

## CHAPTER – II

### COLONIAL EXPANSION AND SPREAD OF DISEASES

This chapter examines origin and spread of the various diseases such as cholera, malaria, Kala-azar and small-pox in North east India and its effects on lives.

Northeast frontier region was very important strategic centre for the territorial expansion of British Empire to Southeastern region. The frontier expansion towards Burma requires huge military force. However the British often witnessed great loss of soldiers due to recurrent spread of epidemic diseases in the early nineteenth century. Colonial Regimental infantry, native infantry suffered heavily due to sickness of “severe kinds”. These was evident more among the 7<sup>th</sup>, 14<sup>th</sup>, 39 and 44<sup>th</sup> Regiments in Cachar. The average of loss of life was two hundred per Regiment since 1824. In comparison with 22<sup>nd</sup> Regiment in Cachar within a short period of time more than sixty men died in the Regimental hospital. Military persons were also died in absence of leave which were not included in the list of the death rate. <sup>1</sup>

Initially days of the expansion of British in India climate was challenging factor for their existence and survival. Colonial Military Commander-in-Chief of the frontier province observed climate was the reason behind the liability of diseases among soldiers. Of the most common disease among them was fever and cholera which appeared occasionally with fatality.<sup>2</sup> Other explanation were made by Harvey on military in the province that because of poor personal cleanliness, Insufficient clothing want of shelter, excessive work, improper diet, insufficiency of medical attendants, overcrowding and conservancy. All those nature had showed no mercy on the military men. But to who it can be blame the authority who commanded or the personal military who worked for serving the commander command? In Lushai expedition the law of hygiene was outraged due to over work and poor provision of food endured by the soldiers. They were exposed in the sun during working hour with insufficient clothing to great diurnal vicissitudes of temperature and were left without shelter. Nights were expressed as, dew pouring from the trees like heavy rain. Their

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<sup>1</sup> NAI, Home Medical Boards Progs 1826, April 1, p-61

<sup>2</sup> NAI, Home Medical Board Progs 1826, April 1, p-55-61

arrangement for shelter was also insufficient and caused sick in their process of operation and spread among them.<sup>3</sup>

In Northeast India colonial military conquest of the Brahmaputra valley by the year 1826 and their gradual establishment make communicable possible of those diseases. Moreover, Europeans economic interests other important cause `epidemic diseases widely into the province.

From the development of railways, road, and other communication projects brought by Colonial rulers were worth contribution initiated by them. These developmental projects and importation of labourer open a better epidemiological link for transportation of diseases from one place to another. For want of more production on tea plantation an inflow of labourer from different parts of the country. Of whom most of them were flee to one place to another in search of survival due to epidemics already hit in their own hometown. Some were physically still weak all these had worsen and posed a serious threat to the lives of the native plantation area. <sup>4</sup>Besides, indigenous socio-religious and cultural customs also played an immense role for an outbreak of epidemic diseases.

Disease of cholera As diseases were more liable to spread where huge people gathered without proper sanitary arrangement with poor medical provision. Environmental factors of climate and surroundings also made possible to contact from one another. Thus outbreak of epidemic diseases comprised of various factors which were all responsible in spreading those diseases.

## **2.1 Dreaded cholera:**

Disease of cholera frequently occurred and it raged with an uncommon mortality particularly in an area of the Cachar Sporadic cases of cholera frequently occurred. For an average it appeared epidemically. It raged with an uncommon mortality in Cachar. By the year 1829 of them were perished by cholera and similarly it caused heavy mortality in Manipur in the year 1830. <sup>5</sup> To an extend it re-appeared in other parts with considerable virulence year after year. Appeared and prove fatal but did not

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<sup>3</sup> NML, Harvey R, Colonel Surgeon 'on the improvement of military medical establishment in India since 1871', *Indian medical Gazette*, February 1898,p-60<sup>3</sup>

<sup>4</sup> Shlomowitz, Rlph et.al., 'Mortality and migrant en route to Assam', 1863-1924, *The Indian economic and social history review*, 27, 3, Sage publication, Delhi 1990, p- 313-330

<sup>5</sup> Allen, B.C, *Gazetteer of Naga Hills and Manipur*, Mittal Publication, Delhi, 1905, p-130

spread much beyond Lower Assam. In 1839 again it fatal in the Muttuck country in all their neighboring hills both north and south. It raged frightful extends with high mortality. Darogah Superintendent of Dacca Commissioner Office had reported enormous number of death. Even the Sheristadar collector *Moonshe* and several others of the *amlah* were exceedingly ill and the inhabitants of the district generally afraid to leave their houses while attending cut cherry. It imposed great obstacle in doing their work because of the appearance of cholera. <sup>6</sup>In Cachar district more than three thousand two hundred persons had been carried off by the disease. <sup>7</sup>Then turn towards Dacca, the civil Surgeon of Dacca reported that between 1830 -1838 in Dacca native hospital more than forty eight percent were died of cholera. Again in the decade between 1840 to 1849, cholera was most prevalent, and broke with more or less severity. <sup>8</sup>

The spread of disease was more rampant since the disease was more rampant since importation of labourer into the province. Cholera was imported by coolies during transit, on steamers, flats or boards and death rate was highest among the largest batches. In 1847 a steamer service on the Brahmaputra was started the flow of coolies increased. They travelled with material increase in numbers and necessarily brought more or less together. Under such circumstances the disease was spread widely increased. It was like a harassing and tedious journey for them which lead them to nervous depression which was augmented to increase the occurrences of cholera among them. That kind of depression was common among Dhangur coolies and were often remarked as ‘to get cholera through fright’. For them it was like committing suicide. It was compared to a crime which they were by no means addicted. Desertions amongst emigrants when en route to Cachar was just like going the place for suicide, the place was almost entirely confined to Assam route and were afforded few facilities for desertion. That kind of travelled had predisposed to cholera.<sup>9</sup> But the cases with severity happened only with overcrowded which was unavoidable on board. Moreover, insufficiency of their diet, poor water supply and their arrangement for different purposes some emigrants washed their mouth out with some water kept

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<sup>6</sup> Datta, Sunanda,(ed) *Cachar District Records Letters subsequent to the annexation of Cachar 1834-1853*, vol-one, The Asiatic Society, Kolkata, 2007, p-88

<sup>7</sup> Ibid p- 98-

<sup>8</sup>NML, Buckle, H.B, ‘Deputy Inspector general of hospitals, Report on the Jail of Eastern Bengal, *The Indian medical Gazette*, Aug 2, 1869,p-173

<sup>9</sup> ASA, Proceedings of Homewise B, March 1875, No.222, 9 pages

in a tub for ablution purpose, the same water women washed their baby clothes. Later it was consumed again for drinking purpose. In that way emigrants crowded together in depots and some were the endemic areas. That condition had made them to adapt very inactive life in their journey. So, sooner or later it was become infectious and the disease was emanated from them.<sup>10</sup>

Then cholera appeared again in Cachar on 1<sup>st</sup> April 1853. It was so virulent and during the course of few days every persons could left their place and were unable to continue their work. Labourers who did brick works and chopper band all went away to Sylhet from Cachar because of fear of cholera. In such situation there were only few labourers stayed. Because of that reason the Superintendent of Cachar did not get anyone engaged for the ongoing construction work.<sup>11</sup> There were confusion and disturbances for Government authority and of the labourers and the natives of such frightful appearance of cholera. And never stopped to appeared time to time and thus it re-appeared again in the end of October 1862 cholera in Thannah Bursikunda, and thence gradually spread to all the station, till December.<sup>12</sup>

The appearance of cholera was also marked after the arrival of coolies. At Katigora, cholera appeared in February 1886 soon after the arrival of several batches of coolies from Calcutta. From then it spread towards the neighbourhood of Silchar till April and May 1867. Gradually it extended all over the other districts. There were several instances that came under Civil Surgeon noticed that tend to showed cholera was propagated by human intercourse. But it was difficult for him to state the particular contact that had took place under his observation. Some instances that he made were. On 23<sup>rd</sup> May 1867 night what he observed was, three of the prisoners of the jails were attacked with cholera, all succumbed within twenty hours. In January 1868, a wing of the 7<sup>th</sup> Native infantry arrived at Silchar in country boats and eleven had died from cholera during the passage up from Dacca. Three days afterwards the disease broke out among people who lived within hundred yards from the ghat or landing place, and several deaths took place. It was directly through direct intercourse it was contacted to some person but some people did not had direct inter course with the men of the

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<sup>10</sup> NML, Richard, Vincent, 'Cholera amongst emigrants to the tea districts', *Indian Medical Gazette*, vol xvi, The proprietor, Calcutta, 1882,p-134

<sup>11</sup>Datta, Sunanda,(ed) *Cachar District Records Letters subsequent to the annexation of Cachar 1853-1860*, vol-two, The Asiatic Society, Kolkata, 2007, p-236

