

**Environmental History of Darjeeling and Western Dooars  
(1835 – 1947)**

**THESIS SUBMITTED TO JADAVPUR UNIVERSITY**

**FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY**

**2017**

**BY**

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## CERTIFICATE

Certified that the thesis entitled **Environmental History of Darjeeling and Western Dooars (1835-1947)** submitted by me for the award of the Degree of Doctor of Philosophy in Arts at Jadavpur University is based upon my work carried out under the Supervision of **Prof. Ranjan Chakrabarti, Vice Chancellor, Vidyasagar University** and that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere / elsewhere.

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ACKNOWLEDGEMENTS

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## **Acknowledgements**

At the outset, I would like to acknowledge my profound sense of gratitude to my Ph.D. supervisor Professor Ranjan Chakrabarti, Vice Chancellor, Vidyasagar University (formally the Professor in History, Department of History, Jadavpur University) for his cooperation, concern and invaluable guidance. It has been a privilege to be a research scholar of Professor Chakrabarti. At every stage of my research work, he was a constant source of inspiration.

I also owe a profound sense of gratitude to my uncle Dr. Gautam Sengupta, Department Archaeology and Ancient India, Visva- Bharati, Santiniketan (former Director General of Archaeological Survey of India) for his support, proper advice and encouragement. From my childhood, he was a source of inspiration to study history.

It is my privilege to express my deepest sense of gratitude to Dr. Srabani Ghosh, Department of History, Alipurduar College. Since the last seventeen years, madam (Dr. Srabani Ghosh) as a guardian protected me whenever I was in a difficult situation. Her endless moral support and encouragement always inspire me to prove myself as a sincere and hard working student of history.

Following the persons had also contributed in their own ways to enrich my understanding of the past.

Special thanks to Dr. Sankar Kumar Das, Department of History, Bakura University (formally in NBU) for providing the photocopies of many unpublished primary sources.

Mr. Arup Guha (Arup Da) and the members of Nature and Advancer Study Group (NAS Group) for helping me to reach the remote parts of the Western Dooars and providing me grass route knowledge about the surroundings.

I have benefited immensely from my intellectual interaction with Mr. Arup Joti Majumder (Arup Da) who possesses keen knowledge about the history of North Bengal.

I express my gratefulness to Prof. Sangamitra Das, former Head of the Department, Department of History, A. B. N. Seal College for always inspiring me to move forward in the field of historical research.

Among the libraries, I wish to acknowledge the help provided by the staff of National Library, Kolkata, Central Library and Departmental library of Department of History Jadavpur University, West Bengal Secretariat Library, Centre for Studies in Social Sciences, The Library of Ramakrishna Mission Institute of Culture, Goal Park and North Bengal State Library Cooch Behar. I would also like to thank the staff of the West Bengal State Archive for helping me to develop deeper insight into the topic. I acknowledge my thanks to all the learned scholars and academicians, whose book I have consulted and mentioned in this thesis.

My profound gratitude is due to two of my closest friends, late Titir Chakrabarty and late Professor Amlan Jyoti Majumdar. Both of them were passed away in course of my research work.

My words of thankfulness are also due to my photographer friend Smt. Debasree Bhaduri. She has helped me in every possible and impossible way for the collection of data from the remote corners of Darjeeling and Western Dooars. I remain indebted for her generous support.

My research work has also been benefited from the unending encouragement and support tendered by my friends and their families. I wholeheartedly acknowledge the gorgeous presence of Gargi Chattopadhyay, Parthasarathi Bhattacharjee and his family, Dr. Priyodarsini Roy- Niranjan Bauri, Piyali Bhattacharjee, Moumita - Subhabrata Deb and their little boy Swarnabho and Lata - Arup Saha in my life. In last few years, we have enjoyed many 'lighter fun time' in various forests of the Western Dooars or in the mountains of the Eastern Himalayas.

## **ABBREVIATIONS**

<b>AR</b>	<b>Asiatic Researches</b>
<b>BD</b>	<b>Bengal Dooars</b>
<b>BDE</b>	<b>Bengal Dooars Extension</b>
<b>CJNH</b>	<b>Calcutta Journal of Natural History</b>
<b>CR</b>	<b>Calcutta Review</b>
<b>DHR</b>	<b>Darjeeling Himalayan Railway</b>
<b>IESHR</b>	<b>Indian Economic and Social History Review</b>
<b>JAS</b>	<b>Journal of Asian Studies</b>
<b>JASB</b>	<b>Journal of Asiatic Society of Bengal</b>
<b>MAS</b>	<b>Modern Asian Studies</b>
<b>PWD</b>	<b>Public Works Department</b>
<b>SAR</b>	<b>South Asia Research</b>
<b>WBSA</b>	<b>West Bengal State Archive</b>

## Introduction

The British imperialism, which was facilitated by colonial expansion profoundly, transforms the environment of Darjeeling and Western Dooars by introducing commercial control over the natural resources. The colonial hill station Darjeeling is situated in the mountain range of the Eastern Himalayas and the Western Dooars stretches parallel to the foothills between the Tista to Sankosh Rivers.<sup>1</sup> Three things *viz.* Climate, strategic location and the landscape became the primary factors for the foundation of Darjeeling, and on the other hand, geographic position and commercial prospects enforced the colonial government to annex Western Dooars with the British Empire.

Prior to the coming of the British colonizers, Sikkim and its adjacent areas were colonized by the Tibetans at the beginning of the seventeenth century and led to the Tibetan influx in these areas. Later, the region was dominated by the Nepalese. In the last few decades of the eighteenth century, the aggressive attacks of the Bhutias and Nepalese in the bordering regions of British territory in northern parts of Bengal annoyed the British officials in India. In the early 18<sup>th</sup> Century the sub Himalayan regions of Bengal were controlled by the rulers of Cooch Behar State. But the commercial interest of the neighboring Bhutan leads to a constant skirmish with the Raja of Cooch Behar. Between Cooch Behar and Bhutan, the Jalpaiguri region consisted of two distinctly different tracks, *viz.*, the *Parganas* of Baikunthpur or Battris - Hazari, Boda, Patgram and Western . Earlier the Baikunthpur, Boda and Patgram formed a part of the territory of the Raja of Cooch Behar which were conquered and annexed by the Mughals with the *Faujdari* of Fakirkundi or Rangpur, later they were transferred to the East India Company with the cession of *Diwani* in 1765. The British East India Company was dragged into the political matter of the North Bengal when the Maharaja of Cooch Behar was kidnapped by Deb Raja of

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<sup>1</sup>Spelling of Darjeeling was Dorjiling. According to Csoma de Korosi it means “Holy Spot”. Some referred it as “bright and sunny spot”. According to the *Imperial Gazetteer, A General Dictionary of Geography, Physical, Political, Statistical and Descriptive*; 1855, Darjeeling is situated in 27°3'9"N and 88°28'E, about 318 mile north of Calcutta and little more than 36 miles from the plains of Bengal, at an elevation of 7400 feet.

Bhutan. In 1773, Warren Hastings, the *de facto* Governor General of India sent the British army to support the native state of Cooch Behar and pushed the Bhutanese out of the Western Dooars.<sup>2</sup> The Anglo-Bhutan War (1873) resulted in the expansion of the British sphere of influence in the region up to the foothills of the Himalayas which were then dominated by the warlike Nepalese and Bhutanese. The political situation on the hill was extremely complicated at that time. Darjeeling was under Sikkimese, Kalimpong was controlled by the Bhutanese and a few portions of the *Terai* were under the Nepalese. In 1793 the entire Western Dooars along with the rest of the Bengal were brought under the regulation of permanent settlement. Dharma Deo, on the decay of the Mughal power, left Bankunthpur and settled in the Mynaguri and cleared the wooded land in the south to start cultivation.

In 1813, the East India Company intervened into the matters of the Himalayan states and deployed the army to protect the Sikkim from the Gorkha intruders. The Anglo-Nepal War (1814-1816) ended with the signing of the Treaty of Sugauli in 1816. Through this treaty, Marquis of Hastings, the Governor General of India hoped that the territory, partly annexed by the Company and partly restored to its previous rulers, would give British merchants direct access to the wool-growing areas.<sup>3</sup> The Gorkha War of 1814-1816 first brought the company into direct relation with this region.<sup>4</sup> In initial phase the colonial policy towards Himalaya was guided by the expansionist, exploitative, protective and defensive ideas, but later the foundation of the hills stations became a part of the utilitarian policy of the colonial government. Within few years another frontier dispute arose between the Sikkim and Nepal in 1828. But following the terms of the Treaty of Titalya (10<sup>th</sup> February, 1817), the problem was referred to the British Government. In 1825, due to some internal problems a group of oppressed Lepcha fled to Nepal from

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<sup>2</sup> Warren Hastings was in favour of expansion of British dominance in the Himalayas. For more information see Hyde Clarke, *English Settlement*, Society of Arts Journal, 19<sup>th</sup> May, 1858, p. 423 and also Hyde Clarke, *Colonization, Defence, and Railways in Our Indian Empire*, London, 1857

<sup>3</sup> Pemble, J, *Forgetting and remembering Britain's Gurkha War*, p.366

<sup>4</sup> *Imperial Gazetteer of India*, Vol. XI, P. 168

Darjeeling.<sup>5</sup> Captain C. A. Lloyd and Mr. Grant, the Commercial residence of Malda was deputed to settle the dispute. Mesmerized by the natural beauty and the climatic similarity of the Dorje Ling with Britain, Lloyd started negotiating with the Maharaja of Sikkim for ceding the mountain range, in lieu of money and land.<sup>6</sup> On 1<sup>st</sup> February, 1835, the Maharaja of Sikkim under the influence of the mediator captain Lloyd agreed to sign a treaty with the British Government and handed over the strip of land which stretched 25 miles in length and 5 to 6 miles in width to the British authorities as the token of friendship to construct sanatorium for the convalescent servants of the East India Company.

The *Terai* was annexed to the British territory in 1850. At first the government decided to attach the southern portion of *Terai* with Purniah and Northern portion with Darjeeling. Later on following the opinion of the inhabitant of *Terai*, it was annexed with the Darjeeling.<sup>7</sup> The term *Terai* loosely applies to the tract of country at the very foot of the Himalaya. It originated from Persian which signifies damp.<sup>8</sup> The dampness in the atmosphere and the thickness of the Semi tropical forest increases along with the increasing distance from the foothills of the Himalayas. Due to the dampness in the atmosphere the forest earned the name '*Terai*' which means 'wet'.

After the foundation of Darjeeling as the hill station for the low income groups of British administration living in the Bengal and Burma, the colonial administrators wanted to maintain peace in the hills. The possession of the resourceful western Dooars became an urgent necessity to resist the Bhutanese attack in the foothills. The British took the possession of Western Dooars

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<sup>5</sup>For more information *Frontier and Overseas Expedition from India*, Compiled by the Intelligence Branch, Division of the Chief of the Staff, Army Head Quarters, India, Vol. IV, Simla, Government Monotype Press, 1907

<sup>6</sup> Bhanja, K. C, *History of Darjeeling and the Sikkim Himalaya*, Gyan Publishing House, New Delhi, p. 18

<sup>7</sup> Hunter W. W, *A Statistical Account of Bengal: Districts of Darjiling and Jalpaiguri, and State of Kuch Behar*. Vol. X, Trubner & Co., London, 1876, p.117

<sup>8</sup> Hooker J. D, *The Himalayan Journals*, Vol. I, John Murray, London, 1854, p.377

through the Anglo-Bhutan war in 1864.<sup>9</sup> The word *Dooar* means “door,” “gateway,” and originally referred to the passes leading through the mountains into India. Epistemologically the word has been misinterpreted and applied to locate a much wider region than it was originally applied to. It consists of a rich and fertile soil capable of high cultivation’.<sup>10</sup> At the time of the annexation of Assam (1826), the colonial officials realized the potentialities of the Dooars. The British officials like Robertson, Pemberton, Captain Jenkins, Cecil Beadon, and the Lieutenant Governor of Bengal in their various Papers, reports, letters and minutes mentioned the immense possibilities of Dooars in terms of timber trade, cotton cultivation, animal husbandry, tea industry and revenue.<sup>11</sup> Both Pemberton and Eden had given twenty miles as the extreme breadth of the Dooars. The Dooars, as popularly understood, is a portion of Terai land stretching for about ninety miles along the foot of the Eastern Himalayas.<sup>12</sup>

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<sup>9</sup> These Dooars are eighteen in number, eleven of them being situated on the frontier of the Rungpore district and Cooch Behar territory in Bengal, between the river Tista and the Monass, and the remaining seven on the Assam frontier, between the Monass and the Dhunseeree rivers. The Bengal Dooars are those of Dhalimkote, Mynagoorie (formally known Zumerkote), Chamoorchee (known in Bhotan Sumchee), Luckee, Buxa (Passaka), Bhulka, Bara, Goomar, Reepo, Cherrung, and Bagh, also known as Chota or Little Bijnee. Of the seven Assam Dooars, two bordering on the Durrung district, and are known as the Booree Goomah, and the Kalling Dooars; the remaining five bordering the Kamroop district, and are called the Shurkolla, Banska, Chappagoorie, Chapkahama, and Bijnee Dooars.

<sup>10</sup> Rennie, Surgeon Davi Field, *Bhootan and The Story of the Dooar War*, London; 1866, pp.3-4

<sup>11</sup> Robertson’s *Paper on Bhutan* (1832), R.B. Pemberton, ‘*Report on Bootan*’ in *Eden’s Political Mission to Bootan* (1872), Captain Jenkins’s *Letter to the Government* (1841), Minute by Cecil Beadon, Lieutenant Governor of Bengal, No.42, dated Darjeeling, July 22, 1864.

<sup>12</sup> Captain S. R. Christophers, Dr. C. A. Bently, *Malaria in Dooars*, p. 21. According to Hooker the Terai, is low malarias belt which skirts the base of the Himalaya, from the Sutlej to Brahma-koond in Upper Assam. Hooker, p. 100

Darjeeling was a first category of hill station for the British authorities in colonial India. Darjeeling owes its colonial origin way back in February, 1835. This highland site transformed was into a social, recreational and commercial center for the British authorities in colonial India. In the colonial period the development of the hill stations became a part of the utilitarian policy of the state. The railway construction boom, introduction of tea plantation, the growth of a commercial market for the timber and increasing demand for fuel and building materials depleted the forest cover which caused erosion and landslides. The less explored regions of Darjeeling and Dooars attracted the adventure thirsty Britons. They exploited the wildlife in the foothills of the Himalayas. Many species of animals were simply wiped out from these regions. The development of Darjeeling as a summer residence of the Europeans in India was closely associated with transition of Western Dooars. Recurring Bhutanese invasion in the Dooars regions became a regular problem for the sentry of population living in Dooars as well as it became annoying for the colonial authorities. The prospect of Dooars mainly the fertile land, dense forest full of *sal* and business opportunities prompted the colonial Government to annex the land from Bhutan on 11<sup>th</sup> November, 1865 and that led to the increase in the area of the Darjeeling district from 640 to 1164 square miles.<sup>13</sup>

### **Physical features of Darjeeling and Western Dooars**

After the possession of the new regions a series of inquiries were made on the marketable products, the condition of roads, and amount of *soil, forests* and zoology, botany, geology, meteorology of these regions. The conquest or possession of the regions was followed by revenue and topographical surveys by the colonial officials. The observation on the metaliferous deposits in the Sub-Himalayan Range and Darjeeling was conducted by R. H. Irvine as early in 1848.<sup>14</sup> He also made an in-depth study of the marketable products of the hill areas of Darjeeling

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<sup>13</sup> Dozey, E.C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p. 7

<sup>14</sup> Irvine, R. H., A few observations on the probable results of a scientific research after metalliferous deposits in the Sub-Himalayan range around Darjiling, *Journal of Asiatic Society of Bengal*, Vol. XVII, p. 137

which attracted the attention of the speculators to invest their money in the growth of the business economy in Darjeeling.<sup>15</sup> The Geological observations conducted by Mr. F. R. Mallet.<sup>16</sup> J. D. Hooker (1849), Gamble (1875) and Clarke (1877) have done their botanical enquiries in the Darjeeling and Sikkim Himalayas to support the exploitative motive of the British colonialism. The colonial enthusiasts have also contributed to explore the zoological, geological, botanical and anthropological study of the Darjeeling and Western Dooars.

According to Mr. F. R. Mallet the rocks of the Darjeeling district is divided in the five groups viz., granitoid rock composed of quartz, feldspar and biotite to a more or less pure mica-schist, the Daling series covers a large area in the northern and eastern part of the district, the Boxa series largely developed in the Western Dooars, occurs only in the extreme eastern end of the Darjeeling district, the Gondwana beds crop out near the base of the hills and constitute a narrow band between the Daling and Tertiaries, running from Punkhabarie to Dalingkote and the Tertiary beds fringe the older rocks continuously from close to the Mechi river eastward nearly as far as Dalingkote.<sup>17</sup> Surgeon Rennie mentioned that the soil in Kalimpong is a rich black loam, capable of being rendered very productive.<sup>18</sup>

Geographically, Terai is a sort of neutral country, being composed neither of the alluvial plains, nor of the rocks of the hills, but for the most part of the alternating beds of sand, gravel, and boulders brought from the mountains. The light, dry and gravelly soil of Terai is perfect for the steady growth of sal trees. The lime stone was available near the Buxa and copper was to be found at Chunabhati, about two miles from Buxa. Owing to the heavy rainfall in Dooars region

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<sup>15</sup> Irvine, R. H., Observation on the Products and Resources of Darjeeling, *Journal of Agriculture & Horticultural Society of India*, Vol. V, Part I, January - December, 1846

<sup>16</sup> Mallet, Mr. F. R., On the Geology of Darjeeling and Western Dooars, *Memoires of the Geological Survey of India*, Vol. XI, Part I, 1875, pp. 1-93

<sup>17</sup> Dozey, E.C, *op. cit.*, p. 220

<sup>18</sup> Rennie; *op. cit.*, p.321

the soil is naturally moist and fertile. The southern portion of the Western Dooars consists of rich black soil, extremely fertile and capable of producing luxuriant crops of rice, cotton and tobacco.

During the summer months i.e. June to September the temperature reaches 16°C – 17°C and in winter it drops to 5°C - 6°C. In Darjeeling temperature reduces in a regular ratio of 3°C for every 1,000 feet of elevation.<sup>19</sup> The Imperial Gazetteer of 1855 stated that the atmosphere of the place was humid and moist with the annual rainfall of 120 inches.<sup>20</sup> The elevation of the Bengal Dooars and Darjeeling varies from 90m to 2,403m. The Western Dooars region is completely free from drought.<sup>21</sup>

The rivers as the source of life in a particular region carried vegetative debris from the mountains and spread it into the plains. It intersected vast regions by changing their courses and roamed left and right. Taking rise in the Himalayas, most of the rivers fed with snow and ice melt from Himalayan glaciers, from north to south moved through the Western Dooars and joined the Brahmaputra or Ganges river system. In the upper portion the river beds are surrounded by huge boulders and as they enter into plains the bed become sandy. During rainy season, a little more than ordinary rainfall in the hills led to the abrupt increase of the water level in the rivers. During the heavy flood when the loose sandy soil washed away due to the high velocity of the water, the rivers sometimes change it courses. The shift of the course of a river leaves an imprint on the landscape and its impact can be noticed in the deserted cities of old mates and depopulated villages which lies scattered in all over the deserted course. But in the summer months the water level falls abruptly by  $\frac{2}{3}$  feet. In southern Bhutan the river systems exhibits a dendritic pattern

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<sup>19</sup> Newall, Major General D. J. F, *Highlands of India*, p.10

<sup>20</sup> See for more information *Imperial Gazetteer, A General Dictionary of Geography, Physical, Political, Statistical and Descriptive*; 1855

<sup>21</sup> See for more information Sunder, D. H. E, *Survey and Settlement of the Western Dooars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895 and Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*; The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008

with treelike branches of the smaller streams meeting to form larger rivers.<sup>22</sup> These large sheets of waters were used of communication, trade, cultivation, source of revenue and mark the boundaries between regions. Once the rivers of the Darjeeling and Western Dooars were abound with fish, porpoise or hog-fish, fish eating crocodiles. In the latter half of the 19th Century, Sharks became very seldom in the large rivers of North Bengal.<sup>23</sup> The overall situation changed due to the human intervention in the nature. The picturesque valleys of the Singalila range near Darjeeling were drained by the Teeta, Mechi, Balasan, Mahanadi and Jaldhaka rivers. Except Tista, Balasan, Mahananda and Jaldhaka, the larger track of Western Dooars also drained by Torsa, Karatoya, Raidak, Kaljani, Sankos and many of their tributaries. The Kalika Puran vividly discussed about the importance of river system in the Sub Himalayan region of Bengal and Assam. The map of Bengal sketched by Van Den Brouk (1660), the revenue survey maps of Mr. O'Donel (1868-70), Major Rennel's survey maps of Bengal prepared from 1764 to 1777 and Survey of Rungpur in 1779, Buchanan Hamilton's Report (1809) were the main sources to study the changing river courses of North Bengal.

The perennial rain and snow fed River Tista and its transboundary basin covers 12,159 square kilometers. The river originates as Chhombu Chhu from a glacial lake, Khangchung Chho, in the Indian state of Sikkim at an elevation of 5,280 meters. But there are many lakes and glaciers in this part of Eastern Himalayas, which supply the headwaters for the Tista. Moving towards plains the river joined by a number of tributaries, including 'Flashy mountain' tributaries of Tista travel in high velocities with large quantities of debris and sediment. The Tista joined by number of tributaries, i.e., Lachung Chhu, Dikchu, chakung Chhu, Rani Khola, Rangpo, Rangnu, Zemu, Rangyong, Rongli, Rangit, Leesh, Geesh, Chel, Neora and Karala.<sup>24</sup> The upper portion of the

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<sup>22</sup>Ramesh Chandra Bisht, *International Encyclopedia of Himalaya*, Vol. I-V, Mittal Publications, 2008, p.31

<sup>23</sup>Harendra Narayan Chaudhuri, *The Cooch Behar State and Its Land Revenue Settlements*. Cooch Behar State Press, 1903, p.6

<sup>24</sup> The Little Rangit rises in Tanglu Mountain in the Singalila range on the boarder of Nepal, and flows generally in a north-easterly direction till it meets Grater Rangit. The Rangnu takes its rise

Tista basin lies in extremely cold and alpine condition and when it enters into the plains it turned into sub-tropical condition. The climatic condition of the Tista basin turned the surrounding region into a global biodiversity hotspot. The history of the course of this erratic river is a history of constant changes in the drainage of North Bengal from a very remote age down to the beginning of the present century.<sup>25</sup> The Tista was a part of the Ganges river system. Before the great flood of 1787, Tista flowed from Jalpaiguri in three separate channels, i.e., the Karatoya, Purnabhaha and Atrai. It was speculated that these three streams led to the name 'Trisrota'.<sup>26</sup> But after the flood the river changes its course to southeast direction and joined the Brahmaputra River. The river Jaldhaka, also known as De Chu, Manshai, Singimari and Dharla in different parts of its course, rises in Bhutan and passes through the border regions of Bhutan and Darjeeling and enters into Western Dooars.<sup>27</sup> The Jaldhaka means 'force of water or dashing waters'. The Jaldhaka is feeds by the Shutunga, Dharla, Khutamara or Gidari in the right bank and Kumlai, Gilandi, Duduya, Mujnai and Dolong in the left bank. The history of the course of

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under Sinchal and flows northwards. After passing through Darjeeling it empties itself into the right bank of Grater Rangit.

<sup>25</sup>Harendra Narayan Chaudhuri, *The Cooch Behar State and Its Land Revenue Settlements*. Cooch Behar State Press, 1903, p.8

<sup>26</sup> In Sanskrit 'Tri' means 'three' and 'Srotas' means 'currents'. According to Kalika Puran the river originated from the breast of the Goddess Parvati, wife of Lord Siva and flowed in the three streams. Another belief is the word Tista is derived from the Sanskrit word 'Trishna' meaning 'desire'. In Pali language Tista is called 'Tanda'. According to J.D. Hooker Tista signifies 'quiet' (Hooker, *Himalayan Journal*, Vol. I, p. 398).

<sup>27</sup> In Bhutan Jaldhaka is known as De Chu. When Mujnai or Manshai River joined it, the Jaldhaka takes the name of the feeder and change to Manshai. After passing by the side of Mathabhanga, the river receives Shutunga, Dharla and after that the name is changed as Singimari. In Rungpur the Singimari River is joined by Torsa under the name of Dharla finally join the Brahmaputra near Bagua in Bangladesh. Once Dharla was a navigable river and the capital city of the Kamata kingdom developed on the bank of the river.

the Jaldhaka is a record of frequent change. The erratic river Torsa or Toyarasha takes its rise in the Chumbi Valley in southern Tibet of China and after traveling 358 km it falls into Brahmaputra in the Rungpur district of Bangladesh.<sup>28</sup> In Tibet Torsa is known as *Machu* and in Bhutan it is known as *Ammo Chhu*. In last two centuries, several times the river shifted its course. Due to the loose nature of the soil, the high velocity of Torsa it cuts down fresh land and opens up new channels. The Torsa and its tributaries cover an area of 310 km. The whole track possesses a network of dead stream, abandoned bed and marshes. In many places it designated as *Mara* or dead, *Bara* or great, *Bura* or *Buri* means old, *Chhara* or deserted, *chhota* or little Torsa. The river Mahananda originates in the Paglajhora Falls on Mahaldiram Hill near Chimli, east of Kurseong in Darjeeling district at an elevation of 2,100 meters. The Karatoya River rises in a marsh in Baikanthapur, Jalpaiguri. The word Karatoya is derived from two Sanskrit words ‘kara’ signifying hand and ‘toa’ means water. According to Hindu mythology the river was formed by the water, which was poured on the hands of Shiva, when he married Parvati. The Mahabharata mentioned the bank of the Karatoya as the easternmost limit of the sacred place, probably indicating the limit of Aryan expansion in this direction. Up to 12<sup>th</sup> Century Karatoya was the major river of North Bengal. The *Siyar-al-Mutahkhirin* mentioned that during the invasion of Bakhtiyar Khilji, Karatoya was three times bigger than the Ganges. The river was regarded as the natural frontier between the Mughal Empire and Koch Kingdom.<sup>29</sup> Buchanan Hamilton in 1810 mentioned Karatowa as a considerable river but at the time of the big flood of 1820 the river changed its course.<sup>30</sup> The Raidak, one of the major right bank tributaries of Brahmaputra originates in the Greater Himalayan region of Bhutan where it is known as Thimphu Chhu or Wang Chhu. It formed the boundary between Buxa and Bhalka Dooars. The combined water of Alaikuri and Dina was known as Kaljani River near Alipur subdivision. The river flow through

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<sup>28</sup> ‘Toyarasha’ means ‘angry water’.

<sup>29</sup>Bhattacharyya, S. N. *A History of the Mughal North East Frontier Policy: Being a Study of the Political Relations of the Mughal Empire with Koch Bihar, Kamrup and Assam*, 1994, p.5

<sup>30</sup> Mahalanobis, Prasanta Chandra, *Report on Rainfall and Flood in North Bengal 1870-1922*; Bengal Secretariat Book Depot, 1927, P. 29

western Dooars, Cooch Behar and finally meets Sankos. The Sankos or Svarnakosa drains the entire Great Himalayan range between Chomo Lhari and Kula Kangri. In Bhutan Sankos is known as Mo Chu. The river flows through Bhutan, Jalpaiguri, Cooch Behar and finally emptied into Brahmaputra in Dhubri District of Assam. The River Sankos determines the boundary between the Eastern and Western Dooars. These rivers have a prominent role in molding the socioeconomic and cultural life of the surrounding region. The aboriginal religious beliefs were also influenced by the rivers and hazards related to the rivers.

The indigenous peoples of these regions, mainly the Lepchas or Rongpas, Totos, Boros, Ravas and Kochs have East Asian features. But later the population increase primarily due to the foundation of the British colonization in Darjeeling (1835) and Western Dooars (1864). The immigrant Nepalis, Bhuties, Limbus, Santalis, and Mundas Labours entered into these regions due to the job opportunities created by the colonial administrators. The establishment of a British sanatorium in Darjeeling integrated the economy of this region to the World capitalist market and unequal trade reflected in the drain of indigenous resources or the unilateral transfer of power to the metropolis. The extreme exploitation of the alien ruler was not only restricted to the native towns and villages, it also annihilated large forest areas and wiped out many species of wild animals. Sudden change in the human ecology due to the massive population growth in the last few decades of the nineteenth century stimulated the resource exploitation in the forested areas of the Sub-Himalayan Bengal.

In the middle of the 19<sup>th</sup> century, the British government realized the importance of Western Dooars and Darjeeling Himalayas in terms of its natural resource, economic prospects and strategic importance. The analysis of the historical development of Darjeeling and the other township in Dooars exposes that various factors that have led their evolution and growth. The colonial government introduced commercial agriculture in the newly occupied fertile land covered with dense forest and marshland. They cleared out the forest of valuable timber and introduced tea and cinchona plantation. The introduction of plantation in the non arable areas, growth of a commercial market for timber and the expansion of the railroad increased the demand of unskilled labour. All these led to the rapid change of human ecology and society in the regions of Darjeeling and Jalpaiguri. The poverty stricken people of southern Nepal, Bhutan

and Bihar migrated to the Dooars and led the growth of new settlements across the jungle of Dooars. On the other hand, military cantonments in Jalapaha, Lebong, Falakata, Madarihat, Alipurduar, Kalchini, Malbazar etc, also stimulated the growth of the townships in Dooars.

As a 'self appointed guardian of Raj' the British Government recreated the environment of the Darjeeling and its adjacent Dooars by transforming the existing vegetative pattern and transplanting landscape according to their very own mother land. The self sufficient aboriginal communities who lived in the lap of the nature were turned into a disfranchised wage worker. Before the selection of Darjeeling as an experimental convulsion depot an experimental hill station of the alien troop was formed in Cherrapunji in Assam but the plan was dropped because of excessive rainfall in this region.

From the lofty mountain range of Darjeeling Himalayas to the alluvial plains of Bengal Dooars, the entire region has varied climates and is extremely rich in biodiversity. The area is known for varied landscape, vegetation and wildlife. The region possesses four types of vegetations, viz., alpine, temperate, subtropical and tropical. The Outer Himalayas and foothills are blanketed in dense tropical rainforests of thick bamboo bushes and tall grasses. From the plains to the snow capped mountains, the surrounding environment has a profound impact on the life circle of the flora and fauna. The impact of the mankind on the environment of the Darjeeling Himalaya and Dooars is extremely alarming. In these regions the mankind is rapidly encroach the wilderness by building barriers and polluting the nature.

The areas of Darjeeling and Western Dooars dragged the attention of the large number of Historians, sociologist, anthropologists, economist and geographers. Many of the research based on the socio-political or anthropological perspectives and based on overall North Bengal. The ethnographic, geological, botanical and zoological study of the Darjeeling and Western Dooars was started by the colonial officials in the nineteenth century. Many of the papers of the colonial officials were published in the Journal of Asiatic Society of Bengal, Asiatic Researches, Calcutta Review and other contemporary newspapers and periodicals. The experience of the colonial officials and travelers were valuable to understand the environmental changes occurred in Darjeeling and Western Dooars from 1835 to 1947. A large number of travelogues, monographs, gazetteers and settlement reports contain some remarkable unexplored history of the Darjeeling

and Dooars which needs to be unearthed for the better understanding of the history of this region. From 1840s onward large number of colonial monographs, articles were published about the Darjeeling and Terai. The botanist like J. D. Hooker (1854), C. B. Clarke (1876), J. S. Gamble (1896), army officials like Surgeon David Field Rennie (1866), Major Gordon Casserly (1914), travelers likes Hurry Mohan Sannial (1880), Major L. A. Waddell (1899), Sir Douglas W. Freshfield (1903) and Percy Brown (1917) provided an abundance of information regarding the various aspects of the environment of Darjeeling and Dooars.

A Large numbers of monographs, articles and thesis were published on Darjeeling Himalayas and Western Dooars highlighting ethnicity, identity, socio-political movements, tourism and plantation industry, etc. On the other hand, from the human geographical point of view the evolution of the geographic condition, natural calamities and river systems of Darjeeling and Dooars has been studied by the geographers like Leszek Starkel, Subhasranjan Basu, Sandipan Chakraborty, Subir Sarkar and others. Aditi Chaterji's '*Contested Landscape: The Story of Darjeeling*' analyses the landscapes of the Indian hill station of Darjeeling from the colonial period to present days as a form of urban and social-cultural construction and symbolic landscape that developed due to power relations among the various ethnic and migrant groups who settled there. It shows that the power relation between the ruler and the ruled became prominent in the landscape of Darjeeling and it shaped the physical and social aspect of the hill station. The study of Aditi Chaterji does not emphasize on the evolution of the landscape of Darjeeling from a historical perspective since its foundation as a colonial hill station. This thesis will show the gradual evolution of the landscape of the Darjeeling and Dooars occurred due to human intervention in the nature. It also laid emphasis on the emotional feelings of the rulers and the ruled after observing the transplanted landscape of the Darjeeling and Dooars which was not yet attracted the attention of the scholars. Professor Tanka Bahadur Subba in his extensive in-depth research on Darjeeling have studied the refugee problems, agrarian relations, socio-religious conditions and the ethnicity of the people living in this areas. K. C. Bhanja in *History of Darjeeling and the Sikkim Himalaya*' provided a history of Darjeeling from a socio-political perspective.<sup>31</sup> Dane Kennedy (1996), *Magic Mountains: Hill Stations and the British Raj*

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<sup>31</sup> Bhanja, K. C, *op.cit*, 1993

expressed that the hills station in the colonial India were established not only to escape from the hot and humid summer of the tropic but also the need of the formation of the settlements in the hills was realized by the colonizers just after the revolt of 1857 to maintain the safety and security of the British woman and children living in the plains.

Although many books, monographs, thesis and papers were published by the scholars of different disciplines to highlight the various aspects of Jalpaiguri districts, yet the areas of the Western Dooars have been largely neglected by the academicians. Dr. Arabindo Deb in '*Bhutan and India, a study in frontier political relations (1772 – 1865)*', discussed about the causes and the consequences of the two Anglo-Bhutan war, human settlements in the foothills, political situation of the native state of Cooch Behar, trade and commerce in Dooars along with the British foreign policy towards Himalayan countries bordering the Bengal province.<sup>32</sup> The work of Dr. Arabindo Deb mainly focussed on the political history of the Bhutan and British India prior to the annexation of Bengal Dooars. Dr. Ranajit Dasgupta's '*Economy, Society and Politics in Bengal: Jalpaiguri 1869-1947*' for the first time discussed about the socio-political and economic transformation of the Jalpaiguri district from 1869 till the independence. His writing primarily concentrated on the socio-economic and political transformation of the Jalpaiguri district and its connection with the various social groups and classes. Dr. Dasgupta's research did not focus on the environmental transformation of the tea garden areas of Dooars or the forested areas of the Sub-Himalayan Bengal.

Dr. Sailen Debnath in '*The Dooars in Historical Transition*' unearthed the history of the Dooars from the antiquity to the present days.<sup>33</sup> To discuss the social, political and economic evolution of the Sub-Himalayan Bengal the author chronologically mentioned about the foundation of the Kamtapur Kingdom, Muslim invention in the middle age and the coming of the British colonizers in the middle of the nineteenth century. The changes in the human ecology due to the

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<sup>32</sup> See Deb, Dr. Arabindo, *Bhutan and India, a study in frontier political relations (1772 – 1865)*, Firma K.L.M. Pvt., Ltd. 1976, Calcutta

<sup>33</sup> See Debnath, Dr. Sailen, *The Dooars in Historical Transition*, N.L. Publishers, Shiv Mandir, West Bengal, 2010

coming of the outsiders in the Dooars and also the genesis of statehood movement have been discussed in the book. The second book of Dr. Debnath deals with the social, political movements in post colonial North Bengal.<sup>34</sup> Subhajyoti Roy's monograph '*Transformations on the Bengal Frontier Jalpaiguri 1765 – 1948*' focussed on the nature and the pattern of agrarian structures in Jalpaiguri.<sup>35</sup> To K. Sivaramakrishnan, the author categorically analyzes the 'downtrodden groups' of the people and the 'colonizers' to trace the inter community relation in the colonial period.<sup>36</sup> Dr. Shesadri Prosad Bose in '*Colonial India, Predatory State: Emergence of New Social structure in Jalpaiguri District (1865 – 1947)*' discussed about the colonial land revenue policy and its relation to the formation of small localities in the non regulating portion of Jalpaiguri. The early historians and researchers have ignored various primary sources which are extremely valuable to unearth the environmental history of the Darjeeling and Dooars. Nandini Bhattacharya in many of her recent articles on the Darjeeling and Western Dooars elaborately discussed about the impact of the climatic conditions, soil and water on the human health of these regions. In her monograph *Contagion and Enclaves: Tropical Medicine in Colonial India* she have made a valuable effort in unearthing the history of the disease, healthcare, medicine and colonial scientific observations made in the Darjeeling, Terai and Dooars regions.<sup>37</sup>

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<sup>34</sup> See Dr. Sailen Debnath: *Social and Political Tensions in North Bengal* (since 1947), N.L. Publishers, Shiv Mandir, W.B. 2007

<sup>35</sup> For more information Dr. Subhajyoti Roy's book '*Transformations on the Bengal Frontier Jalpaiguri 1765 – 1948*' Roughtled Curzon, London, 2002

<sup>36</sup>Subhajyoti Ray, *Transformations of the Bengal Frontier, Jalpaiguri, 1765-1948*, Review by K. Sivaramakrishnan, K published in *Journal of the Royal Asiatic Society*, Third series, vol.13, No.3, (Nov.2003), pp. 416-419

<sup>37</sup>*Contagion and Enclaves: Tropical Medicine in Colonial India*, Liverpool University Press, Liverpool, 2012 is the out came of the PhD thesis of Dr. Nandini Bhattacharya.

The main objective of the proposed work is to make a critical, rational and empirical account of the impact of imperialism on the environment of Darjeeling and Western Dooars and at the same time find out the answer of some questions.

1. Discuss the history of environmental degradation in Darjeeling and Western Dooars regions during the colonial period?
2. How was the 'biological control' implemented by the colonial scientists effected the environment of the Darjeeling and Western Dooars?
3. Did colonial administrators stationed at Darjeeling and Western Dooars realized the problems of environmental degradation and climate change happening in these regions since the time of annexation with the British Empire?
4. Is the unprecedented growth of population and increasing human interaction with nature during the colonial period responsible for the landslide hazards and other natural calamities in Darjeeling and Western Dooars?
5. What was the impact of the colonial forest policy on the wildlife of these regions?
6. How do the demands of the exotic animal products stimulate the exploitation of the wildlife in Darjeeling and Western Dooars?
7. How did the natural environment of the Darjeeling and Western Dooars impact on the health and mentality of the people living in these regions?

The entire research work is confined in the trajectory of history and based on primary sources i.e. archival materials. The written sources are available in different books, periodicals, magazines and journals. On the other hand archival sources includes government reports, gazetteers, minutes, census reports and proceedings, guide books, memoirs and various other available data. The census reports, municipal records, plans and various other official documents is essential to study urbanization, population growth, economic and commercial structure and various other aspect.

Indigenous people who are in the true sense of the terms ‘the nature’s children’ is the subject of the chapter one.<sup>38</sup> Before the coming of the British colonizers, the vast area stretching from the snow clad mountains of the Sikkim to the densely forested river basins of the Western Dooars was roamed by different groups of the aboriginal communities like Lepchas, Toto, Bodo or Mech and Koch. The large numbers of water bodies, impenetrable forest with furious wild beasts and lofty mountain range helped to create an isolated world of the aborigines where they lived in close harmony with the nature. The chapter is not aimed to deal with the politics of identity or the language of the autochthons living in these regions, rather it is intends to find out the dependence of the people on the ‘Mother Nature’ by analyzing the traditional beliefs, rituals, ethnomedicinal practices and the way of the livelihood. An ecological prospective is essential to study the tribal world in the pre-colonial period, because the primitive tribal world was inseparably connected with the nature. The first chapter focuses on the life style and the subsistence economy of the indigenous people living in the surrounding slopes of Darjeeling and Western Dooars who have endured a long history of conquest, subjugation and colonization under the Bhutias and the British. The chapter is an attempt to find out how the environmental condition impacted on the daily life of the autochthons living in the lofty mountain and forested alluvial plains of Western Dooars. This will show how the fear of natural calamities, attack of wild beasts and deadly diseases shaped the religious beliefs and practices of the aborigines.

