

## Malaria in Jalpaiguri: The History of an Epidemic Disease from 1869-1947

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### **Abstract:**

*This article is aimed to examine the spread of malaria disease and its socio-environment impact in the tea plantations area of Jalpaiguri district in colonial India. In recent times there are so many scholars who have studied the environment and health of colonial Bengal, unfortunately, missed Jalpaiguri as their study area or though mentioned only an or few lines on it. Hence present article proposes to examine a detailed study in this theme. The source materials are exclusively collected from the different literary texts, reports, statistical accounts etc. composed by the colonial officers and that of the indigenous writers; some of the original sources of have been collected from the officials of different Tea Estates and West Bengal State Achieves.*

**Keywords:** environment, ecology, malaria disease, society, common people.

### **Introduction**

Malaria disease is well known since the ancient period. It is referred to by the early Greek and Roman writers. Hippocrates in the 5<sup>th</sup> century B.C. distinguished fever in which a rise of temperature occurred daily from those which showed a tertian or quartan periodically. As is done in modern times, India's acquaintance with it can be dated back to the Vedic Period. A description of it is found in one of the oldest Hindu *Tantras*- the *Ayurveda*. In this ancient system of medical science, a connection between malaria and mosquitoes is shown. Mention of 'Makshak' (mosquito) and their contribution to disease are found in the works of Charaka and Susruta- two famous exponents of *Ayurveda*. The early Indian physician, Susrata, who lived in the 5<sup>th</sup> century A.D., described a fever which often began with shivering and passed off with sweating, which tended to recur at fixed intervals and was followed by a severe physical weakness of the victim. In the Charaka Samhita, this type of tertian or quartan ague is said to have originated from the aggravation of the three basic elements of the body, 'Vayu', 'Pitta' and 'Sleshma' and caused by also some 'Aganuka' or external factors, by which he might have tried to mean insect or mosquito bites.<sup>1</sup>

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The study of the history of colonial health in India has been widely discussed over the past two decades. There has been a series of study by Punam Bala, Nandini Saradindu Bhattacharya, Biswamay Pati and Mark Harrison, Madhuri Sharma, Gagandip Cheema, Arabinda Samanta on this theme. The above-said researchers have widely discussed Health and Medicines, but the researchers did not give special attention to North Bengal, especially about malaria, they have overlooked an important district town i.e., Jalpaiguri and the effect of malaria, the reaction of the government and the people of the district which consisted of divisional town and tea gardens, this article tries to focus on the spread of malaria in the district to the town of Jalpaiguri disease and the consequences of the measures adopted by the Government as well as peoples reaction.

### **Location, Geography, and Climate:**

The name Jalpaiguri is derived from *Jalpai*, (an olive tree), and *Guri*, (a place); it means, therefore, the place of the olive trees.<sup>2</sup> The Jalpaiguri district as an administrative unit was formed in January 1869 by the British administrators. The five police stations of Rangpur, namely Boda, Panchagarh, Tetuliya, Patgram, and Debiganj, were joined with the annexed Western Dooars (Western Dooars was annexed by the British after the Anglo-Bhutanese war in 1865) to form the district Jalpaiguri. It was bounded by Purnea district of Bihar and Darjeeling district on the West; on the north by the Himalayan Kingdom of Bhutan and some part of the Darjeeling district; on the south by the districts of Rangpur, Dinajpur and Princely State of Koch Bihar; on the East Goalpara district of Assam and some parts of Koch Bihar.

It claimed that the diseases contracted in Darjeeling could be compared favorably even with relation to Europe: 'Rheumatism: is everywhere a tedious disorder, and it is not uncommon at Darjeeling. Its general duration is less than in Europe.' And invariably so in relation to the 'plains': 'When contracted below, it would be relieved by removal to this climate.' The crucial point invoked in favour of its reputation as a site for convalescence was its suitability for specifically European constitutions weakened by debility in the tropical climate: The influence of the climate on persons enjoying a moderate degree of health is quite as satisfying as it is in cases of diseases. In India, there are many persons who can be called neither ill nor well; who are troubled with ...occasional fevers...indigestion...who are obliged to take a good deal of care of themselves, and yet are able to pursue their ordinary avocations. Perhaps almost every European in India is more or less in this condition.

Through topographical surveys and accounts of the physiological and pathological effects of 'warm climates', India was defined as an exotic space, a dangerous and unfamiliar place, largely unsuited, even in the 'temperate' hill-stations, for permanent white settlement. Although necessarily obeying the same 'universal' laws as in Europe, a disease in India appeared to

Function in unfamiliar or extreme ways. The theory and practice of medicine had, accordingly, to admit to local 'modifications' and these at times opened up a significant gulf between colonial and metropolitan medical science.<sup>3</sup>

S.P. James, the IMS officer deputed to the Commission, reported, 'as we proceeded from Calcutta through the plains of Bengal to the district known as the Dooars,... The endemic indices gradually increased from nil in Calcutta to as high as seventy-two percent in the Dooars'. Thus, in the very first scientific report on malaria in the Dooars, the importance of its location was emphasized. The report underlined the fact that anophelines were of various kinds; on this trip, the Commission discovered two new species of anopheles in the Dooars, which they had not encountered elsewhere in India. Malaria could no longer unambiguously be linked with either sanitary conditions or climatic fluctuations:

'From Calcutta to Dooars the places were under practically identical Conditions, similar climatic influences, a uniform high temperature, an abundant rainfall and much surface water. In Calcutta, however, we had abundant *A. Rossii* and no malaria, and in the Dooars a relatively small - number of *A. Fluviatilis* and a large amount of malaria'.<sup>4</sup>

Emerged as the site of tea plantations, claimed for the most part from forests interspersed with villages where small communities of Meches and Garos who practiced shifting cultivation and herded buffaloes, while a few villages had a settled population of Rajbanshis and Meches who cultivated paddy. In 1864 the first Conservator of Forests in Bengal was appointed. In the next few decades, several plans for the management and consolidation of the forests of Dooars for timber were drawn up and executed. The Western Dooars was very much unhealthy and certain diseases, especially malaria, a black water fever raged there. But as it said earlier that the tea planters were very much preferred the area as it was climatically suitable for tea plantation. The high rainfall at 180 inches and red loamy soil of the Dooars were the perfect combinations for the growth of tea. Dr. Brougham, who had started Dhutaria Garden in Darjeeling in 1859, launched a garden at Gazoldoba in 1874, the first tea garden in Jalpaiguri. After that garden was set up at Fulbari and Bagrakot and by 1876, 13 gardens had been brought into being in the district.<sup>5</sup>

In 1906, a number of planters in the Dooars died of blackwater fever, which was Associated with malaria in some form. One estimate put casualties in 1906 to ten percent of the resident European planting population. J.A. Milligan, the settlement officer then engaged in the revenue settlement and survey of the district, noted that one of his first duties on arriving in Jalpaiguri in 1906 was to attend the funeral of a planter, and that 'this experience was repeated at short intervals during the fall of that dreadful year 1906'. According to him, this was the turning point from a situation where the 'intensely malarias climate...was accepted with resignation by the inhabitants, Europeans and Indians alike.... The planters now petitioned the Government for a thorough assessment of malaria and blackwater fever in the Dooars.

There was a proverb about Jalpaiguri district as the area of water jungle,

*“Jal, Jola Bhumi, Jangal,  
Ei Tinoi Jalpaiguri Amangal”*

( Free English Translation: Water, wasteland, and forest; these three are regarded as the evil of Jalpaiguri)<sup>6</sup>

### **Malaria: as an epidemic**

Colonial health in India Malaria is one of the mainly discussed in the history of science, due to which the environment has been asked to emphasize the importance of the environment. After the death of famine in Bangladesh, cholera and malaria epidemics were seen, which helped to develop negative notions in Bengali colonies. It was also considered acceptable for malaria disease. In 1840 James Taylor's report on Dhaka's emphasis was given to the environmental factors of malaria. Malaria occurs in September when the annual flood decreases and ends in November. Historians have mentioned a sociological importance of the incidence of malaria disease. In the report of the provincial sanitary commissioner in Bengal from 1871-1872, every decade of the census was given a detailed description of the malaria effect of malaria. Not only did malaria bring death but it was harmful in other ways. According to the Sanitary Commissioner of Bengal in 1889, the reason for the death of three-quarters of Bangladesh's death was malaria fever, which caused the death of nearly one million people annually.

In the early sixties, when outbreaks of epidemic fever first attracted serious attention in Bengal, the occurrence of the disease was ascribed to the construction of embankments. The chief exponent of this theory was Raja Digambar Mitra, the Indian Member of the first committee appointed by Government in 1863 to inquire into the causes of the epidemic. From time to time, a great number of other outbreaks were attributed to similar causes. In a report on the epidemic fever submitted to Government by the Commissioner of the Presidency Division in 1874, the following passage occurs:-

“The other cause to which defective drainage may fairly be attributed is embankments. Babu Digambar Mitra has laid much stress on this, but it is still a moot point. Many professional engineers are of opinion that railways and roads have nothing, or next to nothing, to do with the fever. But I find something in this division to support the other view. Dr. Elliot names Muhammadpur as the first place where the epidemic broke out with virulence. Inquiry shows that the great outbreak there was in 1836, and not 1824 or 1825, though there may possibly have been two outbreaks. However this may be, it is stated that it broke out while the Jessore and Faridpur high road was being carried through the village. It seems possible that the very severe fever that prevailed in Belghuria, just north of Calcutta, nearly every year, may have owed its origin to the railway embankment. It used in old days to be a very thriving place, but since then it has become desolate and uncared for ... The south suburban town suffers every year from a

devastating fever in the months of October, November, December, and January, and the people attribute this to the escape of water being prevented by the Diamond Harbour Road.<sup>77</sup>

Another outbreak had previously been reported during the construction of the Northern Bengal and North Western Bengal Railways. Fever became intensely prevalent from 1896 onwards in Nowgong during the construction of the Assam-Bengal Railway from Gauhati to Lumding. Recent observations have shown on numerous occasions that, following the construction of embankments, there is a very great local extension of malaria on both sides of the embankment, accompanied by a rise in the local mortality, an increase in the proportion of fever cases and fever deaths and a rise in the spleen index.<sup>8</sup>