<sup>12</sup> WBSA, Proceedings of the Hon'ble Lieutenant Gouverneur of Bengal, June 1862, Judicial Department, p.68

regiment or the boatmen, as they were aware of the existence of the disease, and were kept aloof. But it was attacked because of the habit of drinking contaminated river water, which flowed towards their house from the Ghat. Likewise, frequent communication between the villages on both sides of the boundary was described as responsible for the appearance of cholera in 1870.<sup>13</sup> Importation of cholera by Bengal coolies was also known from Biswanath garden. In 1869 nine hundred coolies were employed and the numbers of death were fifty two in the first half of that year. In December the average numbers employed were four hundred ninety two and the total death was eighty three. The manager of that garden in one of his report described that 'the garden was critically over ran with loath-some disease brought to the factories by the coolies imported that season'. Which means seasonal change made more liable for attack.<sup>14</sup> He also observed that human intercourse from neighboring area had also spread the disease. One instance was at Tarapur village a person who visited from Sylhet had brought in the disease. Because that person was attacked with cholera on their way to silchar and when arrived he died and from then onwards several death took place.<sup>15</sup>

Cholera was imported also at Hakungari tea garden in 1886 by the arrival of one new coolie. He felt ill the day he arrived on the garden on 8th April. He was taken to the garden hospital, after two days not only him but several of the in-patients contracted the disease and died. Soon followed several death, and the day between 10<sup>th</sup> April to 18<sup>th</sup> July ninety four death occurred. But communicable through human intercourse was not alone responsible in those cases. Others were the nature of the work of labour force, problems with adaptation of new atmosphere, poor water supply all added together and make more liable to spread. Various remarks were made by Civil Surgeon regarding the water supply which was found really unhealthy among the garden. In Kuthari, the source of water supply for drinking was drawn from Deopani River. It was similarly in case of the outbreak of cholera at Pratabgarh was commenced by a batch of coolies landed on the 8<sup>th</sup> April, the first case happened on the 11<sup>th</sup> and died on 13<sup>th</sup>. That caused further spread among the batches. Those attacked were segregated in some huts on the Government road. That cannot stop to

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<sup>13</sup> ASA, Dacca Commissioner Sylhet paper, File No.89, serial No 1-6

<sup>14</sup> ASA, 1871-72, Government of Bengal, Paper-7, File No.134-242

<sup>15</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-465-66

prevent for others to attack and broke again.<sup>16</sup> It was most common known fact that in tea garden cholera was introduced by newly arrived immigrant and those had contact the diseases in embarkation depots on their way to travelled their destination.<sup>17</sup>

Turn towards Tura in May 1871 to June eighty were attacked and thirty two died. After five years it re- appeared in Goalpara district in epidemic form and many numbers were died. But there was not detailed information. Until that time systematic record was not maintained for the district and then travelled to other division and continued till 1868 and again spread to the banks of the river Brahmaputra. During that time the distribution of the disease was worst effected among the ill fed and poor.<sup>18</sup>

As it is stated above cholera which was also known as laid a seed on the board. In the year 1871 coolies transported through that kind of voyage had harshly hit by cholera. The flat was overcrowded and the passengers were so close together in small room. They slept at night looking one row and the feet of the other. Thus unlimited Coolies transportation of steamer service led to an outbreak of cholera. In a steamer Simla, before they reached Dhubri seven deaths occurred, between Dhubri and Goalpara eleven, till Goalpara a total number of eighteen death occurred.<sup>19</sup> There were certain qualified conditions Dr. Palmer was of the opinion that cholera appeared in unsuitable season because death from cholera on steamers mostly occurred in the month between January to July.<sup>20</sup> Other condition was observed by Vincent Richard, medical inspector of Emigrants. He seized defective water supply was the cause of cholera on board the steamers.<sup>21</sup>

In the year 1873 in Nabiganj cholera was again introduced by imported labourer. Dispensary record showed that bulks of the patients were broken down tea coolies, and coolies belonged to the Lushai expedition.<sup>22</sup> From then it gradually extended

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<sup>16</sup> ASA, Annual labour Immigration report of the province of Assam, 1887,p-31-39

<sup>17</sup> ASA, Labour Immigration report on the province of Assam, 1888,p-2

<sup>18</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-103

<sup>19</sup> ASA, Govt of Bengal 1872, File No.186/322, No.1-6

<sup>20</sup> NML, Richar, Vincent, Superintendent of Emigration and medical Inspector of Emigrant, Goalundo and Kooshteah, 'A medical sketch of Inland Immigration operations from 1863-64 to 1879-80', *Indian Medical Gazette, December 1,1880, p-319*

<sup>21</sup> NML, Richards Vincent, 'Outbreak of cholera amongst Assam immigrants', *The Indian Medical Gazette, vol-x1x.,January 1884, W.Newman &co, Calcutta,p-6*

<sup>22</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-344

throughout the province in 1874. There were sixteen thousand four hundred seventy eight fatal cases found.<sup>23</sup>

Steamers and depot were also the place where disease was conveyed on board usually from different depots and occasionally from Goalundo. On their journey, up mail steamers were being overcrowded with long intervals from the district where emigrants were registered or through which they passed the coolies and occasionally infected passengers and crew.<sup>24</sup> The following table will demonstrate the number of death on steamers and depot.

Table 1: Number of death on steamer and depots

<b>Year</b>	<b>No of death on steamers</b>	<b>No of deaths on depots</b>	<b>Total</b>
1888	150	621	771
1889	90	284	374
1890	2	20	22
1891	19	64	83
1892	48	185	233
1893	3	4	7
1894	31	86	117
1895	89	119	208
1896	282	411	693
1897	371	750	1121
1898	26	58	84
1899	21	57	78
1900	177	351	528
1901	18	40	58
1902	6	17	23
1903	8	36	44
<b>Total</b>	<b>1341</b>	<b>3103</b>	<b>4444</b>

Source: Annual sanitary report of the province of Assam 1902p-7,1903p-5

<sup>23</sup> ASA, Administration report of the province of Assam,1875-76p-138

<sup>24</sup> NML, Richard, Vincent, Cholera amongst emigrants to the tea districts', *Indian medical gazette*, May 2,1881,p-133138

Cholera broke out several times on board the steamers and in depot. From the table it shows the year 1897 was most severe. On steamer the Boards there was three hundred seventy one death occurred and in depot seven hundred fifty. In the period between 1888 to 1903 one thousand three hundred loss their lives on steamers and three thousand one hundred three on depots. Of all total four thousand four hundred forty four loss their lives.

On board the steamers of Nepal, Dhubri, Bengal, and Indore on February and March 1881 there was an outbreak of cholera while passing the districts of Assam valley. All the vessels were passed through Kamrup district and the numbers of deaths from cholera, in February 1882 were two hundred and ten and in March seven hundred and thirty four.<sup>25</sup> Goalundo to Dhubri known as the seeds of cholera were often shown during the detention of the immigrants at Calcutta, and the more virulent outbreaks of cholera occurred, as a rule after the departure of the coolies from Goalundo.<sup>26</sup> Civil Surgeon Dr. Curson was of opinion that overcrowding, neglect of the separation of the sick from the healthy, the faulty hospital arrangements, medical attendance, medicines, medical comforts all indifferently provided for the fact that the coolies were infected with cholera when they came on board the vessels continued its course passes without taking heed to the disease, and though the fact that cholera had broke out at Goalpara station too.<sup>27</sup>

Thus the appearance of cholera was associated with contact with the infected person and spread to other. In Dunjan tea garden at Lakhimpur, cholera appeared in an epidemic form among the garden coolies on the 14<sup>th</sup> of April 1887. Introduced by one man who just arrived from his country and after two days, he felt ill and died. In all ten men, fifteen women, and fifteen children died from cholera in the date between 14<sup>th</sup> April to 16<sup>th</sup> of April. The reason ascribed for the outbreak was due to poor coolie lines, the faulty sites and water not conserved and sufficient and were all the causes of infection. The disease was infectious as it appeared and the Government also took some measures but was failed to prevent from infection. One instance was that in Sancherra cholera was brought in by newly arrived batches of coolies, but when they arrived the garden they were segregated, taken necessary means by the manager to

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<sup>25</sup> ASA, Proceedings of the Chief Commissioner of Assam, Revenue Department , January 1882, Assam Secretariat Press, 1883,p-3

<sup>26</sup> ASA, Report on the Administration of the provive of Assam, 1879-75,1875-76, p-142

<sup>27</sup> ASA, Government of Bengal, 1872, File No.191/327, p-2



prevent communication with the other coolies. Unfortunately in spite of strict orders issued by the manager, the sardar in charge of coolies, who was infected under cover of the night sleep into his house, and spread the disease and being taken ill with it himself and died.<sup>28</sup> Another terrible outbreak was happened due to a sudden rash of immigrants into Assam and infected cholera among themselves and when the coolies arrived at depots it became more worse and were infected to many other coolies. But the prevalent of cholera in tea garden during 1888 had not been followed by many district local epidemics. It was due to rapid transit of labour of the late years, witnessed to understand the commercial value of health. So, better arrangement was made for checking the health and death of those recruiting coolie.<sup>29</sup> It was assumed the danger of recruiting unsuitable coolies who were found sick or weakly on their arrival. By recruiting the sick coolies it was worse instead of recruiting better coolies. Carelessness in regard to children, and their practiced of importing coolies without any medical examination and without any regard to their fitness had also worsen.<sup>30</sup> The increase rate of mortality of Garden of Biswananth Tea Company in Darrang coolies was explained by Medical Officer as. Because of seasonal unhealthy majority of death were occurred. His observation was that when disease was brought to the factories by coolies during unhealthy season and that had made more liable for attack. And the coolies imported in Biswananth were mostly Bengali coolies from Bengal.<sup>31</sup> The following shows the graph of mortality.