The chapter two will put some light on human impact on the biotic world. The natural beauty, cool weather and the political situation in the Himalayan frontier prompted the colonial authority to establish control over Darjeeling. On the other hand, commercial prospects, increasing Bhutanese attack and concentration of diversified natural resources in the Western Dooars attracted the colonizers to annex the Western Dooars. The steady population growth in Darjeeling and Western Dooars adversely affected the untouched natural world of the Sub

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<sup>38</sup> I have borrowed the title of the chapter from Dane Kennedy’s book *The Magic Mountains: Hill Stations of the British Raj*, University of California Press, Berkeley, 1996 where he referred the tribes as the nature’s children.

Himalayan Bengal. The colonial efforts to change in the aesthetics of these two regions lead to the massive biological loss. The colonizers not only establish political control over the Darjeeling and Sub-Himalayan Bengal, they also introduce biological control to deal with large number of insects and 'unwanted animals' in the newly settled separate social space. The study of the human migration and its impact on the biotic world from a historical perspective is extremely interesting as it is closely connected with geography, landscape architecture, sociology, anthropology, economics, geology and cultural history. When the Bhutias colonized this area they remained aloof from the subordinate tribes. But as a colonizer the British were much more sophisticated, precise and well organized in grabbing the precious natural resources of the colony by using the man power of conquered regions.

The chapter three will focus on the expansion of commercial agriculture in the hill slopes of the Darjeeling Himalayas and Western Dooars and its impact on the surrounding environment. The preferable soil and climatic condition inspired the colonizers to wipe out the forested land with the help of the native laborers and built new labour colonies, bungalows of the managers and the factories. The chapter will show the opinions of the British civilians and the soldiers towards the biodiversity lose in Darjeeling and Western Dooars due to colonial intervention in nature. When the Britain was going through industrial revolution on the basis of technological innovation, the British merchants and speculators were eager to grab the natural resources of the Darjeeling and Sub Himalayan Bengal for their own benefits. The economic aspiration and the fear of fever were the main factors behind the introduction of tea and cinchona cultivation which transformed the environment in the Darjeeling Himalayas and Sub-Himalayan regions.

The rapid growth of human settlements and plantation economy were closely associated with the improvement and expansion of the communication infrastructure in these areas. In the early nineteenth century the rivers of the Darjeeling and Dooars were used for the transportation of the timber logs from the forests of the hills to the market in the plains. The water transportation also leads to the destruction of the forests in the hill slopes of the Himalayas. The canoes were built by using the *sal* deposits in the forests of the Sub-Himalayan Bengal. The timber market and canoe making business of the Deviganj in Rangpur, Kangtapukuri in Nattor (Rajshahi) were nourished by the forests of the hill slopes of the Himalaya and Dooars from the end of the eighteenth century

to the nineteenth century. The sleepers required for the Eastern Bengal Railway, Darjeeling Himalayan Railway and Bengal Dooars Railway had been supplied from these regions which lead to the destruction of the natural world of the slopes of the Himalayas. The chapter four has unearthed the history of the Human-animal conflict in the Darjeeling and Bengal Dooars caused by the expansion of the communication infrastructure. It further shows that how the communication infrastructure was related to the spread of epidemic diseases in the Western Dooars region.

The chapter five is an attempt to trace the change in the landscape of Darjeeling and Dooars by analyzing the various archival records, travelogues, monograph, gazetteers and memoirs in the chronological order. It shows how the Victorian tradition, beliefs and practices were reflected through the architecture of the ‘queen of the hills’ and the European bungalows, churches in the Bengal Dooars. By transplanting the Victorian structures, Darjeeling was transformed into a replica of the British country sides to get a homely feeling in the colonized semi-tropical land. Urbanization in the hills and the expansion of plantation industry in Dooars lead to the creation of separate social space for the European civilians and subjugated natives. It shows how the built environment is connected with the psychological well being of a community and acted as a catalyst to restore the tradition and beliefs of the ruling race in a colony where the rulers were minority and were ruling over a vast population of diversified classes and communities. The built environment of the Baptist and Roman Catholic Chapels, public libraries, Masonic lodges, hospital, European clubs and hotels helped to preserve the essence of their Mother Land and unified them in an alien land. The chapter will show how the highlands were a gradually developed as a ‘separate social space for the European civilians and native rulers’.

So far a large number of research works were done on the British forest policy in India evaluating different Forest Acts, Administrative Reports and other archival data. Most of the work dealt with the history of the forest, but neglected the human impact on the wildlife. The chapter six discusses the impact of the urbanization, commercialization and growing communication infrastructure on the forest and wildlife. The Victorian period was known as the Age of Classification when the human, animals and plants were classified and reclassified by the botanist, zoologist, geologist and anthropologist of the British Empire. The chapter analyzes the

view of the colonial scientists on the forests of the Darjeeling and Dooars in terms of their material value. It shows how the idea of the modernization was connected with the expansion of agriculture in the uncultivated waste i.e., forests, grass land or savannah. The idea of conservation emerged when large scale destruction was already done by the rulers, both the native and the Europeans.

The colonial life and leisure in the highland and Dooars is the subject of the chapter seven. The homely atmospheres in the hills provided the colonizers a place of recreation and regain the depleted energy after a continuous hard work in the plains of Indian Sub continent. British residences in the hills evoked the perfect image of quite comfortable English country life. Like the country sides of Britain, a large number of English vegetable, fruits and flowers were introduced and grown successfully in the hill side cottage gardens. This cottage kitchen garden had a nostalgic place in the European family life in India because it reminded them of their beloved homes in their native island. To make their life much more comfortable in the hills, they trained the aboriginal people of the hills in indoor works and made them domestic servants. The chapter shows how the impact of the climate is closely connected with the mentality of the people living in particular regions. The similar climatic condition of Darjeeling and their motherland give them the opportunity to follow their traditional lifestyle in the subjugated oriental land.

The geographical location of Darjeeling and Western Dooars is placed in one of the highly active tectonic plates of the planet. The natural calamities like earthquake, flood, storm and landslide occurred in a regular interval affecting the life of the every living being in these areas. The natural calamite in the colonial period is the subject of chapter eight. Many of the geographers and geologists have done their in-depth study on the natural disasters in these regions, but a proper historical research of the natural calamities on the basis of the archival materials has been so far ignored in the research of social science. In the chapter eight various government records, gazetteers, Railway Administrative Reports and Bengal Administrative Reports were compared with the travelogues, diaries, monographs and the personal memories of the British civilians and native Indians to get a complete picture of calamities and their impacts on the living beings. The massive natural disasters not only change the landscape, affected the economy and society, but it

also has some emotional impact on the humans. The chapter is an attempt to assemble the scattered data and on the basis of rational judgment prepares a proper picture of the past and evaluates the impact of the natural calamities.

The conclusion contains the summary of all the main arguments and analyzed findings about the environmental history of Darjeeling and Western Dooars. The environmental transformation of the areas under the spectrum of research faced a massive exploitation under the leadership of alien ruler and immigrant native laborers. Finally the concluding part of the thesis will express the perception of the human-nature relationship in Darjeeling and Western Dooars during the period of British colonial domination.

## Chapter I

### Nature's Children

The valleys of the lofty Himalayas and the foothills were inhabited by different racial clans mainly have Caucasian and Mongoloid features and speaks Tibeto-Burman and Indo-Aryan dialects. The geographical factors in this harsh climatic condition help to develop a completely separate cultural and religious belief of the aborigines like Lepchas, Mechs, Kochs and Totos. The aboriginal animism acquires its origin from the surrounding Mountains, rivers, rocks, soil, trees, rain and thunderbolts etc. Aboriginal mythology, ethno-medicines and the livelihoods are the reflections of their closeness with nature. In the primitive period, nature was the guiding force behind the human culture and society. Every primitive society had the tendency to use the mythology to explain the forces and the wonders of nature. The mythologies evolved according to the changing structure of the economy and the societies and later it took the shape of belief and myths. The growth of mythologies in primordial societies was essentially linked with the human psychology, which took its shape by their surroundings. Every part of a landscape of the Himalayas has the potential for spiritual identity.<sup>1</sup> The lofty mountain peaks facing towards the sky, the unique formation of the rocks, huge trees and dense forests, dark caves and snowy glacier lakes were supposed to be the place of the hidden spiritual forces. Most of the primitive clans believed that the face of the earth is absolute and unchanging and the rivers, mountains, winds and water was created by a superhuman possesses the supreme power. In the pre-colonial period the geographical position of the areas danced forest full of wild beasts, and numerous rivers have accentuated isolation from the rest of the populated plains and long-term isolation from the outside world shaped the aboriginal socio-cultural, economic and religious beliefs.

The ancient text like Kalika Puran and Yogini Tantra mentioned that the foothills of Eastern Himalayas were the homeland of Non-Aryan aboriginal communities or 'Mlechchas' or

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<sup>1</sup> Subba, Jash Raj, *'Mythology of the People of Sikkim'*; Gyan; New Delhi; p. 17

‘Kiratas’.<sup>2</sup> Some historians think that the word Koch derived from the Sanskrit word kuvacha and Mech from Mlechcha. The tribes collected their food, drink, clothing, medicines from the surroundings. Before the coming of the colonizers, the aborigines were nomadic cultivators. To get the benefit from the virgin soil, the Mechs followed their ancestral nomadic form of living and shifted their house and plot of cultivation year after year.

The aboriginal villages were developed in the remote areas far from the influence of civilization and they had a strong bonding with the jungle. The surplus generating fertile river basins of these regions attracted the outsiders to settle down in the plains. These regions became the ‘land of peasantization of aborigines’. But the autochthons who were unable to cope up with the situation soon evicted them from their ancestral land. The non-Plough primitive shifting agriculture or Jhum was replaced by non-aboriginal Plough based agricultural system.

The aboriginal people living in the hills of Darjeeling and the foothills of Terai and Dooars were introduced in ethnology by the early colonial explorers, botanists, medical personals and political agents. They wanted to comprehend the socio-economic structures of the aborigine on the basis of empirical research to ensure supreme control over the human resources of the colony. The ethnographers of the nineteenth century followed the pattern of the Orientalist scholars to describing the Indian socio-cultural structure.<sup>3</sup> As early as in 1840s, the presence shy, peace-loving and animist Lepchas in the Darjeeling and Sikkim Himalayas received the scholarly attention of Dr. A. Campbell, the Medical Superintendent of Darjeeling.<sup>4</sup> Later on a large number of books, article and reports were published on the Lepchas. J. D. Hooker’s ‘*Himalayan*

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<sup>2</sup> The Kalika Puran and Yogini Tantra were written in early medieval period. According to few historians ‘Kalika Puran’ was written within late 9<sup>th</sup> century to early 10<sup>th</sup> century. The Tantric text, Yogini Tantra was written by an anonymous writer in the 16<sup>th</sup> century.

<sup>3</sup> For more information on the historiography of caste in Bengal see Sekhar Bandyopadhyay (2004), ‘*Caste, Culture and Hegemony: Social Domination in colonial Bengal*’.

<sup>4</sup> Dr. A. Campbell, the Medical Superintendent of Darjeeling published series of articles in ‘*The Journal of the Ethnological Society of London*’ within 1840-1874.

*Journal*, Vol. I – II’, Sir Richard Temple’s *Travels in Nepal and Sikkim 1875-76* (1881), Colman Macaulay’s *Report of a mission to Sikkim and Tibet Frontier (1885)*, Mainwaring’s *Lepcha-English Dictionary*, Colonel Waddell’s *Among Himalayas (1899)* were published in the second half of the Nineteenth Century and all these monographs described the identity, physical features, food habits, language and behavior of the aboriginal Lepchas.<sup>5</sup> In the first half of Twentieth Century, most of the writings on the Lepchas mainly concentrated in the Sikkim region highlighting the livelihood, magical practice, Lamastic form of Buddhism and its ceremonies etc. John Claude White, the Political Agent for Sikkim, Bhutan and Tibetan affairs elaborately discussed about the habits and the behavior of the Lepchas in his *Sikkim and Bhutan: Twenty-one years on the North-East Frontier 1887-1908*. Following his account, The Earl of Ronaldshay (1923), John Morris and Geoffrey Gorer published their ethnographic and travel accounts on the Lepchas living in the Sikkim Himalayas.<sup>6</sup> Dr. Rene de Neberskywojkowitz, an Austrian anthropologist and Tibetologist have worked on the Lepchas of Kalimpong and Sikkim. In 1962 Professor A. K. Das made a general survey on the Lepchas which was published in *The Lepchas of the Darjeeling District*. Veena Bhasin in *Ecology, Culture and Change: Tribes of Sikkim Himalayas* (1989) have discussed the impact of ecology on the society, economy and the culture of the Lepchas and Bhutias in the Lachen and Lachung areas of Sikkim in the 1980s.

The earliest evidences of the aboriginal forest dwellers of the Dooars regions can be found in the writing of Babu Kishen Kant Bose’s article “*Some Account of the Country of Bhutan*” published in *Asiatic Researches* Vol. XV (1825).<sup>7</sup> Sir Joseph Dalton Hooker’s *Himalayan Journal*, Vol.

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<sup>5</sup> In the Second half of Nineteenth Century many articles were published in the *Journal of Royal Geographical Society* (London), *Journal of Asiatic Society of Bengal* and *Asiatic Researches*.

<sup>6</sup> Earl of Ronaldshay (1923), *Land of Thunderbolt*, John Morris (1938), *Living with the Lepchas* and Geoffrey Gorer (1938), *Himalayan Village: An Account of the Lepchas of Sikkim*.

<sup>7</sup> Babu Kishen Kant Bose went to Bhutan in 1820s. In the article “*Some Account of the Country of Bhutan*” published in *Asiatic Researches*; Vol. XV; 1825; pp.128-156 have mentioned about the aboriginal people living in Dooars region.

I-II (1854), Surgeon David Field Rennie's *Bhootan and The Story of the Dooar War* (1866) and W. W. Hunter's *Statistical Account of Bengal*, Vol. X (1876) provided valuable information regarding the closeness of the autochthons with the 'Mother Nature'. After the annexation of Western Dooars in 1864, a series of land revenue surveys were made in the forested region's of Sub-Himalayan Bengal mainly in Jalpaiguri district to get an idea about the financial prospects of the region. The colonial Surveyors and settlement officials like Sunder (1895), Grunning (1911) and Milligan (1919) took a significant role in highlighting the life and beliefs of the aborigines like Toto, Bodo and Kochs of the Western Dooars. The civilian-turned-ethnographer, Edward Tuite Dalton in *Descriptive Ethnology of Bengal* (1872) followed the tradition of official studies started by Buchanan Hamilton for ethnographic research on the aboriginal peoples of Chittagong and Assam including the Koch, Toto, Mech or Boro or Kachari living in the Sub-Himalayan Bengal.<sup>8</sup> In the second half of Nineteenth Century, the colonial administrator and member of Indian Civil Service, Sir William Wilson Hunter, Herbert Hope Risley who have remarkable authority over the oriental languages, in their historic works made a linguistic, anthropological and sociological study on the autochthons of these regions.<sup>9</sup> In the early twentieth century, L. S. S. O'Malley in *District Gazetteer of Bengal: Darjeeling* discussed the aboriginal people living in Terai and Darjeeling. Dr. Charu Chandra Sanyal in *Rajbanshis of North Bengal* (1965) discussed the socio-cultural aspects of the Rajbansis and highlighted that their customs and habits which were deeply rooted in the soil.<sup>10</sup>

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<sup>8</sup> Bandyopadhyay, Sekhar, *Caste, Culture and Hegemony: Social Domination in colonial Bengal*. 2004, P. 17

<sup>9</sup> Hunter, W. W, *A Statistical Account of Bengal* (1875-1877) Vol. I-XX, *The Imperial Gazetteer of India* (1881), Vol. I-XXVI. H. H. Risley, *The Tribes and Caste in Bengal* (1891) Vol. I-II and also "*The Study of Ethnology in India*" (1891) in *The Journal of the Anthropological Institute of Great Britain and Ireland* (Royal Anthropological Institute of Great Britain and Ireland) 20: 237–238

<sup>10</sup> Sanyal, Dr. Charu Chandra, *Rajbanshis of North Bengal*, The Asiatic Society, Calcutta, 1965

The chapter is an attempt to find out how the environmental condition molded the socio-economic and religious life of the autochthons living in the lofty mountain and forested alluvial plains of Bengal Dooars. This will show how the fear of natural calamities, attack of wild beasts and deadly diseases shaped the religious beliefs of the aborigines. The distinctive geographic isolation was closely connected with the subsistence pattern of a primitive and less developed community. The nature as an invincible force controls the economic activities of humans living in a particular region.

### **Primitive religion, Superstition and Mother Nature**

The primeval Lepchas proudly address themselves as ‘Mutanchi-Rong-Kup’ or simply ‘Rong’ which means most cared and loved offspring of Mother Nature.<sup>11</sup> According to K. P. Tamsang the word Rong means ‘sons of snowy peaks’.<sup>12</sup> Some colonial officials opined that the word Rong means ‘the squatter of the land of the cave’. The Lepchas have ‘profound love for Mother Nature’ and they believe in peaceful co-existence among all living organisms.

In a secluded situation, the environmental condition became a dominant factor in molding the ideas of the people. In aboriginal perceptions wind, hailstorm, river, mountain, earth, sun, moon was regarded by them as God. Their fear of natural calamities, deadly diseases and the aspiration for good harvest, protection of family from the epidemic, natural disasters and wild beasts enforce them to worship the God in form of nature. They believe that the anger of God manifested through extreme adversities of the living beings. Every part of a landscape of the Himalayas has the potential for spiritual identity.<sup>13</sup> The lofty mountain peaks covered with snow, unique formation of the rocks, huge trees and dense forests, dark caves and snowy glacier lakes were believed to be the place of the hidden spiritual forces. The aborigines of Darjeeling and Western Dooars had close connection with the Mother Nature and their attachment with nature

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<sup>12</sup> Tamsang, K. P, *‘The unknown and untold reality about the Lepchas’*, Luen Sun Offset Printing Co, Hong Kong, 1983

<sup>13</sup> Subba, Jash Raj, *‘Mythology of the People of Sikkim’*; Gyan; New Delhi; p. 17

reflects in aboriginal folk tale and folk songs. The primitive communities who were entirely depended on nature for their livelihood believed that some superhuman like God or Demons may have created the mountains, rivers, lakes, forests and all the living beings. They thought that the first ancestors shifted and changed from at will between humans, animals and objects as they carried out their first tasks – bringing daylight and fire, hewing out the shape of the land and creating the stuff of cultural life.<sup>14</sup> In aboriginal legends, mythology and myths, the animals played a vital part which highlighted their attachment to the surroundings. The Lepcha folklore and customs of the Sikkim region had been studied by Beanvoir-Stocks, C. De as early as in 1925.<sup>15</sup> The popular perception was that the forces of nature and the activities of the wild beasts were controlled by the deities and the sprites that possessed the supreme power to cause the evil if they were not calm down by offerings.

The animism was the ‘oldest phenomenon’ practiced by the primitive societies who were regarded as non-Aryan. Guided by the western notion of religious thoughts and beliefs, H. H. Risley, the Census Commissioner of India, summarized the basic features of animism and mentioned it conceives of man as passing through life surrounded by a ghostly company of powers, elements, tendencies, mostly impersonal in their character, shapeless phantasms of which no image can be formed.<sup>16</sup> But due to the spread of Hinduism in the foothills of Himalayas and Buddhism in the highlands, aboriginal animism quickly assimilated into the religion of the outsiders. Before going for hunting, fishing or start cultivation the Totos had the rituals to give the offering to the god who is known as ‘Gaipuja’, but this puja originated due to the effect of sanskritization.<sup>17</sup> Before going for the *Khedah* operation, the common people of the North

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<sup>14</sup> Ibid, p.18, Jash Raj Subba elaborately discussed about the mythology of the Lepcha people living in the Sikkim region.

<sup>15</sup> Beanvoir- Stocks, C. De, ‘Folk-lore and Customs of the Sikkim’, *Journal of Asiatic Society Bengal*, Calcutta, 1925, pp. 327-505

<sup>16</sup> *Imperial Gazetteer of India*, Vol. I, 1909, p.431

<sup>17</sup> Before the beginning of any work the Bengali Hindu perform ‘Yatra Puja’.

Bengal have the tradition to release a black goat and a red hen in the jungle for the protection of the people who are going to the forest. The Lepcha worshiped Ču-t'in as the hunting God before they start for hunting.

The religious life in India is connected with the secrete trees which form an important part of the ecological heritage of India.<sup>18</sup> In many places of North Bengal, it was believed that malicious sprites lived in the trees and to satisfy the sprites trees were worshiped by the people. In Western Dooars regions the Rajbansis and the Boros or Mechs have the culture to worship plants and trees.<sup>19</sup> In Baneswar area near Cooch Behar, the Rajbansis worshiped a Star fruit tree as the Goddess Bhagawati. In the traditional religion of Machs community, the Sij plant or Euphorbia had a special place. Many of the plants which were worshiped by the indigenious people have some medicinal properties. Totos believed that everything in this world have life starting from stones to trees. The Lepchas believed that everything in the environment is of spiritual significance that animal birds share a symbiotic relationship of mutual obligations and trust with the human.<sup>20</sup>

In the summer months when the atmosphere became extremely hot and agricultural fields became dry the Rajbansis worshiped the 'Bisto thakur' and 'Hukum Deo' for sufficient rainfall.<sup>21</sup> The Paban thakur was worshiped to get rid of the heavy hailstorms and to protect the homestead and crops from the high wind. In the winter months, the fire-related accidents frequently

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<sup>18</sup> Krishna, Nanditha, Amirthaungam, M. '*Sacred Plants of India*'; 2014, p.3

<sup>19</sup> For more information see Dr. Kameswar Brahma, '*A Study in Cultural Heritage of the Boros, Gossaigaon*', Assam, 1998

<sup>20</sup> Jha, Ajeya, "*Ecological Prudence of the Lepchas*", Development Alternatives, Vol.8, No, June 1998. Also mentioned in the Nanditha Krishna, M. Amirthaungam, *Sacred Plants of India*; 2014, p.2

<sup>21</sup> During Baisakh and Bhadro the Rajbansis offer gratitude to the Gods for rainfall and better harvest. Baisakh is the first month in the Bengali calendar and Bhadro is the fifth month of the Bengali calendar which marks the beginning of the autumn.

occurred in the villages as the poor farmers used the fire to get warm in shivering cold. People believed that the anger of the Borma Thakur was responsible for the fire-related destruction in the homestead and to please the God offerings were given to him. The Rajbansis believed that the health-related matters of the villages were controlled by the Gram thakur and his dissatisfaction towards the villagers caused illness of the children and spread disease like cholera. The blessing of the Basumati Thakurani was essential to get good crop and fodder for domestic animals, but if she displeased crops failure, famine and other troubles followed. Both Chandi and Kali Thakurani were considered as extremely evil deities and they were believed to be responsible for every deadly disease including cholera and small pox. When a Mech suffered from Cholera or Dhum, a special offering was given to Kali Thakurani for recovery of the patient. The use of medicine was unknown to the Mechs. In case sick person recovered they sacrificed pig, fowl, goat, buffalo and so on as gratitude to the sprite.

The worship of the Mahakal Thakur and Bisahari Thakurani was directly associated with the fear of wildlife and forests. In Darjeeling and Dooars regions most of the aboriginal villages were surrounded by the jungle and it was pretended that the Mahakal, the Lord of the hills and jungle controlled the movement of the wild beasts and if he has not been propitiated he sends tigers, leopards and elephants to kill the peoples. Due to the fear of wild beast 'Mahakal' is regularly worshiped in the forest enclaves of these regions. With the intention to protect the cows from the tigers and leopards, the settled peasant community in Bengal Dooars gave homage to the Gorakshanath who was regarded as the protector of cows. According to the '*Dharma Sangal*', the Lord Siva and Gorakhanath is the son of Dharmathakur.<sup>22</sup> The offering to the Bisahari was essential for the protection of children, men and cattle from the snakebite and all sorts of troubles.

The Rajbansi population of the Manthoni village in Balakoba area of Jalpaiguri worshiped the village goddess Manthoni to protract their cattle from the attack of the wild beasts and snakes. According to a legend, Manthoni was a Rajbansi woman used to take her cattle to the field for

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<sup>22</sup>Dharma Sangal is a mythological text focused on the various activities of the Hindu God and Goddess.

gazing had some supernatural power to protract her cattle from the attack of the wild beasts. People also believed that she was also future taller who use to protect the villagers from the evils which were going to happen in future. After the death of Manthoni the superstitious villagers started worshipping her as a goddess to protect their cattle from the wild beasts.

In many of the villages of Darjeeling and Jalpaiguri headman of the village were worshiped as God and Goddess for the well-being of the villagers. Barua Thakur in the Northern part of Mainaguri, Guabari Thakur in Jhar Meteli gram, Gabur Thakur in Khair Khal area of South Bhotpatti in Mainaguri, Belgara Thakur in North Kalamati, Chauddatakiya in North Kalamati and Kanwakaba village at North Mainaguri in Ramshai were worshiped as ancestor God among the Rajbansi community. The Rava community in Hemaguri village gave tribute to the ancestor God Haha Huhu to protract their families from the problems including disease and mortality.<sup>23</sup> In Mendabari village of Chilapata, the Rava communities regarded Nal Raja as their ancestor god and pray to him to protect their family from the attack of the wild beast and evils.<sup>24</sup>

In the Terai and Dooars regions, most of the villages of aboriginal communities developed near the forests. In an agriculture and pastoral based aboriginal economy, the people had to depend on the manual labour. The people were bound to work in the open field close to the forests. According to the hunting diary of Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar and the account of Rannicee, it is clear that up to the late nineteenth century, the number of the furious tigers, leopards and elephants was high in the forested region of Western Dooars. During the second half of the nineteenth century, the human-animal conflict was intensified in Western Dooars because of the expansion of settled peasant community. The fear of tigers enforced the people to worship the goddess Bhandarni.<sup>25</sup> Unlike the worship of Dakshina Roy in Sundarbun region, the people of the Koch or Rajbansi community showed their respect to Bhandarni to

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<sup>23</sup> Das, Dr. Bhupendra Mohan in *'Ethnic Affinities of the Ravas'* mentioned about this ancestor Gods.

<sup>24</sup> The ruin of the old fort of *Nal Raja* is situated in the Mendabari within the boundary of Chilapata forest.

<sup>25</sup> In North Bengal people regarded Bhandarni as 'Bon Devi' or the 'Goddess of the forest'.

protect themselves and their cattle from the attacks of the tiger. The forest god of the Toto community is known as 'Pedua' and when the Totos enter into the forest they offered beverage and food to the god to show their respect to him.<sup>26</sup>

The fear of flood causing an annual destruction of life and property enforced the dwellers of the Western Dooars to worship the rivers in the form of God and Goddess. Out of the dependency, fear and respect, the people worshiped the river as god and goddess. The practice of the river worship depended on the physical geography of a particular region. In the alluvial plains, human life was inextricably connected with the rivers in terms of occupation, communication and supply of food. The river as the source of life helped to germinate the village communities in the nearby regions on the other hand as a deadly force of nature destroyed villages during the monsoon.

The Tista, lifeblood of the Western Dooars was worshiped by the aboriginal peoples as the Goddess 'Tista Buri' or 'Mothamoi'. They offered food and beverage to the river goddess and also dedicated songs in the name of the goddess which is known as 'Tista Burir Gaan' or the songs of Tista Buri. The river Chel was regarded by the people as 'Chel Rani' in few forest villages of western Dooars and the Rava and Rajbansi people worshiped the river.<sup>27</sup> In Baro Mechpara village of Falakata thana and Birpara region of Alipurduar, the Rajbansi and the Mech or Boro people worshiped Alaikhungri which is a tributary stream of Kaljani River. The aboriginal people of this region believed that the river has the power to protract the common people from the evil attack of cholera.<sup>28</sup> The two streams of the Raidak River known as Bura

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<sup>26</sup> Roy, Gautam, ed., *Uttarbanger Janajati O Luptapray Lokasanskriti*, Baitanik Patrika Gosthi, 2004, pp. 201-202

<sup>27</sup> I have collected this information from a Rava headman in 2013. This practice is known to the people living in the Kurmaibasti village near Chilapata forest.

<sup>28</sup> See for more information Gautam Roy, ed, *Uttarbanger Janajati O Luptapray Lokasanskriti*, Baitanik Patrika Gosthi, 2004

Raidak and Gabur Raidak also worshiped by the villagers living close to these rivers.<sup>29</sup> In the mountain region where the mountains are the most dominant part of the landscape, the people worship the hills. In the month of August indigenous Lepchas worshiped the Tandong Mountain. According to legend during the great flood, the mountain saved the life of Lepcha men and women. The Kanchanjungha which is known among the Lepchas as ‘king-Chum-Zong-Bu’ means ‘the auspicious bright forehead’ was worshiped by the Lepchas in the month of April. The Mount Kanchanjungha regarded by the Lepchas as their Guardian deity.

The fear of epidemic and diseases increased the worship of different ditties and evil sprites among the primitive communities in the forested regions of Western Dooars. The seasonal weather change had a significant impact on the human bodies. In the 1<sup>st</sup> day of the Bengali calendar (Paila Bysak), the Rajbansi men and women offered parched rice (paddy chura), crushed rice (Chaoler burbhura), powdered rice (chaoler bhajer jhaiya) after being roasted, fried mustered (soresar bhaji), fried dry jute leave( sukatir bhaji), garlic, onions, ginger and turmeric. Later on all this mixed with together and all the family members have it and consider it as medicine. This festival was performed to satisfy the deity so that no death occurred in the family in the coming year. Another festival was organized in the month of Assin when offering was given to the Jitua-bahah Thakur. If a member of Rajbansi family suffered from illness, another member of the family pray to the God and promised to give him offering if seek person recovered from. After fulfillment of the desire, the person arranged a large number of green and ripe plantains in the dala (bamboo tray) and offered it to the Jitua-bahah Thakur as to show the gratitude.

The superstitious Totos had two gods and Goddess. They believed that God Ishpd and Goddess Chimá spread diseases among the Totos when they became displeased. To keep the family safe from the evil attack of the god they worshiped and offer liquor and meat to them. The Lepcha divinity named *rūm* believed as malicious and the *muñ* was the cause of disease, death and

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<sup>29</sup> See for more information Gautam Roy, ed., *Uttarbanger Janajati O Luptapray Lokasanskriti*, Baitanik Patrika Gosthi, 2004

disaster.<sup>30</sup> The evil divinities, the *mun* were innumerable and inhabiting in haunting forests, bogs, torrents, and rocks.<sup>31</sup> Being very powerful they were liable to interfere at any time in the life of the Lepchas and obstruct their projects. Only repeated sacrifices can satisfy their greed for flesh and blood. The Lepcha prayers consist of the lines like: “*O great god, protect us from illness, influenza, winds of the south and lightning. Protect us from the evils that can come from those who practice magic against us. You, too, king of demons, restrain your followers.*”<sup>32</sup> For all the aborigines the most important ceremonies began at the beginning or the end of the harvest. The Lepcha thanksgiving ceremony *rŭm-fat* began at the end of the harvest.<sup>33</sup>

The extremely superstitious aborigines of these regions believe that the Ojhas or priests have the healing power to cure the deadly diseases which were as they thought caused by the evil sprite or Deo. The Lepchas depend on priests known as *boñ-t'in*, Mechs and Rajbansis depended on the Ojhas or Gunin, Garos on hujis and Totos on Deosi to protect themselves from the aggression of the evil spirits. They have mantras to cure the fracture leg of the cows and buffalos, mantras for seed sowing, mantras to reduce the deadly effects of the insects in the agricultural field, hunting wild beasts, protection from the wild animal, snakes and insects etc.<sup>34</sup>

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<sup>30</sup> Corneille Jest, M, Religious Beliefs of the Lepchas in the Kalimpong District (West Bengal), *Journal of the Royal Asiatic Society of Great Britain and Ireland*, No. 3/4 (Oct., 1960), p. 127

<sup>31</sup> *Ibid.*, p. 127

<sup>32</sup> See for more information Das, K. K., The Lepcha people and their notion of heaven and hell, *Journal of the Buddhist Text Society of India*, VI, Pt. I, Calcutta, 1896, Appendix I, pp. 1-5, and M. Corneille Jest, Religious Beliefs of the Lepchas in the Kalimpong District (West Bengal), *Journal of the Royal Asiatic Society of Great Britain and Ireland*, No. 3/4 (Oct., 1960)

<sup>33</sup> Waddell, L. A. The Lepcha or Rong and their Songs, *International Archiv für Ethnographie*, vol. xii, Leiden, 1899, pp.43-57

<sup>34</sup> See for more information Dr. Girija Sankar Roy, ‘*Uttarbanger Rajbansi kshatriya Jatir Puja-Parbon*’.

## **Ethno-Medicine and the aborigines of Darjeeling and Western Dooars**

The Tibetan influx in the Lepcha Land during seventeenth century led to the expansion of Buddhist belief among the animist and peace loving Lepchas. Soon the Buddhist monks i.e., the Lamas became the inseparable part of the life and religious convictions of the Lepchas as they were converted into Buddhism. They started trusting on the messianic power of the Tibetan holy men. It was not that the activity of the Lamas was restricted in the Darjeeling and Sikkim Himalayas. The Tibetan products and the medicines containing different plants and body parts of the animals had a great demand among the people living in the Sub-Himalayan region of Bengal. From the mountain regions of the Himalayas, they use the passes to enter into the Western Dooars which was regarded as the gateway to the vast Indian alluvial plains. Prior to the introduction of the British colonial domination in Darjeeling and Western Dooars, the areas were narrowly populated. There was no chance of excessive exploitation of the natural resources in the forested regions of Darjeeling and Dooars. Srabani Ghosh in her unpublished thesis entitled '*The History of Medicinal and Healthcare Systems of North Bengal from 1869 to 1969*' (2011) discuss the ethnomedicinal practices in the Darjeeling and Western Dooars. The thesis primarily highlighted the use of the plants for the daily medicinal practices of the people living in the North Bengal.

The renowned American antiquarian, Dr. Walter Leo Hildburgh (1876-1955) came to Darjeeling in 1907 and collected data regarding the existing medicinal practices of the Tibetan and Bhutia charmers living in the mountain regions of Darjeeling and Kalimpong (**Table: I**).<sup>35</sup> The Tibetan Lamas who came to Darjeeling and Sikkim from the 'Forbidden city' of Lassa was well known for their medicinal practices in the hill areas of the Darjeeling. Hildburgh's study reveals that the native men, women and children living in Darjeeling wore metal ornaments to avoid sickness, like epilepsy, fever and other types of infectious diseases and the natural calamities like lightning, earthquake etc. He divided the native amulets into two categories: these were secular

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<sup>35</sup> Later on Dr. Walter Leo Hildburgh published his paper entitled Notes on Some Tibetan and Bhutia Amulets and Folk-Medicines, and a Few Nepalese Amulets, *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 39 (Jul. - Dec., 1909), pp. 386-396

and natural amulets. The Secular amulets were made of metal and natural amulets are mainly animal, vegetable and the mineral origin and sold in the markets of Darjeeling in the regular basis. To stop the attacks of the malicious devils they carried the amulets containing foot or a skull of a marmot (*Arctomys caudatus*), piece of the foot of a badger (*Aldes leacura*), joint of a snake's backbone; the claws of various animals, the teeth of various animals, a tiger's whiskers, either with or without the skin, foot of wild cat.<sup>36</sup> The Nepalese also believed that the ivory or trunks of wild boar or claw of tiger in the form of silver or copper plated pendants would protect them from evils. The peoples living in the hills have the faith that if they fixed a horn or skull of a stage at the entrance of their house then its supernatural power would resist the devils to enter into their house. The amulet made of the jaw of the tiger was given to the children for protecting them from the malicious gods. The masked deer hair carried as an amulet curative of fever. The animal products business of the Bhutia was also spread in the Western Dooars. In the paintings, elephants symbolized the people residing in the house would become great. If anyone hanged the picture of a hare in house, then the dweller of the house become claver. If the sketch of a monkey was hanged in the door then it will protect the family from demons and the picture of bird symbolized plenty of food.<sup>37</sup> The Tibetan painted charms was said to be used to keep the hailstorm away. To get rid of dropsy, D. H. E. Sunder mentioned that the Meches purchased Harinabis and bis-bas from the Bhutias.<sup>38</sup> These medicines are tied with a cord on the sick person's neck or hand. As a remedy of Jaundice the deosi prescribed many bitter vegetables to the patients as diet and these are also rubbed over their body. The Bhutia charm started using small painted pictures of the animals to get benefits (**Table: II**).

When the European troop stationed at the Calcutta suffering from the unknown tropical fever, Surgeon James Jonson, one of the prominent medical geographers of the nineteenth century observed that the native living in the jungle and hilly parts of Bengal have some traditional

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<sup>36</sup> Ibid, p. 392

<sup>37</sup> Ibid, p. 391

<sup>38</sup>Sunder, D. H. E, *Survey and Settlement of the Western Dooars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895, p.70

medicines as remedy for the fever.<sup>39</sup> Few medical personals believed that the aborigines mainly the Meches, Ravas, Dhimals and Kochs living in the ‘Deadly Zone’ of Terai were naturally immune to the fatal fever of these regions. The Europeans also surprise by observing that the ‘black aborigines’ of these forests got the immunity from the deadly fever and as ‘the tigers and other wild beasts’ they make the forest their home.<sup>40</sup> While doing research on malaria Captain S. R. Christophers and Dr. C. A. Bently observed that the aborigines of the Terai and Dooars were naturally immune to malaria.<sup>41</sup>

The closeness of the Lepchas with the surrounding environment was elaborately mentioned in various travel accounts and the memoirs of the British colonial officials. Sir. J. D. Hooker who visited Darjeeling, Sikkim and some parts of the Nepal Himalaya in late 1849 referred the Lepchas as the pure naturalist and born botanist. As the true Arcadians of the wilderness, they had separate names for nearly every bird, plant, orchid and butterfly.<sup>42</sup>

The close association of aborigines with the Mother Nature clearly reflected in their ethno-medicinal practices. For centuries the aboriginal people living in the isolated part of the eastern Himalayas and foothills used the plants, minerals and animal products for their own medicinal purpose. The Lepchas had a long tradition of the ethnomedicine which developed from the immemorial period in the ‘Na Mayel Lyang’ (the land of hidden paradise) or ‘Ne Male Lyang’

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<sup>39</sup> Jonson, James, *Influence of Tropical Climate, more especially in the climate of India on European constitutions; The Principal effects and diseases thereby induced, their prevention and removal and the means of preserving health in the hot climates rendered obvious to Europeans of every capacity: An Essay*; 1815, p. 57

<sup>40</sup> Waddell, L. A. *Among the Himalayas*, 1899, p.6

<sup>41</sup> Christophers, Captain S. R. and Bently, Dr. C. A. *Malaria in Dooars*; p. 2. They further observed that the mixing of the malaria immune aborigines with the non immune outside laborers increased the fatality of the disease and it quickly spread among the outsiders and increased the mortality rate.

<sup>42</sup> O’Malley, L.S.S. *Bengal District Gazetteer: Darjeeling*. Delhi, Logos Press, 1907, p. 44

(the land of internal purity) i.e. Sikkim, Darjeeling and illam hills. The earliest mention of the medicinal use of the plants is found in the traditional tells of the Tamsangthing, perhaps the oldest repository of the Lepcha knowledge, having originated along with Pandim Choo, that is the Pandim mountain peak.<sup>43</sup> Later this knowledge was expanded along with the growth of the Boongthingism and Munism. The Lepcha medicine men known as ‘Maondaok’, used the locally grown plants for the treatment of various diseases and preserved their knowledge from generation after generation. The application of the Lepcha indigenous medicine strictly restricted within the clan. The Lepcha medicinal practitioners were extremely superstitious about their knowledge and the strictly follow the secrecy. They believed that if they shear the knowledge with the outsiders, the medicinal properties of the plants will lose their healing power.