The occurrence of outbreaks of malaria in association with the construction of embankments has never been disputed, and the observation in regard to the sudden increase of the spleen index in the neighborhood of these embankments is conclusive. But the manner in which embankments bring about this admitted increase of malaria requires being made clear, in order that adequate steps may be taken to remedy the condition and to prevent the further extension of the evil.<sup>9</sup>

Until the discovery of Malaria injections by Ronald Ross, there were two methods of suppressing malaria: Due to slow evaporation of wetlands, dip etc. and the use of quinine prepared from second antidote drug such as a syringe bark. By 1900, the drainage system was introduced in major cities of India. Quinine powder was distributed among government medical departments and from there to others. Quinine is considered an important weapon of empire. Of course, it was not always a very successful weapon and it had many side effects as a drug. Ronald Ross Anopheles was diagnosed with the malaria virus, and a new reaction was seen in the entire area of the population. Ross and his followers to improve mosquito brigade and drainage system to control malaria mosquitoes, cleanse wetlands etc. Many British medical officers emphasized above the Quinine people. In 1911, the Government of India's Sanitary Commission was appointed by C.P. Lukisd. He emphasized the need for scientific research as well as to improve the health of the system. Imperial Malaria Conference was organized in Simla in October 1909. The Central Malaria Committee was established after this. The most important research work of the Indian Research Fund Association (IRFA), established in 1912, was surrounded by malaria. Malaria was an obstacle to the development of the colonial government at this time. In the first year, 35,500 rupees were paid to local governments for monitoring anti-malaria activity by the IRFA. What is in Bangladesh according to Bentley Sanitary Commissioner and Public Health Director, the 20th century was responsible for the virulence of malaria. The construction of the road was damaged due to water drainage. Agriculture and health deteriorated and the villagers have attacked almost malaria.

According to many scholars observe, colonial period malaria was man-made malaria; That is, due to the so-called progressive task of construction of roads and

railways and construction of river dams etc. The state's efforts to distributing quinine were hardly subsumed by epistolary networks. The 'pike-packets' enabled a flexible 'system', which could enlist, whenever required, a variety of familiar figures including forest officers, police constables on beat patrol, released convicts, 'respectable shop-keepers', stallholders, railway stationmasters at 'small roadside stations', vaccination establishments, dispensaries, indigo and tea planters, political agents to the native states, patels of villages, salt licensees, village headmen, schoolmasters and chowkidars.<sup>21</sup> Such arrangements of governing a 'thing – in-motion', it appears, conjured-up fetishist intimacies between quinine and the 'people' inhabiting the interiors.<sup>22</sup> Quinine was thus projected as compatible with the prevailing bonds of a shared language, locality, community and the rhythms of daily life. Apart from resulting in such a communalization of quinine, exigencies of circulation reconfigured some of its physical attributes.

While quinine changed hands during the course of circulation, the government adopted a series of measures to protect its promised 'purity'. These measures, in turn, reconstituted some of government quinine's physical features. To distinguish it from allegedly adulterated versions available in the bazaars, for instance, most of the quinine manufactured by the government in Madras was coloured pink from 1893 to 1904.<sup>23</sup> Besides, a variety of government stamps, i.e. a seal of the 'royal arms' or a seal bearing the mark of the packing factory, was attached upon firmly closed covers or a certificate endorsing the quality of the drug were enclosed in the packets to guarantee purity of the product.<sup>24</sup> Further, a network of post officials, chemical analysts, police inspectors and legal clauses appear to have been in place to detect, report, investigate, convict and punish acts of fraud in relation to quinine.<sup>25</sup> However, the image of 'quinine' as a profitable commodity seems to have excited the imaginations of a range of players in marketplaces across British India, despite such networks.<sup>10</sup>

The District is situated to the south of the Darjeeling Tarai and the Bhutan hills, and is well known to be unhealthy; in eight out of the ten years ending 1901, it figured among the six districts with the highest mortality from fever in the province of Bengal. The mean ratio of births for ten years from 1893 to 1902 was 31.31 per 1000 and of deaths 31.74 per 1000; the figures for 1907 were births 39.72 and deaths 34.33 per 1000. The difference is partly due to improved registration, but the registration of vital statistics is still far from accurate, particularly in the tea garden areas, the heavy rains and many unabridged rivers making it difficult for the *chukanidars* to report regularly at the police stations.

The Tista river divides the Jalpaiguri district into a western or moderately malaria's tract and an eastern or intensely malaria's region. The latter, known as the Western Doors, has an evil reputation for malaria. The test of the malarial intensity of any region is the percentage of children of from two to ten years of age who have malaria parasites in their blood; the figure representing this percentage is termed the malarial endemicity index or shortly the endemic index. The figures given in the margin show the

endemic indices of five places in the district as ascertained in 1901; subsequent inquiries made in 1907 prove that even these figures are too low and that the true endemic indices are from 10 to 20 percent higher.<sup>11</sup>

Table: I

**Percentage of the malarial intensity in some regions of Jalpaiguri**

Jalpaiguri	16
Mainaguri	25
Rangamati	43
Nagaisuri	55
Nagrakat	72

[Source: Gruning, John F., '*Eastern Bengal and Assam District Gazetteers Jalpaiguri*', N.L. Publishers, Siliguri, 2008 (First Publication, The Pioneer Press, Allahbad)]

The table, however, shows with fair accuracy the risk to which immigrants into the district are exposed. It will be seen that the degree of infection varies greatly.

