kill the regent of the young prince but the conspiracy failed; so they fled to Cachar but later on in 1850 after Nar Singh's death Chandrakirti returned and declared himself as the king. The migration and emigration of King Chandrakuti might have also resulted in carrying parasite from one place to another, as whenever the officials or kings go to neighbouring state they were accompanied or followed by lots of coolies and armies. There was movement of people from Manipur to its neighbouring country or vice versa. In early 1840s a large number of kukis from Manipur immigrated into Cachar deserting their village and settled in the vicinity of Lakhipur Bazaar (Battacharjee.1977: 119). Some of the Manipuri Princes also were taking refuge in Cachar. According to Col. Johnstone, the chasad kukis were originally living in Manipur territory but afterwards took up their abode on the borders of Kobo valley (Burma) (Chakravati. 1964: 67). Thus the immigration of the chasad kuki tribes to its neighbouring states like Cachar, Kobo valley might have increased chances of incurring malarial parasite from their newly settled area.

In the period from 1840s to 1850s the old kuki tribes emigrated to Manipur as they were driven out from the Lushai Hills. There were also Manipuri princes who were taking shelter in the neighbouring states and later on invade Manipur. Jogindra Singh, a fugitive prince, proceeded from Cachar towards Manipur with 500 men in 1888. In 1866 Gokul Singh, son of Debendra, entered Manipur from Cachar with one hundred followers. Gokul Singh escaped but was finally arrested at Cooch Behar (Roy.1973:88-96). Thus, the fugitive Princes of Manipur who were in the neighbouring states might

have brought malarial parasite from their hiding place when they come to invade Manipur. There were several princes in Cachar and Sylhet, ready to re-enter Manipur and renew their conflict on the first opportunity (Mackenzie. 2004:15). The fugitive princes when invading the state (Manipur) must have been accompanied by armies, coolies, etc., thus bringing different people to the state some of them might have been infected with malarial parasite and some of them might have never got malaria in their life making them more susceptible to the disease.

In the 1850's there was shortage of tea labourers in almost all the tea plantation. As many tea planters big or small entered into blind competition, lots of labourers were recruited from Chotanagpur, Bihar, Orissa, East Bengal to Assam. Many of them were infected with malaria and other diseases. There is possibility that some of the labourers might have escaped to Manipur. "Mao Nagas brought in seven Nepalesee coolies who had escaped from Kohima." (Johnstone.1971:154). So there it is possibility that some of the labourers from the tea garden might have escape to Manipur and settled in the state for they had a hard time in the tea plantation as the planters were inconsiderate to the labourers making them work for long hours. As some of the labourers came from highly malarious area they might have help in the spread of malaria in the state.

Land Revenue and taxes

The agricultural product of Manipur consisted principally of rice which is the staple article of food. Tobacco, sugarcane, indigo, mustard, different varieties of dhal, and opium, were also cultivated. Indigenous local variety of tea, considered to be wild tea was found growing in the forest mostly in the south east hilly area, but no private or

authority have taken up plantation of the tea plant. James Johnston the political agent of Manipur (1877-1886) once thought of growing tea for his consumption. The Maharaja instead offered him as much as tea he wanted. So, Manipur, did not experience the British colonial exploitation like her neighbouring state Assam where the cultivators were forced to cultivate tea instead of food products and there was exportation of labourers from other part of India which might have contributed to the introduction different species of parasite in Manipur. But Manipur also could not escape from the imported labourers as many of the persons who go to Assam to work on the tea gardens afterwards settle down as cultivators in the frontier areas (Gait. 1906: 351). Due to trade relation, invasion, migration, etc., Manipur came into contact with the coolies brought from other parts of India to Assam. Some of the labourers might have been from malarial areas.

R.B. Pemberton (1998) described that the soil of Manipur was very fertile that the crops generally prove most abundant and the streams surrounding the valley were enough for irrigation. The land was so fertile that sometimes the produce of the land situated at foot of the hills were enough for the whole population. Mark Harrison (1999) wrote that the Mughal general serving in Bengal declared the province to be unhealthy on account of ability to reduce wheat foods. The opinion of the Mughal general might have some valid point as the area which does not produce or which are not fertile will not produce enough food for the inhabitants. Lack of proper food will make them more susceptible to disease. But in case of Manipur the land was very fertile that only a few areas for cultivation were enough for the whole population. So the native might have less experience of famines or starvation and their immunity against diseases therefore was strong. So, the chances of getting infected with malaria will be minimal.

In 1835, the hill area of Manipur was divided into two classes i.e., hills adjoining the valley with permanent subjugation under the *Raja* and hills that were to some extent not under the direct rule of the *Raja* of Manipur. Hills under the first group paid regular tribute. The tribute varied from a little oil seed to a regular payment in money sometimes amounting to Rs 100 per annum. While the remote villages in the hills paid small amount of tribute to the *Raja* irregularly. Sometimes the villagers had to build houses and serve as collies. Besides the two types of hill men, there was a third type i.e., the hill men inhabiting the valley. Most of them were prisoners of war, and therefore were slaves of the *Raja* so they were forced to perform mean works for the *Raja* (Singh.2003: 86). The sources of revenue were from land revenue, mines, forests, herds, duties form trades and commerce, revenue in the form of services, foreigner's tax, fines, tributes from the vanquished hills and valley and fisheries.

During 1835-1891, one third of the whole cultivated land was possessed by the ruling family like the Brahman, sepoys, headmen and officials and the favorites of the *Raja*. The lands owned by sepoys were rent free (Allen. 1905). The lands owned by civilians were subject to payment of revenue. The land revenue burden fell on the civilians. They were made to pay about 20 seers of rice to the king and in addition to that they had to attend or work in the palace for 10 days in every 40 days which was known as "*lallup*" (Singh.1987:100). Dena (1991) wrote that the practice was very rigid that even during sickness the *lallup* members had to carryout his *lallup* or fine a paid substitute and very often the family was impoverished due to the practice. Thus, the civilians had a hard time under the *Rajah* they had to pay more than what they are capable to do. During the period from 1835 to 1891, exports of rice was not done so though the civilians has to pay

land revenue cum service for 10 days in the palace so they seldom starve for want of food. So even if the condition of the civilians and farmers were deplorable they might have not be easily susceptible to infectious diseases.

There was no monetization in the economy. R. Brown (2001) recorded that woman sellers in the bazaar refused to accept the copper coins which the Political Agent tried to introduce in the state (Singh1998: 23). As the economy of the state was mostly run by barter system or services in the palace, there was no pressure for the cultivators to sell their agricultural products for paying taxes. Thus from 1837-1891, there might not have been shortage of food crops or in a way we can say commercialization of agriculture could not be seen during the period.

The other sources of income were from the mines located at different parts of Manipur. Mines consist of the following items like salt, lime, iron and gold among them the most important was salt. Salt was also used as a means for payment. "Hillmen also worked as coolies for a short time, in order to procure payment in salt."(Singh. 2003: 154). Salt was obtained form the brine wells located in different places in Manipur. The places where there was salt well might be healthy as mosquitoes vector cannot breed in the salt water. "Town located near marshes may remain healthy if sea water has a chance to mix with marsh water" (Rosen. 1958). As sea water contain the property of salt it is likely that the reason for marsh water to be healthy maybe due to its saltiness like wise the area in Manipur located near the salt well might be healthy.

Duties were levied on both imports and exports goods. In 1868-69 the total tax levied on imports amounted to Rs. 1,975-7-9 pies, and on export were Rs 3,633-1-9 pies.

During the native rule no lease or patta of any kind was issued to the landholders. The revenue paid in the form of grain was appropriated by the nobles and the collectors. The system impoverished the cultivators as the lease of land was not issued to the cultivators so whenever the native ruler desires he can disown the land from the cultivators. The appropriation of grain paid for revenue by the nobles and the collectors might have added to the impoverishment of the cultivators as they might have to pay more than the revenue demanded which may result in the less consumption of food by them making them more vulnerable to infection. Under the native government tributes were collected in kind and the main sources of revenue were land tax, salt, ferries elephants, forest produce, taxes on imports and exports cotton, oilseed, etc.

The trade monopoly for some of the articles were under the authority of the *Rajah* like the tea seed, ivory, India-rubber and the *Rajah* had the authority to allow monopoly of trade to certain individuals. In 1873-74, the trade in tea seed and India rubber was allowed to certain individuals by Manipuri authorities and in 1877-78, bee wax, ivory, India rubber and tea seeds were allowed to certain individuals to trade. The monopoly of trade was against the Treaty of 1833, where it was agreed that the *Raja* should not obstruct the trade between Manipur and Cachar by exaction of exorbitant duties. Some of the articles were also prohibited for export like *Khamenchatpa* (Coloured silk dhoti), *Lamthang Khulat* (laced puggree), *Ningthou Phi* (Shirt like garment) and *Lai chappa* (coloured shirt). Thus, during that time the *Rajah* was not compelled to act to the whims and fancies of the British government, and the British could not exploit the state the way they would like to and gain maximum profit out of it.

Revenue was also collected from fisheries; there was a fishery officer (*Ngarunghanba*) who looked after the lakes that were not given to favorites and heroes by the Raja. The state did not monopolise fishery although there was an auction sale of the fish. The different lakes and ditches had been a resort for the poor, as the small fisheries were not touched by the state and the villagers had complete freedom to use them. Thus, during shortage of food grains the villagers or the poor people could catch and sell fish without paying any taxes from the small fisheries. So there were fewer chances that (villagers or poor people) suffered badly or their condition was impoverished during the period of shortage. The management was confined to only those that were remunerative although all mines and lakes belonged to the state; the poor could resort to the mines and lakes which were otherwise not remunerative for their livelihood. Some revenues were paid in cash and some in kind. Revenues from land, mines, forest and fishery were paid in kind. But revenue from salt mines was paid partly in cash and partly in kind. The villagers were not obliged to sell their agricultural produce at a low price to pay for the taxes.

One of the grievances of the government of India against Manipur was the levying of customs duties on all articles exported into the states and on some articles exported to British territory. These duties supplied almost the only money revenue the maharajah had, and also to some extent protected Manipuri industries. Thus during the native rule i.e., before 1891, the British government could not exploit the state as they were not yet given the authority to rule the state.

Besides the regular taxes the native populations were subjected to *lallup* which required all the age group of 16 to 60 years of male population irrespective of caste and

creed to work for the king for ten days in every forty day but the burden fell heavily on the poor as the rich and well to do escaped from performing or giving *lallup*. If a man did not attend his *lallup*, he had to pay one rupee. According to R. Brown (2001), the fine of an absentee was 12 *annas*. For those who have permanent illness and disability were exempted from performing *lallup*. The practice was rigid and in case of sickness, the *lallup* member had either to carryout his *lallup* or to find a paid substitute and very often the family was impoverished because of this. Thus the practice of *lallup* might have been heavy for those household where the male member of the house would be unwell for a long period as the household had to pay the amount of fine of an absentee sick male member in the house. During the year 1835-1891 most of the transactions were done through barter so for a family to pay 12 *annas* would be a heavy burden making the life of the poor more deplorable, thus making him more susceptible to diseases.

The ruling class (the kings and the member of his *darbar*, and the *sepoys*), to whom more than two-thirds of the whole land was granted, were exempted from paying land revenue. Though they did not starve from want of food but the condition of the poor people was impoverished. Almost one fourth of land for which *pattas* were granted was held by persons other than the cultivating ryots.(Singh.N. 2003).

Troops

During this period the troops of Manipur, on several occasions, assisted the British government in their expedition. In 1871-72, the Manipur maharajah provided a contingent of about 2,000 men to assist operations in the Lushai country (Mackenzie. 2004:166). In the *sepoys* mutiny of 1857 the maharaja of Manipur provided four hundred men to the frontier to prevent the mutineers from entering the country (Roy. 1973: 87).

Again in the second Anglo-Burmese war of 1885, two thousand Manipuri soldiers were sent to Kendet province in Burma in support of the British government. The Manipur soldiers who were sent to fight for the British government had high chances of getting infected by malaria as they might have gone to malarious areas during the expedition or sometimes to the frontier or border areas where the incidence malaria is high. Kondrashin (1998) in the article "Factors Determining the Dynamics of Malaria System in South Asia", pointed out that malaria incidence is considerably higher in border areas with permanent population movement". He also opined that population movement led to a change in the biological pattern affecting the transmission of malaria by increasing the exposure of the population vectors and in some instances the population movement resulted in the establishment of new pattern of malaria transmission.