The people living in the hills and Sub-Himalayan Bengal extensively use different types of spices, fruits, roots and other parts of the plants and also the animals and insects for medicine. The aborigines did not possess any institutional knowledge about science and medicines but by using the power of observation and experience they utilized the natural recourses without destroying the balance of nature. In all over the world the aborigines has a friendly intimate connection with nature. In the subsistence primitive economy, the born free people have no restriction to move in the forests, mountains and rivers. The knowledge of the surroundings flora - fauna and their medicinal values transmitted from one generation to another and its enriched year after years due to the collective use of the observation power. But when the complexity of the disease has not been solved by the ethnomedicine, forest dwellers started believing in the supernatural cause of the disease and people started using different amulets to protect themselves from the malicious spirits.

In the sub-Himalayan regions, plantain was extremely used by the Rajbansis as a remedy for the bowel complaints. When the children suffer from it, they were fed with kaorupi plantain and sugar as the remedy.<sup>44</sup> Dhunya (*Coriandrum sativum*) used as an appetite in cooking. The Bel or Bengal Quince (*Ægle Marmelos*) used as medicine. As the colonizers able to understand the

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<sup>43</sup> Tamsang, K. P, ‘*Glossary of Lepcha Medicinal Plants*’, Mani Printing Press; Kalimpong, 2004

<sup>44</sup> Sunder; *op. cit.*, p.12

medicinal value of the bel, they introduced it in the English medicinal practices.<sup>45</sup> Opium was consumed by the Rajbansis farmers in Bhulka as the remedy against fever.<sup>46</sup> The *pani bel* was used by the people as a source of water in man water to drink. At the time of illness, another creeper makes an excellent febrifuge, the gum of the *udal* tree was used as a purgative and formations of the leaves of a shrub called *madar* were excellent for sprains and bruises.<sup>47</sup> The root of khus (*Andropogon muricatum*) used as the remedy for the cardiovascular and gastrointestinal disorders. The Bhutia used Cinnamon, cardamom, black peeper and other spices as medicine, not for food. On the other hand the Kamranga (star fruit) and Averrhoa Bilimbi (cucumber tree or tree sorrel) were regarded as the cause of the fever (**Table: III**).

### **Minerals and Health care**

Beside plants, the aboriginal peoples of the Darjeeling and Western Dooars used scores of mineral medicines as the remedy for diseases prevalent in this climate. In 1840s Dr. A. Campbell while exploring the surrounding areas of the Darjeeling noticed few hot water springs in the mountains slopes of the Eastern Himalayas. Campbell in a letter dated on October 7<sup>th</sup>, 1842 furnished his observation about the hot water springs and their healing power of various contentious diseases. He mentioned that a hot water springs containing radish deposit was existed in the west bank of the Mechi River at about six miles from the Mechi Gola.<sup>48</sup> He further mentioned that the water had medicinal virtues and used to cure rheumatism and skin diseases. Other two hot water springs he observed in the river valley of the Great Rangeet in the mountains of Sikkim. One was located in the one day distance from the Penlog Monastery on the east bank of the Great Rungeet River. The spring was known as ‘Puklong Sachoo’ which means

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<sup>45</sup> Hooker, J. D, *Himalayan Journal*, Vol. I, p.109

<sup>46</sup> Sunder; *op. cit.*, p.31

<sup>47</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London,

<sup>48</sup> *Journal of Asiatic Society of Bengal*, Vol.XII, 1843, p.1039

‘hot spring’. The water had a disagreeable small and whitish deposit which was used as medicine by the natives.<sup>49</sup> Another one was situated in the one day distance of Rinchungpoong on the east bank of the Great Rangeet River and had the whitish deposit. According to Campbell both these hot springs were three days journey from Darjeeling. In every year, hill people living in Darjeeling hills went there to take bath to get relieved from the diseases.

The indigenous people of Darjeeling used the water of a spring for the medicinal purpose known as ‘Devi Pani’ situated on the west surface of the hill at about 3 miles east of the Darjeeling.<sup>50</sup> The spring rose amongst the boulders in the bed of a lateral feeder of Rangnu.<sup>51</sup> The Jallapahar convalescent depot was built near the mineral spring to get advantage from the medicinal water which formally said to have a sulphureous odour. The native people of the hill used the water of the mineral spring to cure the diseases like rheumatism and skin infections. The sick men were brought to the side of the spring and mineral water was poured into a rude bath made of plantain stems.<sup>52</sup> The water was heated by throwing hot stones into the water. The sick man took bath in it and sometimes the water was consumed by the patients. Dr. Hutchinson was appointed to analyze the water in 1871. But the Governments plan to use the water to prepare mineral water was failed and the convalescent depot was also ruined within few years. W. W. Hunter noted that the water of the spring was not in use. The people living in the hills had a firm faith on the healing power of the water of the springs. So a large number of the people gather in the mineral spring by the side of the Rungneet River and in Jayenti (Gyantees) for medicinal baths.<sup>53</sup> In

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<sup>49</sup> *Ibid*, p.1039

<sup>50</sup> The name ‘Devi Pani’ may be given by the Nepalese who came to Darjeeling to work under the colonial officials for the construction of the hill station. The ‘Devi Pani’ was situated in 27°2½’N - 88°22’E at the elevation of 2,050 feet.

<sup>51</sup> Mallet, Mr. F. R., On the Geology of Darjeeling and Western Dooars, *Memoires of the Geological Survey of India*, Vol. XI, Part I, 1875, p. 9

<sup>52</sup> *Ibid.*, p. 9

<sup>53</sup> Dozey; *op. cit.*, p.128

Sikkim native people used orange- yellow earth as the remedy to the goiter. After knowing this Dr. A. Campbell collected the clay from Sikkim and analyzed it with the help of Henry Piddington.<sup>54</sup>

Due to the dampness in the weather, the people of these regions suffered from different skin diseases. It was common among the Meches, Totos.<sup>55</sup> They were mainly suffered from White Leprosy called by them ‘dharam chata’ and the more advanced stage was known as ‘khuria baidh’. Totos were also suffered from skin diseases like ulcer and sores in the legs and hands. The people suffered from the skin diseases took bath in the mineral spring to get rid of their suffering. There was a mineral spring near Buxa, three miles east of Tashigaon. To get relieved the Bhutia men and women suffering from syphilis, boils and skin diseases went there for a bath. The water of the spring was collected in the hollowed trunk of a tree and warmed by throwing hot stones.<sup>56</sup> The patient sat in the water twice or thrice during a day and said to be cured the diseases in a week.

### **The natural poisons and subsistence economy**

In the second decade of Nineteenth Century, the British officials and administrators have noticed the existence of few aboriginal forest villages with a small population in the Darjeeling and Western Dooars region. In a primitive aboriginal economy where the livelihood of the people depends on the use of simple environment-friendly technologies and traditional knowledge about the surrounding, the rate of the expansion of villages and the reclamation of the ‘uncultivated waste’ and destruction of the forest and wildlife may have been extremely slow. To W. W.

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<sup>54</sup> Piddington, Henry, Examination and analysis of an orange-yellow earth brought from the Sikkim Territory by Dr. Campbell, Darjiling, and said to be used there as a cure for goitre, *Journal of Asiatic Society of Bengal*, Vol. XIX, p. 143

<sup>55</sup> For more information see Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895

<sup>56</sup> Sunder; *op. cit.*, p. 9

Hunter the aboriginal people living in these regions were not very skillful sportsmen.<sup>57</sup> They have no need to turn into a hunter, as their domestic animals which supply them with flash food.

The autochthons of Darjeeling and Western Dooars used different types of natural poison to procure animal protein from the forests and water bodies. The Lepchas used aconite poison for hunting with the arrows. The fruit of Chaulmoogra is used to intoxicate fishes. They also catch fish in the pools of the river by using Nux Vomica.<sup>58</sup> D.H.E. Sunder in '*Survey and Settlement of the Western Dooars (1889-1895)*' mentioned the traditional technique of fishing of the aborigines of the Western Dooars through natural poison. The Meches used the toxic creeper, fruits, bark, and juice of the poisonous trees available in the forests to kill fish in the small streams and ponds. The Ru-gubdi, an easily available jungle creeper was cut into a foot length and tied up into a bundle and well beaten with a stick into the water.<sup>59</sup> When the juice of the creeper mixed into the water fish dies within a short time. The pulp of the biskantakra fruit grow in the gorol tree was used to kill the fish. Sometimes the bark of kodaldang and siris or laokri tree were tied up in the bundle and crashed by a stick into the water for fishing. The fruit of the bouka tree was collected and dropped into the stagnant water to kill the fish. The Garos method of fishing was to block the water and spread natural poisons. The bark of Korai tree and Kangkir-Kalfang tree, the fruits of Gorol tree, also known as Punkar-fang, the root of Rahu fang or Kalkut creeper and some cases the Biskuthil tree was crushed and thrown into the water to kill the fishes.<sup>60</sup> They also use a creeper which was bruised and thrown into the stream to stupefies the fish and bring them floating to the surface for an easy catch. But after the coming of the

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<sup>57</sup> Hunter, W. W, *A Statistical Account of Bengal: Districts of Darjiling and Jalpaiguri, and State of Kuch Behar*. Vol. X, Trubner & Co., London, 1876, p.71

<sup>58</sup> Ibid., p.151

<sup>59</sup> Sunder, *op. cit.*, p.71

<sup>60</sup> The Garos extensively used bamboo traps like Dingir, Dhoska, Darika and burung, Pallao to capture fishes. Fishes were stored into a basket called Duku.

colonizers the traditional fishing practices were changed and in few rivers of Darjeeling people started using dynamite for fishing.<sup>61</sup>

### **Mother Nature and livelihood of her children**

The people of the technologically less advanced societies completely depended on the natural resources for their daily requirements. The forest provided food, medicine, drink, clothing, house building materials, household utensils and almost everything required for their livelihood. The aborigines of the Darjeeling and Sub-Himalayan Bengal mainly the Lepchas have a deep knowledge about the forests. Hooker appointed the Lepchas as plant collectors in the Jungle, while he devoted his time for drawing, dissecting and ticketing of the plants. Except the Kochs, all the aboriginal communities lived in the Darjeeling and Dooars regions have a close association with the forest. Prior to the establishment of the British colonial domination and enactment of the forest laws the Lepchas, Totos, Ravas and Mechs preferred to build their houses near or within the forested areas far away from the populated regions. But the Kochs preferred cultivation rather than living in the forest as the hunter-gatherer.

The knowledge about the indigenous people of Darjeeling and Western Dooars was highly empirical. Most of the aboriginal people of these regions were the gross feeder. They eat all kinds of animals for food including pig, goat, duck, fowl, pigeon, peacock, monkey, deer and rhinoceros, buffalo even elephants when obtainable. Dr. Campbell wrote that the Lepchas eat everything which is soft enough to chew.<sup>62</sup> Hooker observed that while the Lepchas were travelling, they have whatever they get from fern top, roots and flowered buds of *Scitamineæ*, various leaves to fungi.<sup>63</sup> They chopped and fried them with little oil and consumed. They eat large grasshopper and locusts. Even the leftover bodies of the cow or goat killed by the tiger or leopards were eaten by them.<sup>64</sup> In last decade of the Nineteenth Century, the Hog-badger

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<sup>61</sup> No. B 32 – 36, September 1901(Revenue Department, Forest, WBSA)

<sup>62</sup> Campbell, Dr. Archibald, *op. cit.*, p. 143-157

<sup>63</sup> Hooker, *op. cit.*, 132

<sup>64</sup> Sunder, *op. cit.*, p.15

(*Arctonyx collaris*) was roamed around the wasteland of Alipur tahasil and it was eaten by the Mechs and Garos. Flash of Indian Porcupines (*Hystrix leucura*), Rhinoceros (*Rhinoceros Indicus*) and wild pigs (*Sus Indicus*) eaten by Mechs, Garos and Rajbansis.<sup>65</sup> The blood of the animal was the part of the delicacy for the aboriginal Totos. They cooked blood of the freshly slaughtered pig with vegetable curry and relished. They occasionally have the forest products and killed animals to get proteins but the exploitation of the wildlife have not occurred in an enormous level during the pre-colonial period. The number of aboriginal population subsisted on forest products were small and the travelogues of the Europeans who came to these regions in the early days of colonial expansion noted the richness of the Western Dooars in terms of the biodiversity.

Across the globe, all the aboriginal communities have the tradition to prepare and enjoy intoxicating drinks made from rice, millet or other herbs found in the surroundings. The fermented liquor of the Totos was known as Eu. The outcaste Rajbansis mainly who were taken away by the Bhutan during their incursion in Cooch Behar known as Debasiyas prepared traditional beer by fermenting the rice. The types of the intoxicating drinks of the Mechs changed with season. In the summer they drink very intoxicating Hasa-jao and winter they consumed mildly intoxicating Bokha-Jao. Both were prepared by fermenting the rice. The common beverage of the Lepchas known as 'Chi' or 'Chiang' was made by fermenting millet (*Eleusine Coracana*) and another alcoholic drink named 'Dyo' prepared by using different herbs, medicinal roots and fermentable plants found in the surroundings. All these intoxicating beverages had a prominent role in the aboriginal religious sacrifices which were performed to gratify the malicious spirits whose anger as they believed responsible for the various deadly diseases.

The distribution of plants depends on the climatic factors and the human and animals living in a particular climate use the plants according to their own needs. For building huts and other necessary purposes, the aboriginal peoples of Darjeeling and Western Dooars depend on the forests. The sub-tropical rainforest of the foothills of the Himalayas the thriving place for

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<sup>65</sup> Sunder, *op. cit.*, p.15

different types of bamboos. Sunder in his settlement report elaborately discussed the use of the bamboo by different communities for various purposes. There were four kinds of bamboos available in outer Himalaya and foothills. Borobasa (*Bambusa Stricta*) which was a thick kind of bamboo used for the post of huts. Makla (*Arundinacca*) a thinner kind of bamboo used for roofing huts and making the fence and the Jaota used for fuel.

The Lepchas used bamboo and broad leaves of plantain to construct houses. The floor was covered with thick bamboo leaves to keep the feet dry in the cold and damp weather. The wall of a Mech house was made of null or madwa reed or of thuri grass and plastered with mud and cow dropping. The roof was made with Khagra reed. The Rajbansis build their house with bamboo matting or grass reeds covered with mud and cattle droppings. The roof of the house thatched with grass. *Clerodendron* leaves, bruised, were used to kill vermin, fly-blows, &c., in cattle; and the twigs from toothpicks.

The Rajbansis of the Western Dooars used bamboos for various purposes. They made the utensils like Doon (basket for measuring rice, oilseeds), khuchi (small basket for measuring rice), Kata (Bamboo or cane basket, mainly used in Ambari Falakata), Dhali (bamboo basket to store paddy), Dhamá (made of bamboo used to give oilcake and water to the cattle), Channi (bamboo sieve for cleaning rice), Kula and Chela (bamboo tray for cleaning rice), Ghátá (for turning up churá or parched rice while it is being pounded), Dhara (bamboo matting for sleeping). Bamboo extensively used for fishing traps or baskets. The jhoka or the cone shaped basket trap, ttosa or kholoi are the baskets for store the captured fish. The jal or fishing nets like Napi jal and Bhasani jal were used with the help of the bamboos. The available bamboo in the hills known as *Dendrocalamus Hamiltonii* was used by the aborigines as the container to preserve milk and card. The concrete oil was extracted from the seeds of *butyracea* or Yel Pote and preserved in the bamboo vessels.<sup>66</sup> In the rainy season the Lepchas uses hats, made of leaves of *Scitamineæ*, between two thin plates of bamboo-work. In the dry season they use a conical hat with plated slips of bamboo and broad flakes of talc between the layers, and a peacock's feather at the side.

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<sup>66</sup> As named by the Lepchas.

Their coracle like umbrella covering from head to backside was made with plated bamboo and enclosed with broad leaves of *Phrynium*.<sup>67</sup> Hooker wrote: “a group of Lepchas with these on, running along in the pelting rain, are a very droll figures; they looks like snails with their shells on their backs.”<sup>68</sup> The Bamboos were used to prepare musical instruments of the Lepcha, Mechs and Rajbansis. The Bamboo made instruments like flute or chipoong, Dotra or kind of guitar was used by the Mechs and Rajbansis. The only musical instrument of the Lepchas was a long bamboo flute with four and six burnt holes far below the mouth-hole. During the time of relaxation, the Lepchas set for hours, chat among themselves and storytelling, singing in a monotonous tone or blowing bamboo flute were the favorite pass time of the Lepchas.

Once the Cotton tree (*Bombax malabaricum*) was prominent trees of the Western Dooars, but this disappeared along with the expansion of cultivation. Sunder mentioned that within 1895 the *Bombax malabaricum* became restricted only in the east foothills of Buxa.<sup>69</sup> According to the old tradition of the Rava community, the ability of weaving clothes by a woman was the basic criteria for her marriage. The required ingredients for the clothes were collected from the surroundings.<sup>70</sup> The Endi silk cloth was made by the Meches and sold in the Jalpaiguri.<sup>71</sup> The Meches used natural colour for dyeing their clothes. The bark of asao tree, tempor tree and gumu-bimfang collected to obtain yellow colour. The red colour obtained from lac and Bhutia manjista and blue extracted from indigo. To get the red colour, the leaves of the tengthlang creeper were boiled in the water with the threads and lac or manjista were put in the boiling

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<sup>67</sup> The ancient boat used by the Lepchas.

<sup>68</sup> Hooker; *op. cit.*, p.131

<sup>69</sup> Sunder; *op. cit.*, p.3

<sup>70</sup> The information gathered from Kurmai Basti, a small Rava village just outside the boundary of the Chilapatha Forest in the left side of the river Sil Torsa.

<sup>71</sup> Sunder; *op. cit.*, p.38

water. The Totos used the threads of Alkushi tree to make their clothes.<sup>72</sup> Before that, the Toto economy was entirely depend on the orange cultivation. But in 1930-31 the orange cultivation destroyed due to disease spread in the orange trees. The destruction of orange cultivation leads to the death of a large number of Totos in malnutrition. Thus the Toto population reduced rapidly in their own land. In a long run, the aborigines lost their primeval culture, traditional song and even the languages.

### **Name of the place indicating the past environmental condition**

In the vast region of Darjeeling and Western Dooars, all the name of mountains, peaks, passes, villages, rivers, marshes and waste lands were given by different communities including Lepchas, Bhutias, Nepali, Rajbansis, Meches, Ravas and Totos. Names were predominantly descriptive indicating the physical feature of a site. The name of the rivers was given on the basis of the colour of water, tortuosity, steepness, impetuosity, shallowness or channels. The names of the mountains and peaks were given on the basis of their physical appearance,

The names of the villages were based on the quality of soil, jungle products, conspicuous trees etc. In Darjeeling, the names of the rivers and peaks have mainly Lepcha, Bhutia and Nepali origin.<sup>73</sup> On the other hand in the foothills and Dooars, the rivers, forests, villages, places mainly got their name from Sanskrit or Rajbansi words. The name of a place marks the predominance of a particular community in a certain area. For instance the Tibetan lived in the high altitude due to this reason most of the name of the mountain passes derived from Tibetan words. On the other hand the Lepchas, Nepalese and Bhutias lived in the comparatively lower elevation gave the name to the comparatively lower sections of the mountain regions. The Koch and Rajbansi

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<sup>72</sup>After the coming of the outsiders due to the domination of the outsiders they lost their traditional weaving technique. For more information see the article of Bemalendu De, '*Toto Janajati Luptapray Lokasanskriti*' in Gautam De (ed), '*Uttarbanger Janajati O Luptapray Lokasanskriti*', Baitanik Patrika Gosthi, 2004, p. 199

<sup>73</sup> O'Malley; *op. cit.*, p.213

population mainly concentrated in the plain regions of Dooars mainly gave the name to the sites and rivers of these regions.

### **Changing pattern of harvest**

According to the colonial anthropologists, the Mechs were the original inhabitant of Terai.<sup>74</sup> They noticed that like the Lepchas in the hills, the Machs were the first dying race in the Terai. The reason was the government prohibitions on Jhum Cultivation and the government restriction to use the forest products through forest conservancy and the expansion of settle plough cultivation from the south. The declarations of the Forest Act lead to the eviction of the slash and burn cultivators (Joomeahs) from the forest regions of Darjeeling and Dooars. The Progress Report of the Forest Administration 1876-1777 reported that the adequate compensation was given to 'those who were affected materially by the change.'<sup>75</sup> The Machs were like the Lepchas disinclined to any continuous employment.<sup>76</sup> But in Jalpaiguri district, the Machs were described as the vanishing race by the British officials. The Mechs were gradually driven towards the east owing to the pressure of the more intelligent races. They moved to the thinly populated tracts in the eastern part of the district or in Assam. Waddell mentioned the Lepchas as dying race with their ancient customs.<sup>77</sup> They were disappeared with the forest they loved and they were

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<sup>74</sup> The opinion of Mr. W. B. Oldham discussed in Grunning, J. F., *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, 1911 National Library Publishers, reprinted 2008 p. 47

<sup>75</sup> *Progress Report of the Forest Administration in the Lower Province of Bengal for the Year 1876-1777*, p. 21

<sup>76</sup> Pinn; F, *The Road of Destiny: Darjeeling letters 1839*, Oxford University Press, Calcutta, 1986, p. 51

<sup>77</sup> More information available in Waddell, *Among the Himalayas*, 1899, pp. V-VI and it was also mention by Douglas Freshfield in 'Round Kanchenjunga'. P. 35

transformed into a dying race.<sup>78</sup> The Forest Act of 1865 and 1878 evicted the aborigine Lepchas and Mechs from their own forests.

To the British jhuming was a wasteful style of cultivation. In a single stroke, the Government's claim over the forest became legitimate, and hunting, food gathering or cutting the forest trees become illegitimate.<sup>79</sup> The tribes lost their right over the forest products. After the annexation of the Western Dooars, the British authority claimed Rs.68 (£ 6, 16s.) in 1870 to sale the right to collect the lac from the Government controlled forests.<sup>80</sup> Previously the aborigines as the nature's children had the exclusive right to collect Jangli chireta, lac and beeswax from the jungle where they are dwelling from the time immemorial.<sup>81</sup> On the other hand, the Semi-aboriginal tribes like the Kochs accepted the change and largely participated in the reclamation of the wasteland and agriculture.

The deputy commissioner, however, reported in 1871 that the population of Darjeeling District had probably doubled within the previous twenty-five years, and it was increased in a daily basis. In 1872 the Nepalese were accreted by the census to form 34.1 percent of the District population.<sup>82</sup> But quite interestingly L. S. S. O'Malley wrote: '*when we first acquired the hill territory of Darjeeling, there were practically no Lepchas in the land, and a contemporary writer says that the oppression of Raja had forced 1,200 able bodied Lepchas, who, he says, formed two- third of the population of Sikkim, to fly from Darjeeling and its neighborhood.*'<sup>83</sup> He further

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<sup>78</sup> L. S. S. O'Malley; *op. cit.*, p. 45

<sup>79</sup> Ranjan Chakrabarti, 'Colonizing the Forest (1800-1900), *Quarterly review of Historical Studies*, October, 1998 - March 1999, No. 3 & 4; Vol-38, P-31

<sup>80</sup> Hunter, 1876, W. W, *op. cit.*, p. 245

<sup>81</sup> *Ibid*, p. 245

<sup>82</sup> *Ibid*, P.85

<sup>83</sup> O'Malley, L. S. S. *op. cit.*, p. 45

said that the number of the Lepchas did not decrease during the British rules, although the statistics showed the decline in the Lepcha population.

The impact of colonial rule had great socio-economic and environmental ramifications on the indigenous people living in the Darjeeling and Western Dooars. The British government wanted to build Darjeeling and Dooars as the commercial center which resulted in the growth of the enormous amount of employment opportunity and a huge demand for manual labour. So Dr. A. Campbell, the first Superintendent of Darjeeling encouraged the neighboring Nepalese to settle down in the British territory and thousand of poverty stricken people of south Nepal started entering in the British territory. The people of Bhutan, Nepal and after them, the British took away what was left of the old Lepcha kingdom. During Campbell's tenure, the business of land speculation increased rapidly and many of the cultivators sold their land to the European speculators. If the land was unclear it was to be held rent-free for the first five years. The chief objective was to attract the native cultivators to settle down in Darjeeling. As the control of the colonial authority spread its roots in Darjeeling, the aboriginal community almost like a part of the land directly came under the control of the British rulers. It can be traced in the proclamation of Lt.-Col. G. W. A. Lloyd issued in 1839. He claimed that the Lepchas were no longer under the orders and the laws of the Sikkim as they settled in the British territory.<sup>84</sup> In 1871 the Deputy Commissioner of Darjeeling reported that there were comparatively few Lepchas and Mechs in the district, the former have left British territory and gone to the independent Sikkim, while the latter crossed the Tista River in the tarai, into the neighboring District of Jalpaiguri.<sup>85</sup> At the time of the annexation of the Western Dooars the existing environmental condition molded the process of the colonization. The forested undulating wasteland of the Western Dooars was marked as a non-regulated area by placing the newly conquered region outside of the colonial tenancy law. The hidden desire of the colonizers behind this decision was to encourage the

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<sup>84</sup> See for more information Consultations, Fort William, 16<sup>th</sup> January 1839; No. 61 (R/195/Vol.7)

<sup>85</sup> Hunter, 1876, *op. cit.*, P. 85

outsiders to settle down in the Western Dooars and expand the cultivation by the reclamation of the forestland.

The remote and untouched market economy rapidly expanded particularly after the introduction of the Railways in 1881. But the unsuitable condition, growing urbanization and the reservation of forest encouraged the aborigines to give up their age-old nomadic cultivation and leave their ancestral land. Some of the Lepchas migrated to Kalimpong, Sikkim or Bhutan where still some forest left. The Mechs who were described by W. W. Hunter as ‘a very wild and uncivilized race of people’ dwelled in the forested regions of Thyanok, Nunmati, Rangamati and Murgao *Jhar* prior to the 1870 and practiced slash and burn cultivation. After the coming of the outsiders, all the large trees were cut down by a contractor and the aborigine of these regions migrated to the other places.<sup>86</sup>

The ethnic sense of these regions rapidly changed with the multiplication of the number of Nepalese in the hills and the Santal, Oraon and the Mundas in the plantation areas of Western Dooars. The demographic change in these areas was largely responsible for the socio-cultural change of the aborigines during the colonial period. The cross-culture interactions which arose as a result of immigration, settlements and colonization reshaped the aboriginal economy and it had an adverse impact on the environment. Their roaming ground was converted into the place of commercial exploitation by the colonizers with the help of enterprising outsider laborer of the Chota Nagpore, Manbhum, Singbhum and Nepal.

Within thirty years (1871-1901) the population of Darjeeling increased more than 2½ times. In 1901, the Nepalese were multiplied to 51% of total population and the Lepchas were reduced to 19% of the total population. After the annexation of Western Dooars, the colonial government declared it as a non regulated district and at the same time the protection of property and life, job opportunities attracted the peoples to the highly fertile tracks of the Western Dooars. Within 1891-1901 the population of Jalpaiguri increased 15.67%, Alipurduar 64.75%, Dam-Dim Thana

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<sup>86</sup> Ibid., p. 34

28.26%, but in 1881 to 1891 the population growth of Dam-Dim was 157.4%.<sup>87</sup> In Dhupguri and Falakata the growth of population increased two times within the last decade of the nineteenth century.

The introduction of the commercial agriculture had a huge impact on the biodiversity of the Darjeeling and Western Dooars. The large number of forested lands in Darjeeling as well as in *terai* and Western Dooars were encroached by the outsiders and these were deliberately given to the enterprising Nepalese, Santali, Oraon and Munda immigrants for clearing and cultivation. The number of hunter-gatherer declined partly as a result of the growing number of tea estates, agriculture holdings and disappearance of forests. Because of the colonial intervention in the remote parts of the Darjeeling and Western Dooars, the aboriginal people started 'disappearing from the forests they loved' and turned into 'a dying race'.<sup>88</sup>

The last three decades of the 19<sup>th</sup> century show that the colonial strategy remarkably affected the environment of the Darjeeling and Western Dooars by introducing plantation and commercialization of the region's agriculture. From the 1870s onward the immigrant started replacing the native folks. Because according to the alien rulers the Nepalese, Santali, Oraon and Munda were born cultivators, resourceful, remarkably loyal and hard working then the un-enterprising, lazy and reluctant aborigines of Darjeeling and Western Dooars. A large number of areas were encroached by the settlement of immigrant Nepalese agriculturists or the labour colonies of the Santali, Oraon and Munda who possessed the different ideas and methods of exploiting the nature and use the natural resources. The Nepalese taught the Lepchas about the method of the Himalayan agriculture and introduced cardamom cultivation and terrace farming in the hills. Soon the terrace cultivation transformed the entire landscape of the Darjeeling hills. The colours of different types of crops in the terrace of the hills became the distinct feature of the identity of the cultivators of the hills. Like the Nepalese consume mustard oil so they cultivate the mustard in the hills and give the hill landscape a completely new bright yellow colour.

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<sup>87</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p.41

<sup>88</sup> L. S. S. O'Malley; *op. cit*, p. 44

## Conclusion

The aborigines who lived close to nature became inferior in the views of the ruling race. The utilitarian thoughts had inspired the progressive colonizers to attack the 'backwardness' of the hill tribes. Soon the European settlers became the 'self-appointed guardian' of 'uncivilized hill folk' and took the responsibility to modernize or civilize the tribes. Though the traditional knowledge of the aborigines was used as an instrument for the expansion of the power and maximized the resource exploitation Darjeeling and Western Dooars.

The Lepchas had profound knowledge about the insects, birds, plants, orchids and the butterflies of their surrounding and the British entomologists utilized their knowledge for their own scientific research and commercial purpose. Some of them were taken to Burma, Andaman and Nicobar, Sumatra, Borneo and Malay Archipelago, in the Celebes, New Guinea and central Africa for entomological work.<sup>89</sup> The botanical explorer of the British Empire Hooker, Gamble and Clark utilized the botanical knowledge of the Lepchas, whereas colonial enthusiast Makintosh gathers the ornithological knowledge from them. In Dooars the situation was different because of the existence of the various groups of autochthons with diversified knowledge.

The medicinal practices of the aborigines were transformed as they came in touch with the Tibetans, Bhutanese, Sikkimese, Nepalese and other outsiders. As early as in seventeenth century the animist Lepchas were colonized and converted in the Tibetan form of Buddhism by the Tibetans and then repressed by Bhutanese from 1700 to 1707. By the end of the eighteenth century, they came under the control of the Ghorkhas (1779-18, 1789-1792) and then colonized by the Sikkimese. When Sikkim became the British protectorate, the aborigine Lepchas again faces the aggression of the more powerful impacts of the British colonization. In the Sub-Himalayan Bengal, the indigenous medicinal practices of the autochthons were definitely transformed with the expansion of commercial agriculture and change in the human ecology. Across the boundaries, many aborigines have a tendency to protest against the coming of the outsider when they interfere in the internal sphere of the tribes. But on the other hand, the Lepchas in the hills, Koch in the sub-Himalayan Bengal adopted the language, religion and even

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<sup>89</sup>Ibid., p. 44

the traditional technologies and the dresses of the immigrants, by losing their distinctive cultural identity and amalgamated with the outsiders. Lack of community sense, willingness to preserve traditional culture, marginalization and their reluctant behavior might be responsible their losing own identity. Because the culture of the majority has a hegemonic power which always spread its root in the society of the marginalized and influenced it to assimilate within the culture of the majority. When the marginalized autochthons unable to accept the sudden change caused by the colonialism and lost their ancestral rights over the Mother Nature, they were migrated to the other places for the sake of life and livelihood. In Darjeeling and Western Dooars regions the same thing happened to the Lepchas, Ravas and the Mechs, and due to the expansion of the colonization, they were transformed into a 'dying race' in their own land.

## Chapter II

### The Colonizers

The day to day experiences of the colonial working class in the alien land made them conscious about the surrounding environment of the subcontinent. The burning sun in the equator as well as the ‘different of tropical disease’, created fear among the British working class in India. Both psychologically and physically the Indian plains turned into a deadly place for the colonizers. Travelling in an unknown terrain far away from the home forced the colonizers to compare the unfamiliar surroundings to their familiar world.<sup>1</sup> In occidental mind, the Asia was mysteriously different from the Europe in terms of climatic conditions, landscape and the biotic world. With the expansion of colonialism, the British Empire got a global connotation, compressing diversified race, culture, eco-regions with varied climate zones. They have dual feelings towards the alluvial plains of the subcontinent. In one hand, it was highly cultivated and profit generating place for the colonizers and on the other hand, it was the dwelling place of inferior natives with dirty habits and place of deadly diseases.

In 1825 a group of Lepchas from Darjeeling escaped to the Nepal to get rid of the increasing oppression of the Raja of Sikkim, Colonel Lloyd, the commercial residence of the Maldah following the instruction of the British Government came to Darjeeling in 1828 to enquire into the matter.<sup>2</sup> After observing the prospect of the Darjeeling as the sanatorium for the British soldiers, he wrote a letter to the Lord William Bentinck to inform him about the place. Ultimately due to the initiative of the colonial officials, the raja of Sikkim granted the land of Darjeeling to the British government in 1835 at a nominal amount. The grant of Darjeeling in

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<sup>1</sup> See Kennedy, D, *The Magic Mountains: Hill Stations of the British Raj*, University of California Press, Berkeley, 1996

<sup>2</sup> *Frontier and Overseas Expedition from India*, Compiled by the Intelligence Branch, Division of the Chief of the Staff, Army Head Quarters, India, Vol. IV, Simla, Government Monotype Press, 1907, p. 42

1835 begins an era of urbanization of the forested slopes of the Eastern Himalayan. On the other hand, the commercial prospect of the Western Dooars was realized by the colonial officials at the beginning of the nineteenth century. As per the details were given by Dr. Buchanan- Hamilton in 1909 the timber markets of Deviganj in Rangpur, Kangtapukuri in Nattor or Rajshahi were fed by the supply of the timber from the Western Dooars. At the beginning of the century, the high storage of the *sal* in the forests of the Western Dooars attracted the attention of the colonial officials. During the annexation of the Assam (1826) the natural environment of the Dooars was observed by the colonial officials. Pemberton in his report (1838) mention the Dooars as the most valuable portion of the Bhutan territory.<sup>3</sup> Captain Jenkins's Report (1841) highlighted the forest resources of the Western Dooars. While moving through Dooars, Ashley Eden noticed the highly fertile black soil and opined that the Dooars had some of the best grazing ground of India.<sup>4</sup>

The formation of the military bases in different parts of Darjeeling and acquisition of the Western Dooars was the military necessity for the British Empire. The Darjeeling and Sikkim was one of the politically unstable areas since the seventeenth century. The Tibetan, Sikkimies and Ghorkhas fought with each other to acquire control over these regions. On the other hand, the question of possession over the lucrative Dooars intensified the skirmish between the native rulers of the Cooch Behar and the Deb Raja of Bhutan. Both Darjeeling and Dooars was located in the vital trade route between the vast Indian subcontinent on one side of the Himalaya and Tibet and China on the other side. The natural beauty of the temperate region of the Himalaya, high deposition of the natural resources as well as the commercial prospects of Dooars attracted the British administrators, speculators and the civilians to expand their commercial interest in the hills of the Himalaya and Sub-Himalaya by acquiring political control.

### **Deadly Plains and Pleasant Mountains**

Most of the historians who have worked on the hills stations of the Raj stated that the origin and the development of the hill stations of the British Raj were closely associated with the climatic

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<sup>3</sup> Pemberton, R. B, *Report on Bhutan, in Eden's Political Mission to Bhootan*, 1972, p. 32

<sup>4</sup> Eden's Memorandum, Darjeeling, 21 April, 1864, Foreign Proceeding, No. 45, Para 26

factors of Indian plains. Vertical sun on the equator became quite unbearable for the ruling class who 'were born and bred in the cool maritime climate of British island'.<sup>5</sup> India was defined by them as 'an unfamiliar dangerous place' full of 'exotic plants, animals and diseases'. The hot and humid alluvial plains surrounded by numerous river systems stretching from the Himalayas in the north to Bay of Bengal in the south became the symbolic monotonous landscape of the subcontinent. As the colonial domination and the commercial interest of the rulers expanded its horizon, they were force to acclimatize in the adverse climatic condition to keep long term control over the alien land. The colonial official documents, travel guides, memoirs and the contemporary British medical journals are the major sources to study the fact that how the fear of the climate and deadly diseases directly contributed to the development of the major hill stations in colonial India.

In the eighteenth and nineteenth century, the Medical Geographers of the Raj actively researched on the geographic conditions of a region particularly on the rivers, plains, climate and natural calamities such as flood, drought and storm to understand their relation with tropical diseases. The writings of British medical geographers such as James Lind's *An Essay on Diseases Incidental to Europeans in Hot Climate* (1768), William Twining's *Clinical Illustrations of the More Important Diseases of Bengal* (2<sup>nd</sup> ed., 1835) and James Ranald Martine's *Notes on the medical Topography of Calcutta* (1837) was primarily focused on the impact of tropical climate on European constituents in India.<sup>6</sup> In the nineteenth century, the trend of the scientific research in Britain was greatly influenced by the feelings of the global control over the diversified geography. As a result, the colonial medical geographers and the scientists segregated the entire planate on the basis of the 'climatic pattern and seasonal distribution of diseases'.

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<sup>5</sup> See Kennedy, D, *The Magic Mountains: Hill Stations of the British Raj*, University of California Press, Berkeley, 1996

<sup>6</sup> The geographic distribution of the heath and diseases in the global basis has also been discussed by many of the medical scientist such as W. Aitken (*Handbook of the Science and Practice of medicine*, London, 1862)

In early nineteenth century, India commonly appeared in the European perception as a ‘land of encircling death’.<sup>7</sup> Many diseases prevalent in India were believed to draw their distinctive character, and their exceptional potency, from the particularities of Indian climate and landscape...<sup>8</sup> The evergreen fertile indo-Gangetic plain, also known as North Indian River plain was the major commercial zone of the subcontinent. The medical topography of the colonial period also epitomized it as a disease laden and deadly landscape of the country. James Johnson, a surgeon of British Royal navy noted in 1815 ‘*there is no unmixed good in the world. The inundation of the Ganges scattered fertility in the plains of Bengal, sow with a liberal hand, and at the same time, the seeds of the dreadful diseases!*’<sup>9</sup> He believed that the contaminated water of the Ganges and its tributary rivers and the dirty habits of the natives had largely been responsible for the deadly epidemics in the Indian plains. The Hindu bodies were burned at the banks of rivers close to the villages or towns. The ashes and every fragment of the funeral pile committed to the streams. The rivers were the source of drinking water and bathing. Dr. Bryden who was a medical officer in Bengal believed that there were certain districts in Bengal which generated cholera germs and time to time it spread into the country by the moist air where it had a permanent abiding place, but died after a varying time.<sup>10</sup>

The fear of the tropical diseases and climate much more intensified along with the increasing number of mortality of the Europeans in Bengal. Sir James Ranald Martin (1796- 1874) who joined the Bengal Medical Service in 1817 and faced the fatal effect of cholera and malignant fever in the Gangetic plains and Orissa, wrote that the mortality rate of the British soldiers

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<sup>7</sup> Arnold, David, *The Tropics and the Travelling Gaze: India, Landscape, and Science 1800-1856*, 2005, p.42

<sup>8</sup> Arnold, David, *The New Cambridge History of India: Science, Technology and Medicine in Colonial India*, Vol. III, 2000

<sup>9</sup> Johnson, James, *The Influence of Tropical Climate, more especially the Climate of India, on the European Constitutions*, 1815

<sup>10</sup> See *The British Medical Journal*, Vol. 1, No. 1211 (Mar. 15, 1884), p. 517; Article - The Contagious Nature of Cholera.

increased due to their disability to acclimatize in the tropical environment. He further mentions the surrounding atmosphere of the military barracks as ‘a world of wretchedness and misery, moral and physical.’<sup>11</sup> Fanny Parks (1794-1875) who had a burning love for the India elaborately discussed the Indian fever when her husband was attacked by it.<sup>12</sup>

During the summer as narrated by Major Gordon Casserly, an Army official posted at the Buxa fort, the ‘sun became a torture’ and the hot wind was like ‘a blast of fiery air from an open furnace door’ for the Europeans.<sup>13</sup> The summer extended from early March to the end of June, India was turned into ‘a place of torment’. In the cities surrounded by millions of natives and bathed in perspiration, the Britons were enforced to do their duties to retain control over the Empire in the tropics. The heat was most oppressive and the climate was indeed something most Englishmen and women never got used to.<sup>14</sup> On the other hand closed in darkened houses from morning to evening thousand of English women and children suffer through the weary months. In the burning summer, the British soldier lied on his bed under the punkah of the barrack-room, thinks with regret of the cool land he had left in their motherland. But the biggest inconvenience was the course of the heat, received only occasionally by rains, which in turn were also too heavy for comfort. The rainy season was the dullest time for the Englishman in India. The month of October was perhaps the unpleasant time of the year in India when the rains were almost ended and the heat was intensified by the dampness of earth and atmosphere. Despite the warning in the popular travelogues and medical tracts, the Englishmen in India rarely cut back on

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<sup>11</sup> Martin, James Ranald, *First Report of the Select Committee on Colonization and Settlement (India)*, 1858, p

<sup>12</sup> Parkes, Fanny, *Wandering of a Pilgrim in Search of the Picturesque*, Vol.1, 1850 pp. 59-60

<sup>13</sup> For more information see the autobiography of Major Gordon Casserly, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914

<sup>14</sup> Nayar, Pramod K, ed, *Days of the Raj: Life and Leisure in British India*, Penguin Books, 2009, p.54

their drinking, and this proves to be the downfall of many.<sup>15</sup> In India, the major problems faced by the British were weather, unmanageable mosquitoes, venomous snakes and other insects.