**The rate of Mortality in Jalpaiguri district**

The intensely malarious climate of the Western Dooars was accepted with resignation by the inhabitants, European and Indian alike, as an inevitable part of their environment. The death rate must have been enormous, and few, if any, escaped that weakening of the constitution and the impaired vitality which prolonged saturation with malaria inevitably produces. Every officer, who has been in charge of survey and similar operations in the Dooars, has testified to the prejudicial effect of malaria on-time progress of his work. O'Donel, Beckett, Hodson, Sunder have all the same tale to tell. In 1888 Colonel Boileau wrote as follows: "The known unhealthiness of the country cannot be ignored. Experience of five years of tea land survey establishment has shown that a large proportion of the men employed fall ill during both the early and the latter part of the held season and about two amines in ten die every year or leave the country unfit for more hard work" a very noteworthy feature of the local malaria is that it is most deadly to new comers even when they come from places with a high malarial endemicity, and as my staff of *amins* each year contained very few men who had experienced a previous season in the district, each cold weather witnessed a breakdown of the survey programme owing to enormous casualties amongst men of all ranks, but especially *amins*. As this initial epidemic wore off, the hope which springs eternal in the breast of a Settlement Officer made me optimistic about retrieving the lost time. But as Hackett wrote in 1872 "After the month of March the Dooars are very unhealthy but we had to stay 'out much longer than that.'" So did we much longer; in fact, we had to be out the whole year round after the first year or two, as otherwise no programme would ever have been completed.

It is difficult to give a realistic impression of the wretched condition under which our work annually dragged to its weary close. Officers and *Kanungos* and *mohurrirs* and *anims*, an average of 30 percent, down with fever and all the others suffering from that depression of spirits and loss of energy which are the aftermath of a course of malarial attacks lived in tents or leaky Bashes throughout the steamy days of sunshine and the weeks of torrential driving rain. It was a wretched life and the wonder to me was that work ever was finished at all. Our death rate was very high and the numbers who went away with broken health were enormous. It is significant that in all the other settlements to which they were subsequently distributed many Jalpaiguri *Kanungos* were at first stigmatized as very inferior. But after the change of climate had allowed them to recoup their health that stigma was in most cases expunged. Again and *amin* inspecting officers commented most unfavorably on the personnel of my stall, but it was the environment, which had reduced them to what they were that ought to have been the subject of unfavorable comment. What say Christopher and Bentley in their report on Malaria in the Dooars? "A marked feature of the chronic malaria subject is a characteristic apathy, and it is easy to understand that when, as is very frequently the case, the percentage of haemoglobin falls to below 25 percent of the normal, the subject becomes apathetic, unwilling to work and there commences the vicious cycle that often ends in death."<sup>12</sup>

The greatest mortality is caused by fevers, the death rate from which was 31.94 per 1000 in 1907 out of a total death rate of 34.33 per 1000. Malaria is prevalent all the year round but is most intense during and after the rains. The types of malaria found in the district are simple tertian, malignant tertian, quartan fever and the deadly blackwater fever. Mixed infections and double infections of the same parasite often make it difficult to recognize the variety from the temperature chart, but a careful record will usually show which variety is present. The cycle of simple tertian fever is 48 hours and the fever occurs every third day. The malignant tertian has a cycle of from 24 to 48 hours and the fever occurs every other day or more commonly daily. The quartan parasite has a cycle of 72 hours and the fever paroxysm occurs every fourth day.<sup>13</sup>

**Table: II**  
**Mortality in the seven districts of North Bengal in the year 1886. (Ratio per mile)**

Jalpaiguri	31.01
Pabna	27.68
Rangpur	27.12
Rajshahi	24.86
Dinajpur	23.92
Bogra	22.21
Darjeeling	16.35

[Source: Nineteenth Annual Report of the Sanitary Commissioner for Bengal for the year 1886.<sup>14</sup>]

Among the Europeans of who over 200 resided in the Dooars, the incidence of malaria is very high. Visitors to the district, no matter what the season, usually suffer from the disease from one to three weeks after their arrival. Residents of only a year or so and those recently returned from furlough are to repeated attacks of fever, while those of longer standing are extraordinarily subject to the liver, biliousness, and dyspepsia, the frequent sings of masked malaria. it is not surprising, therefore, that the invaliding and death rates among Europeans in the Dooars are abnormally high; the mortality among this community which consists almost entirely of strong adults in their prime, ranging from 20 to over 75 per 1000, as compared with a death rate of 7 per 1000 for the whole of European population of India. The high malaria incidence and the resulting sickness and mortality is not due merely to accident or chance but is the direct outcome of the extraordinary prevalence of malarial infection among the general native population of the Dooars. In this time investigation, which has been carried on since July 1907, has shown that the commonly held opinion regarding the extreme unhealthiest of the Dooars is well founded. So far the inquiry has been confined mainly to the tea-gardens, which find employment for more than 150,000 persons and probably support a much greater total population. Among these people, malaria is present to an extraordinary degree.<sup>15</sup>