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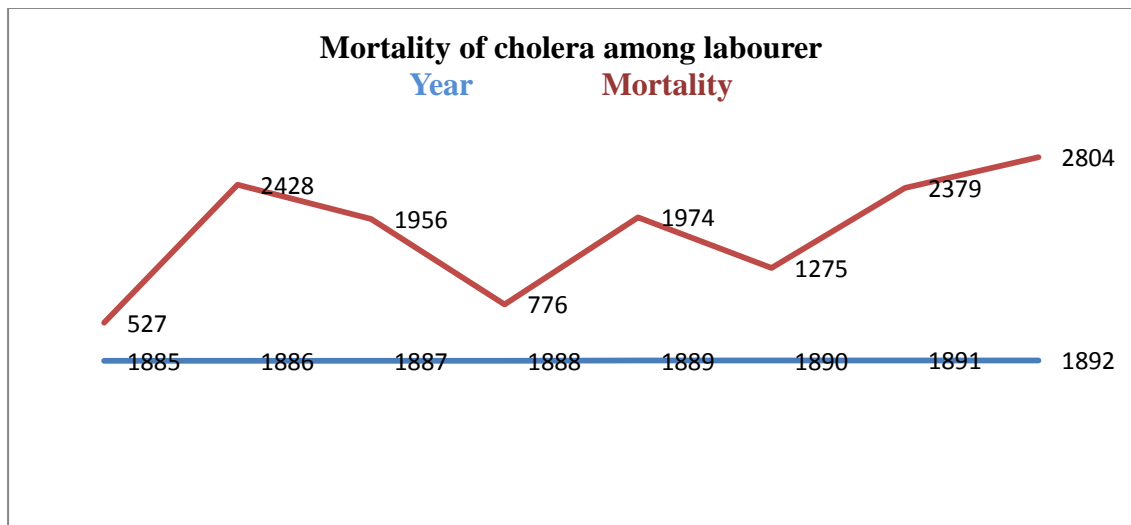
<sup>28</sup> ASA, Annual Immigration report of the province of Assam 1889, p-30

<sup>29</sup> ASA, Annual report on labour immigration into Assam, 1887, p-47

<sup>30</sup> ASA, Annual Immigration report of the province of Assam, 1887,p-30

<sup>31</sup> ASA, Govt of Bengal 1871-72, File No.132/242, Paper-7

Chart 1: Mortality of cholera among labourer:



Source: Annual Report on labour immigration into Assam 1892p-32-33, Report on the administration of the province of Assam 1886-87p-138-9, 1890-91p-153-54 1885 and 1888 only non act

The above chart indicates an increase rate of mortality. If compare to 1885 and 1886 the distribution of the disease increase. Gradually decrease in the next two year. Then come up again and decline in the next year. And in the year 1891 it increase and by the year 1892 had reached its zenith in claiming the lives of labour population of two thousand eight hundred and four. While in the previous year 1885 it was only five hundred twenty seven.

Cholera was not only transported by immigrant labourer. In a place where there was no immigrant were also infected with cholera. In Duarband immigrant labourers were not recruited, they were all practically free labourers. It was the police force who took cholera in the garden from their outpost. They were attacked before the coolies and thus spread among the labourers.<sup>32</sup> Thus from all the above stated cholera was communicable through various developmental projects of roads and waterways introduced far and wide by imported coolies in Northeast India. There was also another important project that contributed the spreading of disease by opening of Railway lines.

Nineteenth century witnessed the opening of railway communication under the initiatives of colonial Government. For the purpose of moving Government officials, military, and for commercial communication purpose. In the year 1885 two small

<sup>32</sup> ASA, Annual labour immigration report of the province of Assam, 1889p-31

railways lines were constructed, one line in Jorhat subdivision and the other part in between Theriaghat and companyjganj. By 1910 the whole of present proper Assam was covered by a network of railway lines by Assam Bengal Railways. For the construction of railway lines large number of coolies required. Immigrants those transit to Surma valley by steamers were less for Assam-Bengal Railway lines construction. And till the year 1898 rail service had limited compartment for tea garden coolies to carry to Cachar. Out of six hundred sixty six coolies, only one hundred sixty seven was carried by train. Gradually more coolies were carried by train.<sup>33</sup> From then Cholera appeared and broke virulent among the railway coolies.<sup>34</sup> The coolies of Assam-Bengal Railway were emigrant. Up mail steamer from Goalundo overcrowded coolies. So, when they came for railway construction work they were considered as dangerous to their health and indeed spread infection. Cases of cholera were generally occurred among the up mail steamers and from then when landed for rail. But on their stay in steamers the numbers were small. It was only great in number after their arrival. No separate segregated and proper detention of infected batches. W.Lyon Clarke a railway contractor lost almost fifty coolies from cholera. Hundred of railway coolies, amounting to several thousands in the aggregate, were recruiting to Gauhati by steamers every day. There was no reception for medical observation or the proper camp where they can take rest. So when they arrived from the steamer they were left free and stay themselves on the banks of the river or the market or anywhere they can go until they were sent off by train to their destination. Usually the steamer arrived evening and left the next morning. The river banks were polluted by taking bath, washed their clothes and used it again for drinking purpose. That had contributed to worsen the health of the coolies traveling to their work destination. Another instance was 42<sup>nd</sup> Gurkha Rifles took cholera down the river were infected, the disease spread rapidly among every batches of coolies in train.<sup>35</sup>

Tragic incident of cholera outbreak among railway coolies was that, occasionally they took out death body of coolie out of the train.<sup>36</sup> Coolies were employed large in number for the construction of railway lines. Around five thousand to ten thousand

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<sup>33</sup> ASA, Assam secretariat proceedings, Rev-A, March 1900, p-2

<sup>34</sup> ASA, Proceedings General Deptt, Feb 1906, p-1

<sup>35</sup> ASA, Assam Secretariat, Rev-A, Feb, 1900, No.140.161

<sup>36</sup> Note: This incident is told by Mr. Thorbill to Principal Medical Officer and sanitary Commissioner Assam and he include this in his Telegram to Deputy Commissioner of Kamrup and the case was not officially reported.

mention may be made of Lumding to Dimapur lines. And broke among them very badly at Lumding and Gauhati in the year 1899.<sup>37</sup> There were also different assumptions about introduction of cholera into Assam. It was intended to impute to the Assam-Bengal Railway. But the assumption made by certain railway agents again tend to showed that certain districts in Assam were actually infected before the coming of railway coolie. For that reason railway coolies were infected from them while passing through those infected districts. The facts they assume were: Those imported coolies into Assam Bengal railway came were free from cholera. It was only after passing over the route via Gauhati they were infected. But not at all were infected, some of them were only infected and they carried away the infection to other coolies.<sup>38</sup> But from the history of immigration and movements it was certain that cholera was imported by coolies immigrants of both by steamers, road and by railways into Assam.<sup>39</sup> Whatever the conflicting cause of the spread of cholera among labourer. Journey by Assam Bengal Railway was also considered as dangerous for health.<sup>40</sup> Cholera spread to Assam from the adjoining districts from Bengal was common many times. It was again in the month of November and April many thousands of laborers from Mymensingh and Dacca districts of Bengal came to Habiganj and Sunamganj by large and small country boats and on foot to harvest the rice crops. These labourers were known to brought cholera with them, many cases were removed from boats at Ajmiriganj and other towns on the rivers. Similarly, many thousands of labourers from Mymensingh, Dacca to Habiganj and Sunamganj sub-division, Sylhet and Cachar during the early cold months for the purpose of cutting timber and bamboos. They usually travel to their destinations by trains, steamer and country boat, but in their return, they came back down the river on bamboo rafts as far as Eastern Bengal. These transit labourers were suspected of having responsible for the importation of cholera into Cachar during 1933. They were responsible for the extension of cholera along the banks of the barak and other rivers below the rivers on the bamboo rafts. Some of the bodies of those who had died of cholera and cases of cholera active and recovered cases were exerting vibrios, whilst

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<sup>37</sup> ASA, Assam Secretariat, Rev-A, Feb, 1900, No.140.161

<sup>38</sup> ASA, Assam Secretariat, Revenue A, Progs, April 1900, No.65-88, p-7

<sup>39</sup> Note: This can be assumed by their report on both the outbreak of cholera among coolies in which Chief Commissioner was much in favour of road and steamer company against railways. Certain reason may be shortage of money to spend by Assam Bengal and Eastern railway.