During the Angami Rebellion of Kohima (Naga Hills), the *Maharaja* of Manipur supplied 2000 soldiers to the British government. The Naga Hills might have been a malarious area as James Johnston in Manipur and the Naga Hills, wrote, "towards the end of rainy season many were laid low by fever. Natives of other parts of India until thoroughly acclimatized suffer greatly from the disease peculiar to jungle district. Hindosti recruits spend their first three years service in hospital." (Johnstone. 1971:49). The Naga Hills seems to be an unhealthy area as according to James Johnston most of the soldiers suffered from fever and were compelled to spend three years in hospital. As there was no geographical demarcation between Manipur and Naga Hills the people from Naga Hills or Manipur might have very frequently gone or settled in the frontiers or borders of this two states. So, the people of Manipur have high chances of contracting the disease from the Naga Hills. During the Naga Hill expedition also the Manipuri soldiers might

have suffered from malaria but it might have gone unrecorded as during that time there was no hospital in the state. There is possibility that the soldiers who had gone for expedition might have brought back the infection to the state.

Transport and Communication

During 1835-1891, there was no proper road in the state. E.W. Dun (1992) wrote that the roads in the valley were raised a few feet above the rice fields and the earth of which they were constructed was dug out of ditches on each side. In many places the road was led over swampy places on bundle of grass or straw. Swampy places are ideal for breeding of mosquitoes. Adams (1996) the article "Malaria, Labor and Population Distribution in Costa Rica: A Biohistorical Perspective", pointed out that, "torrential rains caused mudslides and created breeding opportunities for disease laden mosquitoes" Till 1880, there was no regular road from Imphal to Mao. Only in 1881 the construction of Mao road was completed. Before that people had to use Imphal to Cachar road which was completed in 1842. Before the construction of proper road, the roads which were used might have been loaded with muds and soil. So during rainy season there were high chances of water being accumulated on the pothole, which is an ideal place for the breeding of mosquitoes.

The British government did not conduct any developmental work during 1835-1891 except for assisting in the construction of cart road in the state. The reason might be that during that time Manipur was not under full control of colonial rule so they were not interested in improving the condition of Manipur "The sides of the valley on latter side are earthy and roads could be easily scarped and at gentle gradients" (Dun.

1992:1-9). During rainy seasons there were high chances of water being accumulated in potholes which are ideal places for the breeding of mosquitoes.

According to the Political Agent's report of Manipur in 1879, "The trade with the Naga Hills was about the same as in past years, but the chief drawback is the want of good carriage and the man's backs being the only means of carriage for goods (Laiba.1992). Due to absence of proper road and difficult terrain of the state the transportation of goods on man's back's might have prevailed, the use of man's back for transportation might have increased the movement of people or coolies from one place to another from a non-infectious to an infectious region resulting in the transporting of the disease from one place to another.

The period from 1835 to 1891 marked the first entry of British government in Manipur. For the first time a British Political Agent was appointed and his role was confined to a peacemaker among the neighbouring states. In a way he was an ambassador of peace between Manipur and the neighbouring states who were constantly in war among themselves. Before the appointment of a Political Agent, Manipur was frequently invaded by Burma. The British government did not enjoy complete sovereignty over the state for it was deprived of independent decision without first consulting the *Rajah* of Manipur. As such the British government did not impose any changes in the administration, and did not bring about any developmental work in the state. During this period the state did not have any proper road. Yet there was trade relation with the neighbouring states, but Manipur never exported rice. Barter system was still prevalent in the state, and economy was self subsistence. Taxes were collected in terms of service.

There are no records of any malaria epidemics during this period; however, this period was a phase of opening up of the state and its economy in a major way for the first time.

CHAPTER 3

1891-1907

The year 1891 was an epoch making event in the history of Manipur as it entered a new phase. The native regime came to an end with the establishment of colonial rule in the erstwhile independent state of Manipur under the British Empire. The British Government instead of directly annexing the state set up a regency administration from 1891 to 1907 and introduced administrative reforms which had a far reaching effect on the native population. The reforms included introduction of cash economy to replace barter economy, abolition of *lallup*, introduction of house tax and wasteland tax. The introduction of cash economy marked the end of subsistence economy. To pay for the taxes the native population had to sell their agricultural product which, in a sense, was commercialization of agriculture.

Before 1891 there was trade relation between Manipur and her neighbouring states. The main articles of export were jungle product, textile and livestock. The British government did not interfere in the export and import taxes collected by the native rulers, but after 1891, the British government was the one to decide the taxes on import and export articles and rice turned out to be an important item of export which was earlier not allowed to be exported owing to fear of scarcity during the native rule.

1890-1891 was a period of turmoil due to the Anglo-Manipur war. The villagers had to vacate their villages out of fear on arrival of British troops. Many villagers took shelter in the jungles for around six weeks. As majority of the native people were hiding in the jungles there was a high chance of the people getting infected with diseases like malaria and cholera? The Administration Report of 1891-1892 recorded the mortality rate

to be very high during that year. The war created a famine-like situation in Manipur though the harvest during the year was good as large stores of rice were collected for the consumption of troops. Half of the population had to survive with only one meal a day and many of them showed sign of emaciation making them more susceptible to diseases. A quality of diet is a determining factor of resistance or level of immunity. Thus because of the war many of the natives might have suffered from diseases though records about any kinds of diseases were not recorded in the Administration Report. Moreover it was recorded that the constitutional disturbances brought in much sickness among the resident of Manipur town (valley). But it was not recorded as to what kind of epidemics resulted in the death of so many people.

The political agent during 1892-93 observed that unlike other parts of the province, Manipur did not suffer from fever, and also remarked that both the native and immigrant population had a remarkable immunity from disease compared with that of the neighbouring Assam or Surma Valley. The remark given by the state political agent led us to think that maybe Manipur was free from Malaria, but it might also be possible that he came across with only some of the healthy native population of the state. He also remarked that, "No contrast could, in fact be greater than the appearance of the well nourished sturdy population present in comparison with the normal type of anaemic puny inhabitants of Assam proper and in a lesser degree of the Surma Valley." From the remark given by the political agent of Manipur it seems as if Manipur was a very healthy place to live as it was free from epidemics, but it was also possible that the native population might not be free from malaria or any other epidemics, maybe it did not come to notice of the British officials as it might not have affected any of the Europeans or any

of the staffs of the colonial rule. "It often happens that the effect upon the actual labour forces and the neighbouring native population may pass unrecorded and the outbreak of disease among European attracts attention..." (Christopher.1911).

The Christian missionaries first came to Manipur in 1894. Under the initiative of Mrs. Elice Pettigrew, wife of Rev. William Pettigrew, an American Baptist missionary, medical works were facilitated in the hill areas. According to the missionary couple, one of the most common diseases when they first came to Manipur was malarial fever.

The valley people of Manipur preferred to remain as far away from the English Babus as the event of 1891 were still fresh in their minds. So, taking medical treatment or approaching the English *babus* for treatment was a far cry. The native people in the adjoining villages when they fell sick preferred to offer a dog or a pig to evil spirits instead of medicines to cure themselves of any diseases or ailment. They thought that medicine might cause them to swell up and die; especially the Naga tribes in the North East valley of Manipur were not at all willing to take any medicines lest they offend the evil spirit. However, they did not have any hesitation in using an ointment for external application. Thus it is possible that even if the native population suffered from any diseases they might not have approached the British doctors and therefore the diseases were not recorded by the government.

In order to have a clearer view regarding the British rule and malaria in Manipur the situation is being discussed under different subheadings.

Population

In 1891, the census papers were destroyed in the rebellion of 1891, so there is no information or record even regarding the gross population of the state. In 1901, the population was 284,465, which showed an increased of 28.61 percent in twenty years.

Agriculture

Manipur in the beginning of the British rule was rural in character as more than half of the populations residing in Imphal were agriculturalists by profession. In the valley, permanent cultivation is practiced where rice, a kharif crop was mainly grown. Some of the terrace form of cultivation in the hill areas were also treated as permanent (Laiba. 1992). Semi-permanent or temporary type of cultivation is also practiced in both the hill and valley. In the valley, swamp farming or shallow-water farming in the water sluggish area are good examples of semi-permanent type of cultivation. In the hill areas, Jhum cultivation is an example of semi-permanent or temporary type of cultivation.

In the semi-permanent type of cultivation in the valley there were chances of breeding of anopheline mosquitoes as stagnant water is an ideal place for the mosquitoes to breed. While in Jhum cultivation land is abandoned once the soil is exhausted in search for a more fertile land. Jhuming or shifting cultivation results in deforestation, soil erosion, primitive techniques and hence low productivity low income (ibid). In the area of Jhum cultivation, usually small sheds were constructed with partial wall or even without walls. The farmers sometimes stayed overnight which must have resulted in them being bitten by *Anopheles* mosquitoes. The thatched ceiling of the temporary construction

provides sufficient and safe resting places for the mosquitoes (Sharma, Sharma, Dhillon. 1996).

The abandoned jhum land remains fallow for a period of three to four years for the formation of a cultivable soil by the decay vegetative matter that springs on it. If the land is found unfit the villagers have to migrate to fresh virgin land. So, shifting cultivation necessitates shifting of dwelling places as well. The shifting cultivation resulted in movement of people from one place to another in search of fertile land making people more susceptible to malaria during the course of movement as there were chances of them also of going to Malarious region.

From 1899-1900, the area under cultivation increased from about 36,000 *paris* to 56,914 *paris* (Ibobi. 2003). The increase in the area of cultivation was possibly due to the increase in export of rice, but not for the consumption of the native people. According to the Political Agent of Manipur, the rice grown in the valley was highly nutritious which was evident in the robust appearance of the Manipuris, and said that nowhere in Assam has he seen or come across such a fine race. The valley produced peas, sugarcane, beans, chillies, etc., and various kinds of vegetables were grown for home consumption only and in the hill tract besides rice, jobtears, millet, chillies and various kinds of vegetables were cultivated and cottons were produced for sale to the valley people. The soil in the valley was very fertile as the political agent noted, "Though the area under cultivation was less than usual, the harvest was excellent and the fertility of the soil in the valley is astonishing". During the early period of British rule in Manipur, the native population might not have suffered from shortage of food as the land was very fertile, so there was less chance of starvation during the early period of British rule and hence they would be

more immune to diseases. The Political Agent of Manipur also remarked that fever was not a cause of great suffering. Both the native and immigrant population enjoyed, more remarkable immunity from the disease compared to the Assam or Surma valley. So, maybe due to the sufficient or high quality of rice they had a high level of immunity.

In 1896-97, there was shortage of rain and the paddies were sold at 3 rupees per basket. The native people were suffering for want of rice and famine prevailed in the state. The Administration Report of 1896-1897 recorded an outbreak of influenza at the beginning of the year, and it claimed many victims among the aged and the very young. In 1903-1904, malarial fever was encountered and was attributed to the short rainfall (Administration Report of Manipur. 1903-1904). In 1906-1907, the cultivation of rice was not good due to scantiness of rainfall, so the prices of chief articles of food were wretchedly very high and the landless inhabitants of Imphal were the worst sufferer. On top of that it was impossible to import rice as the price of rice was very high and was not within the means of people. Moreover the shortage of rice in the state was due to introduction of cash economy in the state as the cultivations were tempted to convert their rice into cash immediately after harvest and later on suffer from insufficiency of rice.

The records of an outbreak of influenza in the year 1903-1904 probably might have been malarial fever, as in 1896-1897 also there was record of an epidemic which claimed many people's lives, it is possible that the influenza which was recorded must have been due to malaria as normal fever or influenza will not result in the death of many people. The death due to influenza may be due to shortage of rainfall and food grain as starvation results in less immunity making people more susceptible to diseases.