#### **The reaction of the Government**

Questions aroused that how did the government react to the applying specter of death and disaster caused by malaria? This apparently simple question defiles an easy answer. The colonial government was not a monolithic entity. Nor did its attitude remain constant over nearly one hundred twenty years covered by this study. The initial response of the government was palliation rather than prevention. Therefore, steps were taken to afford some relief. The government appointed native doctors and distributed medicine <sup>16</sup> by the beginning of 1870, the government chalked out a scheme for medical relief to the ailing districts. Each district was divided into circles to which medical aid was afforded. It sent medicines and doctors to hospitals and dispensaries already in existence. In some cases, it strengthened the medical establishment with equipment required. It also founded new dispensaries and four hospitals. The expenses were however met in some cases from special funds and in others from general resources such as local donations and subscriptions. It was rarely supplemented by the revenues of the state. <sup>17</sup>According to a government announcement on 3rd May 1887, the Jalpaiguri District Board was formed. District Border contribution to public health and medical conditions in the city and rural areas of the district was undeniable. In 1918, charitable were further improved in places such as Boda, Panchangarh, Malabar, Samuktala, Tentulia, Rajganj, etc. In 1937, the District Board established the Public Health Laboratory in Jalpaiguri town and from 1938; the Laboratory was set up in the laboratory to prevent the outbreak of an epidemic. Apart from this, the district board recommended various types of antioxidants, such as the use of mosquito for the protection of mosquitoes, the use of quinine for malaria, and the use of incense burners to remove Moses in the evening, destroy the mosquito eggs in closed water.

The changing policy of the government towards the epidemic fever in colonial Bengal may be summed up the three phases. 1. the government initiated a programme of pruning trees and jungles. 2. the state-sponsored sanitation measures. 3. it sent relief in the form of food, medical aids and doctors to the affected villages. Coming to the question of jungle cleaning, it arguably required the huge deployment of men and money. The government sought to solve the problem of money by taking recourse to a compulsory subscription from the villagers. In most cases, government officials would call the important people of large and well-to-do villages and threatened to invoke penal laws unless there was an improvement in the condition of the villages by self-help. The officers would then recommend them to raise a contribution sufficient for the proper cleansing of the village, "both as a means of benefitting themselves and avoiding the possibility of being subjected to the Penal Law"<sup>18</sup>

Many Englishmen had come to believe that this was their primary role in India. But the actual reason was to hegemonies the colonial rule over the natives. And in the case of Jalpaiguri regarding diseases, the river Tista bifurcate the district into two types of malarial territories- the western or moderately malarias zone and the eastern or intensely malarias region. The later known as the Western Dooars was severely destructed by malaria. Jalpaiguri town representing the western region was a moderately malarias zone. But the other part of the Dooars was the den of malaria and the index repeatedly rose until it reached its maximum at Nagrakata. Those malaria fevers were caused due to the decomposition of the rank vegetation which grew immensely far and wide in the district. They were generally found during the beginning and end of the rains, in the month of March and April, and in September and October. The Act was mainly administered by the local bodies. W.W. Hunter mentioned that the selected urban area was the Jalpaiguri town and certain outline villages with a total population of 6281. In 1873, the number of deaths within this area amounted to 157, or 24.99 per thousand. The selected rural area was Pargana Maynaguri, with a total population of 48,185; of whom 664, or 13.78 per thousand, are reported to have died in 1873.<sup>19</sup>

The year 1877 was a milestone in the history of the tea industry of North Bengal. In that year Munshi Rahim Buksh, though he was a Peshkar (bench clerk of the Deputy Commissioner) but became able to obtain an endowment from the British Government for production of tea. He was the first Indian to obtain such a special grant which came to him in the form of the Jaldhaka Grant. Subsequently, Baintbarie, Bamandangaa, Ellenbarie, Damdim, Kumlai and Washabari tea estate began their journey. The first Indian Joint Stock Company was started at the initiative of a few Bengali Lawyers and Clerk of Jalpaiguri in 1879. The first Indian tea garden named Mogalkutu Tea Company Limited was initiated in 1879. As the majority tea gardens labourers in the Dooars were coming from outside they did not experience malaria before their arrival. The annual consent flow of newcomers aggravated the situation there was probably no malarias region in India like the Dooars the garden where the diseases were threatening and taking lives of coolies in large scale. Moreover, in the Dooars the constant immigration of