<sup>40</sup> ASA, Assam secretariat, Revenue-A, February 1900, N0.140-161, p-5

in many institutions the bodies of those who had died were simply pushed off the rafts into the river, possibly to disseminate cholera as they floated downstream.<sup>41</sup>

Table 2: District wise table of mortality:

District	cachar	Sylhet	Goalpara	Kamrup	Darrang	Nowgong	Sibsagar	Lakhimpur	K&J Hills
Year									
1879	71	3535	1365	4086	4148	3059	970	181	
1880	236	732	166	32053	59	538	490	262	
1881	5	1456	57	1719	231	730	759	53	
1882	1342	7393	406	7896	923	2245	754	96	
1893	2532	10490	930	2050	609	3361	883	938	56
1894	493	5452	1355	1344	508	918	2587	829	11
Total	4679	29058	4279	49148	6478	10851	6443	2359	67

Source: Annual sanitary report of the province of Assam 1881, p-8, 1882, p-10, 1894,p-12.

The above table shows that Kamrup district was mostly affected in terms of mortality rate in the year between 1879 to 1894 forty nine thousand one hundred and forty eight losses their lives. Particularly the year 1880 was highest it took mortality of thirty two thousand and forty three. Overall the total mortality from cholera in the province was one lakhs, thirteen thousand three hundred sixty two.

There were various theories on the origin and introduction of nineteenth century cholera in Northeast India. In upper Assam Cholera epidemic was remarked invariably proceeds from the west. It was found the appearance of cholera was associated with the coming of coolies. Before the appearance in upper Assam, in Bengal villages cholera had occurred. And cholera arrived just after four or five days imported by coolies in Assam. Then travel through a hundred miles in the province within sixteen or twenty days. Then spread rapidly on the banks of the great river and the minor streams. And to the interior of the villages, it also occurred seldom at the same time on both sides of the streams.<sup>42</sup> Civil Surgeon of Cachar station had

<sup>41</sup> Local Self Department, Public Health Branch, B.Progs for March 1935, p-1-2

<sup>42</sup> Robinson, William, *Descriptive account of Assam*, Sanskaran Prakashak, Delhi, 1841/1975, p-26 also see ASLR, Annual Report of the public health commissioner with the Government of India for 1927, p-48

remarked that in Cachar cholera outbreak can almost always be referred to the arrival of gang imported labourers from Bengal, Who had brought the disease with them.<sup>43</sup>

William Robinson, European official observed the spread of the diseases were also made more liable because of the socio- religious and cultural practices of the natives. Because whenever epidemic visits the country native fatigue and want of rest endure by the inhabitants. Resulted to assembled in large number and sitting up for many nights for succession. They sing and clap their hands, offering sacrifices to their God in order to avert epidemic. Which had further contributed to spread the diseases among themselves.<sup>44</sup> B.C Allen, observed the possible cause of the spread of cholera in Manipur among the Meitei and the Naga were because of their cultural lifestyle. Generally in most of their places drinking water were usually taken from the small pond. People wash their clothes, at the same times washed their cooking utensils all everything and even the persons took bath in those filthy pools. Where they draw their drinking water from the same pool. So, he made his assumption that when rains hold too long in the spring, those ponds were dried and the people had to recourse to the rivers. Which was sunk to little more than ditches creeping between high banks covered with every kind of filth. The first flood brought down those accumulations of impurities. So, if they contain the germs of cholera, they were disseminated with surprising rapidity was possible throughout the valley. The infection was also further spread by the customs which was dictated that the dead should be burned on the river's bank, and the corpse of the Brahman, even if he had died of cholera, they got took bathed in the river itself and spread the germs through it.<sup>45</sup>

In reverse to these perceptions what the natives ascribed epidemic was different. In the advent of western medicine and before in close contact with western knowledge. For indigenous there was unknown remedy of epidemic in their medicine. It was a dreaded disease because whenever it appeared there was a hue and cry in the villages. Some of the beliefs of Northeastern indigenous about cholera are based on superstitious. They believed cholera as Demons or evil spirits. The Chakmas of Chittagong believed that there are demons of cholera<sup>46</sup>. The khasis believed *Ka*

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<sup>43</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-465-66

<sup>44</sup> Robinson, William, *Descriptive account of Assam*, Sanskaran Prakashak, Delhi, 1841/1975, p-26

<sup>45</sup> Allen, B.C, *Gazetteer of Naga Hills and Manipur*, Mittal Publication, Delhi, 1905, p-130

<sup>46</sup> Jaggi, o.p, *History of science technology and medicine in India, vol iii, Folk medicine*, Atma ram and sons, Delhi, 1982,p-45

*khlam*,<sup>47</sup> as the demon of cholera. So sacrifices were made and use as a remedial measures for the whole of the village. The villages at which sacrifices are made in the case of individual illness are closed and sacrifices offered at the village gate by the priests.<sup>48</sup> The karbis on the other extend believed cholera as foreign disease introduced by the British. But their traditional believed since long time past had revealed that cholera was a Demon who caused the disease. Deity of cholera was known as *ma-avur* or *pok-avur*. They used to sacrifice to this deity with two fowls and many eggs.<sup>49</sup>

But it was surprising to know that in Northeast India cholera was mostly affected in plains than in hills. In hills only few exceptions were known and that was only when directly imported from the plains or in mass establishment. In the Khasi hills cholera appeared in May 1869 travelled from the direction of Jaintiapur, by a labour who carry loads on the Borders of Sylhet. But only few sporadic cases till July and then broke in epidemic form among the police and jail from then it travelled to the south wards.<sup>50</sup> Cholera was also communicated through fair and festivals. In 1878 towards the close of the year cholera broke out at Rangamati and Chandeghona. Thirty one cases were reported in times of muhammadan fair.<sup>51</sup> To an extend in other parts cholera was reported very severe. In Kamrup district itself two hundred villages were attacked and one thousand seven hundred nineteen deaths occurred.<sup>52</sup>

There was another perception made by R.H. Henderson in his letter to the Deputy Commissioner of Cachar stated that ‘cholera were introduced in the garden from the villagers to the neighbourhood of all the gardens and that the disease was introduced into the villagers by the inoculators’. In connection with that Dr. Glover states that ‘the virus used by the inoculators was active. Inadequate precautions were taken to keep it from doing harm. In many cases where precautions were taken and the virus got beyond control. In the adjoining Tarapur and Narainpur gardens, in both of the places proved that the outbreaks in those places were due to operations of inoculations’. With the increased of coolie population in villages who came into

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<sup>47</sup> Gurson, P.R, *The khasis*, Low press publication, Delhi, Reprint, 2002, p-107

<sup>48</sup> Hudson, J.C, *The naga tribes of Manipur*, Low press Publication, Delhi, Reprint 2007, p-136

<sup>49</sup> Colonel Shakespeare, J, *The lushai kuki clans*, Tribal research institute, Mizoram, p-76

<sup>50</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-253

<sup>51</sup> WBSA, Proceedings of the lieytenant Governor of Bengal, Politica department, 1878-79,p-2

<sup>52</sup> ASA, Annual sanitary report of the province of Assam,1881,p-6

gardens for work, and who visit and received visits from their relatives in tea gardens, the danger was more serious.<sup>53</sup>

In 1899 Sanitary commissioner observed the Surma and Brahmaputra valleys are as the endemic home of cholera he was of the opinion that it was usually conveyed through the water-supply. He was of the opinion that the two valleys water supply was extremely liable to contamination.<sup>54</sup> Moreover cholera was also caused due to floods and the case was happened in Goalpara in the year 1921 and brought scarcity of foodstuff all contribute to make more liable for the spread of the disease.<sup>55</sup> Moreover, seasonal incidence of cholera was also common. In Nowgong each spring and autumn it appeared. In the district of Sylhet five sub divisions occupied by the delta of the river barak and from there the infection was carried down into the delta and great rivers rose in the area and broke severely in all the five sub divisions. Such outbreaks were most severe in the lowest sub division of the delta-Sunamganj and Habiganj. In 1926 it began on the banks of the parent river, the barak, it swept down the valley and in three months October, November and December there were one thousand deaths from cholera and in Habiganj one thousand four hundred forty in Sunamganj. At the end of September 1933 cholera broke out in Cachar again on the banks of the barak and its tributaries among camps of bamboo cutters. Rafts with cholera came down the river. There were over one thousand seven hundred cases in Cachar. Those infected were passed on the delta in every sub division of Sylhet. Till the year 1933 there were five thousand five hundred and eight deaths took from cholera and gradually decrease year after year.<sup>56</sup>

Cholera was thus a contagious disease which took huge toll of mortality of the population in Northeast India. But it was not only cholera that had created a great history of diseases in the region. There were also other diseases that swept the lives of the population. The following discuss on small-pox disease of the nineteenth and twentieth century.