Labourers and Migration

With the establishment of colonial rule in Manipur the influx of people from outside and its neighbouring states increased. The new administration required people with the knowledge of the three Rs (reading, writing and arithmetic) for performing government tasks. As the Manipuris lacked western education people from Bengal and Assam were brought in the state for performing the administrative tasks. Bengalis became interested in residing in Manipur as the place was cheap to live. Pettigrew observed, "The Bengalis are few in number, but there is a likelihood of increase as their countrymen in Cachar are finding out that this is a cheap place to live in, rice selling at Rs. 1-8 and 2 per maund, all the year round"(Pettigrew.1894). Thus, due to cheap cost of living in Manipur not only Bengalis but people from other places might have migrated in the state.

The colonial policy encouraged large scale migration of peasants from the thickly populated East Bengal to Assam wastelands in the 1890s in order to get more land revenue. There was also migration of peasants from Mymensingh most of them were Muslims oppressed by Hindu Zamindars; mass migration of labour mostly tribals from Jharkhand region to Assam also took place at about the same time (Hussain. 1993)

The growing requirement of labour force for the plantation results in migration of labourers from outside Assam, particularly from tribal areas of Jharkhand, Bengal, Bihar, Orissa, Madhya Pradesh, Telengana and tribal regions of Maharashtra. Most of the tribals lost their traditional access rights to forest for collection of fuelwood and grazing as forests were declared as 'reserved' by the government. Thus British government created a

'push factor' which might have resulted in the immigration of tribal population to Assam. The immigrant population might have come from malarious region or some of them might have come from non-malarious region, those who have never been exposed to malarial parasites were more susceptible to be infected with malaria.

There was always interaction between Manipur and Assam for trade, or absconding place of the rebel prince, settlements of Manipuris in Assam region such Cachar, Sylhet, etc. The labourers who came to Assam might have also immigrated to Manipur. In 1892 there was roughly 4,000 *paris* of wasteland and reclamation of new land was encouraged. In 1893 about 1000 *paris* of new land was encouraged in 1894, 1,120 *paris* of waste or reoccupied land was distributed among the landless. Still in 1905 there was a considerable area of uncultivated land in the valley. Thus there were chances of landless labourers coming to Manipur for occupying wasteland. "It is given that social, political and economic changes all contribute to the worsening of malaria problem, particularly through population movements and economic disturbances."

The increased movement of people from one place to another with the colonial rule as well as improvement in roads and communication might have resulted in the spread of infectious disease over a wide area. For example in the Naga Hills, there was a severe though localized outbreak of cholera in 1891 and high mortality was recorded. The reason given for the outbreak of the epidemic was that it was brought by the Naga coolies in Manipur taken for transport work by the 44th Gurkha Light Infantry. Thus the movement of labourers was the basic cause of the high mortality in the Naga Hills, as the migrant coolies came back to their villages with cholera spreading the infection far and wide. The causal relationship can be applied in the case of malaria also.

The British rule resulted in increased human movement from one place to another in search of greener pastures, there was an increase in the number of labourers, traders etc. in the state. Most of the labourers who came to the state were poor and could not afford to take proper food. With the increase in the immigrant population in the North-East region by more than one half of the population and in 1901, the immigrant population exceeded three quarters of a million or nearly thirteen percent of the total population of the province. The majority of the immigrants were coolies brought up to the tea gardens. So, among them some might have settled down in Manipur as construction workers, coolies, etc. The increasing population from 1881 to 1901 could be due to the increase in the number of immigrants in the state. So, the movements of coolies might have accelerated the spread of infections from one place to another. As S.R. Christopher pointed out, "Those coolies or labourers who goes outside for labour return to their home or seek new seats of industry carry the infection of malaria wherever they go and assist in the spreading of malaria throughout the region or remote district. Poverty forced labourers to migrate in search of better livelihood but they were the one who are more susceptible to infection as they didn't have enough food to eat. Poverty and powerlessness, factors which force migration may themselves make migrants helpless when faced with ill health".

T.C. Hodson pointed out that the population of the Nagas in Manipur was decreasing. For example he took Maram village, a Naga village in Manipur, for his findings. Earlier in 1859, the village had 900 houses which later on decreased to 200 houses in the year 1891 and again decreased to 120 houses in the year 1900. The explanation given for diminishing number of houses was that the natural environment

prevented the growth of large communities. The reason for the decrease in the number of houses was not given precisely. He had just mentioned “natural environment”.

It is possible that the natural environment which led to the decreasing population might be an environment favouring the breeding of mosquitoes that resulted in the decrease of inhabitants. Maybe the decrease in house was due to epidemics of malaria.

The introduction of cash economy also encouraged migration of people from one place to another as it led to the shifting from subsistence agricultural to commercial agricultural. The farmers in order to pay taxes had to sell their agricultural products and if that was not possible or for having extra money they had to work for a construction of roads, railways and other kind of manual labour. Such an intra and interstate migration of the labour force contributed to the incidence of malaria and the specific region may be malaria endemic area. So, the introduction of cash economy in Manipur might have resulted in the migration of Manipuris to different places and possibly, from malarious and non-malarious areas.

Land Revenue and Taxes

Since 1892, land revenue was paid in cash at a uniform rate of Rs. 5 per *pari*, instead of the *lallup* system (taxes paid in labour, forced labour for ten days in every forty days), a house tax of rupees two for every house occupied by a male adult was imposed in the valley and a house tax of rupees three was introduced in the hills. The house tax in the valley was abolished in the 1899-1900 as many people tried to avoid paying tax and in its place ‘homestead lands’ tax was imposed. All the homestead lands were properly measured and assessed at the rate of ordinary land tax. With the introduction of new tax the valley was divided into five *panas* and each *pana* was in charge of a *Lakpa* (local

revenue officer), who was responsible for both the collection and assessment of land tax. So, there were chances of misappropriation of revenue by the tax collector as 10 percent of first rupees six thousand and five percent of the remaining amount collected by them as their commission, in 1907, the salary was fixed to rupees seventy per month.

The *Patta* system was also introduced in 1892 and the *Patta* holder were given an inheritable and transferable right of the land with the introduction of *Patta* System and the introduction of taxes, the marketability of fisheries, jungles, grazing, hunting etc. started. Unlike the earlier system the native population had to pay taxes in everything which were freely available before the British rule so the life of the native people became more deplorable.

The fixed amount of revenue payment requires taxes to be paid irrespective of whether the land was cultivated or not or whether there was a good or bad harvest. This disrupted the traditional system in Manipur and paved way for changes in economic and social relations. The majority of the people depended upon agricultural products only for family consumption which was more of a subsistence economy. They had to sell their agricultural products for paying cash revenues. The new land revenue system resulted in the sale and purchase of land unknown to the Pre-British Manipur society. When a land holder could not pay land revenue, he has to either sell it or mortgage his *patta* of land resulting in farmers' indebtedness and make the living condition of the farmers more impoverished.

Almost one-fourth of the land granted for *pattas* were held by other than the cultivators like the Brahmins, Rajkumars, and state officials. So the *Pattadar* could

change his tenents anytime whenever he desire to, as no legal safeguards were provided to the cultivators. Thus, the condition of the landless cultivators was quite deplorable.

M. Bhattacharya remarked that the system of *lallup* was good especially for a poor and a sparsely populated state like Manipur. The state had an agricultural population which remained idle for six months in a year and the *lallup* system was very profitably utilized for the benefit of the community. The new system introduced by the British government has added to the impoverishment of the native people.

Though the *lallup* system was abolished a new system of forced labour was introduced where the hill tribes had to supply coolies for road making, transportation, survey, police and military.

The government was not at all concerned for the welfare of the hill tribes. When the Christian missionaries first came to Manipur in 1894, there were no medical facilities for the hill tribes. It began only after Mrs. Elice Pettigrew started medical works in the hills and found out that one of the most common diseases from which the hill tribes were suffering was malarial fever. So malaria might have been a common disease unnoticed by the government as there were no medical facilities among the hill tribes. M. Bhattacharyya (1963) pointed out that the government of Manipur did not bother to take up any welfare activities in the tribal areas when the missionaries started their work. Even after 1891 till 1918, the government expenditure on the hill tribes was less than one-quarter of the amount they paid in taxes.

With the government spending little amount of money, that is, one-quarter of the tax paid by the hill tribes, there was less chance for them to have spent on the

improvement of health and sanitation of the hill tribes. So the diseases from which the tribes might be suffering could have gone unnoticed and unrecorded.

The colonial rule gathered huge income from forest which indirectly resulted in large-scale deforestation. Since 1892, income from forest became regular. During the period from 1892-94, the forest income was Rs. 4,037. From 1904-1905, it was Rs. 39,529 and the next year 13,363 and in 1907 the income from forest was Rs. 11,397. Kondrashin (1998) pointed out that, "In the countries of South-Asia, the economy of its regions depends to a great extent on forest, where large proportion of both local people and from outside area employed on seasonal basis in forest based industries. Evidence has been collected of local transmission among those groups by forest dwelling species of *Anopheles*". The increased income from forest might have resulted in the increase of forest dwelling species of *Anopheles* mosquito in the state.

There was also a 'foreigner tax' also where a tax of rupees five was levied on all adult foreigners settled in the state, who were not in government service nor in the employment of the Manipur state. The sum collected under the 'foreigner's tax' in the year 1900-1901 was Rs. 4,429 which was more than the previous year's 'foreigner tax' which was Rs. 2,602. The increase in foreigner's tax indirectly showed that there was an increase of outsiders in the state or an increase of immigrant population, there was chances that an increase in outsiders might have resulted in the increase of *anopheles* mosquitoes, as some of them might have come from malarious and non-malarious region.

The collection of land revenue rose from three percent in 1893 to 9.37 percent in 1906-1907. Taxes were collected indiscriminately without considering the economic condition of Manipur. Ibohi Singh (2003) remarked that Manipur was a poor country, the

people awfully poor, so revenue in the form of service was better for a poor country like Manipur. Captain Grant described Raja Gambhir Singh as “the poorest reigning prince under British influence”.

The percentage of land revenue increased from 72.32 percent in 1894-1895, to 96.08 percent in 1898-99. The government had not done much for the welfare of the state. The taxes collected from the native people were so high as compared to their income. They do not have any other source of income except agriculture. So selling of this agricultural products was the only option left for them, thus during shortage of food grains they suffer immensely. The high taxes might have resulted impoverishment of the Manipuris.

Trade and Export

Following the colonial rule external trade expanded. Before 1891, there was trade relation between Manipur and other parts of India but rice was never an item of export for fear of insufficiency of food grains in Manipur, but after colonial rule export of rice started and was freely exported to Kohima. The British authorities adopted a new export policy known as “Free Trade Policy”. Under the new policy the British authorities exported thousands of *maunds* of rice freely to Kohima. The export of rice resulted in the decrease in food grains in the state as rice was the staple food of the native population. The subsistence economy of the state collapsed and as a result of “free trade policy” the people of Manipur began to face the problem of scarcity of rice.

The transitional economy was quite distressing for the peasants as they found it very difficult to convert their produce into cash. The marketing facilities was also monopolised by *Marwari* traders, who dictated the prices of the products to the peasants. So, the condition of the peasants was quite deplorable. The people of Manipur began to face scarcity of rice. During the Pre-British period though there was trade relation between Manipur and her neighbouring state, rice was never exported for fear of shortage of rice.

The indigenous industry also of Manipur also received a set back. Earlier Manipur depended on salt produced locally from the brine wells but the colonial rule led to the deterioration of the local salt industry with the influx of English salt imported from Tammu (Myanmar). The monopoly of tea seeds was taken by the British Political Agent who was earlier monopolized by the king. The 'tea seeds' were brought from Burma border to Manipur and sold at Lakhipur in Cachar district by Bengali traders. Trade policy under the British resulted in the increase of outsiders in Manipur. Many people came to Manipur for trade like the Marwaris, Bengalis, Biharis oil crushers, Nepalis, etc. Even there was record of a number of *Kabulies* in the state. It is possible that the *Kabulies* traders were from Afghan; Monirul Hussain (1993) mentioned that most of the Afghan traders were known as *Kabuliwala* in Assam. So, the *Kabulis* might have come to Manipur through Assam. The Colonial rule brought in different kind of people from different places, especially traders to the state. Thus, there were good chances that the traders might have brought malarial parasite in Manipur as the traders keeps on moving from one place to another, possibly also from malarious area to non-malarious area.