labourers from non-malaria zone and their regular shifting to other gardens spread the disease rapidly. The Dooars was so much malaria that it was difficult for the planters to keep immigrant labour settled there. From the graveyard of the Raichan tea estate of Oodlabari located in Jalpaiguri district, it is evident that a large number of the planters lost their lives due to malaria. Thus the planters were alarmed by the ravages of malaria. Unfortunately, there was no proof of the death of thousand of labourers and the employees of the tea gardens. Among the Europeans who stayed in the Dooars, were mainly affected by malaria. In every season new comers suffer from the diseases after one to three weeks of their coming. Those Europeans who stayed in the region for a year and those who recently returned to the Dooars after enjoying leaves were affected by repeated attacks of fever. But the others who lived there for long duration were not attacked by malaria, though suffered from a liver problem, biliousness, and dyspepsia, common symptoms of malarial fever. Thus the death rates among Europeans in the Dooars were very much high. Among the Europeans, there were approximately 20 to 75 adults among 1000 people. The investigators were of the opinion that malarial fever which led to infection and death among the Europeans in a large scale neared due to contact with the indigenous people suffering from malaria. Though the malaria was a dangerous enemy for all the people who used to come to the Dooars for the first time, it was not so much perilous for the people who were the permanent settler of the region. Malaria was chiefly found among the young, and the rate of child mortality was very high. Most of the European Officers stationed at Dooars cited the example of the Meches, an indigenous tribe of the Dooars who were malaria proved. But with the rapid growth of the tea gardens, the Meches were expelled from their habitans and most of them took refuge in Alipurduar Sub-Division and others went to Assam. The symptoms of black water fever and malaria were not similar. There was usually a sharp chill like severe ague, but this was quickly followed by the passage of dark brown, blackish or bloody urine, and generally by repeated and persistent bilious vomiting. The temperature rose rapidly, pain at the pit of the stomach might be complained of and jaundice soon became evident. The attack might last from twelve hours to four or seven days and relapses were not uncommon. In most cases, the first sign of recovery from the disease was the clearing of the urine. When the disease becomes serious the patient used to die from heart failure. But the impact of the investigation was not so much effective for the general workers. Among them so extensive anti-malaria or anti-black water fever propaganda were undertakers. As regard prophylaxis among the general population, in a number of gardens, planters had begun to distribute quinine in palatable form freely among the Coolies. In some cases, the consumption of the valuable remedy previously used in little quantity had increased tenfold. When the labourers used to come to the factory to submit the leaves paladins was directly poured into their mouths as profile active or precaution. If they denied taking paladin their leaves were no taken. When the labourers were attacked with malaria they were given quinine. Though the investigation to prevent the spread of black water fever was undertaken, but no concrete step had been taken to check, the ravages of black water

fever till 1920. Consequently, an officer was sent by the malaria Department of the all Indian institute of hygiene and public health to the Dooars tea garden to find out the problem. All the gardens were instructed to inform the officer deputed at Kalchini whenever any cost of black water fever occurred in their gardens. Afterwards seeds of Ahoi tree were easily available from the divisional forest officer, Jalpaiguri, District Board Office, Jalpaiguri, Lataguri forest office and Kumlai forest office. From the above centres the tea gardens collected the seeds of Ahoi tree and sowed in their respective gardens. In 1934 Dr. G.C. Ramsay of Ross Institute proposed some measures to eradicate malaria after his experiments in the Damdim area. He was of the opinion that without irrigation it would not be possible to eliminate malaria in the Dooars. In Dr. Ramsay Draft Bill it was stated that excavation would be patented to tank, well, ditch, drain, pit or irrigation channel. It was also suggested that the information of the anti-malaria operation would be published in the local gazette for the information of the local Government.<sup>20</sup>

At the instance of the planters, an inquiry into the occurrence of malaria and especially of black-water fever in the Western Dooars is now being made by Dr. Bentley, M. B., and Captain Christopher, IM.S. The following account of the fever of the Western Dooars and the results of the investigation, so far as it has gone, has been kindly written by Dr. Bentley for this volume 'Since the British occupation of the Dooars this tract has shared with the Darjeeling *tarai* the reputation of Royal Society's Malaria Commission in 1901 that anything really definite was known as to the actual incidence of malarial disease in this part of the country. The investigations conducted on this occasion by Drs. Stephens and Christopher's and Captain S.P. James, I.M.S., showed that the malarial endemicity of the Dooars was extraordinarily high and that black water fever was as common in that locality as in any region of Africa visited by the Commission. Until quite recently no further investigation into the conditions relating to malaria in this area was undertaken, but in 1907 the Dooars Planters Association, alarmed by the apparently increasing unhealthiness of the district, made an urgent appeal to the Indian Government, with the result that an enquiry was instituted into the occurrence of malaria and black-water fever, and the general condition of sanitation in the Dooars.'<sup>21</sup>

#### **Free Grants of Quinine by Government:**

During this time instead of distribution quinine as was done formerly by means of a special itinerant staff, Government has adopted the policy of making free grants of the drug to District Boards, Municipalities and certain other agencies, eg., mission dispensaries. The amounts so granted during the past three years have been as follows:

Table III

## Year wise estimates of free grants quinine by Governments

YEARS	RS
1918-19	50,000
1919-20	46,000
1920-21	72,680
1921-22	70,000
1922-23	42,000
1923-24	64,000
1924-25	1,20,000
1925-26	1,20,000