### **Deadly Malarious Terai**

The *Terai*, a marshy and moist forest track stretching between the North Indian alluvial plains and the Himalaya was described by the Britons as ‘a dread belt of fever-laden forest’ or a ‘zone of malaria and black water fever’. The low Malarious belt of *Terai* skirts the base of the Himalaya, from the Sutlej to Brahma-koond in Upper Assam.’<sup>16</sup> This region had always been dreaded by the Europeans. Before the expansion of modern communication infrastructures, they used to hurry through it as fast as they could travel, in order to get beyond the fatal fever zone. Their fear of *Terai* much more exaggerated after the death of Lady Canning who caught fever while halting to sketch by the road side on her return journey from Darjeeling. After the incident, the European ladies use to cover their face while going through the deadly *Terai*.<sup>17</sup> The forested land covering the large parts of the *Terai* and Dooars had a vulnerable effect on the colonial survey officers as well as the native employees who for the first came to the place to explore and estimate the value of the hidden recourses and the prospect of the Western Dooars. The colonial officers like O’Donel, Beckett, Hodgson, Sunder and Milligan had their own experience about the contagious and the harmful nature of the diseases in these parts of Bengal and several times it interrupted the progress of the survey operations.<sup>18</sup> The fear of the tropical diseases and climate

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<sup>15</sup> Ibid, p.128

<sup>16</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p.100

<sup>17</sup> Also mentioned in Newell, A. G, *Black Water Fever*, John Bale, Sons & Danielsson, London, 1909, p. 124

<sup>18</sup> Up to the first decade of the Twentieth Century the environment of the Dooars was extremely contagious, but after that the situation began to change due to the colonial intervention. For more information J. A. Milligan (1919) *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*; The Bengal Secretariat Book Depot; Calcutta. P.15

much more intensified along with the increasing number of mortality of the Europeans in Bengal. They recognized the Malarious climate of these regions as 'an inevitable part of this environment.'<sup>19</sup>

The colonial domination in the unknown terrain encouraged the European scientists to explore the forested and diseases ridden Orient. In the mid of the nineteenth century, a theory was developed that atmospheric poison circulated indefinitely in the blood was responsible for malaria.<sup>20</sup> Most of the travellers, administrators or European civilians moving through the *Terai* towards Darjeeling believed that the hot dense vapour raised by the tropical sun was responsible for the Malarious fever.<sup>21</sup> They believed that the Himalaya prevented the air to move freely, so the contagious vapour locked in the *Terai* region, until the cold, heavy and fresh wind glided down the mountain slope in the winter and replaced it.<sup>22</sup> Some of the Europeans suspected that the vertical sun ray was responsible for the deadly fever. Few believed that the less known insect world was the cause of the high temperature and abnormal deaths in the Terai and Dooars regions. Surgeon David Field Rennie who possessed a vast experience about the deadly Malarious disease of the orient opined that the atmospheric influence was responsible for Malarious fever. Based on the observation and experience, Rennie also focused on the correlation between the nervous system and the atmospheric electricity to explain the active and cognizable development of the Malarious disease. He suspected that the influence of the fever increased along with fog returned in Darjeeling and feel that it may be connected with marshy soil and rank vegetation.<sup>23</sup> As the Darjeeling emerged as a colonial summer resort, the clearing

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<sup>19</sup> Milligan, J. A, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*; The Bengal Secretariat Book Depot; Calcutta, 1919, P.15

<sup>20</sup> Rennie, Surgeon Davi Field, *Bhootan and The Story of the Dooar War*, London, 1866 p.349

<sup>21</sup> J. D. Hooker also had same opinion. Hooker, J. D, 1854, op.cit, p. 135

<sup>22</sup> Donaldson, Florence, *Lepcha Land*, Sampson Low, Marston, London, 1900, p.9

<sup>23</sup> Rennie, 1866, *op.cit.*, p.304

of the forests in the Terai became essential to purify the air of the areas just beneath the Darjeeling.

### **Origin of the Hills Station in Dorje Ling**

The climatic condition of the Indian plain had a deep psychological impact on the mercantile communities like the British as their jobs led to a long and distant separation from their family and the near ones lived in back home. The British Government realized that the establishment of the hills stations might reduce the anxiety among the European working class in India. Because most of them believed that the Indian subcontinent was not a safe place for their families. The foundation of the hill stations in India became a part of the public interests of the European civilian in India which was inextricably related to the Bentham's theory of happiness.<sup>24</sup>

Some of the colonial official records suggested that the early British administrators like Robert Clive, Warren Hastings, Wellington, Munro and Bentinck were in favour of the occupation of the Indian uplands.<sup>25</sup> Prior to the foundation of hill resorts, the invalid British soldiers and civilians were compelled to take shelter in the coastal enclaves for leisure and recreation. Cool sea breeze provided some relief from the warm humid climate of the deadly plains. Sometime during the summer they even sailed to the ports of South Africa or to the Mauritius to get rid of the 'burning climate of South Asia'. The first practical step towards the foundation of hill station was taken by Lord William Bentinck in 1819. Due to his initiative, Simla appeared as the first hill station of British India, after this the number of the hills station increased gradually. In the first stage, some hill station were developed as military cantonments or sanatorium in the sensitive border areas of the British India but later transformed into an imperial summer residence.

In the early 19<sup>th</sup> century, few societies were formed to investigate the climatic condition of Bengal, within a short distance of Calcutta, where the range of the temperature was almost similar to the England and the Northern France i.e., 55° F with occasional snowfall in the months

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<sup>24</sup> Pinn, Fred, *The Road to Destiny: Darjeeling Letters 1839*; OUP; Calcutta; 1986; p. 107

<sup>25</sup> Clarke, Hyde, *English Settlement*, Society of Arts Journal, 19<sup>th</sup> May, 1858, p. 423

of January, February and March.<sup>26</sup> An experimental station for ailing troops was opened at Cherrapunji in Assam, but it proved to be a wash-out literary- as it turned out to be one of the wettest places in the world.<sup>27</sup> In this hunt of cooler place in the subcontinent, the Himalayas proved to be a perfect place. Sir James Ranald Martin (1796- 1874) said, ‘they (the mountains) are especially protective against the diseases of the plains; they are curative in the simple fevers; unaccompanied by organic diseases; visceral diseases are rarely cured in the mountains...’<sup>28</sup>

Darjeeling was developed in the heart of Sub-Himalayas.<sup>29</sup> During the formative period of the hills station, the ‘European masters’ compared the Darjeeling with other hill stations and the hunt for the cooler climate in the profitable Indian sub-continent enforce them to do so. In general, the persons who have visited Darjeeling prior to the urbanization of the hills opined that Darjeeling was far better than the Simla in terms of ‘natural beauty and magnificent forests’. The weather of Darjeeling was drier than that of Landour, Mussoorie and Cheera Poonjee.<sup>30</sup> In general the persons who have visited Darjeeling prior to the urbanization of the hills opined that Darjeeling was far better than the Simla in terms of natural beauty and magnificent forests. The grand view of the hot and dusty Indian plains in the horizon gave them so much relief as they fill they were far away from the diseases, dust and hot climate when they looked at the eternal snows of the mount Kanchanjungha they feel that they were now really at the top of the world. The eminent naturalist Dr. Joseph Hooker, who made the Darjeeling his chief station during his exploration in the Himalayas, expressed that the hills station of Darjeeling owes its origin (like Simla and Mussoorie) to the necessity that existed in India of providing places where the health of the Europeans may be recruited by a temperate climate. He further said that the Darjeeling ridge

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<sup>26</sup> Clarke, Hyde, *Colonization, Defense, and Railways in Our Indian Empire*, 1857, p. 23

<sup>27</sup> Pinn, Fred, 1986, *op.cit.*, p. 1

<sup>28</sup> Ranald Martin, James, 1858, *op.cit.*, p.18

<sup>29</sup> Sub-Himalayas means all the Great Himalayas chain not including the snowy ranges.

<sup>30</sup> The colonial authority realized that the Landour, Mussoorie and Cheera Poonjee were not suitable for the construction of the hill station because of the excessive rainfall.

varies in height from 6,500 to 7,500 feet above the level of the sea, 8,000 feet being the elevation at which the mean temperature most nearly coincides with that of London, viz. 50° F.<sup>31</sup>

As the colonial official reached the mountain, they minutely watched and studied the climate of the place. They selected Darjeeling as because climatologically its temperature was similar to the England and south France. So in the course of colonial expansion in the Orient, the imperial authorities were to some extent guided by their emotion and transformed the hills as a home away home for them. Major Herbert made the earliest meteorological observation in Darjeeling and asserted that the temperature of Darjeeling was cooler than Calcutta because in India the temperature falls at the rate about 1° for every 300 feet. The Calcutta being on the level of the sea and on the other hand, Darjeeling has the elevation of 7,200 feet. He further stated that the latitude of Darjeeling was 5° higher than Calcutta and the country was also clothed with evergreen forest away from the heat of the metropolises and referred as a perfect place for the hill station they were looking for.<sup>32</sup> At the same time, Darjeeling was far from the metropolises which were exposed to the disease. A comparative study of the elevation of the hills station revealed that the Darjeeling was placed at an appropriate height for the construction of a sanitarium. Before the beginning of the railways, another advantage of Darjeeling was its dak route distance from the station situated in the plains.

In this high elevation, the glorious panorama of the snowy mountain peaks, the deep valleys containing evergreen forest and silver line of threads like rivers mesmerized the British rulers and guided them to establish a convalescent depot in Darjeeling. The non-official Europeans and business classes stationed at Calcutta was not very sure about the prospect of the hill station in Darjeeling. In contrary that a group of British official started proclaiming that the climate of the oriental mountains had a remarkable positive and beneficial impact on the European children. After observing the climate of Darjeeling in 1849, J. D. Hooker described it as ‘paradise for European children’.<sup>33</sup> They further expressed that the fresh air of the Indian mountains have

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<sup>31</sup> Hooker, Joseph, *Himalayan Journal*, Vol. I, 1854, p. 105

<sup>32</sup> *Darjeeling guide*, 1854, p. 28

<sup>33</sup> Hooker, Joseph, *op.cit*, p. 120

healing power which regenerated the India-born British children, though they were taken there as pallid, sickly, yellow, soft and flabby from the hot and disease ridden plains. Furthermore, they opined that the station would provide the opportunity to the British families to stay closer and safe in the Subcontinent. Because in those days the British children were sent to their motherland for the education and the long term separation created mental depression among them as also to their family members who were living in India. So in many cases the officers of the British government provided their positive views on the capabilities of the Darjeeling as a perfect shelter for the occidental population in the oriental climate. The optimistic British officials also glorified the natural conditions of Darjeeling, even by saying that the cattle and poultry of these hills were far superior to those found in most parts of the plains and also highlighted the prospect of the place in farming and horticulture industry.<sup>34</sup>

The mass migration to the hills during the hot streaming summer months was viewed as medical necessity during the colonial period. They looked at Darjeeling as an appropriate place for the Europeans in the summer month as the oriental epidemic diseases: Cholera, measles and chicken pox was less prevalent in the hills. The climate of the Darjeeling, freshen up their memories of the home which inextricably related to the cold and pleasant summer. Every year in Darjeeling winter enters with three waves. By the end of the rainy season the sky became clear, the temperature gets pleasant and sweet smelling flowers started appearing in the hill slopes. The second wave of the winter began at the end of the November with the gradual increase of the coldness of the weather and heavy frosts. The ground is frozen in December and January, sometimes almost all day; the atmosphere became cloudless, dry and freezing which gave them a sensation that they felt on a frosty morning at home i.e. England.<sup>35</sup> The resemblance of the winter season between Europe and Darjeeling attracted the attention of the colonizers to build a pleasant holiday home at Darjeeling.

When the first group of the British officials reached Darjeeling, the place was totally unclear and the whole road from Pankhabari surrounded by dense forest with an almost impenetrable growth

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<sup>34</sup> Pinn, Fred, 1986, *op.cit*, p. 46

<sup>35</sup> *Darjeeling Guide*, 1858, *op.cit*, p. 16

of the under wood broken in some hilly slopes by the Lepchas for jhum cultivation. The Moss hangs in filaments and the festoons from the trees, and oaks, maples, ferns, strawberries, raspberries along with the streams rippling and sparkling along the stones and the change in temperature gave the English travelers a unique European sensation. The majestic forest was virgin and was not connected to the colonial commercial exploitation.<sup>36</sup> The detachment from the outer world provided the nature an opportunity to blossom in its own mood. In 1835 Darjeeling was a collection of about 20 huts with a population of 100 peoples. The place was transformed into an embryonic settlement with a few stony paths, a few wattle and daub huts, and hundreds of people milling about like ants, reducing the Jungle to building plots.<sup>37</sup> Within first five years, the forests were cleared for the construction of Kutchary and about thirty other buildings. A significant step was taken to construct a European settlement, during the governor-generalship of Lord Auckland in 1838. By the end of this year, thirty grants were made to the Europeans, a corps of army sappers formed for clearing operations and buildings were to commence with vigour after the rains.<sup>38</sup> In 1839 the growth of the settlement was further stimulated after the appointment of Dr. A. Campbell, the British residence in Nepal, as the Superintendent of Darjeeling. Soon he encouraged the new settlers by granting them free forest lands.<sup>39</sup>

Sir W. W. Hunter mentioned that the majestic forests which clothed the mountains of the British Sikkim were narrowly cleared to construct the residence of the British officials.<sup>40</sup> The

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<sup>36</sup> The exploitation of the forests of Western Dooars was started prior to the coming of the British colonizers in the hills. According to the report of Dr. Buchanan- Hamilton (1809) the timbers of the Sub-Himalayan regions was used to built the canoe which were sold in the markets of Deviganj in Rangpur, Kangtapukuri in Nattor (Rajshahi).

<sup>37</sup> Pinn, Fred, 1986, *op.cit*, p. 3

<sup>38</sup> Pradhan, Queeny, *Empire in the Hills: The Making of Hills Station in Colonial India*, *Studies in History*, 2007, 23: 33; 2007; p. 44

<sup>39</sup> O'Malley, L.S.S, *Bengal District Gazetteer: Darjeeling*; The Bengal Secretariat Book Depot, 1907, Second reprint 1999, Logos Press, New Delhi, p. 22

<sup>40</sup> See for more information Hunter, Sir W. W, *Life of Brian Houghton Hodgson*, 1896

urbanization in Darjeeling and growth of the human settlements introduced a new beginning of the colonial intervention in the natural world of the Orient. Most of the European sanatoriums in the Himalayas were surrounded by their unique flora and faunas, but as the European constructions overflow the landscapes of the mountains, it disrupted the natural growth of the wildlife. The urban morphology of the Darjeeling and the other European hills stations in India were quite different from the towns and the cities of the Indian Subcontinent. The sanatoriums were developed for the seasonal visit for the British civilian and the soldiers, on the other hand, most of the large cities and the commercial places of India had their distinct character as they were build and rebuilt by the powerful rulers, according to their interests, culture and beliefs.

By the end of 1930s, the demand for land rapidly increased, which enforced the government to introduce the rules for the land grant in Darjeeling on 4<sup>th</sup> September; 1839. Major E. Garstin, the Chief Executive Engineer of Lower Province, suggested in his report: ‘the condition on which the ground should be given, is the clearing it of the thick forest which now covers it’.<sup>41</sup> In 1841 a new lease rule was issued by the government to cope up with the emerging demand for the land. But in many cases the leaseholders violated the Rules of 1841 and illegally captured more land, they were entitled to hold according to their title-deeds.<sup>42</sup> But after almost twenty-two years in 1863, the revenue board noticed some irregularities. As a result submitted a report to the district office but beyond this, no steps were taken. Within 1841 to 1863, a large portion of the forested land of Darjeeling were encroached by the property holders of the old hill territory. Holding a property and building European cottages in the hills in the early years proved to be a profitable business for the colonizers as they collected all the building materials from the surrounding forest or even from their own property. An anonymous Englishman wrote in *Asiatic Journal*

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<sup>41</sup> Fred Pinn; op.cit, p.41, Major E. Garstin submitted this report to H. M. Law the Secretary to the Darjeeling Committee.

<sup>42</sup> Hunter, W.W. *A Statistical Account of Bengal*, Volume X; Trubner & Co; London; 1876, p.105

(December, 1837) describing how the natural resources were used by the new settlers in building their houses.<sup>43</sup> The anonymous person wrote:

*'All who intend to building had better set to make doors and windows to take up with them; all other materials can be made on the spot; nothing, in fact, being required more than timber and bamboo, a little lime and mud, as the present fashion of building there is with crushed bamboos for walls, plastered with mud and then whitewashed; and very warm and comfortable are the houses thus built... in all, I believe about two!'*<sup>44</sup>

To attract the British businessmen, 42 acres of forest land was cleared for Bazaar and 47 acres of land was reserved for the new settlers in Darjeeling.<sup>45</sup> The same process of deforestation also followed in Pankhabari, Kurseong and Mahaldiram to construct commercial places. The British authority wanted to epitomize Darjeeling as a profitable and fully equipped modern European settlement in the verge of the disease ridden alluvial plains of Bengal. So they encouraged the both the European entrepreneurs and the outsider labours to settle down in the hill tracks and at the same time bring the non-arable forest land under cultivation and gather commercial profits through in the form of revenue. The impact of colonial rule had great environmental ramifications on Darjeeling. When the Bhutias colonized this area they remained aloof and they were not intended to use the natural resources for the commercial purpose. But as a colonizer the British were much more sophisticated, precise and well organized for extracting the natural resources of the colony by using the men power of conquered areas. They wanted to build Darjeeling as a commercial center which resulted in the growth of the enormous amount of employment opportunity and a huge demand for manual labour. So Dr. A. Campbell, the first superintendent of Darjeeling encourage the neighboring Nepalese to settle down in the British

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<sup>43</sup> Pradhan, Queeny, 2007, *op.cit*, p. 43

<sup>44</sup> Colmeille, Mother Mary, *First the Blade*; Calcutta; 1968, p. 56, The writing of the anonymous Englishman also mentioned in Queeny Pradhan's 'Empire in the Hills: The Making of Hills Station in Colonial India', *Studies in History*, 2007, 23: 33; 2007; p. 43

<sup>45</sup> According to the Rules of 1841 the forest land was encroached by the government to construct Bazaar.

territory and thousand of poverty stricken people of south Nepal started entering in the British territory.

The land grant rules and its statistics revealed the fast expansion of the human settlements in Darjeeling changed the eternal landscape of the Darjeeling hills. Mr. J. Ware Edgar, the Deputy Commissioner of Darjeeling, in his report dated 26<sup>th</sup> September, 1874, divided the District into five revenue tracts, viz. 1. The old hill territory stretched between Sikkim frontiers to the foothills south of Pankhabari. 2. The 115 square miles of land situated in the north west of the district. 3. The two strips of land almost 253 square miles, annexed with Darjeeling in 1850. One lying to the west of old hill territory upto the frontier of Nepal and the other lying to the east of the old hill territory upto the Tista River. 4. The 271 square miles of *Terai*. 5. The 485 square miles of tract placed in the east of Tista also known as Daling sub division, annexed after Bhutan war in 1864.<sup>46</sup> All these parts of the district faced distinct types of colonial exploitation.

During the allocation of the land in the old hill territory, the preference was given to the European settlers. Because of the climate and landscape, the old hill territory was quite similar to the landscape of the British country sides. The lofty picks, deep valleys clothed with forests and the cascading rivers attracted the speculators to invest their money in the land of newly found settlements of Darjeeling. In early years Darjeeling was a scattered village confined only almost entirely to the crest and higher slopes of Birch hill and Jalapahar range.<sup>47</sup> The entire region was densely covered with timber. Certainly, both the west and east face of the hills opposite (where the Victoria hospital now stands) were densely wooded. The whole slope from the crest of the Birch Hill range downwards towards over the site of the Happy Valley Tea Estate was entirely forested.<sup>48</sup>

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<sup>46</sup> Edgar, J. Ware, *Special Report on the Land Tenures of the Darjeeling District*. 26<sup>th</sup> September; 1874

<sup>47</sup> Harvey, David, *Justice, Nature and Geography of Difference*, Oxford, 1997

<sup>48</sup> Pradhan, Queeny, 2007, 23: 33; *op.cit*, p. 43

## Insects of the New World and Deforestation

The diversified insects' kingdom in the forested regions of the Darjeeling and Western Dooars was extremely annoying for the outsiders who wanted to settle there to spread commercial agriculture. The environmental condition of the Sub Himalayan region created an ideal habitat for the insects, including Peepsa, Cicada, Spiders, Bumblebees and Crane flies. Up in the hill slopes, where the nights were colder, many insect species have dark coloured bodies to absorb as much heat as possible.<sup>49</sup> During the early stage of roads construction in Darjeeling, the Bengali Coolies, sepoy and the servants were attacked by the extremely annoying black flies known as Peepsah or Pipsa or Potu and in latin-, *Simulium indicum*. The bite of these insects caused serious inconvenience among the labours so that they were unable to perform their duties due to ulcerations on their limbs.<sup>50</sup> Prior to the invention of the Ronald Ross, many people believe that the infectious bite of the Peepsah was responsible for the deadly fever in the *Terai* and Dooars. The bite of the insects caused small ulcers in the human bodies. After the annexation of Western Dooars, the 41<sup>st</sup> Native Infantry at Buxa terribly suffered from the bite of this small insect.<sup>51</sup> The medical officer stationed at Buxa wrote to the Sanitary Commissioner that 'a considerable number of the sepoys of that regiment have been incapable in performing their duty temporarily due to the bite of the insect.'<sup>52</sup> Mr. Cunningham in his '*Plagues and Pleasure in Bengal*' mentioned the peepsah as more dangerous than the mosquitoes and leeches.

The genus of cicada was another annoying species of insects for the outsiders in Darjeeling and Dooars. The melodious loud sound of the cicada from the early morning till the late evening was unbearable for the Europeans. There were stories where the loud sound of the cicada enforced a

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<sup>49</sup> Bisht, Ramesh Chandra, *International Encyclopedia of Himalayas*, Vol.5 (1-5) Mittal Publications, 2008; p.21

<sup>50</sup> Bayley, *Dorje-Ling 1838* in Pinn; p.35

<sup>51</sup> *First Annual Report of the Sanitary Commissioner from Bengal 1868*, Printed by William Jones; At Alipore Central Jail Press; 1869; Pp. 206

<sup>52</sup> *Ibid*; Pp. 206-207

European to fire a pistol on him and committed suicide.<sup>53</sup> Colonial perception of the public health and cleanliness was connected with the denudation of the bushes and forests. In Darjeeling and Dooars, the bushes were cleared to get relieved from the annoying insects.

Due to the colonial intervention into the natural world of the hills and Western Dooars a new species of weed of tropical Mexico became rampant in the hill slopes and Dooars by replacing the indigenous species of weed. Major Waddell who have visited Darjeeling by the end of the 1890s stated that the blue-flowered groundsel or billygoat weed (*Ageratum Conyzoides*) accidentally enter into Darjeeling with the American Indian corn and became rampant in the higher altitude of the Darjeeling Himalayas in the second half of the nineteenth century.<sup>54</sup> The plant contains the pyrrolizidine alkaloid which is a hepatotoxic component responsible for liver cancer and abnormal cell division or tumor. The insects and animal which consume the plant built up the alkaloids in their body and later on suffer from the poisonous effect of the plant and die. Accidentally the *Ageratum Conyzoides* became an effective insecticide in the mountain slopes of the Himalayas due to the colonial intervention. Furthermore, Waddell mentioned that the weed spread rapidly in the hill slopes displacing the indigenous weeds in all fresh landslips and clearings and even the 'hardy' wormwood disappeared because of blue-flowered groundsel.<sup>55</sup>

Another insecticide was the Cannas lily (Kalabati) which was introduced in Europe from West Indies and later on few species were shifted to Darjeeling. The Cannas lily has a tendency to expand faster in the wetland areas and high tolerance to contaminate the environment. The Cannas was remarkably free from diseases and connected with the 'Anglicization of the landscape' on the other hand use the plant as an insecticide. When the seasonal Cannas dried up leaf were burned as the insecticide.

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<sup>53</sup> For more information see F. Pinn, *The Road of Destiny: Darjeeling letters 1839*, Oxford University Press, Calcutta, 1986

<sup>54</sup> Waddell, L. A, *Among the Himalayas*, 1899, p.19

<sup>55</sup> *Ibid*, p.19

## Deforestation and Weather Change

The rapid denudation of the forest and the expansion of the settlement had an adverse impact on the climate of the queen of hills. The old residents of Darjeeling recognized the change in the climate during their lifetime. Many of the old resident around the last few decade of the nineteenth century, however, affirm that 25 years ago when the hillsides were clothed with virgin forest snow covered the landscape with a white mantle for weeks at a time.<sup>56</sup> The British civilians living in Darjeeling was conscious about the climatic change and its connection with the loss of greenery in the slopes. The dwellers of Darjeeling observed that the extreme level of deforestation leads to deterioration of the snowfall in Jalapahar and Singalila by the end of the nineteenth century. Scientific observations were taken place during this period to mark the lowest line of permanent snow on the four chief peaks, especially in Janu and Kabru. The accounts of the early travelers revealed the occurrence of the heavier and frequent snow frost in Darjeeling. According to Lt. General Lloyd, during his first visit to Darjeeling in February; 1828, snowfall went on for three successive days and covered the entire station and the adjacent hills with a white mantle for a week.<sup>57</sup> On revisiting Darjeeling in 1836 Lt. General Lloyd observed a snowfall covered the ground to the depth of a foot and remained unthawed for over a week.<sup>58</sup> In the month of March 1849, Hooker observed a severe hill storm in Darjeeling and Terai and noted that the hails laid in Darjeeling for seven days and amalgamated into a mass of ice several feet long and a foot thick.<sup>59</sup> A belief gradually developed among the common people in the district that the high level of deforestation carried on in the hills slopes was responsible for decreasing rainfall in the Darjeeling. Douglas Freshfield feels the severity of the deforestation in the Darjeeling and blamed the tea planters as they burned the green foliage and exposed the soil of

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<sup>56</sup>Dozey, E. C, *A Concise History of the Darjeeling District Since 1835*; 1922; p. 123

<sup>57</sup> Ibid, p. 124

<sup>58</sup> Ibid, p. 124

<sup>59</sup> Hooker, *op.cit*, p.405

the mountain in one of the heaviest rainfall zones of the planate and stimulated the chance of the landslip.<sup>60</sup>

In the second half of the nineteenth century, the massive destruction of the forest in the Sub-Himalayan resulted in the frequent change in the river beds. In pre-colonial subsistence economy, the aboriginal population of the Western Dooars practiced *Jhum* cultivation which required a small amount of the water. But rapid expansion of the cultivation zone in the forested areas of the Western Dooars increased the water consumption in agriculture. The new settlers dig up irrigation canals which were popularly known as *Jampois*. These canals obstructed the natural flow of the river and caused inundation of the large areas during the monsoon. Sometime in the rainy season the water level of the *Jampois* increased rapidly and leaving the old bed the main flow of the river shifted into the *Jampois*.

### **Population Growth and Shrinking Forests in Dooars**

Along with the expansion of colonial control over the hills, development of the business economy and communication infrastructures the small villages were transformed into highly populated settlements. In the Darjeeling District, a rapid growth of population occurred in Kalimpong, Kurseong and the Siliguri. Once the lands were the roaming ground of the furious animals, insects. After the coming of a large number of the enterprising Europeans and native labours, the century-old trees were cut down and converted into the plantations, markets and human settlements. Soon the Darjeeling was described as the 'Babel of tribes and nations'.<sup>61</sup> In 1865 the population of Kalimpong was only 3,530 souls but along with the spread of plantation, it was increased to 41,511 in 1901. When Surgeon David Field Rennie came to Kalimpong in 1865 he observed only isolated patches for rice cultivation, though in few areas mountain slopes were cleared for plantation.<sup>62</sup> **(Table: 4)**

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<sup>60</sup> Freshfield, Douglas W, *Round Kanchenjunga: A Narrative of Mountain Travel and Exploration*, Edward Arnold, London, 1903, p. 49

<sup>61</sup> O'Malley, L. S. S, 1999, *op.cit.*, p. 41

<sup>62</sup> Rennie, 1866, *op.cit.*, p. 321

J. D. Hooker in '*Himalayan Journal*' gave a detailed description of the natural environment of Siliguri, while he was moving towards Darjeeling in April, 1849. He observed the west of the Siliguri was covered with sal forest and the water bodies contained hundreds of birds including no less than sixteen species of swimming birds many of which were migratory and English species.<sup>63</sup> These birds were the Shovellers, white eyed and common wild ducks, Merganser, Brahminee and Indian goose, Common Garganey teals, two kinds of gull, one kind shearwater, three of tern, and one type of cormorant. Beside that the egrets, large crane, stork, green heron, and the Demoiselle, the English sand-martin, kingfisher, peregrine-falcon, sparrowhawk, kestrel, and the European vulture, the wild peacock, and jungle-fowl were gathered near the Siliguri. In the east of Siliguri contained a barren waste full of turf or sterile sand.<sup>64</sup> But the situation of Siliguri changed along with the growth of communication infrastructures and expansion of the colonial market economy. In 1864 a place name Hanskhawa which literary means a spot where the ducks were eaten located near Phansidewa was selected as the headquarters of Terai Sub-division. But in 1880 the headquarters of Terai was shifted to Siliguri and the railway network also established with this place. From 1871 to 1881 the population of Siliguri increases 31% and it's occurred only because of its location and connection to the railways as well as the roads network.<sup>65</sup> The 'remarkable urbanization' of the Siliguri was mentioned in the Imperial Gazetteer (1907) and described how the tiny Malarious village in the foothills was transformed into a populated town due to the colonial intervention. Later in Kurseong also the population growth and process of urbanization become faster in the first two decades of the Twentieth century.<sup>66</sup>

The reclamation of the forested tracks of the Western Dooars was made by the Kochs and Mechs during the time of the Mughal invasion in Cooch Behar in the first decade of the Eighteenth Century. Within the forest tracks slash and burn cultivation was practiced by the Mechs, on the

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<sup>63</sup> Hooker, *op.cit*, p.399

<sup>64</sup> Ibid; p.400

<sup>65</sup> Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling*. Alipore, Bengal: Bengal Government Press, 1947, p. 52

<sup>66</sup> Ibid, p. 54

other hand, the Koch agriculturalist cultivated the open fields outside the dense forests. After the Mughal invasion in the North Bengal, the Rajbansis expanded cultivation in the Dooars regions and formed small self-sufficient villages in the adjoining areas of Cooch Behar. When British soldiers enter into the Bengal Dooars during the Second Anglo-Bhutan War (1864) they noticed that many parts the Western Dooars were cultivated by the peasantry and they grew rice, mustard, tobacco in the opened fields.<sup>67</sup> According to Surgeon David Field Rennie, the settlements like Kranti (Kyrantee), tracks near Chamurchi (Chamoorchee), Ambari Falakata (Ambaree Fallacottah), and the track between Ambari Falakata to Siliguri (Silligurie) were well cultivated.

After the annexation of the Western Dooars (1865), the colonial government encouraged the outsiders to settle down in the uncultivated wastelands of the Mynaguri, Falakata, Alipurduar and Bhalka tahsils. The people of the neighboring district attracted by the lowland revenue in the fertile land of the Western Dooars where the security of the life and property was given by the British government came in large number to settle in the wastelands. Later on, the employment opportunity in the tea plantation attracted the poverty stricken people of the Chota Nagpur, Manbhum and Singbhum to settle in Western Dooars. In 1864 Mynaguri was partly cultivated, as the British control was established the waste lands were brought under cultivation. The population growth in a remarkable rate increased in the Falakata. Within 1891 to 1901 populations increased upto 57.87%.<sup>68</sup> Before the annexation, Alipurduar was a low-lying plain on which paddy was cultivated.<sup>69</sup> The Alipurduar developed as a timber market along with the spread of Colonial market economy in the Western Dooars. It became the major market for the

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<sup>67</sup> For more information see D. F. Rennie, *Bhootan and The Story of the Dooar War*, London, 1866

<sup>68</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, P. 41

<sup>69</sup> Sunder, D. H. E, *Survey and Settlement of the Western Dooars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press, 1895, p.24

sal and the local merchants send the logs to the Rangpur and Dacca. Within 1891 to 1901 the population of the Alipurduar increased upto 70.01%.<sup>70</sup>

In Western Dooars up to 1895, there were many non-toll-paying markets near the reserve forest mainly in Jalpesh, Lataguri, Appalchand, and Chalsa. All these markets became the major places to sale the forest products.<sup>71</sup> The growth of the markets was encouraged by the colonial state with the intention to merge the remote resource producing forest economy with the global capitalist markets. All markets of Dooars were under the control of Deputy Commissioner of Jalpaiguri. According to W. W. Hunter, there were no leather markets in the Darjeeling and Western Dooars. But many of the travelers in the nineteenth century mentioned about the business of exotic commodities in the markets of Darjeeling and Western Dooars. Across the Himalayas, the Tibetan lamas were involved in the business of various forest and animal products as the remedy of the different diseases and to protect the people from the attacks of the malicious Gods.<sup>72</sup> D. H. E. Sunder (1895) in his settlement report mentioned the existence of seventeen haats (village markets) in the Western Dooars, but at the time of J. A. Milligan (1919), the number was reduced to fifteen.

The local fairs of the Darjeeling and Western Dooars also played a prominent role in stimulating the regional monetary transactions. These fair opened up the market for the rural produce as well as the forest products and attracted a large number of businessmen and common people to the sale and buy products. After the foundation of Darjeeling, Dr. Campbell initiated to organize an annual fair at the foothills and it became a success for the colonizers which stimulate the market economy in the newly colonized settlement.<sup>73</sup> The demand of the forest produces increased along with the expansion of markets and created pressure on the forests for the regular supply. The

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<sup>70</sup> Gunning, 2008, *op.cit.*, P. 41

<sup>71</sup> Sunder, 1895, *op.cit.*, p. 27

<sup>72</sup> See for more information *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 39 (Jul. - Dec., 1909), pp. 386-396

<sup>73</sup> Clarke, Hyde, 1857, *op.cit.*, p. 29

colonial economic policies in the newly colonized regions encouraged the native to involve in the process of the growth of rural markets in the Darjeeling and Dooars. A fair was introduced in Santarabari near Buxa, Jalpesh in Mynaguri tahsil and Falakata to encourage the trade between India and Bhutan. The Bhutias came down to Buxa to exchange their products like cloth, ponies, leathers and various other articles and took away cotton, woolen products, betel nuts and Tobacco.<sup>74</sup>

### **Human-animal Conflict and loss of Biodiversity**

To stop the total exhaustion of the forest in Darjeeling, the colonial forest department introduced Forest Acts in the Darjeeling. The activities of the colonial forest department were first started in the hill areas of the Darjeeling and Sikkim during 1866-1867 as the forests of these regions faced a massive destruction. Later on as the political control of the colonial government expanded over the Western Dooars, they introduced a systematic exploitation of the timber trees. Through the Forest Acts, the colonial government secured their right over the woods of the sub-continent. But the conservation of the wildlife was completely neglected in the Forest Acts and more than that the wild beasts were viewed as problems for the expansion of the cultivations and settlements.

The coming of the outsiders in Darjeeling and Western Dooars intensified the human-animal conflict in these regions. As the immigrants started clearing the forest patches for settlements, tea plantations, and the rate of human-animal conflicts increased rapidly. In the Darjeeling and Sikkim areas, the main predator was the Himalayan Black bears (*Ursus Tibetanus*). In many cases, the corn fields were destroyed by the bears in the hill slopes. In the month of June and July when the Indian corn is ripening in the clearing of the tea gardens, the Himalayan Bear came out from the jungle to eat the harvest and created problems to the farmers.<sup>75</sup>

In the Western Dooars, the Elephants were the main threat to the expansion of the cultivation. Due to the heavy undergrowth in the forest 'Khedda' operation was quite difficult in the reserve

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<sup>74</sup> Sunder, 1895, *op.cit*, p. 26

<sup>75</sup> Waddell, 1899, *op.cit.*, p. 77

forests of the Western Dooars.<sup>76</sup> The population of the elephants in the Western Dooars grows rapidly and it created problems to the settled peasant community. Gunning (1911) wrote that the elephants became troublesome in the forest villages.<sup>77</sup> The villagers naturally object to this, light fire around their fields, and turn out with torches, horns and drums to scare the intruders off.<sup>78</sup> It sometimes the elephants destroyed the young trees, crops and even to the telegraph poles in the Buxa forest. Major Gordon Casserly also mentioned about the increasing unprovoked attacks of the elephants in the Buxa Dooars.<sup>79</sup> He further opined that for ‘the defence of the self or property or cultivation you may shoot at any elephants’ because the ‘rogue elephants are like the man-eating tigers’.<sup>80</sup>

To provide protection to the farmers the colonial state declared rewards for the destruction of the wild animals. Prior to July 1867, no rewards were offered for the killing of the wild animals. But in 1868, the rewards introduced for the destruction of the wild beasts and it was fixed that the sum of £2 for each tiger, and £1 for a leopard would be given to the hunters.<sup>81</sup> As the rewards were increased on the destruction of the greater number of the animals, a number of the native shikaris (huntsmen) come up to Bengal to destroy them.<sup>82</sup> Although more people were died during the years due to snake bite than the attacks of the wild beast, no rewards were given for the destruction of the snakes in the Western Dooars. A sum of Rs. 1738/- (£173, 16s.) was paid during 1869 in the shape of rewards for the destruction of the wild animals.<sup>83</sup>

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<sup>76</sup> Casserly, Major Gordon, *op.cit.*, p.105

<sup>77</sup> Grunning, 1911, *op.cit.*, p. 89

<sup>78</sup> Major Gordon Casserly; *op.cit.*, p.106

<sup>79</sup> *Ibid*, p.108

<sup>80</sup> *Ibid*, pp.114-115

<sup>81</sup> Hunter, W. W, *Statistical Account of Bengal*, Vol. X, 1876, p. 245

<sup>82</sup> *Ibid*, p. 245-246

<sup>83</sup> *Ibid*, p. 245

The government's policy of reclamation of the wasteland through the help of the new settlers largely affected the biodiversity of these regions. The main motive of the colonial government was to gain monetary profits from the almost every possible living and nonliving things of the colonized land without verifying its environmental impacts. The Forest Acts were implemented to maintain the steady supply of the timber in the market and protect the exhaustible resources from total destruction. On the other hand in the outside of the forests, they granted the wasteland of the newly acquired areas to the cultivators. Though the process of reclamation of the wasteland was practiced for centuries in the South Asia, but the British colonizers were much more sophisticated and well organized to implement their policies in the India. In Darjeeling and Terai the British speculators invested a large amount of money to purchase lands. On the other hand, the robust and enterprising planters with the help of the outside laborers took a leading role for transforming the forest tracks into the plantation. In the colonial 'battle over nature' the human force remained victorious, but in a long run, it destabilized the balance of nature by destroying the ecosystems of the deferent regions. In many areas, the animals were killed or evicted from the lands. But in many cases, the predators like tigers, elephants, bears and venomous snakes throw challenges to the expansion of the human settlements. For instance, the places like Buxa, Mahakalguri, Alipurduar, Bhulka and many parts of the Terai was transformed into the battlefield of the human and animals.<sup>84</sup>

The villagers of these newly settled lands always informed the British officials and the native rulers about the movement of the wild beasts. The colonial officials of the Dooars as the protector of the villagers hunted the life-threatening intruders in the forest villages. Major Gordon Casserly of Buxa, Mr. Ainslie, the Sub-divisional Officer of Alipurduar and his wife Mrs. Ainslie bagged numerous wild animals to protect the villagers and later on the skins of the beasts 'adorn the bungalow' of the British officials.