The colonial rule also led to the decline of the production of indigenous goods of Manipur and narrowed down the avenues for earning by the local people. The local artisans were thrown out of their profession as there was a breakdown in the handicraft industry. Earlier Manipur manufactured cloths, brass, iron vessels and implements and small household articles. Most Manipuri embroidered silk industries, which were of exceptional beauty declined with lack of royal patronage. Moreover, with the import of mill cloths from Great Britain, the indigenous production of Manipuri handlooms withered. So, many artisans took up agriculture as their profession. This resulted in the increase of area under cultivation. In 1899-1900, the area under cultivation increased from about 36,000 *paris* (90,000 acres) to 56,914 *paris* (1, 41,109 acres). The sudden swelling in the number of agriculturists resulted in subdivision and fragmentation of agricultural land leading to uneconomic holding, unproductive agriculture and the problem of rural indebtedness. Thus the colonial rule led to the impoverishment of the life of artisans who were earlier patronised by the kings and officials.

Transport and Communication

The period from 1891-1907 was a transitional period as the British government brought about many changes regarding transport and communication, like the construction of metalled roads, pucca bridges, etc. Coolies from other parts of India were supplied for P.W.D works whom among them also were the *Mohamedans*.

Cachar road was constructed in 1892. So, trade and communication between Assam and Manipur increased. The Royal chronicle also recorded the Manipuris going to Cachar and coming back to Manipur. It also recorded the presence of coolies in Cachar road. Some of the places in the state were metalled. Permanent bridges of stones were

erected nearly at all the rivers in the year 1896-1897. Construction labourers engaged in metalled roads, stone bridges, might have been recruited from outside the state and was possible that through them the malarial parasite might have spread in Manipur. Christopher (1911) pointed out that labour camps on the railway construction sites, road makings, clearing of tropical, tea coolies, were mostly associated with severe malaria which was attributed to the unhygienic conditions prevailing in the labour camps. As the construction works increased facilities for breeding of mosquitoes might have lead to importation of *anopheles*. Moreover, the living condition of the poor filled with deprivation and hardships might have aggravated the condition of malaria. In his account, "The coolies are drawn from various localities, often from different provinces or perhaps from different countries; some come from malarious place, others from regions comparatively healthy, some are already infected with malaria and others when they first arrive are free from infection and very susceptible". So, there were chances that malaria might have been imported by the coolies in the state from their native places or maybe they got the disease from the work places through their back and forth schedules between Manipur and Cachar and Dimapur road.

Transport and Wars

The war of 1891 brought colonial troops from other parts of India. Troops progress towards Manipur from Kohima –Silchar and Tammu. Early eight thousand soldiers were employed in the operation. There were also many Nepalese troops who came from Assam, North Bengal and Nepal. The movement of troops or military and paramilitary personnel from malarious to non-malarious areas encouraged the spread of diseases from one place to another. As military and paramilitary were a mixed population

having a wide variation in the immune status of individual against diseases including malaria, when they move to new location they were exposed to the local strain of malaria and sometime experienced high incidence of malaria infection. The temporary movement and living condition in difficult, hilly terrains of malaria infested areas exposed the military personnel population to intense transmission.

The increase in troops from other parts of India might have resulted in the increase of malarial infection in Manipur, though the epidemic of malaria was not mentioned in the early period of British rule. The incidence of malaria might have increased with the influx of troops from different regions.

The British government was not at all concerned for the native people. The sanitary condition of other places neither occupied by the British nor by the troops did not concern the government. Sanitary measures were not enforced by the British troops and subjects.

The period from 1891 to 1907 is an important phase in the history of Manipur. The state came under the British rule after successfully quelling the rebellion of the natives. The Colonial rule in the state brought about many changes in the administration of the state. One of the major changes was the introduction of money economy and abolition of taxes which was paid in term of service. Trade opened up with the improvement in transport and communication. Rice became one of the most important articles of export which was earlier not allowed to be exported even if it was in abundance. There was an increased in the population of outsiders. Health of the population now became the concern of the British government, hospital was constructed. Sanitary measures were also introduced for the first time. It was first introduced only in

the area of British reserves, and later was extended to the natives. During the First World War many of the natives were forced to join the Labour Corps. There was a record of influenza and malarial fever in the later part of the period. Monetization of the economy resulted in the sell of agricultural product. The self subsistence economy came to an end.

CHAPTER 4

1907-1947

The period from 1907 to 1947 was an important landmark in the history of Manipur. In 1907, Manipur entered a new phase of its history as the administration was handed over to the native ruler Raja Churachand Singh. Though the administration of the state was handed over to the king the nobles did not have a sovereign power. The British officers exercised the *de-facto* authority. The Raja was merely a puppet king under the British authority for the real power was concentrated both in the hands of the Political Agent and the Vice-President. They exercised tremendous influence over the proceedings of the *darbar*. The colonial government very cleverly followed the policy of divide and rule, so that the natives from the hills and valleys would not get together and threatened the British paramouncy. The king or the *Raja* was given the administration of only the Valley while the hill administration was entrusted to a single officer, the Vice – President.

The local administration was still dependent on the colonial rule for protection of their boundaries and internal political structure. The colonial rule did not take up any measure for the development of the state. The colonial rule was only interested in extracting money from the state as they had introduced many taxes like, land revenue, Foreign tax, Fisheries tax, Forest tax, Jail Tax, Cart and Cattle taxes, Excise tax, Miscellaneous tax, Salt tax, Hill tribes tax, excise and income tax. Despite the collection of these taxes the state lacked financial resources and remained economically far behind

the neighboring state. The policies and planning were made only to suit the colonial administration.

During this period, the Colonial rule introduced some urban facilities in the state for example the installation of street lighting in the palace and the road approaching the palace by an acetylene gas. As well electrification and introduction of motor which were done in the same period.

The British development policies like the construction of the roads, embankment, electrification of the state, construction of bridges, etc. may be the reason for the occurrence of malaria and other vector borne diseases in the state. For example in the early 1860s, when an outbreak of epidemics fever first attracted serious attention in Bengal, the occurrence of the disease was ascribed to the construction of the embankment.

In order to understand how the British policies or rule influence the occurrence or spread of malaria in the state, it is discussed under different subheadings:

Population

The population according to the census of 1911 was 3, 46,323. The total number of the inhabitants of Manipur according to the census of 1921 was estimated to be 3, 84,016 of which 2, 59,614 were inhabitants of the valley and the rest 1, 24,402 were the inhabitants of hill tracts. In the census report of 1931 the estimation of the total population was 4, 45,606. The population of male was 2, 15816 and that of female was 2, 29,790. According to the census of 1941 the population of the state was 5, 12,127. Out of this the population of the valley was 3, 43,694, that of the hill was 1, 68,433 and in Jiribam it was 6,139. The population of Imphal was 1, 10,947.

Agriculture:

Agriculture was the main occupation of the state. About 71% were engaged in agriculture. In 1907, about one fourth of the land for which *pattas* had been issued was held by the rich class, who sublet it to the landless cultivators. This led to the creation of new landholders like moneylenders, merchants, rich urban people, and high-ranking official and near relatives of the royal family who were not at all interested in agricultural development. With the increase in absentee landholders, the condition of the landless cultivators became more deplorable as there were no developmental activities in the field of agriculture and the cultivators still practiced the age-old means of cultivation, which is primitive in nature. So that, with the increase in population there might have been no increase in the food production as the native people still resort to the age old practice of cultivation. Chas. A. Bentley (1925) remarked that the food supply of a population is governed by the agriculture production. In 1881, the total population of Manipur was 221070. The population in 1891 is not available as it was destroyed during the Anglo-Manipuri Wars; the total population in 1901 increased to 2, 84,465. Though the agriculture production did not show any remarkable increase the population kept on increasing.

In the year 1907 and 1908, the government i.e. the Colonial rule increased the area under cultivation to 1900 *bighas* of land. The reason for the increase in the area under cultivation was partly due to the discovery of concealed cultivation during the Survey and also partly due to the extension of cultivation. The discovery of concealed

cultivation showed that the government was not that interested in agricultural products of the state, as the earlier survey was not done properly. The extension of cultivation must have been done to increase the area under cultivation. The prices of food grains during 1908, except for *matikalai*, were very much lower than in the corresponding month of the previous year. The increase in the extension of cultivation might have a negative impact as it might have increased the chances of the increased in mosquitoes due to the clearance of forest for cultivation. In 1908-1909, out of 67 square miles in the valley one third of the area was under cultivation.

In the year 1911 and 1912, the area under rice cultivation was roughly estimated at 387800 *bighas* and under other crops was 53,000 *bighas*. So the total number of land under cultivation was 440,800 *bighas*. There was a scarcity of foodgrains in the hill areas, like the Kuki Villages near the Lushai border in the latter part of October 1911 and it spread to the northeastern part of Manipur. The failure of the crop was due to the seeding of wild bamboos attracting a large group of rats. In 1912, the rats later on attacked the rice crops and also did not spare millet on which the villagers relied to replace their lost of rice crops with that of millet. Though some parts of the hilly area were infested with hordes of rats destroying the food crop, in some other parts, the harvest was good as the Administration Report of 1911-12 recorded. It was also recorded that the state produced much more rice than it could consume. However the statement made in the Administration Report was quite contradictory as it was recorded that in some parts of state the foodgrains were all destroyed. Thus, foodgrains were imported from Lakhipur by Cachar traders on credit from the depot or on the Barak River near Jirighat. So, it is possible that the valley produced plenty of rice more than it can be consumed. Hence, the

question arises that if the valley produced more foodgrains than consumption then why does the government made an arrangement for the import of foodgrains from Lakhipur (Cachar). The government might have exported rice indiscriminately when it was plenty without considering the needs of the natives. As a result rice was not enough and had to be imported from neighbouring state.

In the period from 1915-1916, wasteland taken up for cultivation was increased from 3,276 *bighas* (1,082 acres) to 5,797 *bighas* (1,916 acres) of wasteland. The net area under cultivation was also increased by 4,761 *bighas* (1574 acres). In that as the rainfall was good the harvest was also very good, but the good harvest was not beneficial as many of the cultivators had to give away a portion of the crops in return for loans and rice taken during scarcity period from the traders and also from the well to do Manipuris. Majority of the traders were outsiders (Non-Manipuri) so it was probable that they might have taken more interest than they ought to have taken. Traders were only interest to make as much as they can. The poor cultivators might have had less food to eat making them more susceptible to infection.

The area under rice cultivation estimated during the year was more than the previous year i.e., 4, 24,000 *bighas* or 14, 0,105 acres but the cultivation of other crops decreased to 40,000 *bighas* or 13,223 acres. Though the area under rice cultivation increased the price of rice was still very high. It caused distress to the poor cultivators though there was no famine or severe distress. The reason for the high price of rice may be due to traders who might have had taken lots of interest from the cultivators and were selling the food grains at a very high price or it was possible that during this period with the outbreak of the First World War (1914-1918), the British rule became a heavy burden

for them as they were forced to participate in the war. Moreover the food grains might have been exported for the armies.

In the period from 1916-1917, the area under rice cultivation increased to 4,37,000 *bighas* or 144,463 acres and the area under the crops were roughly estimated at 40,000 *bighas* or 13,223 acres. Though the area under rice cultivation was increased the harvest was not good as the flood caused severe damage of rice. 35,000 acres of rice was damaged. The floods which occurred during the year seem to be very severe as numerous breaches occurred in the river embankment and in many places where the embankment held the river overflowed their banks. There was a considerable damage of the merchandise in the bazaar, especially food grains. The whole of Imphal was practically submerged and until the flood subsided. The people lived for several days in the temporary shelters erected upon the roads, embankments and any high ground available. As the south valley was low-lying, full of lakes and marshes, the damage done by flood was even greater than in the north and the centre. The whole drainage of the valley converged and passed through a narrow outlet. As a result, the water could not escape with sufficient speed, and the low lying portions of the South were waterlogged for a considerable period thus, making it conducive for *anopheles* mosquito to breed. Chas A. Bentley (1925) pointed out that the numerous and extensive excavation and burrowpits on a village site may not give rise to malaria as long as the greater part of the surface is submerged by floods of river water. When the inundation ceased to be prevented, every hollow, which can hold rain, water, becomes a dangerous breeding place and *anopheles* mosquito could thus multiply unchecked.