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<sup>53</sup> ASA, Governemnt of Eastern Bengal and Assam, General Department, Sanitation A, January, 1906, p-2

<sup>54</sup> ASA, Assam secretariat, Home A, Progs February 1900, No.86-89, p- 2

<sup>55</sup> NML, The kala-azar position in Assam, *Indian medical Gazette*, September, 1922, p-389

<sup>56</sup> ASA, APHR,P-14



## 2.2 Small-pox (*Mother of Goddess*):

From ancient time, small-pox occupied a prominent place in Hindu beliefs and rituals. The goddesses Sita and other deities were identified as mother of small-pox. These deities were worshipped and propitiated in virtually in every part of the country in India.<sup>57</sup> Just as cholera epidemic was believed to be caused by angry evil spirits. It was also believed small-pox was caused by Sitala mata. Marks of small-pox were not taken as the bad sign among some of the inhabitants in Northeast province too. That reflects their beliefs of understanding small-pox among the inhabitants. Small-pox was believed as the mother of Goddess. In the Brahmaputra valley it was generally known as *Ai*, in assamese it means mother. Whenever small-pox appeared they claimed that mother of goddesses had attacked and described as *Ai olowa* or *Aisakal olowa*. In that case they believed that only the seven sisters including Sitala were able to control the diseases, when rash or pustules of various types appeared over the skin. And then these seven sisters were worshipped on certain occasion.<sup>58</sup> If compare to the present perceptions of small-pox, it was really an interesting beliefs but not acceptable as holy as it claimed before. For indigenus it was not a disease but a kind of mark that was left by mother Goddess. Among the Syntengs in the Khasi hills those who are attacked of this Goddess were honored. They accepted the attacked as the kiss of God and believed that the more violent the attack and the deeper the marks, the more they highly honored the persons attacked.<sup>59</sup> To an extent, they are not afraid of the disease but want the other also to received the attacked in honour of Goddesses. So, women wash their hair in the water used by a diseased person and also bring their children to this house so that they may be touch by small-pox Goddess and get the kiss of the Goddess. The house of the sick is considered sacred for the time being, and the visitors had to wash their feet with clean water before they enter the house.<sup>60</sup> But unlike the khasis, the Angami Nagas were afraid of small-pox disease. Whenever they are informed that <sup>61</sup>mall-pox rages in the locality. Even if they have some important work in the appeared village they often don't go of that particular village. Not only

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<sup>57</sup> Arnold David, *Colonizing the body, State medicine and epidemic disease in nineteenth century India*, University of California Press, London, 1993, P-120

<sup>58</sup> Jaggi, O.P, *History of science, technology and medicine in India*, vol-iii, Folk medicine, Atma Ram & So, Indian Medical Gazette, vol-iii, Wyman, & Co, Calcutta, 1868-69,p-14ns, Delhi, 1982, p-41

<sup>59</sup> Gurson, P.R, *The khasis*, Low Press publication, Delhi, Reprint 2002,p-108

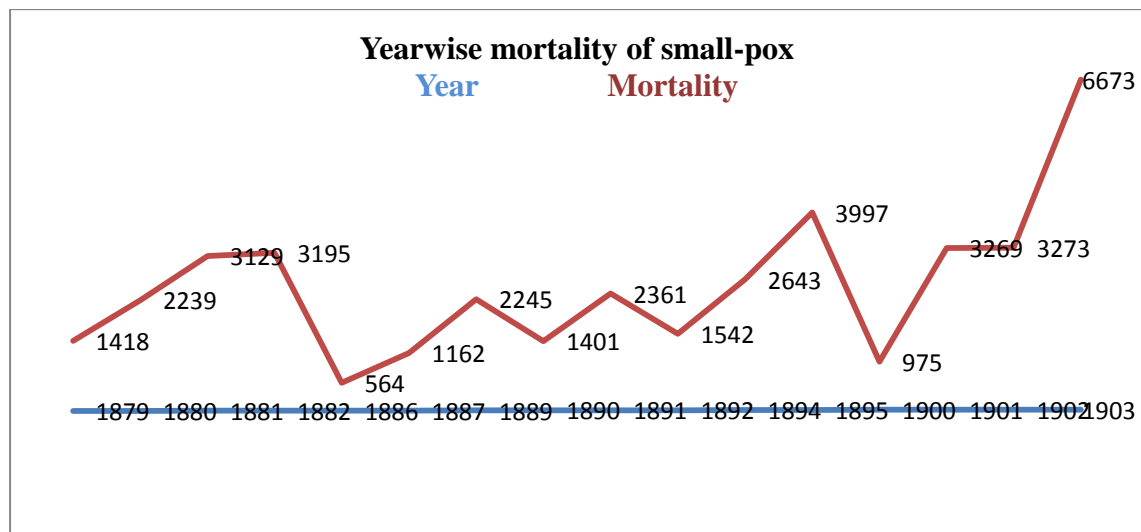
<sup>60</sup> Jaggi, O.P, *History of science, technology and medicine in India*, vol-iii, Folk medicine, Atma Ram & Sons, Delhi, 1982, p-41

<sup>61</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-255

that they do not allow any person from that infected village to enter into the fresh village and they do not even speak from that village.<sup>62</sup>

The history of the appearance of small-pox was frequent from 1832. But till then it raged with uncommon and it appeared mostly in the month between February and July but was quiet considerable in number.<sup>63</sup> Unlike other epidemic diseases small-pox appeared exceptionally. In Cachar small-pox was largely affected among labourers and the natives. And among the hill tribes in 1864-65 appeared to be susceptible to the disease. The faces of more than half of the population are marks of that disease. In 1869 it broke among the tribe of kukis living near Silkauri tea garden and continued to rage with great violence until the latter part of September, and gradually subsided. Out of a population between two and three hundred there occurred thirty died.<sup>64</sup> In the year between 1876-77 it prevailed in an epidemic form and effected several villages. In the Jaintia hills it caused 47 deaths.

Chart: 2 Year wise small-pox mortality



Source: Administration report of the province of Assam 1886p-122, 1890-1p-137, Annual sanitary report of the province of Assam 1882p-8, 1881p-6, 1892p-10, 1894p-11, 1903p-5, 1902p-7

The above chart shows the unequal distribution of the disease year after year. From the year between 1879 to 1882 it increased in number. And gradually decreased in the next year in 1886. From then took up and down the rate of mortality. But in the year

<sup>62</sup> NML, Bhattacharjee, Hem Chandra, 'Prevailing diseases in the Angami Naga Hills', *Indian Medical Gazette*, vol-iii, Wyman, & Co, Calcutta, 1868-69,p-14

<sup>63</sup> Robinson, William, *Descriptive account of Assam*, Sanskaran Prakashak, Delhi, 1841/1975, p-26

<sup>64</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-467

1903 it was increased in the rate of mortality. It took six thousand six hundred seventy three lives.

Table 3. District wise small-pox mortality

District	1879	1880	1881	1882	1891	1892	1893	1894
Goalpara	83	44	87	253	54	149	2,083	2,762
Kamrup	205	112	431	404	640	1,025	305	207
Nowgong	90	506	549	176	1		1	
Darrang	97	172	168	743	6	23	23	36
Sibsagar	114	216	493	609	4	27	20	7
Lakhimpur	121	133	108	49		3	22	16
Sylhet	689	1,040	1,272	873	908	184	172	932
Cachar	19	16	21	83	739	40	12	6
K&J hills					9	1	5	31
Total	1,418	2,239	3,129	3,195	2,361	1,452	2,643	3,997

Source: Annual sanitary report of the province of Assam 1881p-14, 1882p-17, 1892p-18, 1894p-20

From the above table it shows that the year 1894 was the highest rate of mortality compared to the previous years. Kamrup and Sylhet were the districts where small-pox had done most ravages to the lives of the population if compared to the other districts.