[Source: Bentley, C.A, 'Malaria and Agriculture in Bengal How to Reduce Malaria in Bengal by Irrigation', Calcutta Secretariat Book Depot. 1925 p.98]

It would appear from these figures that the sums actually allotted for quinine and cinchona derivatives, including that given by Government, are always less than Rs. 2 lakhs per annum and ordinarily, amount to about 1.5 lakhs. Obviously, the treatment of malaria cases must be, in these circumstances, hopelessly inadequate.<sup>22</sup>

### REACTION OF THE PEOPLE

The response and reaction of the people are extremely difficult to document. Official records of the public reaction were often constrained by a lack of knowledge of the rural psychology, and should, therefore, be used with caution. Again, if archival sources are to be used with caution, greater caution should be exercised with regard to literary evidence. Contemporary literature on the subject was primarily the discourse of the urban literati.

Bengal does not seem to have been an exception. When the widespread epidemic malaria started taking its tolls in the 1860s, the popular reaction did not sharply differ from other parts of the country. In fact, the identification of epidemic disease with divine wrath was almost a pan-Indian phenomenon. It took the distinctive form of belief in disease deities, especially goddesses.

Most of the disease goddesses were associated with a particular disease or ailment. In Bengal, the principal deity was *Sitala*, the goddess of small-pox. The worship of *Sitala* was timed to coincide with the beginning of the small-pox season. In deltaic

Bengal, the specific cholera deity was called *Olabibi* by the Muslims, and *Olai Chandi* by the Hindus. But the most interesting phenomenon was that scarcity did the people interpret epidemic fever as heavenly intervention, and consequently one finds no folk-deity for fever epidemic, excepting the cult of *jwarasuru* prevalent among the lower classes. *Jwarasuru* i.e., the fever demon was invoked in individual cases to get recovery from fever, and by the villagers generally during epidemics of malarial fever. For nowhere in the contemporary literary works or in the official records could one find reference to a widespread worship of this particular deity? In other words, this disease deity, unlike *Sitala* or *Ola Bibi*, never became a cult in the Bengali society. The Rajbanshi peoples in the rural areas used *djol pora* if they suffered from fever and not believed in the western medicinal system of quinine. Meches also suffered from fever. Hodson describes the performance of a *Ojha* which none of the [present day people could remember. It is this:

“An *Ojha* is called. He draws a circle on the ground representing the deities and places thirteen leaves each representing a script, with some rice on each. The *Ojha* causes a pendulum attached to his thumb by a string to vibrate before the leaves while repeating invocations. The leaf, before which the vibration continues, is taken out and asked the god in question about the sacrifice he wants. He answers through the exorcist *Ojha*. The sick man agrees to do so after he gets well. On recovery, the promised sacrifice is given to the said god.”<sup>23</sup>

In Jalpaiguri district especially Dooars escaped its damage. The epidemic became almost a national phenomenon, visiting various places at various times. It was not an isolated disease, affecting a particular person or two. Thus the element of fear disappeared, and instead, there was a helpless resignation to conventional treatment. Arguably, therefore, the epidemic was scarcity regarded as a divine displeasure and consequently, worship or propitiation of a particular god was ruled out.<sup>24</sup>

There was a tree found in the name of Chakanda in fever, there were red flowers on the tree and there were many such things as *Sim*. Once upon a time, the Chakander had a jungle, so the name of the deity was Chakanda Bhandari. In the pre-colonial era, in Jalpaiguri district, there were two types of medical conditions in the field of prevention of malaria disease, namely: the treatment of people and the ancient country medical system. According to the government report of 1872, people of this region were more confident about the treatment of people in Rajbangshi and Rabha, Garo Santal, Choto etc.. Baidya, Kaviraj, *Ojha* were among the main doctors. The local hawkers were cured by the local people gathered in various trees, shrubs, pans, oil spills, etc. from shrimp trees. In case of rubber sickness, their goddess would go to Rantuk and she would send him to the goddess. Besides, indigenous communities believed in the existence of evil spirits. Indigenous people, even local people, went to the refuge for survival and used to carry copper syrup. Many different types of Maya were excellent. They used to run different kinds of bets at sunset. A popular ban mantra (Twelve rosary buns) is:

*"Baro Golap Tero Kali, Khoseya Kha Fannar Buker Jali*

*Kalua Kamuli Ban Buke Bosia Han | Mui Gele Ghuris, Mor Guru Gele Ghuris, Aar Ojha Gele Bojor Kheya Dhoris"*<sup>25</sup>

### **Conclusion:**

Malaria fever was no doubt one of the exceptional scourges deeply affecting the agrarian society in Bengal throughout the second half of the nineteenth century. It had a pervading impact on some select areas, i., agriculture, industry, trade, and commerce. At a different level, it would also try to identify the impact of malaria on the individual and family, society, society, and state, public administration and government. Any such inquiry is, however, constrained by several important factors, for instance, the financial losses which malaria entailed can scarcely be computed in simple monetary terms. For difficult to differentiate the real and potential losses due to malaria sickness. At the very most out, one can try to form an idea about the financial losses to the individual, the family and even to the community. These losses include the cost of illness, i.e., hospital charges, doctors fees, nursing, medicines, the cost of sick leave, the loss of wages during the sickness etc. for example, Bentley estimated that there had been 30 million reported cases of malaria in Bengal in 1911. This, at the rate of Rs 1.5 per case, entailed a total loss of forty-five million rupees in one-year alone.<sup>26</sup>