The flood during that year might have also prevented cultivation, causing distress to the poor. According to Shiela Zurbrigg (1992), seasonal flooding destroyed crops and often prevented agricultural operators for varying pounds of time condition which meant sudden unemployment and lack of earnings. During the year Malaria broke out in an epidemic form throughout the valley and was unusually prevalent. The epidemic of malaria can be attributed to the floods and shortage of food grains.

In 1917-18, the total area under cultivation increased to 17,628 *bighas* (5,827.438 acres). The area under rice cultivation was again increased to 450,000 *bighas* on 148,760 acres, and the area under other crops roughly estimated at 40000 *bighas* or 148,76 acres. Rainfall was normal and there were no floods; climatic conditions were favorable for the rice- cultivation. There was no record of any epidemic during the year as the weather was normal. Though no epidemic was recorded it does not mean that it was free from diseases as in the previous year malaria broke out in an epidemic form in the valley. There may have been epidemic during that year but it was not a serious one and the reason why it was not recorded in the Administration Report was possibly because of the 1st World War. So the government might not have had time to record or check any epidemic in the state, as they were busy with the war.

During the year between 1918 and 1919, the net increase in the total area under cultivation was 7,430 *bighas* (2,456.198 acres) and the area under rice cultivation was estimated at 4, 79,000 *bighas* or 1, 58,347 acres. The area under other crops had slightly increased and the rough estimation was 42,000 *bighas* or 13,884 acres. The rain in the month of June and August was especially excessive and caused floods which caused some damage in the low lying areas. In few areas it totally destroyed rice. The causes of

the frequent floods in the valley was attributed to the silting up of the river beds as there was only one outlet for the water of the valley in the hills.

Chas A. Bentley (1925) pointed out that silting is a process of natural irrigation by the river water. It increases the yield partly as a result of the abundance of moisture supplied to the crop and partly owing to the manurial value of the silt. Silt laden water checks the growth of weeds in the fields and in the drainage channels and also reduces the breeding of mosquitoes, as the larvae of the insects appear unable to flourish in salty water.

During the year there was no record of malarial fever, but widespread epidemics of influenza was recorded which appeared first in the Imphal Valley and later on spread in the whole valley. Many people died due to influenza in the given year.

In the period from 1919 to 1920, the net increase in the total area under cultivation in the valley was 5,483 *bighas* (1,812.56 acres) and in Jiribam 411 *bighas* (135.87 acres) of wasteland were taken up for cultivation. The area under rice cultivation increased and area estimated at 4, 80, 00 *bighas* or 1, 58,677 acres and the area under other crop has also increased and was estimated net 43,000 *bighas* or 14,214 acres. The rainfall was below normal and the irrigated part of the valley produced quite a good crop so there was no scarcity of food grains in the valley but in the hills owing to the shortage of rain the food production was not good. There was a considerable hardship in the hills, as the hill men can not cultivate as much land as they would in an ordinary condition. The prevalence of diseases and also the Kuki rebellion did not however, led to famine. But there was an outbreak of Cholera, Smallpox and Malaria which continued from the previous year.

The case of influenza which was mentioned in the previous year may be malaria as it was mentioned that there was an outbreak of malaria which continued from the previous year but it did not mention about influenza which had taken many lives. So there were chances that the influenza mentioned about in the previous year might be due to malaria.

The year from 1921-22, the net increase in the total area of *ryotwari* land cultivated was 9,596 *bighas* (3172.23 acres) and of the special land 129 *bighas* (42.64 acres). In Jiribam 734 *bighas* (242.64 acres) of land were newly taken up during the year. The area under rice cultivation in the valley was estimated at 4, 98,000 *bighas* or 164,628 acres and the area under other crops at 46,000 *bighas* or 15,206 acres.

During that year the Kukis of the South-West area had further extended their wet rice cultivation in the Khuga valley, though most of them preferred *jhuming* system of cultivation which they were accustomed from their forefather's time.

The total rainfall was normal and it rained between the months of June and September. The rice crop during the period was good except for the damages due to the breaking of the Imphal River.

The Administration Report of 1921-1922, recorded about a slight outbreak of influenza but no other serious epidemics. While Elungkieb Zeliang (2005), in his compilation of Christian missionaries, did not mentioned about the incidence of influenza but malaria was mentioned and was also written that Kuki girls suffered greatly from malaria and also that the Tangkhul girls suffered continuously from malaria. The Influenza mentioned in the Administration Report probably might have been malaria.

In 1923-24, the net increase in the total area of *ryotwari* land cultivation was 66,122 *bighas* (21,858.51 acres) and in the special tenure land seven *bighas* (2.31 acres). The area under rice cultivation in the valley was estimated at 5, 23,000 *bighas* or 1, 72,893 acres. The rainfall during the year was sufficient for the cultivation of rice. The rainfall in hilly area exceeded that of previous year, rice cultivation in the N.E subdivision suffered due to heavy rain in October and cotton crop was exceptionally good.

The malarial condition on the compound improved (Kangpokpi area). The huts of Kukis were burnt down, and the remaining settled in more substantial buildings and some distance from the swampy and low lying land adjacent to the main stream. Jungle and undergrowth was kept low by cutting down twice during the rainy season, thus exposing stagnant and other kinds of pools. The result of regular systematic treatment of such with kerosene and linseed oil was appreciable as there was a remarkable decrease in malaria.

In 1925-26, the net increase in the total area of *ryotwari* land cultivation was 5,077 *bighas* (1,883.3 acres) and the area under rice cultivation in the valley was estimated. Rainfall of the year was above normal. The cultivation of rice was hampered by excessive rains during May and July and a shortage of rain in June, the outturn of rice was also affected by the dry weather of October and November. For the first time in the state mention was made of rain gauge which was established in Churachandpur district and it recorded 36.46 inches of rain from August to March. Though rice crop was not good in the valley it was good in the hilly areas.

The Administration Report recorded that there were no epidemics except for *Kala-azar*. But from reading the weather record that year it is hard to believe that there was no epidemic of malaria as there was excessive rain. At times there was shortage of rain and on other time it dry. This kind of weather is very prone for breeding of *anopheles* mosquito.

From 1927-28, there was a net increase in the total area of *ryotwari* land cultivated and was 3,345 *bighas* (1,105.78 acres). There was reduction of 127 *bighas* in the special tenure. The area under rice cultivation in the valley was 5, 37,452 *bighas* or 1, 77,670 acres.

In the valley the cultivation of rice suffered, firstly due to the irregularity of rainfall during the early part of cultivation season and secondly from shortage of rain in August. While in the hill tracts, rice was generally good except for some villages in the northeastern portion where they practiced wet-rice cultivation near banks of a large streams suffered from flood caused by excessive rainfall.

There was no record of any epidemics of malaria during the period but the irregularity of rainfall made the valley ideal for breeding of *anopheles* mosquitoes. While in the northeastern part the situation was not ideal for breeding of mosquitoes. Chas. A. Bentley (1925) pointed out that "River water in the flood season contains a very large amount of dissolvent Carbon dioxide so much so that the reaction tends to become acidic, and the possibility affords a further explanation of the fact that *anopheles* larvae do not flourish in river water during the flood season.

In 1929-30, the net increase in the total area of *ryotwari* land cultivation was 1,709 *bighas* (567.96 acres). The area under rice cultivation in the Valley was 5, 39,881 *bighas* or 1, 78,473 acres. The total rainfall in the valley was a little above the average but the distribution was abnormal. There was flood in the whole of Imphal Cantonment and the country to the south of Imphal which combined with the adjacent hill district to fill the rivers running into Cachar. The northern circle of Jiribam was swept over and a considerable damage was done by the flood.

There was no record of malaria in any form during that period. It may be attributed to that of the heavy flood which incapacitated the *anopheles* mosquito to breed. Chas. A. Bentley (1925) remarked that, "if there was an abundance of rains malaria is rare. This is explained by the fact that in such regions the rains are heavy and the continuous and breeding places of mosquitoes are washed out, leaving no chance for an ova and larvae do not have a chance to develop or infect individuals." Maybe heavy rainfall in Manipur during that period was instrumental in keeping away the epidemic of malaria in the state. Moreover there was no record of incidence of epidemic of malaria in the state during that year.

In 1931-32, there was a decrease in the special tenure land of 207 *bighas* (68 acres). The area under rice cultivation in the valley was 5, 44,852 *bighas* or 1, 80,116 acres; an increase of 5,500 *bighas* on the last year. The weather was good throughout the year and crops were also good.

The Administration Report of 1931-32, does not have any record of epidemic of malaria in the state. In the book, "History of Christianity in Manipur Source Materials", the same year it was recorded that in Kangpokpi hill villages there was severe malaria

and there was no record of any death owing to the disease, but many have been incapacitated for a long period (Elungkieb Zeliang. 2005). The reason why the Administration Report of 1931-32 did not record about the incidence of malaria was possibly because it did not come to the notice of the British government. The Britishers were concerned only when the disease infected the valley. The government lack of interest in the welfare of the hillmen might be due to the fact that the hill areas were considered insignificant in the administration of the state. The British officials or the British soldiers were not stationed in the hill areas, so this might be the reason for the neglect of hill men. The government was not bothered about the epidemic of fever inflicting hill areas. As a result the British government did not bother to keep a tract of it.

In 1933-34, there was a decrease of 122 *bighas* in the area of *ryotwari* land cultivated which was due to cancellation of *patta* land. The land under rice cultivation was 5, 44,021 *bighas* (1, 79,841.55 acres) and under other crop was 45,875 *bighas*. Rice was good during the period but in the middle of the year some damages were done to the standing crops by insects. There was shortage of rain in November resulting in some more damages. In the hill the rice crops on the whole was good. Wet rice crops were also good and wet rice cultivation was also cultivated in some places.

There was no record of any epidemic of malaria except for the epidemic of *Kala-azar*. May be because the rice crops were good both in the hills and the valleys and the native population had enough to eat as which made them more immune to infection. The epidemic of *kala-azar* was attributed to be imported, perhaps by the improvement of roads, which increased the movement of people from one place to another spreading the disease.

In 1938-39, there was a total increase of 10,583 *bighas* (3,498.512 acres) in the area of *ryotwari* land cultivated. The area under rice cultivation in the valley was 5,60,270 *bighas* (1,85,213.223 acres) and that of other crop was 46,129 *bighas* (15,249.256 acres).

Though the weather was good, crops suffered due to various causes. Insects first damaged the standing crop and later the harvesting of early paddy was interfered by excessive rainfall which also damaged the vegetable crops. Later on in March the highland cultivation suffered from scarcity of rain.

During the year epidemics of malaria was not mentioned except for an epidemic of Cerebro-Spinal meningitis among the hill tribes especially among Kukis. An epidemic of *Kala-azar* was also recorded. The chances of malaria epidemics was less throughout this period as there was an excessive rainfall in the harvesting time; damaging the standing crop, so rainfall might have swept away the chances of *anopheles* mosquito to breed. Chas. A. Bentley (1925) pointed out that heavy rainfall check the breeding of mosquitoes. Thus during this year the state might not have faced the epidemic of malaria.

In 1940-41, the area under rice cultivation in the valley was 5,69,988 *bighas* (1,88,425.78 acres) and that under other crops was 46,124 *bighas* (15,247.60 acres). The year might be free of fever epidemics as the rice crop was good and unlike the previous year the Administration Report did not record about rice crop being damaged by rain. Moreover, mention was not made regarding occurrence of any form of epidemics.

In the year 1943 to 1944, the land under *ryotwari* settlement was 5,67,655 *bighas* (1,87,654.543 acres) of land and the area under cultivation in the Valley was 5,75,152 *bighas* (1,90,132.892 acres) and under other crops was 46,158 *bighas* (95,291.900 acres).

acres). The rice crop during the year was not good due to drought; even other food crops production was not good.