In the year 1879 in Nowgong the incidence of small-pox had demonstrated about the beliefs of the natives of Nowgong.<sup>65</sup> When one school pundit who was a teacher died from small-pox. They natives thought they understand the disease and usually get on with very well. They interpret about the person and his cause of death by small-pox as, he had everything to eat but did not pleased the demon and that cause him to death. The native used to please the demon in order to avoid the disease. But the natives had no idea of keeping away from small-pox which was the real cause of spread.<sup>66</sup> In 1881, one hundred ninety seven villages were attacked and 549 deaths were registered. But the real fact about the primary outbreak was not due to not

<sup>65</sup> ASA, Vaccination Report of the province of Assam, 1897-98,p-3

<sup>66</sup> Moore, P.H,(ed), *Twenty years in Assam or leaves from my journal*, Omson Publication, Delhi, 1901/1982,p-24

pleasing demon but it was due to not isolating those affected nor destroying the clothes or bedding used by them.<sup>67</sup>

Thus since 1881 there was no district and towns in the plains area that were not affected by small-pox.<sup>68</sup> One of the reasons for the gradual spread was also due to the activity of inoculators. Because lymph were supplied in the province and it was not only the difficulties in India but also in England. But the assigned supervisor of government vaccinators were careless to a degree in the matter of the lymph question they used, but like ex-inoculators, "they charge for each operation, and instead of lymph, they used crusts, which were often old and gave rise to unhealthy abscesses in and around the seat of operation".<sup>69</sup> Contrary to that in some parts where natives opposed Government vaccination and where they could not operate properly were mostly effected. In the subdivision of Barpeta greater opposition was offered and experienced. On trammels of customs and religion and caste scruples. Remarks were also made upon certain sects or fractions e.g. The Lalungs, Cacharis, Bhakats, etc, who would not heard of vaccination, not even from one of their own clan or creed. It was amongst those that small-pox played the greatest havoc, without the least impression on them. The ravages was done to 50 percent of the population.<sup>70</sup> In 1921 at Darrang district small-pox was severe in certain mauzas in the Mangaldai sub division where vaccination had been neglected. Whereas death from the disease at Golaghat was also high and the spread was attributed to laxity in the working of the compulsory vaccination.<sup>71</sup>

Gradually by the year 1933-34 death from small pox decline. Only there were recorded in Sylhet decline to 52, Goalpara 33, Kamrup 73, Darrang 23, Nowgong 1, Sibsagar 34, Lakhimppur 6, Garo hills 12 so, for the whole province only 234 death were recorded from small-pox.<sup>72</sup>

Epidemics of cholera and small-pox was not only the diseases that spread frequently far and wide. Of the other was fever, throughout colonial period history of diseases record. Among all the other diseases fever was the chief caused of mortality. But it is

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<sup>67</sup> ASA, Annual sanitary report of the province of Assam, 1881 p-6

<sup>68</sup> ASA, Annual sanitary report of the province of Assam, 1879 p-14

<sup>69</sup> ASA, Annual sanitary report of the province of Assam, 1881, p-16

<sup>70</sup> ASA, Government of Eastern Bengal and Assam, General department, Sanitation-A, January, 1906, p-10

<sup>71</sup> NML, The kala-azar position in Assam, *Indian medical Gazette*, September, 1922, p-389

<sup>72</sup> ASA, Annual Public Health Report of the province of Assam 1933, p-31

difficult to identify the particular kind of fever. Because fever is of different kind. In present day medical term also fever alone cannot be justified as the particular kind of disease. Different kind of fever had different name and were identified and treated and recorded with that particular fever name. But during the colonial period, especially in the early part of the nineteenth century medical records, all similar disease of fever were recorded as fever. Of the most common fever were malaria and kala-azar that took many lives of the population. So, the following deal with only malaria particularly, the fever that swept the lives of the population.

### **2.3 Malaria (*Jungle fever*):**

European officials had many times described Northeast India as the land of malaria. Because of the deadly dense, damp forest and miry reed jungles.<sup>73</sup> They also stated their opinions about the possible cause of the prevalent of the disease. John M Cosh opined that ‘malaria in Assam was the influenced of miasma. The theory of miasma assumed by him was it generated through decomposition of vegetable matter, that a certain quality whether a gas or vapour, or a film or an impalpable powder evolved by vegetable matter during exposed to heat and moisture, and undergoing the process of putrefaction, which had the property of engendering fever when in contact with the body.’ Europeans in Northeast India constituted the months from May to October as unhealthy. And no Europeans ought if possible to venture beyond the limits of cantonments. Because Europeans were avoiding the unhealthy season and that had shown their awareness of malaria fever in their process of expansion. Only in few exceptional cases, Europeans were died from malaria. Instances of few exceptional cases of Europeans who died of malaria were. Dr Leslie contact with malaria after exposure in the jungles for two days while he prepares the skin of two rhinoceros. Captain Cathcart also contact after exposed the whole day while raining, and was also obliged to spend the night without any comforts of life.<sup>74</sup>

Sources of malaria fever were produced from the geographical location with the surrounding of the interior between the rivers from the grounds, gradual sloped from higher banks. When the waters dried up they are converted into stagnant jheels and marshes and produced a prolific source of malarial disease. Moreover, houses were

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<sup>73</sup> Butler, Major John, *Travels and adventures in the Province of Assam*, Vivek Publishing Company, Delhi, 1978, p-234

<sup>74</sup> M’Cosh, John, *Topography of Assam*, Sanskaran Prakashak, Delhi, 1837/1975, p-99-100, 105

buried in the jungles and closed each a hole was filled with stagnant water, rank vegetation, malarious exhalations, decaying animal and vegetable matter, fermenting excreta, and their drinking water were drawn from the banks of a river from the same stagnant hole. The river was contaminated by decaying matters, consequences the villagers those who consumed become sick. Exceptionally, every year one or more villages were being smitten with malaria in epidemic form which sweeps off a large proportion of the inhabitants.<sup>75</sup>

But indigenous believed that fever were ascribed to wrath of vengeful God, angry evil spirits and passing strangers. They even have some kind of diseases as deities so they appeased them in order to avoid diseases. *Ka Rih*, malaria was known as fever devil by the Khasi.<sup>76</sup>

Before, malaria was known as a major disease of tea gardens labourer. Uncultivated land was transformed by labourer as mosquito breeding grounds. In the vicinity of thick forests and jungles for plantation coolies and labourers cut the trees and produced more breeding grounds. In case of Doom dooma tea garden estate, the Dibru or similar rivers were made prone to malarious. The evidence was understandable from the seasonal incidence of malaria in the garden because of swamp breeder and increased the incidence during the rainy season. Another reason was undrained jungle in tea garden. Lack of suitable breeding places in most tea gardens, sensitive to highly pollution and its food. Daily washing of clothes at the head of a small valley driving the insect from the main stream. In Doom dooma January to march was a seasonal for malaria.<sup>77</sup>

General opinion was that the route to the province of Assam was regarded as unhealthy. Travelers were in common contact with malaria fever. An instance was one gentleman having died from fever after having travelled through and after three months, ten natives had died. As for them there was no preventive medicine and they had induced by over execution, or the irregularity and discomfort which afterwards they marched in the hills and some were died of malaria fever. Because of that reason the communication line in the forest, a long road between the Khasi hills and Assam

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<sup>75</sup> NML, Buckle, H.B, Deputy Inspector general of hospitals, Report on the Jail of Eastern Bengal, The Indian medical Gazette, Aug 2, 1869,p-173

<sup>76</sup> Gurson, P.R, *The Khasis*, Low press Publication, Reprint 2002,p-107

<sup>77</sup> NML, Strickland.C, 'The mosquito factor in the malaria of Assam tea gardens, *The Indian Medical Gazette*, January, 1925,p-519

was frequently prohibited. Another instance was in 1862 there was one weakly state of men of the 28<sup>th</sup> native infantry, who died of malaria fever. Later, most of the troops marched from hills to Gauhati were met with malaria fever. The troops were marched through jungly and malarious tract of the country where fever was much apprehended.<sup>78</sup>

While in Tura the distribution of malaria was effected mostly of the immigrant population than the aborigin. In case of Goalpara district malaria prevailed in 1875 and Sylhet in 1869<sup>79</sup> because of neglect of sanitation. Because villagers were poor and unable to call municipal arrangements and jungle were not cleared that led to prevail malarial in the district.<sup>80</sup> Hem Chunder, Bhattacharjee, Sub-Assistant Surgeon, in his observation of tribes living in the valleys of Brahmaputra particularly of the Angami Nagas was 'One cause frequently getting diseases, particularly of malaria is that the sides of their hills are covered with dense jungle, and malaria of the deadliest type originate from the decomposing vegetation. To the influence of this deleterious agent they are constantly exposed, whether they go to their farms or descend to fetch water from springs below, because their footpath lies through these jungles, and they have no high roads or other means of descending or going to other villages. That type of fever was seldom virulent in the Naga Hills'.<sup>81</sup> The incidence of malaria was high in the Naga Hills. The following table shows the number of malaria cases of Dimapur charitable dispensary in Naga Hills.

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<sup>78</sup> WBSA, Proceedings of the lieytenant Governor of Bengal, Politica department, 1878-79,p-230

<sup>79</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-342

<sup>80</sup> Hunter, W.W, *A Statistical Account of Assam*, B.R Publishing Corporation, Delhi, 1879, p-103, 170

<sup>81</sup>NML, Bhattacharjee, Hem Chander, 'Prevailing diseases in the Angami Naga Hills', *Indian Medical Gazette*, January 1 1869,,vol-iii &iv, Wyman & Co, Calcutta, 1868-69, pp-13-14

Table 4: Number of malaria cases in the charitable dispensary in Dimapur

<b>Year</b>	<b>Total number of sick</b>	<b>Total number of malaria cases</b>
1926	4662	1700
1927	3812	1207
1928	4778	1498
1929	5634	1720
1930	6200	2546
1931	7187	2758
<b>Total</b>	<b>32273</b>	<b>11429</b>

Source: Medical department Public health Branch, Govt of Assam, p-2

The above table shows that there was an increase of malaria cases. In the year 1926 it was seventeen hundred cases of malaria and in 1931 it increased into two thousand seven hundred and fifty eight.