The internationally acclaimed hunter of the late nineteenth century, Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar State who was the pioneering personality in following the British way of socio-cultural life in Darjeeling took a prominent role in the destruction of the wildlife in

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<sup>84</sup> The detail of the human-animal conflict was discussed in chapter IV-Growth of Communication Infrastructure, VI- Forest and the wildlife in the foothills and Dooars.

the forest of both the Western and Eastern Dooars. As the true propagator of the western ideas of modernism, the Maharaja of Cooch Behar build Anglo-Indian style mansions in Darjeeling, constructed English medium school and funded enormously different parties and theatres in the clubs of Darjeeling. The forested regions of the Dooars were the place for pleasure hunting of the Maharaja of Cooch Behar and his European associates. Maharaja Nripendra Narayan's '*Thirty-seven Years of Big Game Shooting in Cooch Behar, Dooars and Assam*' vibrantly described his hunting expeditions in Sub Himalayan forests from 1871 to 1907. In many cases, the native villagers informed the Maharaja about the movements of wild beasts near the village settlements as their animals were taken away by the wild animals. The hunting expeditions of the Maharaja, in many cases concentrated to the villages close to the forest in Dooars viz., Barobhisa, Mahakalguri, Haldibari, Bhalka, Rasik Bill, Salsalabari etc where the population growth and expansion of cultivation intensified the human-animal conflict in the last few decade of the nineteenth century. Maharaja in his rough diary proudly mentioned that within thirty-seven years (1871-1907) of shooting, he bagged 365 tigers, 311 leopards and 201 rhinos from the forests of the Dooars.<sup>85</sup>

### **Shift in River Beds due to Human Intervention**

The human intervention in nature reached a new dimension when along with the spread of commercial agriculture people tried to utilize the river water by constructing unscientific canals. W. W. Hunter mentioned that there was no lakes, canals or artificial watercourse been constructed for the porpoise of the irrigation in the Jalpaiguri District. But in the northern part of the district of the Jalpaiguri, there were few artificial drains constructed by the Mechs for the purpose of the agriculture.<sup>86</sup> But these aboriginal canals were not built by using modern technology to get required amount of the water by controlling the flow of the river.

At the beginning the British rule in Dooars the policy of the government towards the training and tapping of the rivers and drainage and irrigation was undefined. Along with the population

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<sup>85</sup> The Maharaja of Cooch Behar, *Big Game Shooting in Cooch Behar, Dooars and Assam: A Rough Diary*, Bombay, Times Press, 1908, p. 449

<sup>86</sup> Hunter, 1876, *op.cit.*, p. 236

growth and expansion of cultivation in the Dooars, the managers, jotders and tenants started utilizing the river water by digging canals in unscientific ways which were popularly known as *Jampoi*.<sup>87</sup> In a long run which was resulted in the sudden change in the river basin and the inundation of the plantations and the human settlements. But the new land lease in the Dooars forced the government to introduce new policy.<sup>88</sup> The deputy commissioner was empowered to control the unauthorized construction of the canals in the river beds. The colonial authorities learned from their mistakes, but it became extremely late to stop the destruction caused by the previous faults. They did not possess the necessary local knowledge based on the continuous observation over an extended period of time, without which an engineer could boldly make predictions about the change in the river course in the future.<sup>89</sup> Milligan realized the necessity of establishing a permanent and continues investigation of the rivers of Western Dooars and allied problems because the power of control needs to be guided by scientific knowledge based on experience and observation.

### **Epidemic**

The anxieties of disease and epidemics resulted in the creation of racial boundary in the hills and Dooars. In the Indo-Gangetic plains, the Europeans also maintained their distance from the natives. But living in the Indian highlands was extremely desirable for the Europeans because of the homely atmosphere, familiar aesthetics and less number of the natives. The colonial morphology in Darjeeling displayed the racial discrimination of the rulers and the ruled. In the Buxa Dooars, a Bhutia village was developed just above the military cantonment of Buxa. But due to the unhealthy habits of the inhabitants, it was feared that cholera might break out among

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<sup>87</sup> J. A. Milligan, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*; The Bengal Secretariat Book Depot; Calcutta. 1919, P.18

<sup>88</sup> For more information see J. A. Milligan, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*; The Bengal Secretariat Book Depot; 1919, Calcutta.

<sup>89</sup> Milligan, 1919, *op.cit.*, P.19

the troops and the village was removed to Chunabati by the order of the government of Bengal.<sup>90</sup> In the tea garden areas of the Dooars and Darjeeling, the European managers lived in a Bungalow far from the labour colonies. It was believed that the unclean and unhygienic habits of the native coolies were responsible for the different types of epidemics. The tradition of spending hot and humid Indian summer in the hills station become a symbol of social status of the native rulers. The English speaking modern-minded native rules of India took an important role in celebrating the European cultural environment in the Indian highlands. A guide book of 20<sup>th</sup> century asked the travellers to Darjeeling to take with them a medicine chest containing the medicines like Rubini's tincture of camphor, vegetable tabloids, asperin or chlorate of potash for mountain sickness, quinine in solution with sulphuric acid, boric acid powder, cotton wool, vasiline, one ounce of permanganate of potash, a sharp scalpel and a pair of scissors to protect themselves from deadly diseases.<sup>91</sup>

The Ronald Ross's discovery of the insect vector cause in the Malarious fever in 1897 marked as an era in the history of the medicinal practices in the tropical colonies. The Dutch scientist N.H. Swellengrebel who has conducted his study on the causes of malaria in the Netherland connected the ecology with malaria research by mentioning about the habitat of the carrier anopheles. The intensity of the malarial fever in the swampy and forested Terai and Western Dooars increased along with the rapid change in the demography and expansion of the commercialization. Captain S. R. Christophers and Dr. C. A. Bently in their report on '*Malaria in Dooars*' mentioned that the "human factor" was responsible for the rapid expansion of the Malarious infection in the labour camps of the north Bengal. The steady expansion of the labour camps leads to an extraordinary prevalence of malaria in Dooars.<sup>92</sup> According to the opinion of Christophers and Bently, the excessive immigration of the labours leads to the mixing of the outsiders with the malaria immune peoples of the Dooars and that 'may be linked to the continual heaping of fresh

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<sup>90</sup> Grunning, 1911, *op.cit.*, p.50

<sup>91</sup> Dozey, 1922, *op.cit.*, p.247

<sup>92</sup> Christophers, Captain S. R, and Bently, Dr. C. A, *Malaria in Dooars*, Simla, 1911, p.1

fuel upon an already glowing fire'.<sup>93</sup> Captain Glen Liston also referred to the association of the labour works and malaria. In 1927 two notable incidents occurred in the history of the Malarious research in the sub-Himalayan Bengal. In this year Ronal Ross visited Dooars and Patrick Hehir's monograph '*Malaria in India*' was published and both of them were made an attempt to find out the cause of the immunity of the aboriginal people to the Malarious fever. Patrick Hehir observed that the Koch 'acquired immunity' from the Malarious fever. Nandini Bhattacharya has discussed the scientific and entrepreneurial incentives for malaria research in the tea plantations of north Bengal in colonial India.<sup>94</sup>

### **Advent of the colonizers and fishing with Dynamite**

While the aboriginal people captured the fishes by using different types of nets and natural poisons which were not harmful to nature, but in the colonial period as the people gather knowledge about more sophisticated and destructive weapons and they started using it to get huge profit by using a little effort. In the Rungpo River which is flowing between Sikkim and Darjeeling a practice of fishing developed in the last few years of the nineteenth century by using the dynamite. It created a massive destruction in the river beds and also to the riverine ecology. In 1900 the government implemented rules preserve fish in the rivers of Darjeeling.<sup>95</sup> The colonial government took steps in 1903 to stop the use of dynamite for fishing.<sup>96</sup> In Darjeeling, the shooting and fishing Club followed strict measures to stop illegal fishing and poaching and employed guards to prevent the local dwellers from the destruction of the 'Game and fish'.<sup>97</sup> The advent of the outsiders intensified the ecological exploitation in the Darjeeling and Dooars regions as they started using more sophisticated technology to acquire maximum profit.

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<sup>93</sup> Ibid; p.2

<sup>94</sup> Bhattacharya, Nandini, The Logic of Location: Malaria Research in Colonial India, Darjeeling and Dooars, 1900–30, *Journal of Medical History*, Apr 2011; 55(2), p. 183

<sup>95</sup> File no. 4A/1, No. 1 – 2, February 1900 (Revenue Department), WBSA

<sup>96</sup> File no. 4A/1, No. B 32 – 36, September 1901 (Revenue Department) WBSA

<sup>97</sup> Dash, 1947, *op.cit*, p. 138

The colonial officials, 'as a self-appointed guardian of the forested, uncivilized and backward dark land' completely transformed the natural environment in of the Darjeeling hills and Western Dooars by replacing the indigenous flora and fauna with the alien organism. The enormous natural resources and the strategic importance of the Himalayas influenced the British authority to expand domination over these areas. While shaping the 'New World' their imagination was guided by the ideas of the 'garden of Eden'. They transformed the surrounding of the hills by introducing plantations, constringing European models and dominating the aborigines and turned it to a perfect home for the colonizers in tropics.

## Chapter III

### The Commercialization of Agriculture

To accumulate extreme profit from the subjugated land, colonialism turned the colony into a place for experimental cultivation by replacing the indigenous species of the flora and fauna. The goal of the colonialism was to develop a worldwide framework to extract the wealth from the lands which were conquered by them through the power of superior machines, scientific knowledge and the greater ability to control and utilize human resources. The demand for the exotic products in European markets changed the pattern of the vegetation of the Darjeeling and Western Dooars during the second half of the nineteenth century. The most of the colonies of the European countries were situated between 23°26'N to 23°26'S of the Equator which was particularly thrived with numerous flora and fauna. Colonial encounter changed the natural pattern of vegetations in the different part of the world. Increasing human intervention in the remote corners of the colonies in search of natural resources made them aware of the climatic conditions, crop pattern, the pattern of natural flora and fauna. The global market-oriented commercial agriculture emerged through the British capitalistic domination transformed the forest lands of the Darjeeling and Western Dooars into agricultural fields, markets and human settlements by destroying the existing biodiversity.

In any part of the globe success of the commercial agriculture depends on the overall environmental factors of a particular region like temperature, rainfall, soil, altitude, living organism including predators and parasites. As the colonizers grab control over the vast subcontinent with diversified climatic zones, they started obtaining scientific knowledge about the environmental conditions of the Indian Sub-Continent.<sup>1</sup> They evaluate the commercial and political prospects of a region and prepared the policy to annex the region. The 'Knowledge about the conquered region' became important for long term 'domination and exploitation'. The annexation of a region followed by series of anthropological, geological, meteorological and zoological surveys with the intension to acquire maximum scientific knowledge about the less

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<sup>1</sup>*Administration Report of Bengal, 1872-1873, p.79*

developed areas of the Orient. The Botanical Garden of Calcutta (1787), Botanical Garden of Bogor Java (1817), Agri-Horticultural Society in Calcutta (1820), Botanical Garden in Peradeniya, Ceylon (1821), Botanical Garden of Singapore (1874), Lloyd's Botanical Garden Darjeeling (1878) and the Botanical Survey of India (1890) were founded with the intention to accelerate the scientific research on the floras of the colonies, maximized the profit by introducing commercial plants by replacing the less profitable undergrowth and large trees of the subjugated dark and mysterious lands of the 'other'. As the instrument of colonial machinery, all these scientific institutes played a prominent role in changing the ecosystem in the Darjeeling and Sub-Himalayan Bengal. According to David Arnold, the scientists of these colonial scientific research institutions, extend the exploitation, recorded of the India's regional flora, coordinate the work of provincial botanist and also promoted the introduction and the cultivation of cinchona, tea, coffee and other commercial crops.<sup>2</sup>

### **Experimental Cotton Cultivation in Terai and Western Dooars**

At the early days of the colonization of the hills, the enterprising colonial officials have the opinion that the Terai or Morang possessed the essential climatic conditions for the commercial cultivation of cotton. Dr. Archibald Campbell, the pioneer of the urbanization of the Darjeeling hills observed that a large number of the coconut trees were available in the Terai which was occurred only on the seashore of the Bengal.<sup>3</sup> In the middle of the nineteenth century coconut trees grow only in the two places viz., seashore of the Bay of Bengal and Terai region of the foothills of the Himalayas.<sup>4</sup> The concentration of the coconut trees in the upper portion of the Terai added an idea in the mind of Dr. A. Campbell that the zone could be utilized for the

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<sup>2</sup> Arnold, David, *The New Cambridge History of India: Science, Technology and Medicine in Colonial India*, London, 2004, p. 134

<sup>3</sup> Clarke, Hyde, *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857, p. 77

<sup>4</sup> Ibid, p. 77

experimental plantation of the Sea Island cotton.<sup>5</sup> He wrote a letter to the editorial of ‘*The Times*’ describing the result of his experiment with the Sea Island cotton cultivation in the neighboring places of Darjeeling.<sup>6</sup> In 1852 cotton cultivation was started in Terai with the intention to maintain the supply of raw materials for the cotton mill industries of the Great Britain. Later on, Mr. Welby Jackson in ‘*Report on Darjeeling*’ (1854) wrote that the American cotton cultivation was introduced in the Terai on the fresh lands which recovered from the jungle by burning out trees and the annual production was 3,000 maunds.<sup>7</sup> Though the *Bombax malabaricum* was an indigenous kind of cotton plant of the Terai and Dooars particularly thrived in the upper portion of the foothills of the Eastern Himalayas. But the indigenous cotton plants disappeared along with the spread of cultivation in the Western Dooars.<sup>8</sup>

### **Tea Trade and Environment of the Darjeeling and Western Dooars**

The Dutch East India Company was the first to export the tea in Europe. It was believed that through the ships of the Dutch, the tea reached England via Holland.<sup>9</sup> Soon after the entry of the tea in Britain, its reference began to mention in the minutes of the British East India Company. The tea as a beverage of the tropic formed part of the dowry of Catherine of Braganza on her marriage in 1662 to Charles II, king of England. The British merchant also added tea as the regular item of trade. In 1669, tea shared a small portion of the overseas trade of the company. But by the beginning of 18<sup>th</sup> century, the consumption of the tea in Britain increased rapidly. In this prime time, the British East India Company got the complete monopoly over the trade of

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<sup>5</sup> Ibid., p. 77

<sup>6</sup> ‘*The Times*’, 16<sup>th</sup> February, 1857

<sup>7</sup> *Selections from the Records of the Bengal Government*, No. XVII, *Report on Darjeeling*, by W. B. Jackson, Calcutta, 1854, pp. 4-5

<sup>8</sup> Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press, 1895, p. 3

<sup>9</sup> Xaxa, Virginius, *Economic Dualism & the structure of the Class: A Study in the plantation and peasant setting in North Bengal*, Cosmos publication; New Delhi, 1997, p. 99

Chinese tea. The officials of the East India Company demanded the extension of the tea cultivation in the colonies like India where the climate of some places were almost similar to China. Consequently, the regions adjoining China and neighboring Bhutan which were till then not part of the British India but where favorable climate for growing tea was under suspect, acquired great significance and attraction to the British.<sup>10</sup>

Understanding the commercial value of the tea in the market of Britain, Governor General Warren Hastings became interested in introducing tea plantation in India and instructed Sir Joseph Banks, an active naturalist and botanist to investigate into the prospect of tea cultivation in India.<sup>11</sup> Later on Major Charles Alexander Bruce, a soldier and explorer find out the naturally grown tea plants i.e. *Camellia Sinensis* in Assam (1834) following the words of his dying brother Robert who noticed the presence of indigenous tea plants in Assam for the first time in 1823.<sup>12</sup> However, C. A. Bruce was recognized by the scholars as the explorer of indigenous tea plants in Assam. Though the officials of the company ignored the fact and brought the tea plants and seeds from China. In 1835 Colonel Lloyd forecasted the ‘capabilities’ of the climate and the soil of Darjeeling as being suitable for the cultivation of tea.<sup>13</sup> With the expansion of the colonial domination in the foothills of Himalayas, mainly after the annexation of Assam (1826),

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<sup>10</sup> Griffiths, P. *The History of Indian Tea Industry*, Weidenfield and Nicolson; 1967, p. 34. also mentioned in Virginius Xaxa, *Economic Dualism & the structure of the Class*; Cosmos publication; New Delhi; 1997; p. 99

<sup>11</sup> Sir Joseph Banks (1743-1820) who was the leading botanist of Britain in eighteenth century was in favour of transforming the Royal Botanical Garden; Kew into World’s leading centre of Botanical research. He requested the British king George III to send botanical voyages to collect botanical specimens from all over the world.

<sup>12</sup> Rajkumar, Dhriti Kanta, "Raids made out by the Lushai Tribes in the Tea Gardens of Cachar during the Colonial Period: A Study on the Historical Perspective." *Journal of Humanities and Social Science* 4 (9) 2013, pp. 43–54

<sup>13</sup> 23 March - *Consultations, Fort William*, 5 April 1835, No. 103

Darjeeling (1835), Assam Dooars (1842) and Bengal Dooars (1865), the British authorities introduced experimental plantation in the outer and Sub Himalayan region of Bengal.

In January 1834 the government of Lord William Bentinck appointed a committee, ‘*to consider the question of importing seeds and plants from China*’ to find out the most favourable places for tea cultivation in India. Based on the analogy of soil and climate, the members of the committee published a report and suggested three suitable sites for the cultivation of tea in India. These were the lower slopes and valleys of the Himalayas, the eastern frontier of the British India and the slopes of Nilgiris in the south. This was followed by the appointment of another committee “*for the purpose of submitting a plan for the introduction of tea cultivation in India.*” The first experimental tea plantation was started in Upper Assam and the district of Kumaon and Garhwal. In early 1836, the first tolerable sample of tea was manufactured through a primitive method by using charcoal fire for drying and sent to Calcutta. This tea was tested by Lord Auckland and he mentioned it as good quality. The seeds and plants of Chinese variety of tea were imported into Darjeeling in 1841, along with a number of Chinaman to about the tea garden and manufacture.<sup>14</sup> Soon the seeds were distributed by the government to those who desired to cultivate. The ‘seeds of the tea’ not only transformed the landscape of the hills, it also altered entire human ecology, the natural environment and the regional economy of the Darjeeling and Western Dooars. In 1856 the industry was well established in Darjeeling, while within the next six years it was gradually extended into Terai.<sup>15</sup> The colonial authority became well aware of the prospect of the Western Dooars for tea cultivation.

The climatic factors along with the proper management system were essential for the tea industry. The colonial scientists have realized that the Darjeeling possessed varieties of soil which had necessary qualities for the growth of tea cultivation. In these soils, the chocolate - coloured ferruginous soil which contains a high portion of phosphoric acid and potash was highly valued as the perfect soil for the tea plantation. The reddish soil and the climatic condition of Darjeeling

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<sup>14</sup>Dozey, E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.196

<sup>15</sup> *Ibid*, p.196

and *Terai* helped the tea plants to grow faster. At the early days of plantation, Dr. J. D. Hooker who made the first floristic study of the Darjeeling and Sikkim opined that the introduction of the tea plants from China was one of the greatest triumphs of the British administration in India and it was possible due to the initiatives were taken by the Superintendent of the Botanical Garden Calcutta and Seharunpur.<sup>16</sup> Archibald Campbell, the Superintendent of Darjeeling, also experimented with the tea plants in the garden of his house at the 7,000 feet elevation at Darjeeling.<sup>17</sup> Dr. Witecombe, Mr. James Grant and Captain Samler also followed the example of Campbell and started experimental cultivation of the in their cottage garden in Darjeeling.<sup>18</sup> By 1856 the industry expanded rapidly and the first plantation in commercial basis began in the same year at Lebong and Aloorbari. In Terai the first two gardens were started by H. Hancock, at Upper Puntunghar in 1861 and in 1866, the Singel Tea Estate was founded by Mr. James White of Kurseong.<sup>19</sup> To attract the native to the tea plantation, around 1,600 pounds of tea seeds were distributed among the natives.<sup>20</sup> The prospect of the tea industry in Western Dooars was first understood in 1859.<sup>21</sup> In 1874 the first tea garden of the Western Dooars started its journey with the initiative of Dr. Brougham and Richard Houghton was appointed as the Manager of the garden.<sup>22</sup> Within two years 13 gardens were opened covering an area of 818 acres.<sup>23</sup> Later on, it was followed by a rapid growth in the plantation areas.

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<sup>16</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p. 5

<sup>17</sup> *Ibid*, p. 114

<sup>18</sup> Clarke, 1857, *op.cit.*, p. 242

<sup>19</sup> Dozey, 1916, *op.cit.*, After p.10

<sup>20</sup> Clarke, 1857, *op.cit.*, p. 243

<sup>21</sup> Dasgupta, Ranjit, *Economy, Society and Politics in Bengal: Jalpaiguri 1869-1947*, 1992, p.56

<sup>22</sup> See for more information B. C. Ghosh, *The Development of Tea Industry in the District of Jalpaiguri 1869-1968*, 1970

In Western Dooars the land for the commercial plantation was selected on the basis of soil, facilities or procuring labour and means of transport, good lay of the land and then jungle was cleared, water and healthy situation prevailed, a temporary bungalow was created with bamboos and grass, and number of sheds for the coolies were build.<sup>24</sup> In 100 acres of land three to two hundred men, women and children were appointed to cut down the jungle compressing the forest trees, tiger grasses, bush wood and undergrowth.<sup>25</sup> The heavy timber left standing for sufficient time to make it thoroughly dry and then the whole is set to fire. If any unburned timber remained in the plot than again these were set on fire. After that, the coolies dig out the roots from the soil and prepared the ground for plantation.<sup>26</sup>

### **Speculators and Reclamation of Forest Lands**

The introduction of the commercial plantation in Darjeeling and its prospects created a mad rush among the speculators of Calcutta who were willing to invest their money in land. The waste land or forest of Darjeeling became the main attraction of the speculators for expansion of their estates. The Darjeeling was looked upon as a perfect speculation by the colonial business communities settled at Calcutta. The introduction of the tea plantation and the mud rush of the speculators were largely responsible for the deforestation in Darjeeling region. On the other hand, the British planters played a prominent role in the exploitation of the forest resources and the expansion of the tea industry in Western Dooars. In the '*Rules for Allocation of Building Plots*' issued by the political department of Fort William on 4<sup>th</sup> September; 1839, it was declared that the unclear forest land would be assigned rent free for the first five years to the applicants in

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<sup>23</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p.103

<sup>24</sup> Hunter, W. W, *Statistical Account of Bengal*, Vol. X, 1876, p. 172

<sup>25</sup> *Ibid*, p. 172

<sup>26</sup> *Ibid*, p. 173

lots, not less than 10 acres for 30 years.<sup>27</sup> The cleared space of Darjeeling, Mahalderam, Kurseong and Punkabarree were allotted for the commercial purpose.<sup>28</sup> When Mr. J. T. Pearson visited these places in 1839, the entire area was surrounded by thick forest, later the forests were cut down for cultivation.<sup>29</sup> Through the Rule of 1839, the alien government established firm control over the indigenous timber, stones, minerals and the other products of the subjugated land. More than that government also reserves to itself all mines as well as elephant's ivory and other natural productions of the track at the bases of the hills.<sup>30</sup> In 1841 a new lease rule was issued by the government to cope up with the emerging demand for the land. But in many cases the leaseholders violated the Rules of 1841 and illegally grabbed more land, they were entitled to hold, according to their title-deeds.<sup>31</sup> The *Darjeeling Guide* (1854) noted that 'the whole road from Punkhabaree to Darjeeling, around 30 miles, runs through a forest of the noblest trees, with an almost impenetrable underground for the entire way; and the same extended to the whole of the Sikkim to the snowy mountains.'<sup>32</sup> But soon the place was entirely transformed by the European speculators who cut down the forest for the tea plantation. After the introduction of the tea cultivation in Darjeeling, the European speculators illegally purchased land from the native cultivators for commercial plantation. Bishop Cotton wrote 'our English neighbors are, for the most part devoted to tea, not to drinking it, but to planting it.'<sup>33</sup> In the Late Ninetieth century, the British mountaineer, explorer and the editor of the *Alpine Journal* Douglas William Freshfield

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<sup>27</sup> See for more information- 4<sup>th</sup> September- *consultations*, Fort William, 4<sup>th</sup> September, 1839, No.70

<sup>28</sup> 4<sup>th</sup> September – *consultations*, Fort William, 4<sup>th</sup> September, 1839, No.70; rule 19

<sup>29</sup> Pinn, F, *The Road of Destiny: Darjeeling letters 1839*, Oxford University Press, Calcutta, 1986, p. 94

<sup>30</sup> 4<sup>th</sup> September- *consultations*, Fort William, 4<sup>th</sup> September, 1839, No.70; rule 20

<sup>31</sup> Hunter, 1876, *op.cit.*, p. 105

<sup>32</sup> *Darjeeling Guide* 1854, p.23

<sup>33</sup> Cotton, G. C. L, *Memoir of George Edward Lynch Cotton*, Darjeeling, 1862, p.265

(1845-1937) while going to the Kanchenjunga expedition via Darjeeling in 1899 noticed the lush green tea plantations spread all over the hill slopes which enforced him to think about the massive destruction have done by the European planters without thinking about its consequences in the surroundings.<sup>34</sup> But Hurry Mohan Sannial, an overseer of P. W. D Bengal, who visited Darjeeling in the late 1870s, embraced the role of the tea planters to purify the climate by clearing the forest and transforming the habits of the aborigine.<sup>35</sup>

After the annexation of Western Dooars (1865), the planters Associations who have already established large number of tea estates in Darjeeling and Assam became interested in investing their capital in the expansion of tea industry in the uncultivated regions stretching between the Tista and Sankosh River and influenced the colonial government to lease the wastelands of the newly acquired regions in favour of lucrative tea plantation.<sup>36</sup> In March 1873 the Lieutenant-Governor submitted a draft rule for leasing and selling of waste land. The draft disposed of that waste land should be sold subject to the liability of paying land revenue, which should be assessed there for long term years. But after listening to the opinion of the tea planters' associations and the local officials of the plantation district, Sir George Campbell realized the financial importance of the tea in the less populated areas of Bengal and well considered that the Government might concede something for the planters, and at the same time mentioned that the rights and claims of the ancient inhabitant of the country were respected.<sup>37</sup> The Government view was not to give the wasteland to the Zaminders and other large holders in the plantation districts. In Chittagong, Cachar and Darjeeling it was decided that the land of the resident ryots must be sold as waste land to speculators.<sup>38</sup> The ryots were evicted from their own land and had

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<sup>34</sup> Freshfield, Douglas W, 1903, *op.cit.*, p.49

<sup>35</sup> For more information see Sannial, Hurry Mohan, *A History of Darjeeling: Newly Translated from the Original 1880 Bengali Edition*, Pagoda Tree Press, 2009

<sup>36</sup> *Bengal Administrative Report 1872-1873*; p.76

<sup>37</sup> *Ibid*, p.76

<sup>38</sup> *Ibid*, p.76

to pay high rent for grazing and firewood to the speculators. In many cases, in Darjeeling the wastelands were purchased by the speculators and later on, they sold the land to the tea planters at much higher prices.

In regard to the mistake of the past, the Lieutenant-Governor in 1872 said that if the hill people have no definite property in particular land,<sup>39</sup> The Lieutenant-Governor hoped that the hill people should compensate by providing employment in the Tea gardens. The government express concern for the hill tribes and projected that the motive of the government was to expand tea cultivation without harming the rights of the aborigines.<sup>40</sup> But in reality, the situation was quite different. Many of the reports and travelogues of the nineteenth century mentioned that with the disappearance of forest and expansion of tea plantation the aborigines like the Lepchas from Darjeeling and Mechs from the Western Dooars disappeared from their own land. Many of the Lepchas left their ancestral land and moved to the more peaceful portion of the forests in Sikkim, while the Mechs were moved to the side of Assam. The British authority encouraged both the European entrepreneur and the outsider labours to settle down in the hill tracks and at the same time bring the non-arable forest land under cultivation and gather commercial profits through revenue.

Based on the Government Notification, No. 3203 L.R, dated 6<sup>th</sup> July, 1895, Dr. Sailen Debnath have highlighted that the Mech and the Garo people lived in the forested areas of the Dooars have severely suffered from the expansion of the tea plantations.<sup>41</sup> The growing pressure of the outsiders in the aboriginal natural world enforced them to communicate with the local administrators for claiming a separate protected space for themselves. As a result of their petition, the Deputy Commissioner of Jalpaiguri and Commissioner of Rajsahi division provided

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<sup>39</sup> *Ibid*, p.79

<sup>40</sup> *Ibid*, p.79-80

<sup>41</sup> Debnath, Dr. Sailen, *The Dooars in Historical Transition*, N.L. Publishers, Shiv Mandir, West Bengal, 2010, p. 138

30.7 sq. miles of land for the Mechs and Garos.<sup>42</sup> The penetration of the outsiders into the untouched forests, destruction of the century-old trees for the expansion of the boundary of the tea gardens and the regular movement of the human in the forest broke the existing harmony of nature with the tribal people living in the Darjeeling and Western Dooars. Because of these reasons some of the aboriginal people leave their ancestral land and move to the forested areas of Assam.

The impact of colonial rule had great environmental consequences on the environment of Darjeeling and Western Dooars. When the Bhutias colonized these areas they remained aloof from the subjugated people and they were not highly equipped to use the natural resources for commercial the purpose. But as a colonizer, the Britishers wanted to build Darjeeling as a commercial center which resulted in the growth of the enormous amount of employment opportunity and a huge demand for manual labour. However, the development of the industry in the hills had been even more rapid as the suitability of the soil and climate to the growth of tea became apparent; government offered the land to investors on favourable terms; and the industry rapidly developed.<sup>43</sup> In the early stage, the tea companies like Kurseong and Darjeeling tea company, Darjeeling Land Mortgage Bank, Darjeeling Tea Company and Lebong Tea companies played a major role in the extending their tea estate into the forest land. The statistics of the tea plantation and the areas under cultivation will show that the faster growth of plantation in the Darjeeling district (**Table: V**).

The success of the tea plantations in the Darjeeling encourage the planters to purchase uncultivated tracks in the Terai and later on, rapid expansion of the gardens in the Terai enforced the British planters to spread their industry all over the less populated tracks of Western Dooars. The thousand acres of the forest was replaced by the tea plantations in the Terai and

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<sup>42</sup> *Ibid*, p. 138

<sup>43</sup> O'Malley, L. S. S, *Bengal District Gazetteer: Darjeeling*, 1907, Logos Press, Reprint 1999, p.74

Dooars to make a perfect blend with the Darjeeling tea.<sup>44</sup> The fast expansion of the tea industry transformed the entire human ecology of the Darjeeling and *Terai*. In *Terai* the first two gardens were started in 1865 at Champta and within nine years (1874) the number of the tea estate reached to 113 encompassing an area of 18,888 acres. In *Terai* a special emphasis was given to the expansion of the plantation by demolishing the unhealthy forest tracks. The Nepalese were very much enterprising people and most of the cases they clear the nearby forest patches for the expansion of the cultivation of the crops.

The introduction of the tea plantations in the remote mountain areas of the Himalayas became an instrument of the English colonization. This was aimed to transform the existing balance of nature which they believed full of impurities and diseases. The annihilation of the forests loaded in biodiversity was the ultimate outcome of the colonial policy of commercialization of agriculture. Hurry Mohan Sannial, an Overseer of Public Works Department of Bengal, visited Darjeeling during the 1880s. He observed the expansion of the commercial plantation *Terai* and projected it as the 'spreading of the civilization in the backward areas of India'. The expansion of the tea plantation in Darjeeling was closely associated with the rapid urbanization of this region. The planters erected more substantial buildings which generally consisted of bungalow for the manager, with stables, cook house, and all necessary out building attached and the numbers of quarters for the officials, Clarks and coolies of the gardens. All these constructions in the tea garden areas were severely affected the nearby forests. The trees were cut down and utilized for the construction purpose. The plots of waste land attached to the tea gardens were also allotted to the fresh immigrants. The ethnic sense of these regions rapidly changed with the multiplication of the number of the outsiders and their dependency on the forest increased the pressure upon the natural resources (**Table: VI**).

### **Environmental Impacts of the Tea Plantation**

By the end of the ninetieth century many of the British travelers who have noticed the reckless deforestation in the hills slopes, express their mixed feelings towards the virtual impact of the tea

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<sup>44</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914, p.57

plantation on the environment of Darjeeling and Western Dooars. The extreme level of deforestation in the hills and Western Dooars exposed the soil to the one of the heaviest rainfall regions of the world. In Darjeeling, yearly average rainfall was 120.85 inches, Mongpu 128.43 inches, Buxa 220.91 inches, and Jalpaiguri 129.21 inches.<sup>45</sup> As a result in every monsoon, the hill slopes of Darjeeling suffered from numerous landslips and spread panic among the dwellers. In the last few years of the nineteenth century, many Anglo-Indian and natives lost their life and property due to the occurrence of the landslips. Landslips were normal phenomena in the outer part of the Eastern Himalayas, but frequency and impacts of landslips increased in the Darjeeling hills during the colonial period. It increased due to the annihilation of the primeval forest trees in the hill slopes. Douglas William Freshfield, the president of the Royal Geographer Society in his travelogue '*Round Kanchenjunga*' (1903) straightly blamed 'reckless clearing of forests' for the tea plantation and 'exposure of soft slopes at high angle' responsible for massive landslip in the Darjeeling region.<sup>46</sup> Almost like Freshfield, Waddell also stated that the large scale annihilation of forests for tea plantations in the hill slopes was responsible for landslips in the Darjeeling and Sikkim.<sup>47</sup> The European men and women who visited the Darjeeling hills in the unbearable summer months of the subcontinents, not only to cherish the cooler climate but also to see the panoramic scenic beauty of the hills, they also criticized the planters as their commercial greed transformed the overall environment of the hills. Major L. A. Waddell in his '*Among the Himalayas*' opined that this clearing and cabbage like rows of tea bushes did not enhance the beauty of the landscape.<sup>48</sup>

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<sup>45</sup> Hunter, W. W, *The Imperial Gazetteer of India*, Vol. VI, Trubner & Co., London, 1886, p. 649

<sup>46</sup> Freshfield (1903), *op.cit*, p.241

<sup>47</sup> Waddell, L. A. *Among the Himalayas*, 1899, p.73

<sup>48</sup> *Ibid*, p.23

## Plantation and Biodiversity

More inroads were built in the forest to get more plots for the tea plantations.<sup>49</sup> The annihilation of forest from the outer Himalayas disturbed the balance of nature. The Sub-tropical forest of the foothills was the thriving ground for the different species of flora and fauna. But once the forests and the undergrowths were removed for the plantations, it severely affected the life cycle of the different species of insects. In the *Terai* region, the main obstruction of the tea cultivation was the attack of different types of the insects. The problematic blights or pests like legion, red spiders, mosquito and the green flies not only affected the tea plants, it also created panic among the labourers in the *Terai*. Waddell (1899) mentioned that the many of the plantations were suffered from the effect of the blight as the planters rudely disturbed the 'balance of nature'.<sup>50</sup> They removed the great variety of rank forest growth and substituting one kind of plant i.e. tea.<sup>51</sup> Thus the parasitical insect, beetles and mites, as well as moulds, finding their natural food gone and turned their attention to the tea, and caused devastating 'blight'.<sup>52</sup>

### *Gaicho* Planters and Wildlife in the Terai and Western Dooars

The expansion of plantations, protection of the laborers and recreation of the planters in the Terai and Western Dooars, the destruction of the wildlife became inevitable in the Darjeeling and Western Dooars for the well equipped British colonizers. The formation of the plantations and labour colonies near the forests led to a conflict between the wildlife and the immigrant laborers in the Terai and Western Dooars. In the early years of tea plantation in Terai and Western Dooars regions, the robust, fearless and enterprising European planters played a leading role in guiding the unskilled Indian labours to clear the forests, prepare the ground for plantation, constructed roads and wooden shelters. Major Gordon Casserly's *'Life in an Indian Outpost'* focused on the planters' life in the tea gardens of Buxa Dooars and its surrounding. Major Casserly opined that

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<sup>49</sup> Ibid, p.60

<sup>50</sup> Waddell, 1899, *op.cit.*, p.250

<sup>51</sup> Ibid, p.250

<sup>52</sup> Ibid, Pp. 250-253

the planters of India were the ‘best volunteers of the British Empire’ as they worked in the adverse climatic condition along with the colonial labour class and utilized the manpower to expand the commercial interest of the Empire.<sup>53</sup> They were educated men, hard riders, good shooters and keen sportsmen and physically strong.<sup>54</sup> In the early days of colonization in the foothills and Western Dooars, the planters often came across the wild beasts like elephants, tigers and Himalayan black bear as the gardens were built in the depleted portions of the forests occupying the animal trails. To glorify the bravery of the British planters, Major Casserly stated that ‘the planters fear nothing except wild elephants; and not them if he on the horse back or on the road.’<sup>55</sup> Further, he admitted that guided by the moral force, the planters build up the plantation in the one of the most dangerous parts of the sub-continent surrounded by furious animals and diseases and collected labours to create new plots for plantations.<sup>56</sup> With the intention to ‘ordering the nature’, the planters expanded cultivation by destroying primeval forests, killed wild beasts to protect the labour and also for recreation.

In the early days of the plantation in Western Dooars, the tea gardens were not safe for the European and immigrant labour communities. Increasing human penetration in the forests and encroachment of the forest lands increased the incidents of Human-animal conflicts. Major Gordon Casserly, while staying in Buxa Military Cantonment in the early twentieth century, frequently heard the news of the elephants attacked in the villages near the tea gardens. The wild intruders deliberately broke the frail structures of bamboo and destroyed hut after hut until they reached the houses of the *banniahs*, or tradesmen who dealt in grain and food-stuffs. Then the heard feasted royally on the contents of the shops. The villagers naturally objected to the recurring elephant attacks by light fire around their fields, and turn out with torches, horns and

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<sup>53</sup> Casserly, op.cit., p.59

<sup>54</sup> Ibid, p.59

<sup>55</sup> Ibid, p.58

<sup>56</sup> Ibid., p.58

drums to scare the intruders off.<sup>57</sup> The struggle of the animals which began in the nineteenth century with the coming of the new settlers has not been stopped yet. In this unfair conflict they are following the same pattern as it was started in the nineteenth century, but the humans became more equipped in sophisticated technologies in the twenty-first century to evict the animals for their roaming ground.