Transport and Communication

Improvement in transport and communication resulted in the increase of movement from one place to another. During the year from 1907-1947, there was an improvement in the roads. Bridges were constructed in Manipur, even motor cars and all other types of vehicles could be seen in Manipur like aeroplane. Even the number of vehicles in the state increased. The improvement of transport and communication can also be related to the increase in chances of spreading of malaria from one place to other.

Sharma, Sharma, Dhillon (1996) observed that, the movement of large number of road transport vehicle from one part to another part of the country which carry goods like coal, ore etc. from malarious prone areas to industrial township and carry back the finished goods to other parts of the country. The labour moving with the transport was exposed to transmission of malaria when they halt at night during the journey. With the improvement in roads and the introduction of motor lorries in Manipur, the movement from one place to another became easier. So it is possible that there was an increase in movement of not only labourers or traders but also an increase movement of people from one state to another.

In the year 1907-08, the old bridges in the Cachar road over Irang River and the Barak *nallah* were reconstructed and also a new bridge over the Thoubal River at Yaripok was also constructed. The construction of new bridges in the Thoubal River as well as the reconstruction of the Irang River and the Barak *nallah* which is located in

Assam and Manipur border might have resulted in the increase of movement of people from one place to another. A.V.Kondrashin (1998), observed that Malaria incidence is considerable higher in border areas with permanent population movement'.

An Iron bridge road as well as metalled road were completed and a copper working was carried out on the Burma road in the year 1911-12, roads, bridges, building, small culverts and river embankment were repaired in 1915-16 and in 1917-18, in the hill sector of the Cachar road suspension bridge was built. Later on in 1918-19, on Burma road some small bridges of permanent nature were erected in places of culverts which were washed away by the disastrous flood of 1916, many *pucca* bridges were provided and the *pucca* irrigation culvert was completed in 1919 and 1920. Many new bridle paths on the Lushai border were also completed.

In the period from 1925-26, the roads in the valley were good, but later on there was great damage on the road due to heavy cart traffic. Two of the bridges (Iril and at Yaripek) were reconstructed with reinforced concrete pillar. New Roads were constructed in many parts of the hills area like the Sadar Hills, Tamenglong, Kangpokpi road, Imphal and Ukhrul roads were completed. The damaged on the road which was attributed to heavy cart traffic showed there was frequent movement from one place to another.

In 1927-28, the number of motor lorries in the state rose from 79 on the 31st March 1927 to 101 on 31st March 1928. The first motor car plied by the Raja was seen as early as 1916. The number of Motor lorries in the state rose from 143 in 1926 to 156 in 1930. The government of Assam imposed heavy tax on all such lorries plying on the roads. The increased in lorries in the state could be due to the increase in the export of

goods from the state. The chances of spreading disease, from one place to another increased i.e. from malarious area to non malarious area.

The Second World War put Manipur into the communication map of the world. During the war the three important routes leading to Burma, Assam and Cachar were made freely accessible by the British to bring in the allied troops along with their war machinery and equipment. Some airfields were also constructed at strategic points of the Valley. During the period there was an improvement in the means of communication, which sped up the movements of foodgrains from one place to another, but it also led to the increase the negative effect of epidemics.

The tropical aggregation of labour for construction of roads and canals has been related to malaria. Unlike the construction of dams and urban areas where labour force was aggregated in small camps surrounding the construction labour in linearly spread over long distances. They intermingled with local population and enhanced outbreaks in a large number of villages.

Thus, the improvement in the means of transport and communication might have also aggravated the case of malaria in Manipur.

Labourers and Migration

Labourers and migration are commonly linked with the spread of malaria from one place to another. The factors which contribute to the movement of labours are industrialization, developmental projects, urbanisation, better transportation, and agricultural purposes. Migrant labourers are unorganized sectors and often reside on

unauthorized lands. Most of them are from the poorest of the poor and so are more vulnerable to diseases.

N.Lokendra Singh (1997) pointed out that in the absence of economic opportunity there was little scope for the peasants to be profitably employed in their off-season. In what ever jobs that they got themselves engaged in, the wages were extremely low. Various references can be seen in the Annual Administration Reports which kept a record of the events throughout the first decade of 20th c, the rate of wages remained almost constant at 4 *annas* per day for unskilled workers in the valley and 6 *annas* for unskilled workers in the hills.

In 1907-08, primitive laborers were imposed in the state and the Kukis migrated to and fro from one districts to another. It was recorded that in 1908-09, there was an increase of 2,041 houses in the hill tracts; out of that 1,494 were in the Kuki Villages. The increase was partly due to the new comers entering the state from the Lushai hills, Chin Hills (Burma). There was also an increase among the Kabui Naga and Tangkhul Naga. In 1911-12, 300 new settlers came for forest work in the Cachar border.

During the period from 1915-16, though the harvest was good there was shortage of food grains, as most of the cultivators had to return the loans taken the previous year, large number of native rural population went to work and trade in Cachar, Assam and more especially in Burma. The increased in the number of migration of rural population in Cachar, Assam and in Burma for work might have increased the chances of getting infected to malaria from their workplace. When the rural population returned to the state there was a high chance of them bringing back different strains of malarial parasite to the state.

The rural population has to move from one place to another in search of better livelihood and sometimes got infected with diseases and when they return to their natural habitat they spread the infection. Madhukar Pai and Anand Zacharia (1997) observed that, "large scale interstate movements occur in relation to the development of agriculture, forests, industrial project and construction activities to and fro from malarious zones are crucial to the transmission of the disease".

During the First World War, the Manipur Labour Corps was raised and 2000 Nagas and Kukis were recruited and sent much against their will to France in May 1917, they were sent as laborers for digging trenches, carrying loads and building bare camps (Dena, 1991 pp. 126). In 1919, the Manipur Labor Corps to France returned to Manipur. The hillmen were unable to cultivate as much land as they would under normal or ordinary circumstances due to the prevalence of disease and the disturbed conditions prevailed as a result of the Kuki rebellion against the British government referring to join the Manipur Labor Corps. During the year (1919-20), all men employed on punitive labour received a daily ration of rice. Many refugees from the hills during the Kuki Punitive measures, many of them took refuge in the Langol hill reserve for supplying firewood. During that year there was an increase in outdoor patients. The reason was that many of the transport coolies employed in the Kuki Punitive measures were sent to Hospital. The Administration Report recorded that the increase in the dispensary as well as in the Civil Hospital was mainly due to prevalence of malaria in an epidemic form in the valley. 2,972 persons were treated for this disease in the Kakching dispensary alone.

In 1923-24, about 200 new families settled in Jiribam most of them from Cachar. In 1925-26, there was an increase under Foreigners Tax. The increase was due to the increase in the number of men and buffaloes in the Grazer reserve. The grazer also helped in the spreading of the disease from one place to another as the grazer had to move from one place to another in search of greener pastures. Cattle grazers from different malaria paradigms migrated from place to place in search of Cattle fodder (Sharma, Sharma, Dhillon.1996). The cattle grazers changed their camps very frequently depending on the grazing facilities available in the area because of the temporary nature of camps, frequent shifting of sites. The cattle grazers were exposed to natural transmission of the area.

In 1931-32, there were a few Manipuris who actually moved from valley and most of the manipuris occupying lands in the settlement were from large settlements in Lakhipur, Silchar and elsewhere in Silchar District.

In 1933-34, there were altogether 9,948 coolies impressed for state work, for which they were paid. Sadar used 2,314 of these, Ukhnul 1,928, and Tamenglong 5,706. The impressments of coolies are distributed evenly among all villages.

In 1938-39, 12,891 coolies were impressed in Sadar subdivision, 62,639 in the East subdivision, and 54,921 in the West subdivision in connection with the construction of bridges, roads, carriages of materials for repairs and reconstruction of lakes.

In 1940-41, the coolies impressed for state work increased to 90,152. Out of that 11,845 were in the Sadar subdivision, 36,633 in the East Subdivision and 41,674 in the West sub division.

In 1943-44, the refugees from the hills continued to come to Imphal. They numbered over 1000, the refugees were not only from the hills but also from Burma, and

were housed in a camp but later on due to shortages of transport the refugees were unable to travel on to Dimapur and the camp overflowed. Lorry-loads of refugees from the hill valleys in the battle area were dumped in Imphal without work and food. The situation of the refugees became more impoverished due to absence of food and the places where they were dumped were not healthy. Many people from different places came making it a difficult task to keep the place healthy. Thus, there was a high channel for spreading of diseases in this kind of situation. The hill men had to work as labourers on the Dimapur, Tamu and Teddim roads, the Kharasom, Ukhrul, Sita, Mombi and Bishenpur- Jiribam Jeep tracts but also as porters for the parties of Assam Rifles.

Troops and Wars

Military troops and wars were also responsible for the spreading of diseases from one place to another. Like the labourers, they also moved from malarious area to non-malarious areas. The British concerns for the military troops were also one of the reasons for the introduction of modern medicines in India. “Military losses to disease were particularly persuasive in forcing the British and other colonial powers to take responsibilities for indigenous health” (Arnold. 1989).

During the Kuki Rebellion in 1917, the British government dispatched armies from different battalions stationed at different places like the columns of 3rd Assam Rifles stationed at Kohima in the Naga Hills, and of the 4th Assam Rifles stationed at Imphal. It was possible that the soldiers who were already infected with the malaria might have brought malaria from their work place.

Troops are mobile people – they are always on a move from one place to another, from malarious to non malarious area, they are more susceptible to getting the disease as well as spreading them. “ The death rates of troops was not the main concerned of the military authorities but the number of troops capable of active service at any given time, and the persistent ‘Wastage’ from such generally non-fatal diseases as malaria, dysentery and venereal diseases remained a major cause of anxiety until the 20th Century. (Pati, Harrison.)

North-East India is a malarious zone, which is also confirmed by the British officials, “.... The *Anopheles* mosquito is plentiful and many of them are infected. I do not think there is a single European official in the Naga Hills last year who did not have malaria.” (Mill.1926). Thus it is possible that the North-Eastern region might not have been a salubrious place for the British Soldiers or officials so that might be the also one of the reason for the “Anti-malarial and Anti- Mosquito Campaign” in 1931-1932.

The Kukis in 1917 rebelled the sending of Labor Corps to France, the British Government in order to quell the rebellion sent armies from the 3rd Assam Rifles, stationed at Kohima in the Naga Hills, 4th Assam Rifles, stationed at Imphal. It is possible that malarial parasite is brought in Manipur by the armies as in the Naga Hills there are plenty of *Anopheles* mosquito already mentioned by J.P.Mills. Moreover, the Administration report of 1918-19, has also mentioned about the epidemic of influenza. The Administration report records, Manipur did not escape from the widespread epidemic of influenza which caused so much havoc in other countries”. Robert Reid (1883-1941) had also mentioned about a serious outbreak of influenza in a very fatal form which

caused delay in the military operations in Manipur as well as in the Naga Hills and Burma, the Military operations had to be postponed.

During the Second World War, Manipur served as a battlefield and the number of outsiders especially war armies, refugees increased causing both economic as well as physical hardship to the people of Manipur. With the Japanese Occupation of Burma in the early 1942, Manipur which was a border state began to feel the impact of the war. In January and February, 1942, refugees from Rangoon, household servants, British families who had been in oil or timber business and even few Italians and Swedes along with their women and children began to arrive in hundreds from Burma. The camps run by the Maharani overflowed with refugees. Even if many refugees wanted to go out of Manipur, an acute shortage of transport resulted in the overcrowding of the camps. By May, at least 1,50,000 refugees went towards Dimapur and another 37,000 went via Bishenpur to Silchar. The Administration Report of Manipur also recorded that the refugees from the hills numbered over 1000. War armies were an important agent in importing malaria to Manipur. The problem faced during the 2nd World War was that over 20,000 buildings have to be requisitioned for the army. The owners, including the servants, had to put up in with their friends and relatives in the surrounding countryside.

The pouring in of lots of refugees from Burma to Manipur might have increased the chances of spreading of malaria parasite in Manipur as Burma was a highly malaria endemic zone. Rev. East mentioned in "Burma Manuscript" that the, "Epidemic of Malaria is playing havoc with people." He also mentioned about procuring a large amount of quinine from the government wherever he goes.