Malaria was also common sickness among the military force in the hill tracts in 1878. Because of the unfed, badly house, insufficiency-clothed, and probable debilitated condition of large sections of population. They were unable to resist the effects of the cold, and they succumbed from disease and represents 20 percent of the mortality of native soldier. In Goalpara district there was four thousand eight hundred forty deaths registered from malaria fever. Moreover, on the north bank of the Brahmaputra, there was one tract and the inhabitant of that tract was also depopulated by malarial fever.<sup>82</sup>

The increase rate of malaria incidence was also known from railway lines in Lumding, one of the important rail junction stations. The Chief medical officer of the Assam Bengal Railway reports that Haru Langpher was the main source of carrier of mosquito. The number of case treated at Lumding hospital in 1923 was 2,862 as compared with 2,2263 in 1922.<sup>83</sup> The source of malaria was carried by the river Horu Langpher. Where mosquito breed in the sandy bed of the river. Large number of tanks

<sup>82</sup> ASA, Annual sanitary report of the province of Assam, 1881, p-17

<sup>83</sup> ASA, Annual Public Health Report of the province Assam, 1923, p-10



as well as pools in the bed of the big river were the place where malaria was known to be put down. Seasonally it occurred but it cannot breed in running water.<sup>84</sup>

The incidence of malaria was also high in Jorhat municipality. While summarizing the rates per mile the following were the rate of incidence in the period between 1926 to 1934.

Table 5: Year wise malaria incidence per mile

Year	Malaria case incidence per mile
1926	137
1927	128
1928	236
1929	131
1930	261
1931	342
1932	390
1933	414
1934	322

Source: Local Self Department, Public Health Branch, Public Health Prigs, June 1935, p-4

The above table shows that there was an increase of malaria incidence per mile thousand population. In between there were decrease but again increase from the year 1931 and in the year it increase at a rate of three hundred and twenty two per thousand population.

The population in Jorhat principally consists of assamese with a sprinkling of persons from many other parts of the India who had settled there. There was no appreciable immigration from any particular part of India and as far as can be ascertained. No immigration to the town itself that might be responsible for the introduction of foreign strains of the malaria parasite to any appreciable degree. The municipality was situated in the centre of a very large and prosperous tea state area where there might be much chance for the introduction of new strains of malaria through the medium of thousands of the tea estate laboureres recruited annually, many of whom pay periodic

<sup>84</sup> NML, Stickland C, 'The mosquito factor in the in the malaria of Assam Tea gardens', *The Indian Medical Gazette, November, 1925,p-514*

visits to the municipal Bazaar and to shops. But in actual the comparatively low spleen and parasites rates showed that they played little or no part in the malaria incidence of the town. Apart from the tea estates, there were also comprehensive numbers of villages contiguous to the surrounding of the town area. People from these villages and from others within a radius of ten to twelve miles of the town frequent went the bazaar, in the year between 1934 to 1935, the Toklajan river had been found to be the principal source of malaria. And also of a small drain leading from the Bhogdai river to the Toklaijan near Goromur road were ascribed as the source of malaria.<sup>85</sup>

Malaria was not the only remarkable fever of the nineteenth and twentieth century history of disease. Another remarkable fever that swept the lives of the population in Northeast India was kala-azar.

#### **2.4 Black fever (*Kala-azar*):**

Kala-azar was a contagious disease that was widespread since the 1880s. There was also confusion among the medical men on identification of the disease. It was a destructive life in the districts affected. From history it is a known fact that kala-azar was spread from the Garo hills. But till the year 1882 there was no general registration of deaths. Dr Clarke stated from the information he gathered and from the fact of depopulation of certain areas. That there was no doubt but the very high rate of mortality exists among the Garos and other tribes, especially of those who occupied the low hill tracts which lie between the hills and the plains. He further stated that kala-azar was a form of malarial poisoning known among the natives sickness from darkened colour which the skin assumes in chronic cases. The popular idea was that the disease was contagious and the natives had great horror when it appeared among them. They frequently separate those affected from other member of the family or community.

Mr. MC Cannaught, the Medical Officer at Tura, had made enquiries about that disease. He stated that it “begin with a high temperature, severe pains in the head and body, loss of appetite, and other symptoms of a general febrile condition: fever sometimes of an anguish form and sometimes fever without remission for days

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<sup>85</sup> ASA, Local Self Department, Public Health Branch, Public Health Prigs, June 1935, p-4

together. The spleen and the liver enlarged, the skin becomes gradually darkened, and in advanced cases there often is hemorrhage from the nose and gums: anemia of the feet, or genera dropsy, is likewise common, and life ends by a combination of disordered functions known as malarial cachexia". The disease was not appeared to him as any new form of disease. The disease was already known among the people for the past 20 years and the localities chiefly in which it prevailed were those who combined all the conditions under which the most intense forms of malarial diseases were produced. The disease was so inimical to life that large tracts of hill country were being depopulated in consequence.<sup>86</sup>

In Garo hills Kala azar prevailed again in 1886-87. The tract most afflicted by the scourge was in the sub mountain, region bordering on Goalpara, including large part of the plains of the district.<sup>87</sup> Till 1897 it spread in other parts of the province. Dr. Giles had found the anchylostomiasis parasite in case of kala-azar, concluded that the disease was anchylostomiasis, complicated with malarial cachexia. According to him the disease was a chronic disease from his observation of many cases. It was identified as cachexia with the ordinary severe malarial cachexias, only too familiar to us in jails and civil dispensaries. Dr. Rogers had pointed out and acted upon for his essential to grasp the fact that the disease was a cachexia. Fever of intermittent and remittent type it may be present or absent at any particular date, but the progressive weakness and procrastation was remained.<sup>88</sup>

Kala-azar actually spread up the Brahmaputra valley from the Garo hills to the Nowgong district and beyond. It tends to confine itself to isolated villages, families and houses, and that had frequently appeared in such after the entry of an effected person. The disease spread more and more and exterminated mass of the population. People aware that the disease was terrible and there was no remedy against it. The only preventive measure was that the people were not allowed to move freely into villages which were not yet effected by the disease. If a young bride who was married to a young man in a different village showed symptoms of the disease. In that case, she was separated from her husband, expelled from the village and had to wait for her

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<sup>86</sup> ASA, Annual Sanitary Report of the Province of Assam, 1882, p-21

<sup>87</sup> ASA, Annual Administration Report of the Province of Assam, 1886, pp-5-6

<sup>88</sup> NML, Rogers Leonard, The Kala-azar report, Indian medical gazette, December 1897,p.473-476

in a hut in the jungles.<sup>89</sup> The Garos believed that when kala-azar broke it was incurable but offered sacrifices to God. *Tara-Rabuga*, who is the creator, was the only God who can cure the devastating disease of Kala-azar. But offering a sacrifice to him was very expensive they have to offer bull, goat, and a fowl must need to slaughter. Not only that, they also had to provide rice and liquor for two days to the worshippers.<sup>90</sup> For them there was no such medicine that can cure the disease so they adopted drastic measure in times of Kala-azar epidemics. In some cases the victim of the disease was made drunk, put in a bamboo hut and the house was set on fire. In this way the danger of contagion was removed. But, in cases of so many people affected this measures cannot be apply. In such case the people left the villages and left those infected by this disease and took an abode elsewhere. They burnt the abandoned village and those left were also burnt and died. In this way they used to check the spread of the disease. In memory of those burnt to death in front many huts there was some memorial posts made of wood. That kind of post was the indicator of number of victims killed by Kala-azar in a particular house.<sup>91</sup>

Kala-azar had spread in Nowgong since 1891. In one direction, towards Nonai, the whole country was affected by the disease for many miles, hundreds of persons were affected. It had spread greatly on the banks of the Kalong river many miles from the Sadar station of Nowgong. In Mangaldai sub-division effected villages were in the Mauzas of Hindughopa and Sipajhar. The disease under consideration was decided that which was so widely prevalent there, and had been so more or less since 1890. The village headmen had reported to the sub divisional officer and also to Dr. Borah, the Civil Surgeon, that in February 1893, the disease was brought from Gauhati by schoolboys and others in 1890 to the Bangsora mauza, via Kuruna, a village nearly opposite Gauhati on the northern bank and thence to the Sipajhar and Hindughopa mauzas. In 1891 there had been two hundred thirty six deaths in the Bangsora mauza, fifty seven in the Rangamati mauza, and one hundred sixty six in the Hindughopa and Sirpajhar mauzas. The increased rainfall also contributed to increase in death rate. Moreover, the village in the mauzas of Hindughopa and Sipajhar, were generally

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<sup>89</sup> SDB, G.Stadler, et al., (ed)s, *History of the Catholic missions in Northeast India (1890-1915)*, Firma KLM Pvt Ltd, Calcutta, 1980, p-31

<sup>90</sup> Playfair, Major A, *The Garos*, Spectrum publications, Delhi, 1998,p-81