As early as 1908, Bentley mentioned that on a tea garden in the Dooars with 1,350 working coolies, an average of some 50 to 70 women attended hospitals on every day during the rainy season because of fever of their infants. In the same area, Rice found that a good number of women who otherwise regularly worked during the cold weather rarely turned up during the plucking season. By way of explanation, he argued that their children, before they became immunized, suffered heavily from malaria. This necessitated intense nursing, and the result was that the mothers absented themselves from their work for this purpose. The statistical information provided by Rice indicate that about 4% of the working days were lost due to malaria sickness. A plantation labourer sought to work about 300 days in a year, he would be incapacitated for at least 12 days due to malaria. In the tea estates of the Dooars, Rice a famous malaria specialist found that 60% of the total sick were incapacitated by malaria or by other diseases in which malaria had been the primary cause of lowering the resistance of the patients. The precise extent of the reduction of efficiency was a most difficult to estimate, but Rice took 10% as the loss of efficiency due to malaria, and this he considered a conservative estimate.<sup>27</sup>

Far greater was the wastage of capital due to the value of lives lost. In the garden of Dooars, Rice estimated that it cost Rs 300 to obtain a coolie for the estates. Rice and Savage stated that the value of a settled working coolie in an estate was Rs 400 in the Dooars. These figures, however, represented only the cost of recruiting and equipping coolie, and not the capital sum which his work was worth. Perhaps one way to calculate

the material value of a human life would be to work out an aggregate of total income a person would have earned in course of his working life. In 1939, the average expectation of life in India at birth was about 23 years, at the age of 20 years about 27, and at the age of 50 years about 14 years. It is, therefore, reasonable to take 20 years as the mean for calculating the loss of life for each individual who died of malaria. The per capita annual income of the Indians in 1934 was Rs 45. This means that each death from malaria was equivalent to an average loss of 20 years of income at the rate of Rs 45 per annum, i.e., Rs 900. If one takes into account 3,50,000 malaria deaths in a year, the total loss of income due to the value of lives lost would amount to Rs 31,50,00,000.<sup>28</sup> On the other hand the phenomenon of malaria fever in Jalpaiguri provides an important insight into the attitude of a colonial government to its subjugated subjects and the method of colonial management.

Therefore, malaria had an immense effect on the economy, society, and lives of people of Jalpaiguri. The tea economy provided the economic force for the newly settled region in the mid-nineteenth century. The disastrous effect of malaria on agriculture operation in the plains, its effects on the efficiency and output of labour in the tea estates in hill tracts were also important. Shortage of labour due to malaria sickness and malaria mortality had been particularly felt by the tea estates of Dooars. Bentley stated that "the leaf too often running away in the midst of the plucking season, or the bushes failing to give their proper outturn for want of cultivation".<sup>29</sup>

Far greater was the wastage of capital due to the value of lives lost- In the tea gardens of Bengal Dooars, Rice estimated that it cost Rs.300/ to obtain a coolie for the estates. Rice and Savage stated that the value of a settled working coolie in an estate was Rs.400/= in the Dooars. These figures, however, represented only the cost of recruiting and equipping a coolie, and not the capital sum which his work was worth.<sup>30</sup>

The financial loss was huge in the tea estates of the Dooars. Local labourers were not available in Dooars in sufficient numbers, for indigenous population was either sparse or workshy. Even if some labourers could be harnessed, there had always been the strong risk of desertion. Under such circumstances, the planters had to fall back on imported labourers. One can notice a continuous inflow of immigrant laborers pouring in Dooars and Assam from the neighboring states of United Provinces, Bihar, Central Provinces, and Madras etc. An unhealthy garden became unpopular among the coolies who left it, and new labourers had to be recruited in their places. In fact, the greatest number of death among the working coolies in Dooars was from malaria, and the cost of recruiting and equipping a new labour was enormous.<sup>31</sup>

The main purpose behind the construction of railway, embankments, and roads was to enhance the revenue of the state, not the well-being of the people. The widespread prevalence of malaria or other vector-borne diseases was due to serious environment disturbances created because of the government's greedy policy of exploitation. Through

its effects, the whole population of Bengal suffered the majority of who were farmers and labourers.<sup>32</sup>

The numbers of deaths in Bengal from malaria was an economic factor of serious importance. It was estimated that in each year one million people died in Malaria. If this was the death figure, then the suffering and productivity loss would have been ten times more. Thus, the economic and human loss was colossal. The causes of diseases lay squarely with administrative, environmental and nutritional factors. The natural causes of the decadence of the environment, along with man-made measures, brought untold suffering to the people. Unfortunately, that suffering is unabated today, and unluckily, we no longer have foreigners to kick about for our miseries. If it is rightly said that the knowledge of history is more than anticipated experience, then our knowledge of the history of environmental degradation could bring some foresight to the future.<sup>33</sup>

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