Hundreds of thousands of troops poured into the area. For accommodating the armies over 40,000 houses has to be relinquished creating lots of problem for the native population. The owners of the house including many state servants have to 'put in' with their friends and relatives in the surrounding countryside.

During this period there was a high chance of spreading malarial parasites as many people like refugees, armies poured in into the state. Moreover, due to war there was shortage of food products. The Administration report recorded, "Hundreds of thousands of troops poured into the area and the resources of the state was strained to their uttermost in providing supplies to the social purchase organization and labour for military work". Though the Administration Report did not mention about epidemic of malaria during the Second World War, the possibility of people suffering from Malaria was very high. The government officials might not have recorded it, as they might have been preoccupied with the war.

Trade

After the British took over the sovereignty of Manipur, they started opening up communication by constructing roads, bridges and telegram cables. The introduction of lorries and motors increased the export of manipuri food grains. During the pre-colonial period due to high cost of transportation the harvest surpluses or food grains were not exported but were restricted to local markets. According to Sumit Sarkar in "Modern India 1885-1947", commercialization of Agriculture was driven by railway construction, road construction, which led to growth in exports. It was a 'forced' process. Peasants were forced to produce commercial crops. Rice was the commercial crop as the main

export of Manipur was rice. Besides rice Manipur also traded in export of cattles, brought from Burma while some others from the nepali grazers settled in Manipur. Weaving also formed a valuable cottage industry in the state during the year 1921-22. During the year the export of Manipur cloth increased considerably due to the *Swadeshi* Movements.

The British rule resulted in the commercialization of agriculture. With the introduction of lorries the amount of export of rice increase, and the price of rice back home was very high making it out of reach for most of the people. According to Kohei Wakimura, in his article "Health and Economic History: Lessons from the study of Famines, Epidemics and Colonial Development in British India "1871-1920", observed that commercialization of agriculture was driven by railway, road construction, resulting growth in exports, it was a 'forced' process. Peasants were forced to produce commercial crops in order to pay heavy land revenue or rents decrease of food production, worsening the damage of famines intensified the dependence of peasants on moneylenders

In 1915-16, the price of rice was abnormally high, though the embargo on the rice was made. The price of rice also rose though there was no famine kind of situation leading to severe distress. In 1911-12, with the help of Lakhipur traders arrangement were made to supply rice to Hillmen. 1,08,086 maund of rice were exported during 1911-12. In 1916-17, the price of rice was normal the harvest of the precious year was good but due to floods the export of rice was prevented and the state was saved from the shortage of foodgrains. During 1918-19, large quantity of rice was exported which resulted in the rise of the price of rice. From 1907-22, prevalence of malaria had been recorded. It might be due to the increase in the export of food grains which resulted in shortage of food grains in the state.

Malaria mortality was severe in those districts where the food grains price was high as well as by the sudden increase in export on local food grains (Zurbrigg.1992). For the poorer section like the artisans, urban labourers the rise in food grains meant a decline in consumption which weakened the general resistance to disease and when the body is not well nourished there is a greater chance of being attack by diseases.

In 1923-24, the export of rice was 1,81,370 maunds. There was no restriction on the export of rice and the trade was mainly in the hands of Marwaris. In 1925-26, the export of rice was very high and the price of rice was very high. The increase in the export of rice as well as the other food grains was due to used of motor lorries which made the exportation of rice very fast and easy. In 1927-28, rice was exported mostly for Kohima Civil Station, some units of Assam Rifles and some areas in Sibsagar where rice was scarce. Even if the harvest was good the food grain were exported so the price of food grains does not decrease. It was immediately exported. Thus hunger coincided with period of low food grain prices as well as high.

In 1929-30, rice was cheap though embargo on export of rice was removed. Throughout the year the civil station of Kohima and the unit of the Assam Rifles stationed at Sadiya and Lokra were supplied. During the year 1, 64,510 *maunds* of rice were exported as against 1, 65,983 in the previous year. 73,026 *maunds* of rice were supplied to meet the demands of the government order.

In 1933-34, the price of rice was low and there was no embargo on the export of rice. During the year 2, 23,523 *maunds* of rice were exported as against 2,77,389 *maunds* in the previous year. There was a decrease in the export of rice compared to the previous year. But 1938-39, the export of rice increased to 3,72,174 *maunds* and 1,98,558 *maunds*

as compared to 2,61,716 *maunds* of rice in the previous year. The increase in export of rice might be due to the decrease or low price of rice. In this connection a comparative study can be made between the increase in area under as well as the increase in the production of rice. In 1925-26 the total area under cultivation was 1, 75,537 *acres* and in 1938 the total area under cultivation was 1, 85,213 *acres*, the increase in the cultivation of land during the thirteen years gap was only 10, 322 *acres*. On the other hand the volume of rice export in 1925-26 was 1, 55,014 *maunds* and in 1938 it was 3, 72,174 *maunds*. The increase in the amount of rice exported during the last thirteen years was almost double i.e., 217160 compared to the area under cultivation, which was very low. The increase in the export of rice was very sharp causing serious economic effect on the normal life of the common people. The serious authority was further intensified by the shortage of food grains.

The traders were also responsible for the shortage of food grains, though there were several rice mills in the state only three were owned by the Meiteis (Native population). So the great bulk of this trade was in the hands of outsiders i.e. the *Marwaris*. The *Marwari* traders took up all the contracts for the export trade including the supply of the British Army Reserve in Kohima. Before 1932, the export rice was carried on under two different categories i.e. 'Cart Tax' and 'Land Pass' system. Under the first system the free movement of rice was allowed after paying cart tax and the second system was made through agreement between Manipur State and Assam Government. Under the second Category rice could be exported to the Kohima Civil Stations and Assam Rifles posted in different areas in Assam. The new system gave a great help in the consolidation and growth of *Marwaris* in Manipur and the quantity of

rice export in 1932 reached 2,77,387 *maunds* as against 1,05,287 *maunds* in the previous year. The export of rice was not a great threat as long as it did not affect the livelihood of the native population, and rice was enough to satisfy both export demand and local demand.

Towards, the end of 1939, an excessive rainfall affected the growth and in November the standing rice crops were further damaged by hail and flooding. The prices increased and whatever rice was available was largely bought up by the *Marwari* traders and was immediately exported. The shortage of rice resulted in the shooting up of price beyond the affordability of the common people, and thus threatening the economic well being of women and health of children. So the women folk started an agitation against high price of rice. The agitation was called as '*Nupi Lan*' i.e. 'Women's war', The scarcity during the period might have resulted in the increase in the numbers of the distress among the poorer section of the working population and such distress means greater susceptibility to disease and consequently greater loss of life.

Rise in price of food grains, means decline in consumption. Malaria mortality was severe in the districts where the effects of price were compounded by sudden intense export pressure on local food grains, resulting in depletion of stocks and distress to number of poorer section of the working population and such distress means greater susceptibility to disease and greater loss of life (Zurbrigg. 1992).

During the Second World War, there was again shortage of food grains in Manipur. Most of the trucks and lorries were used for the transportation of armies instead of using it for bringing regular food supplies. The tremendous increase in demand and dislocation of trade resulted in the increase of price. The price of rice rose from Re 1 per

maund in February 1942 to Rs. 25 per *maund* in August 1943. During the Second World War due to the shortage of food grains the native population suffered from hunger, which might have resulted in the decrease in the resistance and lethality of infection including malaria infection.

Land Revenue and Taxes

During the year 1907-1948, there was an increase in the revenue demand as well as the area and cultivation increased. The increase in the land revenue was partly due to the extension of cultivation and also partly due to the discovery of concealed cultivation. The government did not even spare the grazing land. In order to prevent encroachment on village grazing land the lands were demarcated. The assessment prevailing all over the main valley was Rs 5 per *pari*, and the rice lands taken up by the Nagas the rate was fixed at Rs 3 per *pari*. There was also an increase in the forest revenue.

Towards 1913, there was an agitation in Manipur valley against the system of *Pothang*. *Pothangs* are of two kinds: '*Pothang Bekari*', and '*Pothan Senkhai*'. In '*Pothang Bekari*', native people were used for carrying goods or baggage or to make bridges, roads and build new bungalows without payment for the touring officials. While in '*Pothang Senkhai*' the household had to supply money, chicken, eggs or other domestic animals to feed the touring officials free of cost. The system made the native people more impoverished, besides paying other taxes. Moreover the supply of the eatables free of cost might have been a big burden for them as they themselves were deprived of the food items supplied to the officials. Later on the system was abolished in

the valley but not in the hills. In place of '*Pothang*', new tax was imposed, an increase in the land revenue at the rate of *annas* 3 per rupees.

In 1909-10, the government uncovered many hidden lands of the peasants. Fine was imposed on the revenue defaulters which aggravated their economic conditions. The problem faced by the peasants was due to difficulty in converting their product into cash. The monopolization of trade by *Marwaris* made matter worse for the peasants as the *Marwaris* dictated prices to the peasants. The peasants became victim of '*Phoudan Shel thaba*' (advancing of money for cheaper paddy after harvest). Also the peasants started borrowing money from the local moneylender at a very high interest. Due to land revenue and taxes, the peasants had a hard time; the high taxes might have resulted in the decrease in the consumption pattern of the native population which might have resulted in vulnerability to diseases.

During the period from 1907 to 1947, the British became the king maker. Among the princes the one who was in the good book of the British government was made the *Rajah* of the state. Transport and communication improved to a great extent. Motor lorries were introduced in the state for trade purpose. Electrification of the state was started during this period. Majority of the trade was dominated by outsiders (*marwaris*). From time to time there was an increased in the land under cultivation. Land was being demarcated and the British government encourages the private ownership of land. There was record of scarcity of foodgrains in the state. Manipur was one of the battlefields in the Second World War. There was a record of epidemics of malaria in the state during this period. The British government for the first time initiated Anti-malaria and Anti-mosquito campaign.

CHAPTER 5

SUMMARY AND DISCUSSION

The British government for the first time posted Political Agent in Manipur in 1835, for preservation of friendly intercourse and as a medium of communication with Manipur government and if need arise with the Burmese government on the frontier and to prevent border feuds. The British interest in the state might be due to its strategic importance, especially for the protection of the frontiers. The political agent did not have the authority to make any administrative reforms in the beginning of the appointment. He was dependent on the *Maharaja* for everything. The appointment of the Political Agent was considered to be of great help as the inhabitants of Bengal, Nagas, Burma and Manipur can trade freely without any fear.

Before 1891, the British governments were not at all bothered about the health of the natives. There was no record of any epidemics as there was neither any hospital nor any public health system. People resorted to local physicians for any ailment. The Government of Manipur, i.e., the *Rajah* enacted heavy duties on all exported and imported articles. The trade between Cachar and Manipur was the most important. The export items were categorized into three headings – jungle products, textile and livestock; the items of import were betel nut, kerosene, cloth, brass and other metals. Rice was not exported before 1891. Trading of slaves was also prevalent. There was frequent invasion by the Manipuri princes. There was a large number of immigrant population from south, Burma, Cachar and Lushai Hills.

The agricultural products of Manipur consisted of rice, tobacco, sugarcane, indigo, mustard, different varieties of pulses. The soil of Manipur was considered to be very fertile. One-third of the cultivated land was possessed by the ruling family. Land revenue burden fell on the poor and landless labourers. Salt was produced in the state from the salt wells. Barter system was prevalent. The native people paid regular taxes as well as perform *lallup* to the authority (*Rajah*). Even if a person was unwell, he had to pay *lallup* in terms of cash because he was unwell to perform *lallup*.

Manipuri troops assisted the British Government in their expedition. The road and communication before 1891 was very poor. There were no proper roads; the only road which was present was a peddled road. The British government did not take up any developmental work during that time.

1891 to 1907 was an important landmark in the history of Manipur. The British government took full sovereignty of the state. It was a period of regency rule as the native *Rajah* was a minor. During this period, the British government started some developmental work. Christian missionaries came to Manipur for the first time. Hospitals were also constructed. During this period the area under cultivation increased. Rice was being exported. The colonial rule in Manipur also resulted in the influx of people from its neighbouring countries as well as from other parts of India. Cash economy was introduced. *Patta* system was also introduced. The British government adopted free trade policy. The Colonial rule leads to the decline of production of indigenous goods. There was an improvement in the transport and communication. Some of the roads were metalled and a number of bridges were constructed.