The plantation areas developed during the nineteenth century in the reclaimed land of the forests, the laborers usually burned the grasses to protect their families from the attacks of the herbivore, carnivore, and amphibian species of animals. Because the grasslands outside the forests were the roaming ground of the herbivores and following them the carnivores also gathered there. The grassland has a vital part in the food chain of forest ecosystem. But in the nineteenth century, the colonial forest department implemented the policy of the large scale destruction of the 'unproductive grasslands' which was regarded as the breeding and hiding ground of different species of animals. In the 1870s thousand of the Nepalese laborers settled by the side of the Bamunpokri forests in the tea plantations burned the grasslands outside of the forest. The Nepalese labours have the tendency to burn the forest just outside their villages to protract their family from the attack of the wild beasts. It definitely impacted on the food and life cycle of the animals and the insects living in these grasslands. The large scale immigration in the Western Doors increased the human penetration in the forested regions of the nearby places. The forest department further mentioned that it was extremely difficult to stop the activities of the laborers class in the protected portion of the reserve.<sup>58</sup>

Prior to the expansion of the railways and spread of electric connection in the tea plantations of Darjeeling and Western Doars, most of the gardens were completely depended on the forests for the necessary fuel consumption. In 1879 Brandis inspected the Tista division and expressed the need of conservation of the forest. But at the same time, he mentioned that the lower portion of the Tista forest possessed sufficient woods for the exploitation and supplies the requirement of

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<sup>57</sup> Ibid., p.106

<sup>58</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p. 29

the tea gardens.<sup>59</sup> From 1874 onwards most of the tea gardens of the Western Dooars were built in the clearings of the forests patches sharing the boundary with the forest reserve. The growth of the plantation areas by the sides of the forest reserves adversely affected the forest environment. Sometimes legal problems were developed between the Forest Department and the tea gardens. The Gairkata Tea Estate which was located in the Western Dooars fought against the Forest Department because of the boundary dispute.<sup>60</sup> The Mineral Spring Tea Estate also involved in the same legal problem with the forest department.<sup>61</sup>

### **Tea Gardens and Diseases**

The *Terai* and Western Dooars were known for the different types of malignant fevers and other health related problems for the immigrants to this climate.<sup>62</sup> The European phobia of the Terai fever which was also known as Jungle or Swamp fever further intensified after the death of Countess Charlotte Elizabeth Canning in 18<sup>th</sup> November, 1861.<sup>63</sup> On 8<sup>th</sup> November, 1861, just after her arrival from Darjeeling to Calcutta, Lady Canning became bed ridden due to high temperature. As reported in 'The Argus' on 13<sup>th</sup> January, 1862, it presumed that in her journey through the malarious zone at the foothills of the Himalayas and swamps of Purneah, she caught

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<sup>59</sup> Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926, p.

<sup>60</sup> File no. 10R/3, No. 20-23, May 1901 (Revenue Department, WBSA)

File no. 10R/3, No. 25-32 January 1902 (Revenue Department, WBSA)

File no. 10R/3, No. 26-29, May 1902 (Revenue Department, WBSA)

<sup>61</sup> No. B. 55-56, June 1882 (Revenue Department, WBSA)

<sup>62</sup> The various malignant fevers include Malarious fever, Blackwater fever, typhoid fever and pneumonia fever etc.

<sup>63</sup> Buckland, C. E, *Dictionary of Indian Biography*, Haskell House Publishers Ltd, New York, 1968, p. 71

the fatal jungle fever and died after ten days.<sup>64</sup> But before Lady Canning's death, countless immigrant labours died in Terai while the road construction was going on through the jungle. To avoid the contamination of the Terai fever in the jungle of foothills, Dr. J. T. Pearson, the medical officer of Darjeeling suggested the traveler to cross the deadly Terai within three hours in the morning.<sup>65</sup> In the nineteenth century, popular perception was that the contaminated environment and the furious insects thriving in the forest of the Terai were responsible for the unidentified malignant fever.

A new trend of malaria research was started by the colonial doctors, scientists and researchers and they increasingly criticized the colonial infrastructural developments, commercialization of agriculture, embankments and railway network which they believed must have interrupted the natural drainage system and stimulated the growth of the mosquitoes. The recurring epidemic in the Western Dooars leads to series of enquiries which highlighted that the factor producing these epidemics has largely been attributed to a change in the natural drainage of the country.<sup>66</sup> After the annexation of Western Dooars within a few years, the disease ridden foothills region went through a rapid infrastructural change which intensified the occurrence of the epidemic disease. The Western Dooars possessed many deserted river beds and small swamps which were often used for rice cultivation but often filled with rank vegetation and jungle. The rice field, large pools, borrows pits and *katcha* wells were the major breeding places of the mosquitoes. The months of September to November the stagnant waters became the breeding ground for the mosquitoes.<sup>67</sup> In the tea gardens, the British managers made a systematic attempt to locate the breeding grounds of the mosquitoes near their bungalows.

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<sup>64</sup> The Argus, Monday 13 January 1862, Page 7 (News Paper Published from Melbourne)

<sup>65</sup> Pinn, 1986, *op.cit.*, pp. 105-106

<sup>66</sup> Christophers, Captain S. R, Bently, Dr. C A, *Malaria in Duars*, Simla, 1911, p.13

<sup>67</sup> According to Christophers and Bently, the common species of Anopheles mosquitoes found in Dooars were *A. sinensis*, *Myzomyia listoni*, *Pseudomyzomia rossi*, *Mysorhynchus barbirostris*, *Nyssorhynchus juliginosus*.

These trend of malaria research was changed by Captain S. R. Christophers and Dr. C. A. Bently who have studied the causes of the deadly malarial fevers on the basis of their case study in tea gardens of the Dam Dim, Chelsa, Nagrakata, Daina Thana, Torsha District and Jalpaiguri where large number of the labours came from the Choto Nagpur, Manbhum and Singbhum areas.<sup>68</sup> According to Christophers and Bently, the ‘constant mixing of the malaria immune indigenous population with the non-immune outsider turned the Western Dooars into a malaria prevalent region in Indian Sub Continent’. Their new discoveries on the nature of malaria opposed the old idea regarding the water logging and rather they focused on the mosquito cycle of the parasite for spreading malaria. During their study on malaria in Dooars, they watched the close association between the labour camps with severe malaria. They believed that the constant immigration of the labourers resulted in the mixing of malaria immune population with the non-immune outsider human force which was almost like ‘continual heaping of fresh fuel upon an already glowing fire’.<sup>69</sup> Captain Glen Liston also referred to the association of the labour works and malaria.<sup>70</sup>

In the plantations of Darjeeling, the Nepalese and the Sikkimese were appointed as the laborers. But with the beginning of the tea gardens in Terai and Dooars, the demand of the outside labours rapidly increased because the Nepalese were unwilling to work in the lower elevation. The tea gardens of Dooars were under the voluntary or *sardari* system for the supply of the coolies from the Santal Parganas.<sup>71</sup> The newly recruited coolies settled down close proximity to the coolies

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<sup>68</sup> Bhattacharya, Nandini, The Logic of Location: Malaria Research in Colonial India, Darjeeling and Duars, 1900–30, *Journal of Medical History*, Cambridge University Press, April 2011; 55(2): 183–202

<sup>69</sup> Christophers, Captain S. R, Bently, Dr. C A, 1911, op.cit., p.2

<sup>70</sup> Ibid, p.10

<sup>71</sup> There were some basic differences sardari system of Assam and Dooars. The most important difference between this two were about the matter of Government intervention. In the case of Assam Government issued laws and commissions for the protection of the coolies, but in Dooars there were not a single step was taken by the Government, because the area was notoriously

who have brought up earlier. Though there were many coolie lines in Dooars where different types of the workers mixed up with each other. The new coolies within the first few years of arrival suffered from the severe malaria infection.

Dr. A. G. Newell, the Fellow of the Society of Tropical Medicine and Hygiene, have observed the severe malignant form of malaria i.e., Black Water Fever in the highly malarious region of the Dooars and Terai of Bengal and summarized his experience of the disease in a book named '*Black Water Fever*' (1909).<sup>72</sup> Dr. Newell who was also served the duties of the Empire as a Medical Officer of Dianah- Toorsa District of Dooars and Kurseong- Terai District of Terai mentioned two preventive measures to get rid of the malignant fevers viz., personal and public measures. In the malarious zones of the Terai and Dooars, the people were suggested to use mosquito nets to bed, door, window and verandah, wear gloves, leggings and net over face, to take regular medicines and maintain health and hygiene.<sup>73</sup>

### **Tropical Diseases: Experimental cultivation of Ipecacuanha and Cinchona**

The global character of the British colonialism and their authority over scientific knowledge helped the British administrator to expand the arms of the commercial interest in the diseases ridden remote parts of the sub-continent. When the cannon and army were used to expand and control the overseas territory, the ever-expanding scientific knowledge was use to protect the manpower from diseases, promote the feelings of superiority and restore the satisfaction of possessing an overseas Empire filled with natural resources. In the 1860s the two types of experimental cultivation were started by the colonial botanists in the Darjeeling to protect the body of the colonial officials and the labour forces from the deadly diseases prevalent in the foothills of the Himalayas. Nandini Bhattacharya in her book '*Contagion and Enclaves: Tropical Medicine in Colonial India*' (2014) have discussed how the weather of Darjeeling, Terai and

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unhealthy and there was no system of registration of the coolies who have entered in Dooars. Malaria in Dooars; Pp. 42-43

<sup>72</sup> Newell, A. G, *Black Water Fever*, John Bale, Sons & Danielsson, London, 1909, p. 124

<sup>73</sup> *Ibid*, p. 124

Dooars impacted on the health of the Europeans and the native labours and in this regard she highlighted the nature of the hill diseases like fever, diarrhea, rheumatism etc.<sup>74</sup> To combat the diseases prevalent in the Darjeeling, Terai and Bengal Dooars, two tropical medicinal plants of South America, Ipecacuanha and Cinchona was introduced in the Darjeeling.

### **Experimental Cultivation of Ipecacuanha**

The half-shrubby perennial medicinal plant, Ipecacuanha which was also known as ‘roadside sick-making plant’ indigenous to the Costa Rica, Nicaragua, Panama, Colombia and Brazil was introduced in Darjeeling in 1867 for medicinal purposes.<sup>75</sup> It contains the alkaloids emetine (methyicephaeline) which is anti-protozoal and cephaeline. In the 17<sup>th</sup> century the plant was noticed in Europe when the botanist, herbalist and physician, Nicoholas Culpeper who mentioned the name in his monograph *Complete Herbal and English Physician*. From ancient times the plant was used in the tropical South America for the treatment of dysentery, cure stomach, intestine and liver infection, exciting appetite and digestion. Thomas Dover (1660-1742) an English physician developed a remedy for common cold and fever by mixing Ipecacuanha with the opium which was known as ‘Dover’s Powder’. It was introduced in Edinburgh in 1832 and a few years later introduced in Glasgow.<sup>76</sup> The British botanist Bentley and Trimen were in favour of the introduction of the Ipecacuanha in India as it contained the remedy of chronic dysentery and diarrhea.<sup>77</sup> The experimental cultivation of Ipecacuanha was

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<sup>74</sup> Bhattacharya, Nandini, *Contagion and Enclaves: Tropical Medicine in Colonial India*, Liverpool University Press, Liverpool, 2012

<sup>75</sup> The Ipecacuanha plant contained pseudo-tannin Ipecacuanha acid (cephaëlic acid)

<sup>76</sup> Bulletin of Miscellaneous Information (Royal Botanic Garden, Kew), Vol. 1888, No. 17 (1888), p. 123

<sup>77</sup> Bulletin of Miscellaneous Information (Royal Botanic Garden, Kew), Vol. 1888, No. 17 (1888), p. 123

started in the cinchona plantation of Mongpoo, Darjeeling in 1867.<sup>78</sup> The Botanical Gardens also started experiments with this plant in India.<sup>79</sup> It was also introduced in Nilgiri and later on an experimental plantation was begun at Burma.<sup>80</sup>

### **Life-Saving Cinchona**

In the slopes of Darjeeling Himalayas, the Britishers also started the cultivation of ‘Jasuit’s Bark’ or ‘Peruvian Bark’ commonly known as the Cinchona.<sup>81</sup> The life-saving plant of cinchona was native to the South America. Long before the subjugation of the Peruvians by the Spanish in 1525, the indigenous people of the Peru know about the medicinal properties of the Cinchona plants with its unpleasant side effects. In the next four centuries with the help of the voyages of the British, French and Dutch merchants, the plant spread in the ‘deadly fever-ridden tropics’. The effectiveness of the ‘Peruvian Bark’ became known to the Europeans as the Countess Cinchona, the Spanish Vicereine of Peru was cured of the prolonged fever in 1638. In 1664, Surgeon C. Dellon of French Navy studied small pox, malaria and other tropical diseases in Western India and used the ‘Jasuit’s Bark’ for the treatment of malaria. But the over-exploitation cinchona plants and the excessive deforestation in South America and created a risk of total exhaustion of the natural source of supply, as a result the attempts were made by the European trading nations to cultivate cinchona in the colonized new lands to maintain the regular supply of the plant.<sup>82</sup>

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<sup>78</sup> *Annual Report on the Administration of the Bengal Presidency for 1867-68*, Calcutta, Bengal Secretariat Press, Calcutta, 1868, p.209

<sup>79</sup> *The Annals of Indian Administration*, Vol. XIV, 1870, p. 301

<sup>80</sup> Chopra, Col. Sir. R. N, Chopra, I. C, *Indigenous Drugs of India*, Academic Publishers, Kolkata, 2006, p. 230

<sup>81</sup> The Jesuit missionaries working in Bolivia and Peru know the antipyretics properties of cinchona that’s why it also known as Jesuit bark.

<sup>82</sup> Dash, Arther Jules, 1947, (Reprinted Siliguri, 2011), *op.cit.*, p. 139

Around 1819, Dr. Ainslie insisted the government to introduced cinchona plants in India. In 1852 Pasteur discovered quinidine and cinchonidine. In 1857, Mr. (Sir) Clements Robert Markham<sup>83</sup>, the then secretary of State for India, ordered to obtain and furnished India with supplies of cinchona tree. Dr. T. Anderson went to Java to inspect the plantation and the process of the manufacture. However, knowing the medicinal properties of the plant Bengali Kabirajs also use the plants for the treatment of 'Burdwan Fever' during 1869.<sup>84</sup> Due to the efforts of Markham and Dr. T. Anderson, the first nursery of the cinchona was started at Nilgiri in 1861 and this was followed by the foundation of nurseries at Dimsong in Sikkim and Senchal in Darjeeling. In 1863 cinchona plantation was started at Mongpu (5,200') in Riang Valley at Darjeeling. The plantation began to thrive in 1867-68 and by 1875 there were about 2000 acres of Government Cinchona plants.<sup>85</sup> In 1881 plots were allotted for the plantation in Labdha and Sitong in the southern slopes of the same valley. The heavy demand of the quinine led to the expansion of the cultivation in 1890 and almost 4½ million plants were available for the production of quinine.

In Darjeeling Himalayas, most of the cinchona plantations were built close to the reserve forest. At the beginning, the cinchona plantations were established in Senehal and Lebong. In the Tista forest division, the Government grabbed the forest land for the cultivation of the cinchona.<sup>86</sup> The Nar Cher and Noam Block land were reserved for the cinchona plantation. According to the Memorandum dated on 30<sup>th</sup> October 1878, the Superintendent of the Royal Botanical Garden, Calcutta was empowered to select any spot if he thought it suitable for the cinchona plantation

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<sup>83</sup> He had an excellent knowledge about South America as he extensively travelled through this country.

<sup>84</sup> Gopaul Chunder Roy, *The Causes, Symptoms and Treatment of Burdwan Fever or the Epidemic Fever of Lower Bengal* (London, 1876), p. 106; David Arnold, *The New Cambridge History of India: Science, Technology and Medicine in Colonial India* (London, 2004), p. 71

<sup>85</sup> Hunter, W. W. 1876, *op.cit.*, p. 176

<sup>86</sup> For more information regarding the encroachment of the forest land for plantation see Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926

and also permitted to cut down the forest for fire woods at free of the coast as required for plantations.<sup>87</sup> During 1900 the Government took the policy to extend the cultivation of cinchona as the public welfare and started a plantation in Munsong which was then under Reserve forest.<sup>88</sup> Another plantation was opened in 1938 clearing the forested Rongo block of the Kurseong Forest Division. Large numbers of labours were employed for preparing the land for cultivation and clearing the forests.

In the Terai and Dooars, the ‘Quininization’ of daily life occurred due to the increasing rate of the malignant fevers.<sup>89</sup> The most effective measure of prophylaxis which has been adopted by the Europeans in the Dooars was the habit of taking quinine daily in 5 grain doses.<sup>90</sup> The benefits of systematic quinine prophylaxis have been so marked among the Europeans. This method gave the Europeans the power to minimize the so-called climatic effects of the district. The Europeans have suffered from the effects of climate in the hyper-epidemic areas of Terai and Western Dooars. Sometimes they have to take Magnesium Sulphate or Soda Sulphate to keep the lever healthy and clean from the malarious parasites. Dr. Newell suggested the dwellers of the Terai to use different insecticides like pyrethrum, sulphur, coconut oil, kerosene oil, citronella oil, eucalyptus oil to kill the larva of the mosquitoes.<sup>91</sup>

At the end of the 19<sup>th</sup> century, the one - third of the population in the Darjeeling district raised on the plantation. The rate of the population growth clearly shows how first the human settlement expanded. These led to the formation of the coolie lines mainly near the tea gardens in

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<sup>87</sup> Stebbing, E. P, *The Forests of India*, Vol. I, Mayflower Press, Great Britain, 1921

<sup>88</sup> Dash, Arther Jules, 1947, (Reprinted Siliguri, 2011), op.cit., p. 140

<sup>89</sup> Newell, A. G, *Black Water Fever*, John Bale, Sons & Danielsson, London, 1909, p. 124. According to him the ‘daily dose of quinine of 10 grains, in two doses of 5 grains, taken night and morning from June to December ; and 5 grains daily, or 10 grains every fourth day and last day of month, between January and end of May.’

<sup>90</sup> Christophers, Captain S. R, Bently, Dr. C A, 1911, op.cit., p.82

<sup>91</sup> Newell, A. G, *Black Water Fever*, John Bale, Sons & Danielsson, London, 1909, p. 124

Darjeeling and Dooars. In 1940s total 13,507 people depended on the cinchona plantation in Darjeeling district and most of them were Nepalese.<sup>92</sup>

### **Arboricultural Experiments in Darjeeling and Western Dooars**

The arboricultural experiments or the plantation of indigenous and foreign trees, management and study of them became successful in Darjeeling and Terai. 20,000 seeds of the Mahogany which were the indigenous tree of Central and South America, imported from West Indian Islands by the Colonial Office for the plantation in the Terai.<sup>93</sup> Soon the experiment on the seeds of held in the Botanical Garden, Calcutta. The climate of the Terai was suitable for the mahogany plantation and the experiment remained successful in the Tatalyah. Dr. Anderson in his report '*On the Cultivation and Growth of Mahogany in India*' published in the Calcutta Gazette; 6<sup>th</sup> February; 1866 wrote about the possibilities of mahogany plantation in Sikkim Terai, Lower Bengal, Assam and Chittagong. He desired to develop a plantation in the Sikkim Terai, if the colonial government annually procures the considerable amount of the seeds of mahogany from the Jamaica and West Indies.<sup>94</sup>

Another tree which grabbed the attention of the colonizers was the indigenous plant of China and Japan i.e. popularly known as Japanese Cider or Dhupi (*Cryptomeria Japonica*). A Chinese man named Mr. R. Fortune who was a celebrated authority upon tea and its manufacture and compared the climate of the Himalaya with china brought the seeds of the *Cryptomeria Japonica* from China and Japan and handed over it to Dr. Anderson, the Superintendent of the Botanical Garden Calcutta.<sup>95</sup> Later on, the seedling of first growing *Cryptomeria* was introduced by Dr. Anderson in the Jalapahar and Dow hill. The plant distribution in all over the planate depends on the climatic factors, but the biotic interactions and global imperial domination, trade and the market economy have altered the vegetative pattern in almost everywhere in the globe. Both in

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<sup>92</sup> Dash, Arther Jules, 1947, (Reprinted Siliguri, 2011), *op.cit.*, p. 144

<sup>93</sup> Stebbing, E. P, *The Forests of India*, Vol. II, Mayflower Press, Great Britain, 1923, p.377

<sup>94</sup> *Ibid*, p.410

<sup>95</sup> Clarke, Hyde, 1857, *op.cit.*, p. 243

the hill slopes of the Darjeeling Himalayas and Western Dooars wildlife was largely affected by the replacement of the indigenous plants with the imported alien species plants. The wildlife of a particular region depends on the plants for food and shelter. When the indigenous plants of a large area replaced with the alien non-edible fruit bearing trees, it may have been forced the animals and birds to migrate in other places. In the outer Himalayas indigenous Pines and oaks were replaced by the faster-growing Japanese Cider or Dhupi (*Cryptomeria Japonica*). But the pine nuts, acorns or oak nuts were the extremely vital for the high altitude ecosystem. Different species of animals completely depended upon the nuts during the winter months when the snow covered the surface of the soil. The replacement of the trees in many ways affected the biodiversity.

The Annual Progress Report of Forests 1868-69 highlighted that the Forest Department introduced experimental plantation of the alien tree replacing the indigenous plants. The Teak plantation was started at Bamunpokri in the Terai in 1868 by following 'tunggya' method. Within two years the plants became 5 feet to 7½ feet high and strong.<sup>96</sup> In 1876-77 almost 153 acres of land was brought under Teak plantation in Bamunpokri.<sup>97</sup> 'Toungya' method was applied in this area in 1869-70 to sow the seeds of the teak. Brandis was in favour of the teak plantation in Western Dooars but Schlich abandoned the work as he recognized it 'money and energy consuming' and instead of teak he favored the sal plantation.<sup>98</sup>

The plantation programme in the southern portion of Buxa reserve was started in the month of July-August; 1876. About 2 to 3 feet high sapling of the precious trees were dug up from the soil and planted in rows to secure timber for future exploitation. Their aim was to transplant the forest and create separate blocks for the valuable trees. Brandis expressed that "the planting of

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<sup>96</sup> Stebbing, E. P. 1923, op.cit, p.426

<sup>97</sup> Schlich, W, *Progress Report of Forest Administration in Bengal for 1876-1877*, Superintendent of the Government Printing, Calcutta, 1878, p. 2

<sup>98</sup> Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926

sal in Buxa reserve opens out a splendid field for experiments, which must be made systematically, on a large scale and on a well-considered plan.”<sup>99</sup>

According to the *Administrative Report of Bengal 1873-1874*, the experimental plantation of teak and rubber in the grass jungle of the Terai proved unsuccessful. The sisoo and toon were also planted along with the teak in the Terai regions. The rubber was mainly brought to Calcutta from outside, so the rubber plantation was done in Darjeeling to maintain the steady supply of the raw rubber.<sup>100</sup> In September 1904, lease of 2,000 acres of land of the Engo Block of Darjeeling Division was given to Mr. A. W. C. Chaplin for the rubber plantation.<sup>101</sup> In Darjeeling experiment was also made with Spanish chestnuts as the seeds were sent by the Secretary of State for India.<sup>102</sup> These plants were interplanted with the toon.<sup>103</sup> A small plantation of Spanish chestnuts was made in Rangrum in 1874-75.<sup>104</sup> The Pine, Scots, Juniper and Yew which are also known as the coniferous trees were introduced in Darjeeling to satisfy the demand of the North Bengal Railways. Transplantation of the coniferous trees which were mainly native to the Great Britain was made on the plot of land made over to the North Bengal State Railway (**Table: VII**).<sup>105</sup>

According to Mackenzie nineteenth century was a period when amateurs dominated science.<sup>106</sup> The hill slopes of Darjeeling, forested Terai and Western Dooars were transformed into a

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<sup>99</sup> Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926, p.199

<sup>100</sup> *Administrative Report of Bengal 1873-1874*, p. 221

<sup>101</sup> File No. 3L/3, No. 57-61, September 1904 (Revenue Department, WBSA)

<sup>102</sup> Schlich, W, 1878, *op.cit.*, p. 2

<sup>103</sup> *Ibid*, p. 5

<sup>104</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p. 76

<sup>105</sup> No. B 44-46, April, 1879 (Revenue Department, Forest), WBSA

<sup>106</sup> Mackenzie, J.M. ed. *Imperialism and the Natural World*, Manchester University Press, p.5

laboratory for the scientists, meteorologist, botanist, ornithologist and entomologist of the British Empire. The construction of the large buildings, mansions and bungalows, commercial places, metalled roads, railway tracks and profit generating agricultural fields and plantations was not enough for the colonial rulers to accumulate the wealth of the subjugated land. They also replaced the indigenous floras with the alien plants and trees with the intention to make profits, get medicine, construct and change the landscape. Till 1880 most of the attempts of the plantation of timbered trees remain unsuccessful and Brandis stated that it was still in an experimental stage, though it had been started almost 15 years ago. A massive deforestation of the forested regions of the Darjeeling and Western Dooars occurred in the second half of the nineteenth century. The natural restocking in the devastated areas of the steep hill slopes was extremely difficult and at the same time, the plantation had not been proved successful in the Darjeeling region due to the irregular of supply of the seeds. The Oaks did not produce seed in every year and on the other hand Maple, Magnolia, Chestnut, Toon and Pipli generate seed at regular interval. The Lieutenant-Governor expressed that spending huge amount of money for the experimental plantation of the foreign trees was a mistake and he further emphasized on the protection and cultivation of the indigenous plants rather than alien trees.<sup>107</sup> The introduction of the Taungya system or the plantation of the timber trees in India by Dietrich Brandies largely responsible for the ecological change in the hills as well as in the Sub Himalayan Bengal.

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<sup>107</sup> Schlich, W, 1878, *op.cit.*, p. 2

## Chapter IV

### The Communication Infrastructures

The expansion of communication infrastructures in Darjeeling and Western Dooars was related to the growing political problems raised in the Himalayan countries viz., Nepal, Sikkim and Bhutan. To spread political hegemony, the colonial government implemented their power and knowledge to expand the railway and road network in the Darjeeling and Western Dooars. As the colonial government acquired the grant of Darjeeling in 1835, a punitive military expedition became necessary to stop the border dispute with the Nepal-Sikkim. In the Darjeeling and Western Dooars, the roads were expanded for dual purposes to resist the expansion of the Russia in the mountains of the Sikkim Himalayas, stop Bhutanese attacks in the Sub-Himalayan Bengal and opened up the scope of exploitation of the natural resources of the Darjeeling and Dooars.<sup>1</sup> In 1830s, the Darjeeling Road was constructed up to the foothills of the Himalayas. An enormous amount of the labour, skill and engineering knowledge were used to cut down the hills to construct the Hill Cart Road in 1839-1840. The control over Darjeeling means strategically a greater control over the Daling Dooar, spread between the Jaldhaka and Tista River including the thriving market areas of the Jalpaiguri.<sup>2</sup> Once the traffic on the Hill cart road was carried on by pack ponies, pack bullocks, bullock carts, palkees and tongas.<sup>3</sup> Later on, the prospects of Darjeeling as a hill station and tea producing zones enforced the government to extend the railway network up to the Queen of Hills in 1881. The tea and timber of Sub-Himalayan Bengal

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<sup>1</sup> For more information see Spencer, J. E, Thomas, W. L., The Hill Stations and Summer Resorts of the Orient, *Geographical Review*, Vol. 38, No. 4 (Oct., 1948), pp. 637-651

<sup>2</sup> *Frontier and Overseas Expedition from India*, Compiled by the Intelligence Branch, Division of the Chief of the Staff, Army Head Quarters, India, Vol. IV, Simla, Government Monotype Press, 1907, p. 137

<sup>3</sup> *The Darjeeling Himalayan Railway: Illustrated Guide For the Tourists*, 1896; p.9

encouraged the colonial officials to spread the tracks of the Bengal Dooars Railways in the Western Dooars during the 1890s.

### **Seasonal Riverine Transportation**

Prior to the expansion of the metalled road and rail network in the North Bengal, the journey towards the mountain was extremely time and money consuming matter for the Europeans. Only the energetic Britons were able to take up the exhortation of the formidable journey. The journey through the rivers and forests surrounded by different species of animals and insects was extremely challenging for the Europeans. The Himalayas, adobe of the eternal snow had a mesmerizing impact on the Europeans, so they enthusiastically overcame all the barriers to reach there even through the unhealthy and deadly Dooars. Dr. Buchanan- Hamilton's Report (1809) mark that the Tista was navigable upto the mart Madarganj, on the west bank during the dry season and a canoe containing lesser than 150 maunds travelled beyond this point.<sup>4</sup> But in the rainy season, it was navigable up to the foothills.

The rivers of the Western Dooars were navigable upto the cultivation limit, but beyond that the courses became torturous. Throughout the year it was impossible to cross the river on foot because in all seasons the rivers contained a large amount of water. Tista was navigable throughout its course by steamers in the late nineteenth century.<sup>5</sup> From December to May the navigable capacity of Torsa was reduced to 50 maunds burden upto the junction of the Mujnai. Whereas in the rainy season, a boat containing 200 maunds of burden generally came up to Mathabhanga, those of a less capacity going higher up by the Mujnai to Falakata in the Western Dooars. The Duduya which was the combined water of the Gairkata, Nanai, Angarbasha and other small streams flows through the north-west part of the Western Dooars and have the

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<sup>4</sup> The information gathered from the Report of Dr. Buchanan- Hamilton mentioned in Grunning's *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p. 10

<sup>5</sup> Hunter, W. W, *Statistical Account of Bengal*, Vol. X, 1876, p.226

capacity to carry boats of 50 maunds up to the Jalpaiguri-Alipur road.<sup>6</sup> The Mujnai River was navigable up to the Falakata with 50 maunds of burden.<sup>7</sup> In Jalpaiguri district, many of the villages were developed on the river banks of Tista just because of the trade going on through the Tista River. In the middle of the nineteenth century, the roads were extended to connect forests with the river for the systematic exploitation of the wood.

The earliest description of the condition of the roads and the surrounding environment of Western Dooars was depicted in the writings of Babu Kishen Kant Bose who went to Bhutan via some areas of the Dooars in the 1820s.<sup>8</sup> According to his description, Dooars was covered with long grass and jungle with a small number of native huts. During the monsoon months, i.e., Bysakh to Kartik (April to September), the communication between Sidli and Northern hill broke up and in the month of Assin (October), the jungle was burned to clear for the road. The country from Bijni to hills was covered with *Khagrah* and intercepted with scattered forest patches.<sup>9</sup> He further, mentioned that the jungle also the dwelling place for the different types of furious mammals and insects.

In 1839 an anonymous English man wrote about his experience of the journey to Darjeeling describing how he travelled through the rivers from Berhampore to Malda and at last arrived at his destination via Kissengunge, Dinajpur and Siliguri. Before the construction of the road in these areas, the navigable rivers were the only way to reach near the foothills. Mr. J. T. Pearson, a Medical officer of Darjeeling, vividly described his first journey to Darjeeling in 1839.<sup>10</sup> His

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<sup>6</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p. 11

<sup>7</sup> *Ibid*, p. 11

<sup>8</sup> *Asiatic Researches*, Vol. XV, 1825, pp.128-156

<sup>9</sup> A type of reed grows in the foothills of the Himalayas near the water bodies.

<sup>10</sup> Pinn, Fred, *The Road to Destiny: Darjeeling Letters 1839*; Oxford University Press, Calcutta, 1986, p.92

whole voyage from Junpore to Titalya lasted twenty-six days. During the tour, he observed the roads in the hills were full of mud, especially between Mahalderam to Sonadah, mud reached up to the knees and paths were obstructed by the fallen trees. Prior to the foundation of the railways, the route to Darjeeling was almost like an adventure or the expedition for the British officials in India. On the way, they suffered from incessant rain, the bad state of roads and lack of shelter.<sup>11</sup> The renowned botanist, Sir J. D. Hooker described his journey to Darjeeling as 'perilous'. He commenced his journey from Bhagalpur in frail boat and reached Caragola Ghat by drafting down the Ganges. The rest of the way to Darjeeling, he traveled by palanquin and reached the destination via Purnea, Kishangunj (Kissangunge), Titalaya, Siliguri, Pankhabari and Kurseong. After Siliguri, the road as stated by J. D. Hooker 'winded through thick brushwood choked the long grasses'.<sup>12</sup>

The entire landscape was transformed after the construction of a wide P. W. D high road and the railway track to Kishangunj (Kissangunge) through Matigara. Soon the brushwood was also replaced by paddy field or grass pasture. These bushes were the hiding ground for the wild animals and at the time of the road construction the Public Works Department trapped and killed large numbers of leopards to make the place safer for the human.

The weather played a vital part in the process of the communication up to Darjeeling and Dooars. Until the end of 1854; the visitor to Darjeeling had to choose between two modes of transit viz., the road and river journey. The entire distance of 401 miles along the dusty trunk roads in the plains portion had to cover in the road journey to Darjeeling.<sup>13</sup> Darjeeling was five days of dak journey from Calcutta. Water carriage was possible from June to September during the rainy season to Dinajpur or Titalya on the bank of Mahananda which was almost twenty-

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<sup>11</sup> For more information see Pinn, Fred, *The Road to Destiny: Darjeeling Letters 1839*; Oxford University Press, Calcutta, 1986

<sup>12</sup> Hooker, J.D, , *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p. 101

<sup>13</sup> Dozey, E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p. 7

eight miles from the foothills. But during the winter when the level of the water became low, the Mahananda River was navigable up to Dulolgunge which was situated eighty miles away from the foot of the hills. The river journey was necessarily slow and depends on the winds and forces of the water. The river journey covered 270 miles, and then the travelers have to cross the distance of 142 miles in plains and 40 miles in the hills to reach the destination in the hills.<sup>14</sup> Prior to the foundation of the railways the total expenditure of a first class dak traveler was £25 and it consumed almost seven days, whereas after the introduction of the railways, the cost of the first class railway passenger was reduced to only £5 and it took only ten hours. From 1869 to 1877 the travelers to Darjeeling had two options, either proceeds by rail to Sahibgunge then by road to Siliguri or by East Bengal Railway to Poradah and proceeds through Bhairamara and Sara to Jalpaiguri.

### **Mining in the River beds of the Sub-Himalaya and Transportation**

The mineral deposits of the Himalayan region formed by the enormous tectonic pressure build up in these areas during the formation of the Himalayan Mountain ranges in five millions of years ago. The tectonic pressure and temperature transformed the skeletal fragments of the marine organism like corals, foams and mollusks of the Tethys Ocean into pure limestone, soil and mud transformed into the building stones, slate, plastic clay. From Sikkim to Buxa in a vast area limestone, copper, building stones, slate, plastic clay were discovered during the colonial period. The discovery of the sedimentary rocks and metals by the colonial geologist and administrators provided a fresh impetus to the expansion of the colonial communication infrastructures in these areas.

Captain Napier discovered the pure lime deposit in Sikkim during the nineteenth century.<sup>15</sup> Later on the large deposit of the tufa which was the bicarbonate of lime found in the largest quantity in the dolomite hills near the Buxa. Before the expansion of railway track near the dolomite mines

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<sup>14</sup> Ibid, p. 8

<sup>15</sup> Clarke, Hyde, *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857, p. 64

of the foothills, the raw materials from Jayanti hills were transported through the Torsha river, thence taken down to the Brahmaputra. But after the extension of the North Bengal State Railways lime was carted up to Jalpaiguri and then taken to the Sukna or downstream. During the colonial period the tufa deposits in the west of Pankhabari in water course 500 or 600 feet above the Balasan River, Pashak were exhausted due to over-exploitation.<sup>16</sup> Before the expansion of communication, the rivers were the only means of transport up to the foothills as the way to the foothills was covered with jungle.

### **Canoe market in plains and the forests of Darjeeling and Sikkim Himalayas**

The exploitation of the forests of Darjeeling and Western Dooars was started in the last half of the eighteenth century due to the growing demand of the canoes in the plains of Bengal, particularly in Deviganj in Rangpur, Kangtapukuri in Nattor (Rajshahi). As per the report of Dr. Buchanan- Hamilton, the *sal* and *sisu* wood of Baikunthapur was almost exhausted prior to the annexation of the Western Dooars with the British Empire.<sup>17</sup> The entire timber business was depended on the Dafader who employed workmen in monthly wages to cut the timber in the forest of the Western Dooars and floated it in the river. They deliver the *dhura* of timber to the merchants in a particular place.<sup>18</sup> According to Dr. Buchanan- Hamilton, every year 150 to 160 canoes were made in the Baikunthapur (Battris-Hazari). At the time of the Sannyasi-Fakir rebellion, the insurgents extensively used river roots of the Brahmaputra, Tista and Mahananda to escape in the forested areas of the Bhutan Dooars and Assam through the huge country boats known as Bojras to protect themselves from the advancing British troops.<sup>19</sup> There was a great demand of *sal* canoe in the district through which the Tista flows.<sup>20</sup>

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<sup>16</sup> Hunter, W. W, 1876, *op.cit.*, p. 156

<sup>17</sup> *Ibid*, p. 242

<sup>18</sup> According to Dr. Buchanan- Hamilton two *dhuras* means 252 logs.

<sup>19</sup> The forested places in the foothills of the Sub-Himalayas where the rebels took shelter to escape from the British troop has been discussed Dr. Ananda Bhattacharya's, Sannyasi and Fakir

R. H. Irvine in his article ‘*Observation on the Products and Resource of Darjeeling*’ explained the need of the expansion of communication in the sal forest on the banks of Tista and Runjeet rivers because he predicted that due to over-exploitation the sal forest of the Morang would be exhausted soon.<sup>21</sup> In March 1849 Sir J. D. Hooker while moving towards Darjeeling through the Bengal Dooars observed a Koch village by the side of the river at the eight miles from the Rummai mainly inhabited by the timber cutter of the Jalpaiguri during the dry season.<sup>22</sup> To some extent the forests of the Sikkim and Baikunthapur severely affected by the canoe cutters who moved to the slope of the mountain in the winter to cut down the large trees and shaped it into the form of the canoe and later on, sale those in the riverside markets of the plains Bengal. The forest of Sikkim, Dooars and Darjeeling contributed to the growth of the timber markets in Rangpur, Dhubri, Alipurduar, Khunia and Dacca where the logs were supplied through rivers. Within the first few years of the twentieth century nearly all the stations on the Eastern Bengal State Railways, mainly Rangpur, Nattore, Mandalghat by the side of the Tista River and the Mathabhanga at the meeting point of the Jaldaka and Dudua Rivers had evolved as the major markets of timber.<sup>23</sup> In the riverside markets, large boats were used to carry the timber. To maintain the supply in the offseason depots was built in Gachdanga near Alipurduar on the bank of Kaljani. By the side of the river Tista depots were constructed in Phulbari, Sibok and Siliguri. The soil erosion in the mountain increased due to the destruction of the forest reduced capacity of the navigation of a river. The history of the navigation system in the rivers of North Bengal shows that the navigable capacity of the rivers reduced year after year due to the excessive soil

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Rebellion in Bihar (1767-1800), *Islam and Muslim Societies: A Social Science Journal*, Vol. VI, No. 2, 2013, pp. 28-44

<sup>20</sup> No. 5-6, January 1868 (Revenue, Forest)

<sup>21</sup> Irvine, R. H, ‘Observation on the Products and Resource of Darjeeling’, *Journal of Agriculture & Horticultural Society of India*, Vol. V, Part I, January-December, Calcutta, 1846, p. 185

<sup>22</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p. 395

<sup>23</sup> *Working Plan (Revised) for the Reserved Forests of the Jalpaiguri Division*, P. 6

erosion and rapid change in the weather in the Himalayas. The colonial officials and the European civilians have noticed that change in the climatic condition in the nineteenth century.

The tea gardens sometimes used the rivers to transport their products to the south in the markets of the plains. The Hantapata and Lankapara Tea Estates send their products to the Falakata via a cart road and from there it was transported to the market of Dhubri through the Mujnai River via Brahmaputra.<sup>24</sup>

### **Disease ridden Environment and the Early Days of Road Construction**

The June 1838 was a watershed in the history of Darjeeling when Executive Engineer, Lt. Gilmore was posted there with a corps of sappers and miners to construct roads in the hills. In the early stage of road construction in Darjeeling, the climate was the major problem for the advancement of the work as many died or became severely ill because of the unhealthiness in the surroundings. The cool and unhealthy air, dampness and the attacks of the numerous insects were responsible for the illness and death of a large number of labours. There were numerous references to the risky living condition of the road builders and a high rate of sickness and injury occurred among the labour force in Darjeeling during the beginning of road construction. The Bengali Coolies, sepoys and the servants were attacked by the extremely annoying black flies known as Peepsah.<sup>25</sup> The bite of the insect caused serious inconvenience among the labours and they were unable to perform their duties due to ulcerations on their limbs.<sup>26</sup> The numerous less known insects active around Darjeeling was so powerful that it almost stopped the working of the labour force while they were preparing the roads to strengthen the control of colonialism over this region. The overall environment of the hills was responsible for the unwillingness of the Mechs and the other collies of the plains to going up in the hills. Procurement of the hill labour

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<sup>24</sup> Grunning, 1911, *op.cit*, p. 11, The Mujnai River was navigable up to the Falakata with 50 maunds of burden.