<sup>91</sup> Stadler, G, et.al., *History of the Catholic missions in Northeast India (1890-1915)*, Firma KLM Private Limited, Calcutta, 1980, p- 31from Sir Leonard Rogers, *Journal and proceedings of the Asiatic Society of Bengal*, vol-13,

below the level of the surrounding country, full of thick jungle, badly drained, and containing numerous tanks filled with dirty water, which was the drinking water-supply of the people, were all together contributed to further spread.<sup>92</sup>

In July 1898 in Golaghat several cases of kala-azar occurred fatally among the indigenous population of the mauzas Garjangia and Naharani. Introduction of the disease was from a person who had gone for business. Immigrants from Nowgong were infected and traced deported in their own district for checking the spread of epidemic. Then spread among the indigenous population.<sup>93</sup> In that matter anxiety was felt with regard to the possibility of the spread of kala-azar which was spread from Nowgong district to Golaghat division, and from through Golaghat to the district of upper Assam. The administrator as well as the local officers had kept a watch for any person coming up the Trunk road connecting Nowgong with Golaghat. They suspected that it was imported from that road from a person suffering from kala-azar carry and infected to other. But undoubtedly with strict rules also it occurred in Namdayang mauza, a sparsely populated tract bordering of Nowgong. The place which was in a great measure isolated from the other parts of the world. From then in other districts spread slowly and steadily from village to village and from mauza to mauza.<sup>94</sup>

To an extreme average European were live for years in a kala-azar village and never come to harbor a single worm and even among the Assamese there was differences of personal cleanliness for, but for other that live in an infected site were soon come to harbor an equally large number of the parasites. But those who had better habits had protected them during the earlier part of an outbreak naturally and were likely to remain healthy in case of epidemic.<sup>95</sup> In comparison with the native death rate Europeans were less or very less in comparison. In the period between 1892 to 1914 only eleven Europeans were attacked with kala-azar with a total death rate of over seventy two percent, a very black picture indeed. Most notably of them were towards the end of 1892, a daughter of the then civil Surgeon of Nowgong contracted kala-azar and died after many months of suffering in Darjeeling. In February 1893, the forest officer developed the disease and died a few months later in Calcutta. Towards

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<sup>92</sup> ASA, AAnnual Sanitary Report of t he Province of Assam, 1892,pp-20-23

<sup>93</sup> ASA, Assam secretariat proceedings Home A, January 1899, No.50-57, p.2

<sup>94</sup> ASA, Home A, june 1899, no.138-148, p-7

<sup>95</sup> NML, Giles, G, The etiology of kala-azar, *Indian medical Gazette*, January 1898, p.3

the end of that year the district superintendent of police and his little boy aged seven years were attacked and they both died the following year in Mozufferpore.<sup>96</sup>In the period between 1891-1895 forty nine thousand and two hundred and forty two deaths occurred. The death rate was increased in the year between 1896 to 900 to seventy four thousand and three. Gradually decrease to the next five years to twenty three thousand nine hundred sixty one.<sup>97</sup>

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<sup>96</sup> NML, Price, J.Dodds,'kala-azar in Europeans in the Nowgong district of Assam', Indina medical gazette,, March, 1920,p-87

<sup>97</sup> Dutta, Achintya Kumar, 'British medical intervention and people response', in (eds), Bagchi Amiya Kumar, et.al. *Maladies, preventives and curatives, debates in public health in India*, .also from Dispensary return of the province of assam, p-21

Table 6: Kala-azar mortality

District	Cachar	Sylhet	Goalpara	kamrup	darrang	Nowgong	sibsagar	Lakhm	k&j hills	naga hills	Lushai	garo hills	sd fr trct	Manipur
Year														
1914		203	138	215	317	393	24	8				10		
1915	2	159	55	283	310	419	7					12		
1916		63	106	277	320	451	28	3				6		
1917	1	31	153	287	245	591	181	1				18		
1918	4	34	313	564	263	565	235	3				22		
1919	3	7	311	423	171	559	168	5				20		
1920	5	26	602	931	256	846	114					18		
1921	1	183	557	755	169	1172	121	3				26		
1922		275	253	450	202	933	128	4				47		
1923	4	841	442	976	289	1291	219	13				54	2	
1924	2	1874	309	1152	448	1479	235	13				69	4	
1925	3	2109	453	1120	478	1445	200	8		1		1	3	2
1926	9	1320	297	714	474	839	170	1	4		1	346	1	
1927	12	798	226	475	318	528	143	5	3			350	1	
1928	2	482	166	241	258	260	86	5	4		1	154	1	
1929	3	429	135	180	241	178	87	1		1		149	1	
1930	2	274	112	102	185	132	58	2		1		84		1
1931	4	246	121	160	222	129	71					64		
1932	4	296	122	152	155	132	78	2		1	1	43	1	
1933	2	146	92	129	167	110	64	4		1		34		
Total	63	9796	4963	9586	5488	12452	2417	81	11	5	3	1527	14	3

Source: APHR 1923, p-10, 1924,p-13,1925,p-13, 1933,p-19

The above table shows the mortality rate of kala-azar in the period between 1914 to 1933 and took the lives of total forty six thousand, four hundred and nine. In district wise Nowgong was the highest mortality rate. It was twelve thousand four hundred fifty two. And in year wise the year 1925 was the highest of five thousand eight hundred twenty three.

Gradually decline in rate of mortality and in the period between 1936 to 1940 it was six thousand one hundred thirty six and gradually decreased in the next five year 1941 to 1945 two thousand nine hundred forty three.

Epidemics of cholera, small-pox, malaria and kala-azar during colonial period took huge toll of mortality. In the year between 1879 to 1894 more than one lakh, thirteen thousand, three hundred sixty loss their lives. Particularly of immigrant labourer it was more than eighteen thousand, five hundred sixty three loss their lives from cholera in the year between 1885 to 1903. From small-pox in the period between 1879 to 1903 more than forty thousand and eighty three loss their lives. From malaria more than twelve thousand, eight hundred ninety seven cases were reported in the year between 1926 to 1934. From kala-azar forty six thousand, four hundred and nine loss lives in the period between 1914 to 1933. Of all total in the period between 1879 to 1934 epidemic diseases had took the lives of more than two lakhs, thirty one thousand, one hundred and nine in Northeast India. History in Northeast India revealed epidemics was known since time immemorial. That before in contact with western medical knowledge they had their own perceptions, way of averting epidemics. But the ravages done was less accounted and there was also no systematic record maintained by indigenous administration before the coming of the British. Epidemic diseases was ascribed by indigenous as caused by angry spirits. Not based on physical and scientific reason.

But colonial period had witnessed various perceptions of epidemics of the origin and spread of the diseases. It is a well known fact that diseases were meaningless to study in history if we did not relate with how diseases and who attacked the body and what further the attack body can do. To a further extend if the body can spread the diseases to other bodies and caused death to many people is called epidemic. In Northeast India epidemic diseases of the nineteenth and first half of the twentieth century had a complex character in understanding the history, origin and spread of the epidemic



diseases. Because in most cases epidemic diseases was introduced by immigrant plantation, railway labourer and European native military in different parts of Northeast India. And in some cases local foot coolies who carried load of European. From them in most cases it was communicable to a larger population. The body that got attack was one of the source of spread of those epidemic diseases. And most of the bodies got the attack by diseases on their journey to the province of Assam. Because of poor and limited facilities on board the steamers and railways, overcrowding, neglect of water supply, unhealthy depots and establishment all these led communicable the diseases one another. Later when reached their destination the weak and sick bodies came in contact with neighbouring bodies and spread the diseases. Labourers were not the aboriginal of Northeast India. They migrated into the province of Assam for earning their livelihood and for serving colonial productive plantation from different parts of India. On the other hand colonial native military were established in the frontier province for colonial further expansion in the region. Their bodies were attacked by diseases due to heavy work assigned marching by foot on hills with little comfort for health, poor arrangement of foodstuff and sanitation in their establishment. All these conditions had made more liable to spread the diseases. These bodies were not originally from Northeast India but from other parts of India who were all the servants of colonial Government. They came in the province because of colonial needs and command for consolidation of colonial power in Northeast India. After the consolidation of colonial rule in Northeast India and by the large inroute of migrated population under such condition. Epidemics broke frequently and thus colonial expansion in Northeast India laid a great impact on the health of the population indirectly through their developmental projects and military expansion in the region.

But it was not justifiable alone on the above origin and spread of the nineteenth and first half of the twentieth century epidemics in Northeast India. The climates, seasonal change and the Geographical features of the region had also contributed to originate and produced germs. And when the body contacts the germs it was infectious for the bodies. The province was commonly surrounded with stagnant jheels and marshes and produced a prolific source of malarial germs. Moreover, negligence of Government vaccinators also contributed to spread small-pox epidemic in Northeast India. Indigenous socio-religious beliefs and practices had also spread the diseases in

various instances. Of all the above poor and ill fed, insanitary condition of the people were the major causes of the spread and outbreak of epidemic diseases in the nineteenth and first half of the twentieth century in Northeast India.