There was an increase of troops from outside the state due to disturbances of 1891 from Kohima, Silchar, Tamu, Assam, North Bengal and Nepal.

From 1907 till independence, the administration was handed over to the native ruler. The British officers exercised *de-facto* authority. Some urban facilities were initiated; like the installation of street lightning and electrification of urban areas. One-fourth of the *patta* land was held by the rich people. Due to that a group of landholders was created. With the increase in absentee landholders, the condition of the landless cultivators became more deplorable. There was no improvement in the agricultural production to keep up with the pace of increasing population. Thus, the area under cultivation was increased. Apart from that there was also devastation caused by rats that resulted in famine in the state.

With the improvement in transport and communication there was an increase of movement of people from one place to another. Iron bridges were erected in place of culverts and metalled roads were constructed. Many new bridle paths were also completed. During the Second World War some airfields were constructed at strategic locations. The routes leading to Burma, Assam and Cachar were made freely accessible by the British.

The wage of labourers was very low. There was an increase in refugees from neighbouring states. Manipur was one of the battlefields during the Second World War. So, many troops came to Manipur. With the improvement in transport and communication like introduction of lorries and motors there was an increase in the export of Manipuri food grains. The price of rice was abnormally high. The revenue demand increased. In order to prevent encroachment, lands were being demarcated.

In Manipur, the period from 1835 to 1891 was free from the yolk of British rule. Though Political Agent was appointed he had to take permission from the *Rajah* for everything, as he was under strict scrutiny of the Manipuri authority. The only thing which the British government did was to maintain peace and order as well as solving the conflicts of princes for the throne. During that time due to absence of hospitals the native people resorted to local physicians. The local physicians were divided into two groups; firstly, the *Ametpa Loishang* and secondly the *Maiba Loishang*. The *Ametpa* diagnosed and treated patients suffering from boils, scars and ulcers. The *Maiba Loishang* performed *mantras* (hymns) to pacify gods, demigods and goddesses. It is possible that malaria might have been treated by the “*Maiba Loishang*”, patients suffering from malaria have high fever and shiver, and so the natives might think it to be due to the rage of gods or goddesses.

In the absence of any hospitals there was no scientific way of diagnosing malaria. The native people might have shivered when having fever, but they might not have thought that the sickness was due to malaria. So they might have thought that the sickness was caused due to some evil spirit and might have resorted to sacrifices to pacify the spirit. R. Brown in his “Statistical Account” has mentioned about the possibility of growth of ‘cinchona’ in Manipur. The *maibas* might have used *cinchona* for treating patients as most of the local physicians were well versed in the knowledge of useful herbs or medicinal plants. They might have some idea that cinchona was effective in treating shivering and fever.

The Kuki tribes of Manipur when seriously ill sacrificed a dog to the creator (*Pathien*) to relieve the sick of their suffering (William Shaw. 1997). For serious illness

the native people administered sacrifices. The local physicians might have been highly qualified as the neighbouring states of Manipur summoned physicians to treat their ailing king. So the local physicians might have treated many of the native people from malaria, they might not have felt the need to keep records of their treatment.

Manipur, prior to British Rule, was frequently invaded by the princes who fled to the neighbouring state like Sylhet and Cachar during disturbances among princes. The invasion might have resulted in bringing of different strains of malarial parasites from outside Manipur. Though a Political Agent was appointed by the British Government they did not take any serious interventions in the health of the native people as they did not have a total control over Manipur. It was only in 1897 that the role of *Anopheles* mosquito was discovered as the vector of malaria. The natives might not have been aware of disease caused due to mosquito bite. It is possible that they might have also resorted to the same theory of miasma, putrid air or swampy places which made them ill or sick. The hill tribes' preference to stay in an elevated area might do a justification. They prefer to stay in an elevated area as they think that the higher their houses are, the healthier they will be. It is possible that there was a high death rate due to malaria. So the villagers might have linked the deaths to swampy or marshy areas. Though Laveran had discovered the *Plasmodia* which cause malaria in 1880, the doctors in the Indian Medical Service were not aware about the discovery till Ronald Ross started his work on malaria in 1897 (Sheldon Watt). The native people had no chance of knowing that malaria was caused due to mosquito bite.

The existence of trade relations shows that there was movement of people from one place to another, maybe from malarious to non-malarious area and from non-

malarious to malarious area. The movement of traders might have also help in the movement of malarial parasites from one place to another. As the transport and communication was very bad the traders might have to hold back on their journey from Manipur to her neighbouring states or from her neighbouring states to Manipur. So there were chances of being infected with *Anopheles* mosquito during their journey. Moreover, whenever a trader traveled for business purpose many people follow him, like coolies as they were required for carrying goods.

The soil of Manipur seemed to be very fertile. Even the British Political Agent remarked on the fertility of the soil. The natives were not that hardworking but they always had enough to eat from the little bit of their cultivated land. Before 1891, as there was no export of foodgrains, even if there were famines and droughts there was no record of severe distress. So even if the natives suffer from any disease it might have not been lethal. As a result, it is possible that some of them might have been immune to mosquito bite. The hill-men were reported to be a 'hardy race'; some of them show a remarkable 'indifference to cold'. "The Kukis have been frequently seen asleep on the hard road, during the coldest month of the year, naked, with the exception of their scanty breech cloths. Fevers are common but they are not dangerous to life, and even seldom seen to induce enlargements of spleen' (Brown). Here one interesting thing worth noticing is the word used by Brown, he had used "seldom" instead of "not" that shows that the natives do suffer from malaria and other fevers but may be due to lack of patronage by the British Government in the health care of the natives proper survey was not conducted .So that may be the reason why the disease was not detected. There is another possibility that

the place where the Kukis settled might have fewer mosquitoes as most of the hill tribes chose an elevated place for their habitation.

From the year 1891 to 1947, Manipur came under the Colonial rule. Like other colonial ruled country British Government made lots of administrative reforms in the administration of the state. The introduction of cash economy was a blow for the natives. There was no monetization of economy the natives found it very difficult to meet the demand of the taxes and revenue of the new ruler, so in order to fulfill the demands of the British government, the natives had to sell their agricultural product. With it the subsistence economy of Manipur came to an end. Before 1891 the government was against export of rice, but under the colonial rule rice started to be exported extensively, as a result, Manipur faced frequent famines affecting the livelihood of the natives. “*Nupi Lan*” (women’s war) was the result of the distress and hardships due to shortage of foodgrains in the state. During that time the situation might have been very bad, otherwise the women might not have bothered to indulge in such a strong protest against the colonial rule. The decrease in foodgrains might have significantly affected the health of the people thus making them more susceptible to infectious disease. Sheila Zurbrigg (1997), in her account “ Epidemic Malaria and the 1943 Bengal Famine” opined that, “Because wage rates remained unchanged until well into the famine period, the purchasing power and, in turn, food consumption for a large portion of the rural landless poor was reduced to a fraction of its already bare-subsistence level, thus triggering epidemic starvation”.

There was an increase in an immigrant population as well as an increase in the movement of various groups of people like traders, labourers, troops and officials of the

British Government from one place to another in the region. Likewise, the movement of Manipuris to neighbouring states also increased." *Anopheles* mosquito population was reported to be high and many of them are infected. "I do not think there was a single European official in the Naga Hills last year who did not have malaria" (J.P. Mills, 1926:4). During the Manipur Rebellion of 1891, many troops came to Manipur from different parts of India to quell the rebellion. The natives witnessed hardships as rice from their granaries were forcibly taken for the troops' ration. Moreover, during the First World War, labour corps from Manipur was sent to France. So it was possible that those who were coerced to join labour corps might have introduced different strains of malarial parasites when they came back from the field.

During the Second World War, Manipur was among one of the battlefields; so large number of troops from other parts of India as well as from other countries came to Manipur. This might have contributed to the introduction and transmission of new strands of malaria in the state. For some of them it might have been their first exposure to tropical area. Disturbed conditions of war tend to favour the spread of infectious diseases. "There are more chances of spreading malaria during war. Men infected of oversea will harbour hidden or dormant infection when they return home, thus making possible the introduction of the disease into regions free from malaria" (Roy .1944).

The efficiency and abundance of mosquito vectors have greater influence on the prevalence of malaria rather than changes in the status of human reservoir (Roy. 1944).

The improvement in roads and communication improve trade between Manipur and her neighbouring country. However, it also incongruously accelerated malarial incidences in the state.

Government hospitals started only after 1891 when the British Government took over the administration of the state. In promotion of modern health services in the state, Christian missionaries also played an important role. The health care in hill areas was neglected before that. So, some of the claims of the officials about fever free areas might have been inaccurate. They might have not been aware of the real health problem faced by the hill tribes surrounding the valley since they were largely neglected by the government and for forbidding trespassers from their territories. As an instance, Mrs. Grimwood gave an account about her visit to a Kuki (a hill tribe) village where they were not permitted to enter the village. They were made to stay in an old makeshift in the vicinity of the village. This was a prelude to the Kuki rebellion of 1917. The negligence on the part of the government may be due to the inaccessibility by outsiders to the hill areas as some of them stay in elevated terrains and rough topography. J.H. Hutton (1965) in "The Mixed Culture of the Naga Tribes" also wrote in support of their dwelling as, "The inhabitants of the higher ranges are in general taller and fairer than those of the lower and hotter hills, while the incidence of malaria, yaws, and goitre, is less in the higher hills". George Watt (1887), in his account "The Aboriginal Tribes Of Manipur, wrote that, "Manipur is thus the middle portion of this highland country, and is traversed by a perfectly bewildering series of more or less parallel ranges which are every now and then knotted together by transverse spurs in proximity to the culminating points."

All the while, it seemed that the British Government were not interested in spending money in the health and welfare of the hill areas, as they might have considered that spending on the hill tribes was frivolous. "Control of diseases, many spread by the imperialist themselves, turned out to be necessary for the success of their economic

projects both for technical reasons for labour availability and for the political reasons of propaganda to counter peasant revolt. Support for health care was limited to force which had an impact on profits” (Cleaver. 1976).

After the introduction of hospitals, malaria related cases were encountered. In 1897-98, the official records reported the prevalence of fever in an epidemic form and of a fatal type throughout the valley during rainy seasons. The naga villages on the Northern Frontiers near Mao were also being attacked with epidemic fever and the mortality rate was very high. The prevalence of an epidemic form of fever where many people loose their lives may be due to malaria. The colonial rule might be considered as a probable theory for the introduction and transmission of various waves of malaria in the state.

Manipur before the Colonial rule might have suffered from numerous epidemics. The valley was surrounded by swampy and moist soil. One of the British officials had also remarked, “Manipur valley is well impregnated with the germ of terrible disease”. The Colonial rule might have aggravated epidemics in the state as the British introduced many administrative reforms like introduction of money economy, demarcation of land, free trade, creation of absentee landholders, encouragement of outsiders to settle in wasteland. The private ownership of land had a negative affect on the poor as they cannot freely cultivate land according to their wish. Those who were unable to pay taxes were deprived of land making the condition of the poor more deplorable. Earlier whenever there was shortage of food the natives resort to nearby forest or pond, but the private ownership of land deprived the natives from exploring forest in search of food. So it is possible that during shortage of foodgrains the native might not have anything to eat making them more susceptible to diseases, as starvation weakens the immunity of the

body. Thus the state might not be free from epidemic diseases before the Colonial rule but the native might have more immunity to diseases as food items were plentiful as the soil was very fertile and whenever there was shortage or failure of crops the natives could easily resort to forest products.

With the establishment of Colonial rule, the lands under cultivation kept on increasing but food was never enough for the natives, they suffered more due to shortage of food grains. During the native rule land under cultivation was comparatively very less but that time there was never shortage of food grains and the natives lead a carefree and merry life. Whenever they had free time or abundance of food grains they were not bothered to earn an extra income. It is possible that the pressure free life style might have help in a healthier existence. It is possible that the people were leading a healthier life.

Moreover, British Rule introduced electrification of the state, motor vehicle started Plying, improvement in communication, construction of bridges, telegram cables. All the developmental work while making positive contributions might have also helped in transmission of malaria in the state.

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