<sup>25</sup> Peepsah is also known as Pipsa or Potu. In Latin it is known as *Simulium indicum*.

<sup>26</sup> Bayley, *Dorje-Ling 1838* in Pinn, 1986, *op.cit*, p. 35

became impossible because of the anti-British policy of the Raja of Sikkim.<sup>27</sup> In the first season the road construction, the project was severely failed due to rain and many labours became sick or fly away. In the remote, humid and forested environment, colonial officials often suffered from ‘psychosomatic’ and Lt. Gilmore severely suffered from it while the road construction was going on in the hill slopes. On 24<sup>th</sup> March 1839, Lt. Gilmore wrote a letter to his higher officials and described that the adverse climatic condition was responsible for the scarcity of labour, procurement of artifacts.<sup>28</sup>

In 1839 local agent of Darjeeling Lt. General Lloyd and Assistant Surgeon Dr. A. Chapman was also took part in the exploration of land and the nature of the country for the road construction.<sup>29</sup> Soon small-pox broke out in Darjeeling and Colonel Lloyd requested the Government to introduced vaccination among the natives of Darjeeling who were often attacked by small-pox.<sup>30</sup> The only remedy was known to the native was to escape from the place where it broke out. To improve the health care situation in Darjeeling among the European constituents and the labouring class, Dr. Pearson requested the Government to introduce ‘Hospital Doolies’.<sup>31</sup> The main aim of this proposal was to bring the doctor quickly to the patient, rather than carrying the sick or wounded to a Medical Officer. The condition of the dooly bearers was almost like the situation of the labours. They have to do their duty, even in the cold night completely exposed in the jungle which created fever and obliged to lie down in their wet cloth.<sup>32</sup> The name of

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<sup>27</sup> Pinn; 1986, *op.cit*; p.118

<sup>28</sup> See for more information Pinn, F, *The Road of Destiny: Darjeeling letters 1839*, Oxford University Press, Calcutta, 1986

<sup>29</sup> Dozey, 1916, *op.cit.*, p. 3

<sup>30</sup> 5<sup>th</sup> June- Consultations, Fort William, 3 July 1839, No.156, also mentioned in Pinn; p.159

<sup>31</sup> Dr. Pearson took it very seriously by urging the Government to introduce hospital doolies. Later on the proposal was accepted by the government.

<sup>32</sup> Pinn; p.161

Darjeeling strikes terror to the natives.<sup>33</sup> The weather was an obstacle for the native coolies who were borrowed by the British officials to construct the road and build the station at Darjeeling. The continuous rain, shivering cold, the attack of the peepsah, and scarcity of water, food and the agony of the journey led to the death of many native workers. A popular story about the early days of the road construction of Darjeeling narrated that around 14 dead bodies were seen lying exposed on the road when the road constructions were in the initial stage.<sup>34</sup> The number of people who have either died in the road or have left sick was numerous and remained unreported.

Dr. A. Campbell, the superintendent of Darjeeling, Lieutenant Napier of the Royal Engineers (Later on Lord Napier of Magdala), Lt. General Lloyd and Wilson took a pioneering role in the construction of Darjeeling as an ‘embryonic settlement’ with a few stony paths, a few wattle and huts and a hundred of people milled about like ants, reduced the jungle to building plots.<sup>35</sup> At the beginning of the road construction in Darjeeling, Major G. W. A. Lloyd recommended the formation of a road in the hills through blasting and removing the rocks with the help of a large labour force. He further recommended the formation of two types of the road network in Darjeeling, viz., the steeper and shorter road to carry the invalid into the refreshing cold climate and a road for the wheeled carriage. One road would like the Shorter Hills in England with an elevation of 5000 feet in ten miles, steeper so as to carry the invalid quickly to the cold climate and another would construct for the wheeled carriage. But Mr. W. B. Jackson in his ‘*Report on Darjeeling*’ (1854) gave the entire credit of the development of the settlement to Dr. A. Campbell, the first Superintendent of Darjeeling.<sup>36</sup>

A comparative study of the travelogues of Darjeeling and Sikkim shows how the environmental change occurred in these regions along with the expansion of the roads. When Captain Lloyd,

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<sup>33</sup> *Ibid*; 1986, *op.cit*; p.166

<sup>34</sup> Same type of incident also occurred in the Neilgherries when the Ootacomond was founded.

<sup>35</sup> Pinn; 1986, *op.cit*, p.3

<sup>36</sup> Jackson, W. B, *Report on Darjeeling*, 1854, p. 2

Major E. Garstin and J. D. Hooker passed through these places the entire region was extremely wild. The expansion of the metalled road means the coming of a large amount of labour force and massive deforestation and destruction of wildlife. In the *Report on Darjeeling* (1839), Major E. Garstin, the Chief Executive Engineer of the Lower Provinces and the member of the Darjeeling Association Committee mentioned that the road from Titalya to Pankhabari via Raneedunga was surrounded by long grass jungle in the first part of the journey and the density of the forest increased along with the changing elevation.<sup>37</sup> The road from Pankhabari, according to him was extremely bad and steep, trees had not been cut down from the middle of the path or stones and woods were not removed. From 1839 to 1842, the road from Siliguri to Darjeeling, known as the military road, was constructed by Lord Nepier of Magdala with the help of the outside labour force he cut down the portion of the forest and the underwood between the Pankhabari and Darjeeling for building the road communication. The road passed through no less than 300 bridges towards the Down hills after Kurseong. The overall construction expenditure of the Old Military Road was Rs. 8, 00,000/-.<sup>38</sup>

In the late of the 1860s, Major George E Bulger travelled through the Sahibgunge, Caragola ghat, Siliguri and Pankhabari to reach his destination in Darjeeling. Bulger in his travelogue entitled '*Notes of the Tour from Bangalore to Calcutta*' provided the details of the condition of the roads in these regions before the construction of the Darjeeling Himalayan railways. In the 1860s the road extended from Caragola to Pankhabari known as Ganges and Darjeeling Road.<sup>39</sup> He observed that the metalled road extended from Caragola to Titalya was in an excellent condition.<sup>40</sup> The way to Pankhabari passes through the deadly Terai and Major George E Bulger

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<sup>37</sup> Letter to H.M. Low, Esq. Secretary to the Darjeeling Committee, Later on publish in Bengal Hurkaru, March 16; 1839.

<sup>38</sup> Dozey, 1916, *op.cit.*, p. 4

<sup>39</sup> Bulger, Major George E, *Notes of the Tour from Bangalore to Calcutta; Thence to Delhi and Subsequently to the British Sikkim*, The Regimental Press, 1869, p. 38

<sup>40</sup> *Ibid*, p. 43

noticed that on both sides of the road, trees were removed and there was nothing but ‘a thick second-growth or rank grass, intercepted with shrubs and climbing plants of many species...’<sup>41</sup>

After nine years of enormous efforts and sacrifice of life, both by the colonizers and colonized, the construction of the Cart Road from Siliguri to Darjeeling was completed in 1869.<sup>42</sup> The construction of the cart road provided the base for the construction of the railway in the Darjeeling hills. The road has been formed by blasting at many places. During the formation of the road, a large number of trees, huge stones and other geological obstructions were uprooted and the hill streams were controlled by the engineers and the overseers of the P.W.D, with the help of cheap labours. Quite interestingly, the total amount of the expenditure on the construction of the cart road was Rs. 90,000/- or £6,000 per miles, while the amount of the expenditure of the railway tracks was much lower than the cart road. The expenditure of the Darjeeling Himalayan Railway only cost Rs. 52,000/- or £3,500, per miles, because the most of the trees, stones and the bushes were already cleared by the Public Work Department, at the time of the construction of the metalled road in the hills.<sup>43</sup>

### **Surveys for Railway construction**

Since 1850s, the railway construction boom in India has expanded the market economy and intensified the natural resource exploitation. Two companies viz. North Bengal Railway Company and Simla Railway Company proposed their plan to the British Government to establish railway connection between the hills and major Indian Cities. Dr. Archibald Campbell, the then superintendent of Darjeeling, who possessed an intimate knowledge of the local details,

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<sup>41</sup> *Ibid*, p. 41

<sup>42</sup> The plan of the road was prepared by Mr. Dewar of the Survey Department.

<sup>43</sup> Dozey, 1916, *op.cit.*, p. 15

soon submitted a report on the ‘*The Northern Railways*’ (1857).<sup>44</sup> In this report, he provided details of the road and telegraph construction undertaking in the hills of Darjeeling. This was followed by a series of discussion among the Bengal engineers about the railway routes would be connected with the Darjeeling. Dr. Campbell in his report vividly described the commercial prospect of Darjeeling and emphasized the need of the railway connection of Darjeeling with the marketplaces of the Gangetic plain. He straightly encouraged the speculators to invest their money in the lands of Darjeeling. Furthermore he suggested that it would be profitable for the Britons if they invest their money in the land of Darjeeling and use it for plantation or for the building estates.<sup>45</sup> He further added that the building materials were easily procurable in all over the hills which included the timber of oak, chestnut, magnolia, walnut, birch and many others. For the wood requirement of railways, he ensured the authority about the abundance of the Sal and Sissoo in the forests of the Nepal and Darjeeling for the railway sleepers.<sup>46</sup>

Soon the government made a number of Geological, Meteorological and Trigonometrical Surveys to find out the suitable alignment for the construction of railway track to Darjeeling. To analyze the role of the colonial scientific agencies, David Arnold noted that the Geological and Trigonometrical Survey of India represented the emerging role of scientific and technological agencies in colonial state formation and in defining the expanding roles and responsibilities of the modern state in its Indian setting.<sup>47</sup> Following the reports published in the *Journal of Asiatic Society* on the geological character of the Darjeeling district, the plan was made to utilize the lime deposit of the Sikkim which was discovered by Captain Napier in 1850s for the

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<sup>44</sup> The report on ‘*The Northern Railways*’ (1857) of Dr. Archibald Campbell is quoted in Hyde Clarke’s *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857, p.45

<sup>45</sup> Clarke, Hyde, 1857, *op.cit.*, p. 45

<sup>46</sup> *Ibid*, p. 48

<sup>47</sup> Arnold, David, Science, *The New Cambridge History of India: Technology and Medicine in Colonial India*, 2004, p. 60

construction works.<sup>48</sup> Based on the survey made by Captain Impey, a metalled road was constructed between the Darjeeling and the Ganges. Later it provided the basis for the construction of the railway track between Darjeeling to the Ganges. On February 1855, with the opening of the railway traffic between Calcutta and Ranigunge, the exhausting cart journey to Darjeeling was reduced to 120 miles. This was followed by a rapid expansion of the railways towards the highlands of the Himalayas.

In 1866, the first train was steamed out of the Sealdah platform for Poradah junction, south of Dumukdea ghat, on the way to Kushtea. The survey of the East Bengal Railways, which was first called as Northern Bengal State Railways, was built in 1871-1872. In the next year, the plans of railway tracks covering almost 204 miles were approved and it only took a little over five years to complete. In the January; 1878, a miter-gauge was opened between the Poradah junction to Atrai and thus established through communication between Sealdah and Jalpaiguri. Later in the next year, the line was extended up to Siliguri.

Darjeeling was the first hill station to become directly linked by the rail to plain. Tom Mitchell and Rumsey were appointed for the construction of the tramway to the queen of hills. Mr. Franklin Prestage created this unique mountain locomotive line.<sup>49</sup> It was a steel rail weighting 41¼ lbs and lay on sleepers of timber.<sup>50</sup> Many of the Nepalese coolies and the labours were employed by the colonial officials for cutting the timbers, earthworks, excavations, embankments and blasting. The ‘Tiny’ which was the first name of the tramway, later changed to ‘The Darjeeling Himalayan Railway’ was opened for traffic in 1881.<sup>51</sup> Sometimes it also referred

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<sup>48</sup> *Bengal Hurkaru*, 14<sup>th</sup> January, 1843

<sup>49</sup> Ferguson, John, *Six Weeks Trip Through India: Being Notes By the Way*, London: Forgotten Books. (Original work published 1902), 2013, p. 105

<sup>50</sup> *The Darjeeling Himalayan Railway: Illustrated Guide For the Tourists*, 1896; p.9

<sup>51</sup> The opening of stations under the Darjeeling Himalayan Railways along with date and length mentioned in Railway Administrative Report 1880-1881:

to 'Lilliputian train'.<sup>52</sup> During the construction of the railway tracks, the railway sleepers were collected from the nearby forests. In the 1870s, the forests of Bamanpokhri and the Sukna were largely depleted for the construction of the railway sleepers.<sup>53</sup> The exploitation continued till the formation of the working plans of the forest in 1904. At the beginning, the thick forests became a challenge for the construction of the railway tracks. So every encouragement was given to the coolies, Individuals and the speculators for faster clearing of the thick forests. The excessive rainfall and extreme cold created were the major problems during the construction of the railways. Due to the colonial encounter, the place was transformed into a remarkable piece of engineering.

### **Railway Construction in Western Dooars**

The expansion of the railways in Darjeeling, boom in the tea business in the 1880s and the commercial prospects of Western Dooars encouraged the government to spread the railway tracks in the Western Dooars. According to the agreement signed between the colonial government and Messrs. Octavius Steel and Company in April 1891, the company got the right to construct Bengal Dooars Railways. The main line of the Bengal Dooars Railway was built from Barnes ghat to Dam Dim opened on 15 January, 1893.<sup>54</sup> The lines were made with flatfooted steel rails on the *sal* sleepers. Later the Bengal Dooars Railways were extended in Eastern, Western and Southern direction. In the eastern direction the line was extended from Mal

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Siliguri to Kurseong – 23<sup>rd</sup> August 1880 – 30 miles

Kurseong to Sonada – 1<sup>st</sup> February 1881 - 9½ miles

Sonada to Jore Bungalow – 24<sup>th</sup> March 1981 - 5½ miles

<sup>52</sup> *The Darjeeling Himalayan Railway: Illustrated Guide For the Tourists*, 1896, p. 9

<sup>53</sup> See for more information *Progress Report of the Forest Administration in Bengal for 1876-1877*

<sup>54</sup> *Railways in India, Administrative Report for the Year 1913-1914*, Vol.2 (appendices); p. 159

to Madarihut, a southern extension of the line opened up the area between Barnes ghat to Lalmanihut and the Western extension connected Dam Dim to Bagrakote via Oodlabari later on the line was again expanded to connect Chalsa and Matelli with the expansion of the growing market economy in Western Dooars. Another economically important railway section of the Western Dooars was the Santarabari Extension of Cooch Behar State Railways connecting the forested timber producing regions of Jainti, Rajabhatkhawa to the timber market of Alipurduar in the south bank of the Kaljani River and with the native state of Cooch Behar.<sup>55</sup> In 1913-1914, a total amount of 158.37 miles of railways were under Bengal Dooars Railways and Bengal Dooars Railway Extension. The lines were constructed for the opening out the Western Dooars and opening out of tea industry.<sup>56</sup>

### **Bridges**

The rapid expansion of the communication infrastructure enforced the alien rulers to implement superior scientific knowledge to dominate the mind and the soul of the colonizers. The construction of the gigantic bridges reflects the ambition and power of the ruling class. In the nineteenth century, most of the bridges in the Darjeeling and Western Dooars were constructed by using woods and bamboos procured from the nearby forests. While visiting Darjeeling in May, 1848, J. D. Hooker referred the cane bridge as ‘the most characteristic of the Himalayan object of Art’.<sup>57</sup> Most of the bridges were constructed by using Sal planks. The section of the Cart Road between Kurseong to Darjeeling contained 300 bridges was completed in 1865.<sup>58</sup> Darjeeling Himalayan Railways passed through 550 culverts and small bridges, in these

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<sup>55</sup> *Ibid.* p. 47. This line was originally on the 2'6" gauge, but was converted to an opened on, the 3<sup>3</sup>/<sub>8</sub> gauge upto Rajabhatkhawa from 13<sup>th</sup> April 1910 and upto *Jainti* from 1<sup>st</sup> May 1910.

<sup>56</sup> *Ibid.*, p. 159

<sup>57</sup> Hooker, 1854, *op.cit.*, p. 149

<sup>58</sup> Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling, Alipore, Bengal*: Bengal Government Press, 1947, (Reprinted Siliguri, 2011), p. 181

constructions, the timbers of the surrounding forest were used in large numbers. Even the Planter's Association forced the Government to construct bridges over the mountain stream for their own interest. Hurry Mohan Sannial, an overseer of P. W. D Bengal, who visited Darjeeling in the late 1880s, as 'an honest servant of the colonizers' he was surprised to see the enormous effort of the men behind the construction of the huge structures like bridges and the mountain railways.<sup>59</sup>

In 1895-1896, a wooden bridge was constructed upon the Balsan River by the P. W. D and it lasted for only five years. Again in August 1910, the wooden Balasun Bridge was washed away due to heavy rainfall and the destruction of the bridge due to the flood water heavily disrupted the traffic in the Darjeeling District.<sup>60</sup> This bridge was extensively used to reach the Matigara market. Soon the broken structure was replaced by a new wooden bridge with the length of 300 yards, which was claimed as the longest structure of its kind in Bengal Province. Later on, a stone bridge was built over the Balasun by the Railway authorities in 1915. The wooden Panighata suspension bridge was built over the Balsan River and opened for traffic in 1901. In Ambhutia, Namsu and Avongrove, three bridges were constructed to get access to the Matigara Road, Gari Dhura and Tong Song Cart Road.<sup>61</sup>

The First World War gave a massive impetus to the scientific, technological innovation and infrastructural growth in the strategically vital colonized land. In the bordering land of Sikkim, Darjeeling and Dooars the government implemented the more advanced engineering technology to reduce the difficulty of communication and opened up the remote areas for motor traffic. For the construction of the bridges, the Truss and cantilever principal were implemented. Soon the cane, bamboo made suspension bridge, *sal* planked bridge, log bridge was replaced with the

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<sup>59</sup> For more information related to the experience of the native see Sannial, Hurry Mohan, *A History of Darjeeling: Newly Translated from the Original 1880 Bengali Edition*, Pagoda Tree Press, 2009

<sup>60</sup> Dozey, 1916, *op.cit.*, p. 35

<sup>61</sup> *Ibid*, p. 36

highly sophisticated gigantic Truss and cantilever bridges build with pre-stressed concrete and strong structural steel was thrown over the large rivers to handle both railway and road traffic.

The construction of the modern bridges in the tracks of the Eastern Bengal Railway stimulates the natural resource exploitation in the Darjeeling and Western Dooars as all the railway lines spread in these regions became connected with each other due to the construction of bridges. Previously the travelers enrooted to the Darjeeling and Western Dooars had to cross the large rivers through the ferries, but the construction of the bridges reduced the discomfort of the journey in the first few decades of the twentieth century. The quick, safe and comfortable communications increased the immigration of the outsiders in the Darjeeling and Western Dooars. When the Hardinge Bridge was constructed over River Padma, it was the deepest foundations of its kind in the world. In February; 1912 around 24,000 labours were employed on this railway bridge and it took 5 years to opening for the traffic. The foundation of the Hardinge Bridge opened up more business opportunities in the North Bengal and the Assam and it also extended the timber market of Dooars as the bridge was linked with the narrow gauge lines of Darjeeling Himalayan Railway, the Kissengunje and Tista Valley Extensions.<sup>62</sup> The huge structure of the Hardinge Bridge created a sense of pride among the Europeans and on the other hand mesmerized the native. The imperial pride and technological superiority of the colonizers reflected in the construction of the Coronation Bridge over the Tista River to commemorate the coronation of the King George VI and Queen Elizabeth. The height of the Bridge (173 feet) from the water level often mesmerized the commons. The Mahananda Bridge (700 feet long) improved the communication in the foothills.<sup>63</sup>

### **Roads**

The roads were constructed in the forests to bring the logs and the sleepers to the river banks from where these were transported to the markets of the plains. In 1876-77 the cart roads were

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<sup>62</sup> *Ibid*, p.188, Dozey mentioned the northern Dooars as ‘the mistress of the timber trade for at least two decades.

<sup>63</sup> Ferguson, John, (Original work published 1902), 2013, *op.cit.*, p. 105

made through the Gulma, Chuklong, Ruhoni and Gorumara (Goroomara) Rivers. A one mile long timber road with three substantial stone bridges from Dhalka Jhar to the Balasun – Naksalbari was constructed during this period.<sup>64</sup> A bridle path was made in the Bamonpokri forest to the Pankhabari road at Runchoogjhora. The bridle path from Chuklong to Latpanchor was constructed to extract the sleepers from the forest. The roads were made through the forest to open up the forest for exploitation. In 1876-1877, the construction of the road opened forty square miles of forests. Schlich was in favour to open up the old riverside road along the Tista from Sibhok.<sup>65</sup> Commercially this road opened up the transnational trade between Bhutan, Tibet and India and also accesses to the forest. The aim of the government was to open the Branch road from Sibhok to open 40 square miles of the forests in the Darjeeling. The forest Department cut down four new roads in the Buxa forest with the length of 14½ miles. The total length of road in Buxa Reserve was 40¾ miles.<sup>66</sup> The Jangi Guard Road was constructed between Kalimpong and Gorubathan to connect the hills with Dooars. The metalled roads and the bridges consumed a large quantity of the bricks which were built by burning the woods of the nearby forests of the brick kilns.

In 1918 the petrol-driven light motor cars like Austin 7 with low gearbox was introduced in the narrow and steep roads of Darjeeling.<sup>67</sup> The Baby Austin car on the roads of the hills provided the European Sahibs and Mems far more comfortable and heavenly experience during their exodus in the hills in the steamy summer months of the colonized tropics. The roads and bridges constructed after the 1920s designed for the wheel traffic. Blake Pinnell, the son of the Deputy Commissioner of Darjeeling in his reminiscence of the childhood mentioned that his father L. G.

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<sup>64</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p. 87

<sup>65</sup> Schlich, W, *Progress Report of Forest Administration in Bengal for 1876-1877*, Superintendent of the Government Printing, Calcutta, 1878, p. 2

<sup>66</sup> *Ibid*, p. 4

<sup>67</sup> Dash, Arther Jules, 1947, (Reprinted Siliguri, 2011), *op.cit.*, p. 180

Pinnell used to drive a Baby Austin car which was perfect for the winding up and downs of the roads of the Darjeeling.<sup>68</sup>

### **Ecological Impact of Railways Tracks and Metalled Road**

The rapid expansion of the communication in Darjeeling hills and forested Western Dooars led to a massive ecological exploitation in the surrounding areas. The natural environment of these regions lost its glory due to the booming communication infrastructures and increasing human activities in the forests. In Darjeeling, the number of the European houses more than doubled within three years of the opening of the Darjeeling Himalayan Railways.<sup>69</sup> The overall population of the district increased rapidly within 1881 to 1901, due to the railway communications. The Darjeeling Himalayan Railway after crossing Mahanuddi River passed through the Sukna forest which turned into a battlefield for human and animals during the colonial period because of the human penetration in the forests.

### **Communication, Population Growth and Environment**

Prior to the foundation of the railway station in Siliguri, it was a small village with a tiny populated track. When the early travelers of Darjeeling visited the *Terai*, it was almost an impenetrable track of forest full of furious animals, insects and reptiles. In 1864 the Siliguri possessed only a dak-Bungalow and few native huts. At one hour distance from Siliguri within Terai people build houses surrounded by a ditch and a strong fence to protect themselves from the attacks of tigers.<sup>70</sup> While moving through the Darjeeling Terai Surgeon Rennie observed that the Mechs who were the only dwellers of the Terai in the south of the Darjeeling built their

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<sup>68</sup> Fleming, Laurence, *Last Children of the Raj: British Childhood in India, 1919-1939*, Radcliffe Press, London, p. 249

<sup>69</sup> Kennedy, Dane, *The Magic Mountain: Hills Station and the British Raj*; Oxford University Press; New Delhi; 1996; P.92

<sup>70</sup> Rennie, Surgeon Davi Field, *Bhootan and The Story of the Dooar War*, London; 1866, p.245

houses in the branches of the trees.<sup>71</sup> But after the expansion of the communication infrastructures in the hills, the entire scenario change rapidly. In the southern portion of Buxa Dooars, the growth of Alipurduar occurred due to the rapid improvement of the communication.

The expansion of the railways related to the growth of villages and human settlements in the hills and Western Dooars. The formation of the villages, labour colonies in the plantation areas, the creation of roads and the regular movement of the outsiders through the forests had an adverse impact on the environment of the Darjeeling and Western Dooars. The railways opened a new opportunity for the European merchants in Calcutta or elsewhere in British India to invest in the landed property in Darjeeling or in the plantation of the Western Dooars. The export goods from Darjeeling and Dooars during the colonial period specifically denoted the commercial exploitation going in these regions. The export goods included the forest products like beeswax, musk, skins, wool, woods, hides, horns, exotic butterflies etc (**Fig: VIII**).

### **Empire, Communication Infrastructures and Wildlife**

The expansion of the Railways in Darjeeling and Western Dooars stimulated the rate of human-animal conflict in the Sub-Himalayan Bengal. From the early years of the road construction in Darjeeling, the wild animals were a problem for the labours working in the forested hill slopes. The wildlife was severely affected by the railway tracks. The animal trails were disrupted by the communication infrastructures. To ensure the safety of the common people, the P. W. I of line took the initiative to trap panthers near the Rungtong (1404 feet) which had the reputation of being a sanctuary of the panthers.<sup>72</sup> In Rungtong over 60 panthers were trapped and shot by the colonial officials to get rid of their attacks.<sup>73</sup> In another two occasions, panthers were caught near the Rungtong. In the winter of 1900, a Tiger came out of the forest and took shelter in the

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<sup>71</sup> For more information see Surgeon Rennie's, David Field, *Bhootan and The Story of the Dooar War*, London; 1866

<sup>72</sup> Dozey, E. C, 1916, *op.cit.*, p.17

<sup>73</sup> Dozey, E. C, 1916, *op.cit.*, pp.17-18

railway station of *Sukna* near the booking office and it was killed instantly.<sup>74</sup> Soon the big cat's skin hanged on the wall of a forest bungalow. In another case, an incoming train at the *Sukna* station awoke a tiger which was sleeping under the first railway culvert just outside of the station. The tiger in its mad rush hit an Indian traveler who somehow manages to reach the station and the tiger vanished in the woods. Up to the close of 1870, the area from Salt Hill Road to the depot of Jalapahar was thickly forested and full of tigers.

Since the time of the establishment of the railways in Darjeeling and Dooars, it created a huge threat to the wildlife and especially to the elephants. The migration of the elephant is 'biological requirement' going on year after year as a 'hereditary system of socialization'. Prior to the foundation of the settlements an extended elephant corridor existed from the Himalayan foothills of Bhutan, North Bengal to the eastwards into the state of Assam, Arunachal Pradesh, Nagaland, Manipur, Tripura and Meghalaya, to Bangladesh and Burma.

When the communication infrastructure started growing during the colonial period the movement of the elephants became a problem for the commercial expansion of the British colonialism in the Sub-Himalayas.<sup>75</sup> The silence of the primeval forest in the hillsides was shattered by the whistle of the Darjeeling Himalayan Railways and it created problems for the wildlife. In a few cases, the furious herd of elephants blocked the railway track and interrupted the movement of the passengers. In late 1916, a driver of the line came across a Tusker and two female elephants at the tenth mile. To drive them off the line, he blows the whistle and it irritated the male who tore up the mail post and was about to charge the train when a bright thought flashed across the mind of the driver and the blow off as much steam as possible from the blow-

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<sup>74</sup> Ibid, p.16

<sup>75</sup> Since colonial period, the wild habitat in North Bengal is highly fragmented due to various development activities like conversion of forest into tea plantations, settlements, agriculture and exploitation of timber. Human expansion in the fragmented landscape it causes has increased the level of human wildlife conflicts.

off cocks of the engine.<sup>76</sup> The harsh sound forced the elephants to move away from the track and escape in the hillside as quickly as possible. The aggressive attacks of the elephants in the railway tracks and rail station were extremely common in the Buxa Dooars region since the colonial period. On one occasion a Tusker elephant appeared on the Rajabhatkhawa railway station. The staff locked them into a building of the station and the driver blew the whistle loudly to scare the animal.<sup>77</sup> But the extreme sound just infuriated the elephant and he ignored it and attacked the platform and tried to root it up. But in doing so he broke up his tusks and screaming in pain, quickly disappeared into the jungle.<sup>78</sup>

After the annexation of the Western Dooars, the colonial authorities spread road communication in the forested areas of the foothills of the Himalayas and connected the region with the world capitalist market with the intention to exploit the natural resources and at the same time maintain control over the Indo-Bhutan border. Since the expansion of the Railway in Western Dooars a tendency was developed among the Asian Elephant to attack the railways or any other moving vehicles. In March 1905, a tusker entered into Madarihut and pulled down several houses, charged engine – shed, making a large hole in the missionary wall, damage a first-class carriage standing in the railway station, and injured several people.<sup>79</sup> In many cases, grain loaded bullock carts were attacked by the herd of elephants. While Major Gordon Casserly was in the Buxa army camp, two such incidents of attacks on the carts occurred close to Rajabhatkhawa station. In one case the driver of the bullock cart got away safely, but woman with them was brutally crushed to death by the elephants. In another occasion, the drivers escaped, but the elephants

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<sup>76</sup> E. C. Dozey, 1916, *op.cit*, p. 17

<sup>77</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, 1914, London, 1914, p.107

<sup>78</sup> *Ibid*, p.107

<sup>79</sup> Grunning J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p. 16

killed several of bullocks and destroyed the carts.<sup>80</sup> The elephants in one occasion attacked the iron fetters loaded bullock carts in the way to Alipurduar as they thought that these were loaded with grain.<sup>81</sup> In the Buxa forest, as stated in the *District Gazetteer of Jalpaiguri* (1911), the elephants were extremely troublesome and caused considerable damage to the forest. They frequently pulled up the telegraph poles which compelled the department to fasten the cable high up in large trees.<sup>82</sup>

The evaluation of the various primary sources revealed that the elephants of the Sub-Himalayan region at the Buxa Dooars became extremely aggressive towards the humans and the man-made constructions from the second half of the nineteenth century. The behavioral change of the wild elephants was attributed to the increasing human impact on the forest of the Buxa.<sup>83</sup> Around the 1870s, the colonial officials realized that the procurement of the sleepers from the slopes of the Himalayas was dangerous because the natural regeneration of the plants was extremely difficult in the hills for loose soil, steepness and curves of the slopes. Soon attention was shifted to the forest of Western Dooars and particularly of Buxa divisions for the construction of the railway tracks of Jalpaiguri-Siliguri and Rungpore - Teesta Extensions of the North Bengal Railway.<sup>84</sup> Secondly the growth of the Alipurduar as the timber market, expansion of trade and agriculture, population and the movement of the humans in the forested land. Thirdly, the discovery of the dolomite, copper, building stone deposits in the Buxa during the 1870s prompted the colonial

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<sup>80</sup> Casserly, Major Gordon, op.cit, 1914 p.107

<sup>81</sup> For more information see Major Gordon Casserly, *Life in an Indian Outpost* T. Werner Laurie LTD, 1914, London, 1914

<sup>82</sup> Grunning J. F, op.cit, 1911, reprinted N. L. Publishers, 2008, p. 16

<sup>83</sup> The details of the Human-animal conflict in the Buxa Dooars has been discussed in chapter VI

<sup>84</sup> *Progress Report of the Forest Administration in Bengal for 1877-1878*, p. 9

government to build inroads in the Buxa Dooars and all these reasons attributed to the growth Human - animal conflicts.<sup>85</sup>

The headquarters of the Bengal Dooars Railway situated at Domohani and the place was often regarded by the projectors of the line as 'the most forsaken spot on the earth'.<sup>86</sup> In the early years of the opening of the track in Domohani, the train ran through virgin forests where not frequently elephants and bears in ignoring the whistle of the advancing train and run over.<sup>87</sup> In this route also the elephants were the major problem. But the railways had an adverse impact on the bears too, as they were frequently run over and killed while crossing the railway track.<sup>88</sup>

### **From Forests to Dead Tracks: Conversion to Conservation**

The railway construction boom in India leads to a massive destruction of the *sal* forests in the slopes of the Himalayas and foothills. Prior to the expansion of the railways in the Darjeeling and Bengal Dooars, the region was the major suppliers of the *sal* sleepers of the North Bengal Railways. In the hills, the rivers were used for the transportation of the valuable timber. The litter rafts were made through the *Pinus longiflora* to transport the heavy wood like *sal* and *sisoo* from the hills to the plains. The trees of the temperate forest on the slopes of the Himalayas had been used for making the railway sleepers. A thousand sleepers costing Rs.3 for each were prepared of oak, chestnut and magnolia to supply the consignment of the Eastern Bengal Railway Company. The sample of the timber at first supplied to the East Indian Railway Company and Eastern Bengal Railway Company for the trial of the construction of railway carriages and railway wagons.<sup>89</sup>

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<sup>85</sup>Hunter, W. W, 1876, *op.cit.*, p. 155

<sup>86</sup> Dozey, 1916, *op.cit.*, p.314

<sup>87</sup> *Ibid*; p.314

<sup>88</sup> *Ibid*; p.314

<sup>89</sup> Stebbing, E. P, *The Forests of India*, vol. II, p.407

In April, 1865, 150 sleepers of *sal* were cut near the banks of the Rungeet but the work stopped due to sudden outbreaks of fever.<sup>90</sup> Later these were sold to Tohelm Lama, the agent of the Sikkim Durbar in Darjeeling, allowed to cut down 30 trees of *Pinus longiflora* on the Sikkim side of the Rungeet River with the intention to build the lighter rafts from the heavy sleepers of *sal*. In several places on the bank of Rungeet when the processes of the annexation of the Western Dooars was going on in 1864, Surgeon Rennie observed that the natives were employed to cut down the *sal* trees and cutting them into the size of railway sleepers. He further noticed that the natives were also trying to float the wood through the Tista to the plain with the help of bamboo rafts.<sup>91</sup> By this time 100 *sal* trees were cut down near the junction of Great Rungeet and Tista Rivers to build 5000 *sal* sleepers. The main wood depot was built at Siliguri (Silligoree) and a subsidiary depot was developed at Sivok. Brandis wanted to introduced suggested that an attempt should be made to sell some of the other species associated with the *sal* or *sissu* in these forests, to be tried as railway sleepers.

Within the mid of the 1860s large portion of the British Sikkim was exhausted for the construction of the sleepers. *The Annual Report on the Administration of the Bengal Presidency for 1867-68* mentioned that the tropical forest of Bhutan side in the Western Dooars was better stocked with mature timber in 1867-68, than the British Sikkim.<sup>92</sup> By this time the Government wanted to stop the misuse of the timber and full utilization of the floating sleepers.<sup>93</sup> It was estimated that the forest of the Western Dooars mainly the Maraghat, Salbari, Nathabari,

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<sup>90</sup> *Ibid*; p.377

<sup>91</sup> Rennie, 1866, *op.cit.*, p.317

<sup>92</sup> *Annual Report on the Administration of the Bengal Presidency for 1867-68*, Calcutta, Bengal Secretariat Press, Calcutta, 1868, p.202

<sup>93</sup> No. 5-6, January 1868 (Revenue Department, Forest, WBSA)

Aleechunghy, Deema, Buxa and Outer Hills possessed 50, 0000 sleepers.<sup>94</sup> The demand of the railway sleepers in the metre-gauge lines of the Eastern Bengal Railways was boundless. The use of the indigenous timber by the railways was not only restricted to the manufacture of the railway sleepers, the valuable forests were used to build stations, waiting rooms, refreshing rooms, railway quarters and even the level crossing. For an instant, the finest refreshing room at Tindharia, which was built with the splendid specimen of the screw-pine and leaves of which were used to make the famous Panama hats.<sup>95</sup>

At the end of 1872 Schlich became the conservator of forest of Bengal and within a few years, he prepared an informative inspection report on the forest of the Darjeeling, Bhutan Dooars, Assam Dooars and Chota Nagpur forest. The Administrative Report of Bengal narrated that during this period a steady and systematic inspection and records was started from acre by acre in the Darjeeling Terai, between the Tista and Mahananda Rivers.<sup>96</sup> In 1874 Schlich prepared a preliminary Working Plan and divided the forest into different compartments for the commencement of the timber extraction from the Buxa reserve. In the feverous Dooars, the short cutting season extended from December to March and the sowing season lasted from October to the end of April. But the transportation of the heavy *sal* logs was extremely difficult in the Western Dooars because most of the rivers became navigable only during the rainy season. The water level became low along with the progress of the dry season and the wood cutting was only possible in the dry winter months. Under the supervision of the colonial administrators, the woods were cut down in the winter months and dragged to the roadside and then the sleepers were prepared or otherwise transported to the nearby markets like Alipurduar. In the Working

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<sup>94</sup> *Annual Report on the Administration of the Bengal Presidency for 1867-68*, Calcutta, Bengal Secretariat Press, Calcutta, 1868, p.202, The forest named Aleechunghy in the Western Dooars has not been mentioned in the other sources.

<sup>95</sup> Dozey, E. C, 1916, *op.cit.*, p. 18

<sup>96</sup> *The Administrative Report of Bengal 1873-1874*, p. 216

Plan, Dr. Schlich fixed the target of the department to cut 5520 trees in every year.<sup>97</sup> In the year 1873-1874, the forest department sold 1,100 *sal* logs, 200 logs of temperate forests and about 300 small pieces of timber which were already stored in the timber depot.<sup>98</sup>

Up to 1879, an average of 2800 trees had been felled annually by the authority. The misuse of the valuable timber logs was another problem in the Buxa reserve. Before the report of Brandis in 1880, in each and every year a large quantity of logs was left in the roadsides of the forest or in the deforested regions. For instance, in 1876-77, in Compartment VIII, where 1742 *sal* trees had been felled, and 1200 logs still remained in the forest, and in the Compartment X 1400 logs out of 1632 trees felled.<sup>99</sup> In addition to that fresh felling was made in 1878-79. So Brandis issued an instruction to differ fresh felling of the trees until the older logs were removed from the forest. Secondly the fresh felling was deferred due to the propounding of the plan to construct of the railway line between Rungpur to Dhubri for which a large number of sleepers were already prepared.<sup>100</sup> But except Alipur the depot other depots were built in the Gachidanga on the bank of the Kaljani River and Kawnia on the Bank of the Tista River to sale the timber of the Buxa forest.

The *sal* forest in the outer hills between the Tista and Lehti had been depleted for the construction of the railway sleepers.<sup>101</sup> In 1880 only in the inaccessible parts of this region the full grown *sal* trees. A large number of the trees were cut down in the Tista Valley in 1866 under the supervision of Mann. Later few trees were again depleted to construct bridges. The timber of Mungwa and Peshok Blocks had been used to build a Tista Valley Road and bridge. In 1876 the forest of these blocks had been depleted by Mr. Bonham-Carter to construct narrow-gauge

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<sup>97</sup> Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926, p.199

<sup>98</sup> *The Administrative Report of Bengal 1873-1874*, p. 217

<sup>99</sup> Stebbing, 1926, op.cit., p.199

<sup>100</sup> *Ibid*, p.200

<sup>101</sup> *Ibid*, p.208

sleepers for the North Bengal State Railway.<sup>102</sup> In the valley of the Great Rungeet and Rilli or in the Eastern Bank of the Tista no departmental felling had organized, but this region *sal* was sold to the native canon makers who dragged down the timber by the help of coolies or elephants.<sup>103</sup> By the side of cart road, a depot was created at the Phulbari to control the timber supply to Jalpaiguri through the Tista River.

In 1891-92 a free grant of mature trees which estimated worth Rs. 30,000, was made to the Bengal-Dooars Railway Company for sleepers.<sup>104</sup> In 1899-1900 department operations began again and sleepers were supplied to the Eastern Bengal State Railway.<sup>105</sup> There was an almost unlimited demand for the meter gauge Sal sleepers from the East Bengal State, Bengal and North Western, and Bengal-Dooars Railways.<sup>106</sup> About 502 acres of forest land was given to the Bengal Dooars Railway Company for the construction of railway sleepers and other thing required for the railways.<sup>107</sup> After the expansion of the Bengal Dooars Railway, the rapid transportation of the wood was possible, then the time consuming water transports. The timber products of the Tondu Forest had been exported through the Ramshai, Barodighi and Lataguri station on the Bengal Dooars Railway. The outlet of the Muraghat Forest was Binnaguri station. By rail to the distance between the Binnaguri to Lataguri was 44 miles and the railway fee was 0.8 of a pie per maund per miles. But by road, the distance was only 24 miles.<sup>108</sup> In 1895 – 1896

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<sup>102</sup> *Ibid*, p.208

<sup>103</sup> *Ibid*, p.209

<sup>104</sup> Grunning; 1911, *op.cit.* Forest; p. 88

<sup>105</sup> *Ibid*, p. 91

<sup>106</sup> *Ibid*, p.92

<sup>107</sup> Trafford, F, *Working Plan (Revised) for the Reserved Forests of the Jalpaiguri Division, Darjeeling; Bengal Secretariat Tour Press, 1905*, p. 3

<sup>108</sup> *Ibid*, P. 6

the government sanctioned extra grant to prepare railway sleepers in the Angul and Kurseong forest division.<sup>109</sup> **(Table: IX)**

The Darjeeling Himalayan Railways, the proud possession of the imperialist, soon became an inseparable part of the scenic beauty of the queen of the hills. During her state visit to Darjeeling, Lady Dufferin arrived in Darjeeling through a special train consisting two tiny engines, two small carriages and two trolleys. There is a sense of pride in Lady Dufferin's description of the railway line as evidence of the technological advancement of the colonists.<sup>110</sup> Few commissions reported that the roads and railways were responsible for causing obstruction to the drainage. The deep excavation work for the railway tracks, embankments also responsible for water logging

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<sup>109</sup> File No. 8B/1, No. B. 59-62, November 1895 (Revenue, Forest, WBSA)

<sup>110</sup> Pradhan, Queeny, Empire in the Hills: The Making of Hills Station in Colonial India; *Studies in History*; 2007, 23: 33; 2007, p.57

## Chapter V

### Power, Space and Landscape

The landscape changes are generally dominated by the climatic and biological factors. The transformation of the upper crust of the earth occurs due to the forces of nature or by the human intervention in the natural condition. The natural forces like wind, rain, flood, earthquake, heat and volcanic eruption have the power to change the landscape. Human activities mainly the urbanization, deforestation, cultivation and communication infrastructures have an adverse effect on the environment of a particular region. The in-depth study of the changing landscape needs a holistic and humanitarian approach to understand the process of the transformation of the surrounding. The transformation of the upper crust of the planet due to forces of the nature is a continuous process. But the human consciously or unconsciously has modelled and remodelled the landscape for own purposes. In pre-colonial economy, the impact of the peasants, hunters and gathers in the landscape was small and insignificant. The range of exploitation of nature is closely associated with the technological innovation and commercialization. In a market oriented colonial economy heavy demand of resources leads to the increasing pressure on the nature.<sup>1</sup> As the human started using more sophisticated and modern techniques to exploit the resources and organized manpower to intervene in nature, it resulted in a long term and massive effects in the surroundings.

The power has the ability to spread its imprint on the space, it recreates the landscape, reorganize the surrounding by transforming the existing and introducing the new. The natural forces ever active in the planet follow the Nature's Law to change the landscape. On the other hand, the human forces were consciously and unconsciously controlled by the culture, tradition and imagination of the dominant community in shaping the landscape of a particular region. The power relation among the communities visible not only in the metropolis but it also reflected in

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<sup>1</sup> For instance the expansion of market and demand of agricultural products leads to the expansion of cultivation which resulted in deforestation.

the morphology of the interior towns and localities. The human constructed landscape represents specific ideologies, ideas and imagination of the dominant class in the society.

In the process of urbanization in Darjeeling and construction of small settlements in the tea garden areas of Western Dooars, the colonizers exercised their power to organize the landscape according to the culture and beliefs which were shaped by the nostalgia about their motherland. In occidental mind, the Asia was 'mysteriously different' from the Europe in terms of climatic conditions, landscape and the biotic world. With the expansion of colonialism, the British Empire got a global connotation which compressed diversified race, culture, eco-regions with varied climate zones. They have a dual feeling towards the alluvial plains of the subcontinent. It was highly cultivated and profit generating place for the colonizers and at the same time, it was the dwelling place of inferior natives with dirty habits and germinating place of deadly disease. These positive and negative feelings towards hot, humid plains of Indian subcontinent helped to form the colonial perception of separate space in the hills.<sup>2</sup> The power of the colonizer gave them the opportunity to create separate social space for themselves in the Indian highlands. The hill station was a type of colonial town was an exotic impression on colonized terrain and satisfied the British desire for Anglicised social enclaves.<sup>3</sup>

In Victorian Britain the cultural heritage, tradition and sense of superiority of the upper class shaped in the perception about the aesthetics of the external world. The romantic imagination about the tropical colonies and possession over the exotic products was cherished by the British ladies and gentlemen. To them '*the Orient was almost a European invention ... a place of romance, exotic beings, haunting memories and landscapes, remarkable experiences.*'<sup>4</sup> The landscape of Darjeeling was constructed by the colonialists to make it a perfect replica of European countryside. As the population of the human increased rapidly, it adversely affected

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<sup>2</sup> See Dane Kennedy's *The Magic Mountains: Hill Stations and the British Raj*, Berkeley: University of California Press, 1996.

<sup>3</sup> Chatterji, Aditi, *Contested Landscape: the Story of Darjeeling*, INTACH, 2007, p.1

<sup>4</sup> Said, Edward W, *Orientalism*, 1979, p.1

the growth of the other species. From a densely forested hilltop, the colonizers turn Darjeeling into ‘the Garden of Eden’. Both the native and European travelogues of the nineteenth century and the first half of the twentieth century reflect a descriptive view about the utterly picturesque beauty and the climate of Darjeeling. More recently Pamela Kanwar, Dane Kennedy, Aditi Chatterji and Deborah Sutton have done some remarkable researches on the hills stations of the Indian subcontinent.<sup>5</sup> Among them, Aditi Chatterji’s work is primarily focused on the landscape of Darjeeling.

The chronological study of the travel accounts, diaries, reports of the newspapers and Government papers will highlight how the surrounding landscape of Darjeeling and Western Dooars changed along with the time due to human intervention in nature. Babu Kishen Kant Bose, who went to Bhutan in the 1820s, described his journey through the Dooars by giving some information about the landscape of the surrounding region of Dooars in his article “*Some Account of the Country of Bhutan*”.<sup>6</sup> His account projected that during the 1820s the Sidli Duar was covered with long grass, with a few scattered huts surrounded by very high jungle. The country from Bijni to hills was covered with *Khagrah* and intercepted with scattered forest patches.<sup>7</sup>

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<sup>5</sup> Pamela Kanwar’s *Imperial Simla: The Political Culture of the Raj*, Oxford: Oxford University Press, 2003, Dane Kennedy’s *The Magic Mountains: Hill Stations and the British Raj*, Berkeley: University of California Press, 1996, Aditi Chatterji’s books *Contested Landscape: the Story of Darjeeling*, INTACH, 2007, *Landscape of Power: The Indian Stations*, University of Oxford, 2003, and *The Changing Landscapes of the Indian Hill-stations: Power, Culture and Tradition*, Prabasi Press, 1997 and Deborah Sutton’s ‘*Other Landscapes: Colonialism and the Predicament of Authority in Nineteenth Century South India*’ Orient Black Swan, 2011.

<sup>6</sup> *Asiatic Researches*, Vol. XV, 1825, pp.128-156

<sup>7</sup> *Khagrah* (*eriochloea procera*) is a type of reed grows in the uncultivated regions close to the river bed.

In 1828 Lt. Colonel G. A. Lloyd and J. W. Grant, the commercial resident of Malda visited Darjeeling and trace the possibilities of the station as a sanatorium. At that time the hill slopes were clothed with dense forest. As soon as the British government decided to build Darjeeling as a sanatorium for the British soldiers and civilians, the transition of the landscape of the adjacent foothills became an essential matter for the imperial domination and resource exploitation. The growth of Darjeeling as a sanatorium, largely related to the environmental condition of the foothills, as it brought about a huge change in the existing landscape in Dooars.

The natural landscape of Darjeeling started changing from 1835 onwards when Captain Lloyd and Dr. Chapman started living in the Darjeeling and constantly explored the place and turned it into an inhabitable hill station for the European by clearing the forest and constructing the cottages. Major E. Garstin, the Chief Executive Engineer of the Lower Provinces and also the member of the Darjeeling Association Committee went to Darjeeling to observe the situation of the station in 1839 wrote a detailed description of roads to Darjeeling in his report.<sup>8</sup> He observed that the roadsides from Titalya to Punkhabari (Pankhabari) via Raneedunga (Ranidunga) went through a grass jungle in the first part and the density of the jungle increased along with the changing elevation. The forests were burnt annually in the hot season to make space for the temporary road. In the late 1830s, the surrounding landscape between Titalya and Sannyasikata (Sunnyasseekottah) were a gently undulating country, rich in crops, and abounding with pan gardens.<sup>9</sup> From Sannyasikata they went toward the Terai, a track of land covered with high grass and shrubs intercepted with occasional patches of cultivations. From the village of Beer Singh Chowdhury, the road went through a morung of fine sal trees with an underwood of the dwarf China bamboos.

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<sup>8</sup> Letter to H. M. Low, Esq. Secretary to the Darjeeling Committee, Later on publish in Bengal Hurkaru, March 16; 1839. The letter is also mentioned in Fred Pinn, *The Road to Destiny: Darjeeling Letters 1839*, Oxford University Press, Calcutta, 1986

<sup>9</sup> Pinn, Fred, *The Road to Destiny: Darjeeling Letters 1839*, Oxford University Press, Calcutta, 1986 p.70

The process of change further exhilarated after 1839 under the guidance of Dr. Archibald Campbell. When he took the charge there were not twenty families in the whole track of the hills. Within twenty years of his superintendentship he made an infrastructural change by constructing many roads, bridged torrents, organized the bazaars, built houses, the Cutcherry and Churches, the convalescent depot at Jullapahar for soldiers, introduced English flowers and fruits, experimented on tea seed being grown, encouraged commerce, and created revenue. In 1835, the Darjeeling was a collection of 20 huts with a population of 100 souls.<sup>10</sup> In 1839, Colonel Lloyd's bungalow was the single building establishment in the Darjeeling. The whole station was a cluster of little hills connected together by pointed ridges, and not afforded space for a house without cutting down the hill to obtain a level.<sup>11</sup> When Captain Herbert visited the place it was an amphitheatre of hills clothed with forest in the 1830s. In 1840, a Kutchery and 30 other buildings were constructed. The Herbert Hill bungalow, purchased by Brian Houghton Hodgson in 1845 from Sir Herbert Maddock, was built in a narrow clearing of the majestic forest. *The Darjeeling Guide* highlighted that many buildings were constructed during 1845. Rockville, Lloyd Bank, Oak Lodge, Vernon Lodge, Cheverement, Woodlands, the Dell, Colinton and the Glen and Salt Hill were constructed by the end of the 1840s. According to *The Hand Book of Darjeeling* (1863), the Darjeeling had only 70 houses at the beginning of the 1860s. The shape of the ridge on which the town developed was almost like the letter 'Y', so the plan was to construct the building from the base which rested at Senchal and Katapahar and work downwards and forwards in parallel rows.<sup>12</sup> Mr. Welby Jackson in his *Report on Darjeeling* (1854) mentioned Darjeeling as 'an inaccessible track of forest, with a very sentry of

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<sup>10</sup> O'Malley, L.S.S. *Bengal District Gazetteer: Darjeeling*. Delhi, Logos Press, 1907, p.35

<sup>11</sup> Pinn, Fred, *op.cit*, p. 76. The author informed that the rough map printed in Bayley's Guide Book was wrong.

<sup>12</sup> Dozey, E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.49

population.’<sup>13</sup> As the population of increased in Darjeeling, the forest in the hill slopes was steadily replaced by the new settlers.

The human has the tendency to compare the familiar with unfamiliar to understand the change in the surrounding.<sup>14</sup> The overseas Empire opens the new horizon for exploring the earth far away from their motherland. The extensive travelling gave them the opportunity to understand the diversified geography, climate and diseases. In the less known newly explored tropical paradise, unending greenery, exotic flora and fauna became extremely monotonous when the colonizers had to live in the colonized land for year after year just to control the market economy and exploit natural resources.

### **Darjeeling Himalayan Railway**

Mr. J. Ware Edgar in his Report (1874) divided the Darjeeling region into five revenue producing tracks to stimulate the profit of the colonial government. The land stretching from the Sikkim frontier to the foothills below the Pankhabari (Old Hill Territory), the 115 square miles of land in the North West of the district, the two strips of land consisted of 253 square miles annexed during 1850, the Western part of the Old Hill Territory extended upto the Nepal border and the 485 square mile of land stretched in the east of the Tista (known as Daling Division) annexed with Darjeeling after the Bhutan War in 1864 to expand the economic interests of the colonial authority.<sup>15</sup> All parts of the district starting from the forests to villages faced distinct types of colonial exploitation. During the allocation of the land in the old hill territory, the preference was given to the European settlers. In early years, Darjeeling was a ‘scattered village’

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<sup>13</sup> See for more information Jackson, Welby, *Report on Darjeeling*, 1854

<sup>14</sup> Dane Kennedy in his monograph *The Magic Mountains: Hill Stations of the British Raj*, University of California Press, Berkeley, 1996 also expressed similar opinion regarding the human psychology to understand the change in the surroundings.

<sup>15</sup> Edgar, J. Ware, *Special Report on the Land Tenures of the Darjeeling District*, 26<sup>th</sup> September; 1874

confined only almost entirely to the crest and higher slopes of Birch hill and Jalapahar range.<sup>16</sup> The entire region was densely covered with timber and there was no demand for land. Both the west and the east face of the hills opposite (where the Victoria hospital now stands) were densely wooded, as was the whole slope from the crest of the Birch Hill range downwards towards over the site of the Happy Valley Tea Estate.<sup>17</sup> Soon the forest land was cut down to spread the lucrative tea plantation. The densely forested Birch hill was cleared for the Pathabong and Rungeet Tea Estate.<sup>18</sup> Prior to the foundation of the cart road, the way towards the Punkhabari was thickly forested. Later the forests of this region were denuded for the plantation. As the tea plantation replaced the forest tracks, the wild animals like tiger, panther, elephant, buffalo, bison and deer were evicted from their tracks and took shelter in the elephant grass, surrounding the tea estate. All this led to the increasing human-animal conflict in the *terai* region.

In 1883, the guide book of R. D. O'Brien narrated that from Siliguri to the foothills the line runs through rice fields, with an occasional tea garden on the either side and as the ascent begins a dense Sal forest is passed through.<sup>19</sup> But around thirty-five years ago when J. D. Hooker passed through Siliguri, he noted that it as was a tiny village and the entire road upto the hills passed through the dense forest. In 1880s, large portion of the forests in the hill slopes were cleared for the construction railways, plantation and settlements. During this period when travellers reached the Ghoom station through the Darjeeling Himalayan railway, they for the first time get the glimpse of picturesque Darjeeling where the hillside dotted with villa residences with a background of clearly visible snow peaks.<sup>20</sup>

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<sup>16</sup> See Harvey, David, *Justice, Nature and Geography of Difference*; Oxford; 1997

<sup>17</sup> Pradhan, Queeny, *Empire in the Hills: The Making of Hills Station in Colonial India*; *Studies in History*; 2007, 23: 33; p. 43

<sup>18</sup> *Ibid*; p. 44

<sup>19</sup> O'Brien, R. D, *Darjeeling: The Sanitarium of Bengal, and Its Surroundings*, W. Newman & Co., Calcutta, 1883, p.6

<sup>20</sup> *Ibid*, p.8

Colonel Waddell who visited Darjeeling and Sikkim in the late 1890s described that the clearing of forest get larger and numerous and the less steep slopes were deforested for cultivation and tea plantation. But according to him, it does not enhance the beauty of the landscape. From his account, it became clear that in the late 1890s the white villas of the planters and the number of the native villages became more frequent in the near the hill slopes of Darjeeling.<sup>21</sup> The colonizers with the help of the labour force transformed the surrounding landscape and made them more open and grassy in the Darjeeling. Within few years, Darjeeling was transformed into a perfect replica of ‘an ordinary Alpine Towns.’<sup>22</sup> The British travellers who have visited the Swiss Alps compared it with his own known world and locate the similarity of the scenic beauty with ‘the Derbyshire of Great Britain’. In a similar fashion, the Himalayas have been described as ‘the Alps of Asia.’<sup>23</sup>

The human most of the time remain psychologically connected with the previous experiences and in a completely unknown environment; they utilized their knowledge which was accumulated through the experiences of the past to understand the unknown. David Arnold referred it as psychological ‘interconnectedness’ which he feels reflected in the colonial understanding of the weather, plants and landscape of the Orient. After facing the physiological and psychological problems in Bengal plains when the Britons saw the lofty mountains and clear, cool, murmuring rivers with its rapid and shallow, it reminds them the familiar beauty of the Scottish Highland. The British residences were mesmerised by the deep ravines, the sound of the raging torrents’ which thundering down the rocky path.<sup>24</sup> In April 1849 when Hooker saw the Mahananda (Mahanuddee) from the hill slopes, he felt that ‘it is as clear and sparkling as a trout

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<sup>21</sup> Waddell, L. A. *Among the Himalayas*, 1899, Mittal Publications, Reprinted 1979, p. 23

<sup>22</sup> *Ibid*, p. 27

<sup>23</sup> Freshfield, Douglas, p.4

<sup>24</sup> The feelings of the Europeans reflected in the writings of Captain J. A. K. Keble (1912) ‘*Darjeeling Ditties and Other Poems*’.

stream in Scotland.’<sup>25</sup> According to him, ‘the spring of this region and the elevation most vividly recalled that of England’.<sup>26</sup> Hooker compared the progress of the Darjeeling with Australian colony.<sup>27</sup>

In most of the travelogues, biographies and accounts related to the Darjeeling and Western Doars, colonizers as well Indians compare the temperate climate, plants and the picturesque beauty with their own familiar world. The recognition of the similarities between the natural landscapes of Darjeeling with the Scottish Highland, Italian Alps or Rhine land was almost like a ‘socially negotiated phenomenon’ or ‘collective identification of the commonness of the aesthetics between different places’. When Waddell looked at the Kunchanjunga it reminded him about the landscape of the Mount Blanc, the highest mountain in the United Kingdom.<sup>28</sup> Waddell compared the primeval forests of the Terai with ‘wild luxuriance of vegetation as rank as any the heart of Brazil’.<sup>29</sup> To him, the view of the Himalayas from foothills was almost like the view of the ‘Alps from the Jura’.<sup>30</sup> For Douglas W. Freshfield the landscape of Darjeeling was similar to any ‘Sub-alpine town of Italian Alps’. The climate reminded him about the Western Scottish Highland, and the architecture projected the features of the early Victorian modified by local conditions.<sup>31</sup> Furthermore, Freshfield compared the tea bushes in the hill slopes with the Rhine vineyard or gigantic fruit gardens of the Europe.<sup>32</sup> When John Ferguson

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<sup>25</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p.101 After he leave Siliguri and moved toward Pankhabari.

<sup>26</sup> *Ibid*, p.109

<sup>27</sup> O’Malley, 1907, *op.cit*, p. 35

<sup>28</sup> Waddell, 1899, *op.cit*, p. 29

<sup>29</sup> *Ibid*, p. 9

<sup>30</sup> Freshfield, Douglas W, *Round Kanchenjunga*, 1903, p. 31

<sup>31</sup> *Ibid*, p. 32

<sup>32</sup> *Ibid*, p. 49

move around the 'Queen of Hills', the enchanting landscape reminded him about the splendid scenic landscape of the 'Nuwara Eliya', a colonial hill town in the Central Province of Sri Lanka.<sup>33</sup>

David Arnold feels that the 'interconnectedness was more striking in the case of botany'.<sup>34</sup> The observation of the colonizers about the natural world particularly on the flowers, orchids, grasses and plants were connected with the nostalgia for 'motherland' and an abiding 'sense of alienation in abroad'. The different types of plants of the temperate zone, like the Masendras, the Hibiscus Africanus, Patorium, varieties of Bauhinia, Malpeggia, the gay coxcomb and a little blue flower very like the English 'forget-me-not', refreshed the Britishness among the alien travellers.<sup>35</sup> In the late 1830s an anonymous British traveller noticed in Punkhabarree, the road passed through a thick and lofty forest with a dense Underwood, enlivened by some brilliant flowering shrubs, among which the traveller observed the bright scarlet Holm's Koldia which was never seen in the Indian plains.<sup>36</sup> About the flowers in Darjeeling, Hooker mentioned that these 'are so notoriously the harbingers of a European spring that their presence carries one home at once; but, as species, they differ from their European prototypes...'<sup>37</sup>

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<sup>33</sup> Ferguson, John, *Six Weeks Trip through India: Being Notes By the Way*. London: Forgotten Books. (Original work published 1902), reprinted 2013, Pp. 108-109

<sup>34</sup> Arnold, David, *The Tropics and the traveling Gaze: India, Landscape, and science, 1800-1856*. University of Washington Press, 2006, p. 62

<sup>35</sup> Letter to H.M. Low, Esq. Secretary to the Darjeeling Committee, Later on publish in *Bengal Hurkaru*, March 16; 1839. Also mention in Fred Pinn, *The Road to Destiny: Darjeeling Letters 1839*, Oxford University Press, Calcutta, 1986

<sup>36</sup> For more information see Fred Pinn, *The Road to Destiny: Darjeeling Letters 1839*, Oxford University Press, Calcutta, 1986.

<sup>37</sup> Hooker, J. D; 1854, *op.cit*, p.109

In the unbearable summer months when the vast Indian subcontinent was sweltering under the burning Sun, the colonial explorers noticed the abundance of naturally grown violet, crab apple, a species of damson stoned fruit, and varieties of Camellia in the Darjeeling Himalayas.<sup>38</sup> The report of the *Bengal Hurkaru* on March 16, 1839, projected that the road from Jalapahar to Darjeeling bounded by raspberry bushes, two kinds of fine oaks, beech trees, cinnamon, birches and other trees common in the temperate climate of the Europe. The aromatic herbs which were extensively used in the British delicacies were not available in the Gangetic plains or elsewhere in India. But in Darjeeling, the colonial officials were delighted to see the naturally grown Parsley, mint, peppermint and other aromatic herbs. These were the delicious food for cattle and helped to produce the finest quality of mutton, lamb and beef. The naturally thrived fruits, shrubs, weeds and trees in Darjeeling such as wild Strawberry, maple, geranium, bramble, chestnut, cherry, willow, oak flowering, the birch bursting into leaf, the violet, *Chrysosplenium*, *Stellaria* and *Arum*, *Vaccinium*, stag-moss attracted the attention of the early British travelers, as all these plants were common to temperate Europe.<sup>39</sup> The Britons observed the unique resemblance between the nature of the Oaks in Darjeeling and Britain. The Forest was cleared to raise grasses for winter fodder for Cattle and sheep. Naturally grown flowers and herbs freshen up the memories of the homeland.

The colder wind of Darjeeling was very much refreshing than the hot and humid air in the plains of the Orient. The landscape and atmosphere of the hill station dramatically impacted on the mind and the body of the European men and women. The colonial idea of the beautiful landscape was guided by their traditional idea of picturesqueness. Darjeeling became the landscape of memory for the British. The delightful climate recalled the memories of their far distant home.<sup>40</sup>

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<sup>38</sup> One of the crab apples was like the Siberian crab and other almost like ribston pippin in miniature.

<sup>39</sup> The Englishman, 25 February 1839. The Chiretta plant, the olea fragrans, the bay tree and the cinnamon, strawberry and raspberry were indigenous to Darjeeling. Also mention in Clarke, Hyde, *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857, p. 38

<sup>40</sup> Pinn; Fred, 1986, *op.cit*, p.80; The Englishman, 25 February, 1839

The air is dry and clear, the sky free of clouds. In Darjeeling Robin reminded them about the childhood days in England.<sup>41</sup>

The early British travellers noticed the change of tropical climate and find its resemblance with the European one from Punkhabari onward. The first thing attracted the traveller was the 'mosses hanging from the trees'. After the monotonous paddy field and the exotic tropical fruit trees, when they saw the hanging moss on the trees or different species of luxuriant creepers it's created utter excitement among the British travellers. In Darjeeling mosses and lichens hanging from the century-old pine or oak or carpeted the roadside, gave homely feeling to the Europeans in the Darjeeling. According to J. D. Hooker 'the prevalence of lichens, common to this country and to Scotland (especially *L. geographicus*), which coloured the rocks, added an additional feature to the resemblance to Scotch Highland scenery.'<sup>42</sup> Along the narrow path, Hooker found two common British weeds, *Poa annua* and shepherd's purse.<sup>43</sup> Hooker opined that these species had eventually been imported by men and yaks, and as they did not grow in India. He was delighted by seeing these weed in the less known terrain of India. The finding of the shepherd's purse in this area increased the geographical distribution of this weed.<sup>44</sup>

By introducing commercially profitable alien plants and trees the colonizers leave their permanent imprint in the environment of the hills and altered the appearance of the landscape. The commercial interest of the ruler transformed the existing structure of the flora in the Darjeeling and its surrounding Dooars. The need of the artificial plantation was felt by the British administrators as the early settlers of Darjeeling guided the reckless exploitation of the virgin forest. Soon they planted the quick growing plants like *Cryptomeria* (*Cryptomeria Japonica*) and other species of valuable timbers in the radius of five miles from the centre of the Darjeeling town. Evergreen *Cryptomeria* is often referred as Japanese cedar, as it was endemic in

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<sup>41</sup> *Ibid*; P.99

<sup>42</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p. 221

<sup>43</sup> *Poa annua* is a kind of grass

<sup>44</sup> Hooker, 1854, *op.cit*, p.221

Japan. It was locally known as Dhuppi and favoured for its light wood which was extensively used in house building. Within the first two decades of the twentieth century the Cryptomeria or the Dhuppi forest became predominant in the landscape of Darjeeling. Mr. Fortune brought a quantity of the seed of this plant from China and Japan and gave it to Dr. Anderson. Later this seed was planted out in the nursery of the Jalapahar. In the dry season, the forest fire often spread near the side of Rangneet River and sometimes it also denuded forests from the hillside. During the colonial era, the British official preferred stiff and quick growing Cryptomeria as a replacement of the indigenous trees in the forest.

In the Nineteenth Century, many medical officials have opined that the 'moist and marshy' forest tracks insects and weather was responsible for the deadly fever in the Terai and Dooars regions. To resist the growth of the insects in the surroundings of the human settlements they introduced biological control in the hill slopes of the Himalayas. The common insecticide plants of the Tropical portion of South America especially in Brazil and Mexico, the Blue-flowered groundsel or Billygoat-Weed (*Ageratum Conyzoides*) was introduced in India to control the annoying insects.<sup>45</sup> While travelling in the Darjeeling and Sikkim during last decade of the nineteenth century Major L. A. Waddell observed the rapid growth of the *Ageratum Conyzoides* in the hill slopes replacing the native weeds including the hardy worm-woods in the all fresh landslips and clearings.<sup>46</sup> The Native Americans use it for the medicinal purposes as it has some toxic issues. These alien plants have a permanent imprint in the landscape of the Darjeeling and Western Dooars.

The botanist of the colonial authority precisely selected the plants to introduce in India guided by their colonial motives, anglicized tradition and ideologies with the intention to get the commercial benefit or transplant the British landscape in India. The Cannas were planted in the gardens of Darjeeling and quickly became an integral part of the beautification of the gardens of Hill stations. Originally the Cannas were imported to Europe gardens from East Indies during the

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<sup>45</sup> Name of the plant was mentioned in Waddell's '*Among Himalayas*'; p. 19; Among the Vietnamese the plant was known as Cut lon or pig faces as it grew in the dirty areas.

<sup>46</sup> Waddell, 1899, *op.cit*, p. 19

1860s. In Victorian time Cannas became an extremely popular in the European gardens mainly in Britain, Germany, France, Hungary and Italy. It was believed that the cannas was remarkably disease free and the smoke from the burning leafs has insecticide particles.

### **Sudden change in landscape**

Hooker's '*Himalayan Journal*', Vol. I-II was not only a valuable book for botanical point of view it also incorporates the Hooker's vision about the landscape of the Darjeeling Himalayas and foothills. After travelling through the Gangetic plains, when J. D. Hooker entered into the foothills he noticed the 'sudden and immediate' change in the landscape.<sup>47</sup> Further, he expressed that 'the whole horizon was bounded by the sea-like expanse of the plains... in one boundless flat.'<sup>48</sup> The cloudless blue sky in the morning and the starry dark night in the gorgeous mountain of the subjugated Orient was a delightful and romantic experience for the Europeans. To express the pleasurable climatic condition of the Darjeeling, Major Gordon Casserly in his reminiscence wrote (1914): "*the abrupt change from the sweltering heat of the Bengal plains, seven thousand feet below, to the cool climate and refreshing breezes of Darjeeling is marvelous. In less than twenty-four hours the English dwellers in the hot and crowded city of Calcutta are borne to this gay Hill station, which must seem another world for them.*"<sup>49</sup> Major Gordon Casserly watched that the train, at first, entered into the Terai forest which was full of huge trees clothed with orchids, walled by dense undergrowth. But as the train started moving towards the high altitude the forest became thinner and sparser.<sup>50</sup> Then the train passed through the long stretches of tea gardens. To him, the plain stretching bellow almost looks 'a map'.<sup>51</sup> During the 1920s, When the British travellers reached Siliguri they feel the sudden change in 'the scenery because the dense

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<sup>47</sup> Hooker, 1854, *op.cit*, p.100

<sup>48</sup> *Ibid*, p.104

<sup>49</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, 1914, p. 267

<sup>50</sup> *Ibid*, p. 264

<sup>51</sup> *Ibid*, p. 264

forest, deep ravines and sharp curves replacing the monotony of the landscape of the plains which throughout Bengal present the same aspects.<sup>52</sup>

### **Military Cantonments: The Landscape of Power**

The foundation of the military cantonment altered the landscape and at the same time displayed the power of the imperial authority. The racial segregation between the ruler and the ruled reflected in the construction of the army base of the particular region. In Darjeeling, the construction of the cantonment of Senchal (1844), Julapahar (1848), Katapahar, Lebong (after Sikkim expedition in 1888), Takdah or Hum Cantonment was build to maintain control over the Himalayan border of the British Empire and resist the invasion of the warlike neighbours.<sup>53</sup> The colonial authority provided the greater facilities to the European Soldiers and separated the native soldiers from the cantonment where the alien troops taking their shelter. The new military stations in connection with the annexation of the Dooars was established in Putla Kowa for the protection of Balla Dooars, Buxa Cantonment to protect the Buxa Dooars, Julpesh Cantonment does to Dalimkote and Chamoorchee.<sup>54</sup> The cantonment of Julpesh was established as the substitute of Jalpaiguri cantonment to support the garrison posted at Dhalimkote. When Rennie passed through the civil station of Mynagoorie, it only possessed some Government building composed of bamboo and matting. Sometimes the native villages were removed to protect the cantonment from the infectious diseases as the colonial authority believed that the dirty habits of the natives responsible for the germination of the diseases like cholera, small pox. There was a village above the Buxa cantonment containing 1,000 Bhutias, but because of the ‘filthy habits’ of the inhabitant, it was feared that cholera might break out among the troop and the village was removed to Chunabhati by the order of the Government of Bengal.<sup>55</sup> In the foothills of the Buxa

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<sup>52</sup> Dozey, 1916, *op.cit*, p.13

<sup>53</sup> The Cantonment of Senchal was abandoned in April, 1867 and transferred to Jalapahar

<sup>54</sup> Now the place is known as Patla khawa.

<sup>55</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p. 50

particularly at Chunabhati, the native people have the opinion that their dark complexion was responsible for the prevalence of the deadly fever.<sup>56</sup> In most of the tea gardens of the Western Dooars, the bungalows of the managers or the European officials were placed in the safest part of the garden far away from the settlement of the plantation labours.

### **Public School**

The climactic condition of Darjeeling, familiar picturesque landscape, lush green playground, and the concentration of the Victorian culture in the hill areas prompted the colonizers as well as the Christian missionaries to establish Public Schools in the highland far from the populated disease ridden plains. The architecture of the school reflected the nostalgia of the colonizers who have acquired education in the century-old boarding schools of the Britain and learned about the traditional values based on the notion of sportsmanship, honesty and conservatism. The service to the Empire enforced them to bring their families in a subjugated land where they became concern about the education of the new generation who were born and brought up in the tropical alien land thousands of miles away from their motherland. To restore the health and cultural identity of the British children in India, hills were selected as the suitable place for the construction of the public schools.

The number of the boarding schools of the highlands quickly increased due to the improvement of the communication system. The colonial officials started sending their children to Darjeeling with the intention to groom them in an environment which was climatologically and culturally almost similar to their motherland. In the nineteenth century most of the teachers of these schools had degree from the Oxford, Cambridge and other renowned educational institutions of the British Island. In the Diocesan School (1875), The Catholic Boarding and Day School later known as Loreto House, Queen Hill's Girl's High School, and the British girls were educated in the Biblical knowledge, home science, etiquettes and manners.

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<sup>56</sup> *Ibid*, p. 50

## Church and landscape

The colonial sense of aesthetics became the major component of the architecture of the Darjeeling. The Western Dooars was the place for the profit making whereas Darjeeling satisfies their imaginary vision of a perfect 'leisurely destination' in the unfamiliar tropical colonized land. The idea of aesthetic reflected in the gothic architecture of Darjeeling represents the socio-religious and cultural perception of the upper section of the colonial administrators. The European lifestyle and the Christianity had an abiding impact on the surrounding environment of the hills. Due to the colonial intervention, 'the Orient became an integral part of the European material civilization and culture.'<sup>57</sup> The evangelicals started their crusade against 'Indian barbarism' and advocated the permanence of the British rule with a mission to change the nature of the 'dark and backward' religions of the Orient.

The heart of the station stood that essential symbol of traditional English values, the Anglican Church.<sup>58</sup> The churches became an inseparable part of the landscape of Darjeeling with the foundation of St. Andrew's Church in 30<sup>th</sup> November 1843.<sup>59</sup> The St. Joseph's Church (1880), Church of the Immaculate Conception (R.C; 1893), St. Columba's Church (Scott; 1894) had their separate foundations in the Darjeeling hills. According to Dane Kennedy, the Victorian Gothic solidity of these sanctified structures, situated on prominent sites in each station, bespoke the shared values that bound European residents and visitors together.<sup>60</sup> The holy commune on the Thursdays and the evening song on the Wednesdays and Fridays created an entirely separate atmosphere in the hills. The large clock with the ball in the St. Andrew's Church which rings in

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<sup>57</sup> Edward W. Said, 1995; *op.cit*, p. 2

<sup>58</sup> Kennedy, Dane, *The Magic Mountains: Hill Stations and the British Raj*, UNIVERSITY OF CALIFORNIA PRESS, 1996, pp. 3-4.

<sup>59</sup> Hewson, Eileen, *Darjeeling and Dooars: Christian Cemeteries and Memorials 1842-1995*, BACSA, London, 2006, p. 3

<sup>60</sup> Dane Kennedy, 1996, *op.cit*, P. 100

every hour, gave the Europeans a sensation of English country villages. In the Darjeeling, the churches were the main attraction of the occidental architecture.

### **Burial Ground**

The study of the necrogeography or the cemeteries closely related to the architectural and cultural landscape of a particular region. In the colonial pattern of the morphology, the burial places were developed in the isolated or melancholy part of the township. The Christian cemeteries in colonial Darjeeling contained huge trees shaded graveyard, garden, spiritual sculptures and complete silence. The religious belief and cultural identity of the ruling class reflected in the landscape of Darjeeling and Western Dooars through the creation of the peaceful resting place for the Europeans in the lap of nature. The foliage was removed to build the burial places of the Darjeeling and Western Dooars. In Darjeeling Town the Old Cemetery, Jalapahar Cemetery, Senchal Cemetery contained extremely expressive of the nineteenth century gravestones which tell the audience about the cultural and religious identity, social structure and architectural trend of the period.<sup>61</sup> During the Victorian period, the Britons preferred the Obelisk and other classical forms of the tombstone. The location of the cemeteries in the morphology of a particular place related to the land use pattern of the region. On the basis of religious and racial identity separate graveyards were constructed on the hill slopes of the Darjeeling Himalayas. Sometimes forested portion located by the side of the settlement was given to the particular community to construct their resting place. The Land of Birch hill Park was given to the Parsi community to build their burial ground in 1903.<sup>62</sup> In another portion of the birch hill park near Tindharia extension was made to the native Christian cemetery at 1899.<sup>63</sup>

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<sup>61</sup> File No. 6F/1, No. B. 9-11, April 1901 (WBSA)

<sup>62</sup> File No. 6F/1, No. B. 17-19, January 1903 (WBSA)

<sup>63</sup> File No. 6F/2, No. B. 9-18, October 1899 (WBSA)

### Colonial Buildings and superiority of the rulers

The construction of the main administrative building was followed by the foundation of the residences of the upper-class British officials and these residences were not merely replicated the model of the British country architecture; these were also recreated British landscape in the remote areas of the Sub-Himalayas. Dane Kennedy observes that the name of the residences like Mount Pleasant, Beechwood, Bryan stone, the Dell, Colinton, Castleton, Woodlands etc 'evoked the images of the quiet comfort of English country life' in the hills.<sup>64</sup> Swatahsiddha Sarkar observed that the 'each house like English country house was given a name that denoted its picturesque site or nostalgia for an England left behind'.<sup>65</sup> The urbanization of mountain was followed by the rapid growth of the occidental structures in the hills. Soon the administrative buildings were established to control the overall situation of the surrounding. In the construction of the well fenced European Bungalows, Jail, the Armed Police Barrack, Post and Telegraph office became the places where the power of the ruling class was strongly concentrated. The Town Hall, Nobel Ball Room, Lawn Tennis Courts, Entertainment Club created superior cultural ambiance for the Europeans living in the Darjeeling hills.

The pretty villas, large hotel, clubs and churches, big English shops with plate-glass windows, hillside lined with lovely gardens, the fascinating house like the villas of Trouville and Deauville under the shade of giant orchid-clad trees wall were close to the aesthetic perception of the Europeans about a perfect country village. In the central portion of Darjeeling from the Chaurasta, one side of the ground raised a thousand feet, crowded with barracks and European bungalows. On the other side, the hill slopes steeply away covered with tea gardens. Along the ridge, the road run by a trim English Church in pretty grounds, then an Amusement Club with tennis courts terraced one above the other and the Lieutenant-Governor of Bengal's summer residence set in a lovely park. To the north the ground falls sharply another thousand feet; and

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<sup>64</sup> Kennedy, Dane, 1996, *op.cit*, P.103

<sup>65</sup> Sarkar, Swatahsiddha, 'British Hinterland: Darjeeling in Colonial Days' in Datta, Karubaki, *Urbanization in the Eastern Himalayas*, Serials Publications; New Delhi. 2006, pp. 231-245

one looks down on the roofs of the bungalows and British Infantry Barracks of Lebong, with its racecourse around the polo ground and the rifle-range.

Darjeeling became a place for the experiment on the architectural styles. On the way to Darjeeling, Sir J. D. Hooker has observed a rest house where experiments were made to assimilate the Swiss cottage with the suburban gothic. Their houses were more often gabled Gothic villas, half-timbered Tudor cottages, gingerbread-ornamented Swiss chalets, and other European architectural imports than the familiar, verandah-enclosed, Public Works bungalows that billeted the British across the rest of the subcontinent.<sup>66</sup>

During the colonial period, the highlands were gradually developed as a 'separate social space for the European civilians and native rulers'. A large number of native rulers who visited the hill station to maintain their social status and at the same time 'experience the European climate in the Indian soil' they noticed that the Indian hill stations were almost like 'European country sides'. For instance, Princess Gayatri Devi of Cooch Behar State (Maharani of Jaipur) who used to spend the summer months in the highlands of India vividly described her experience in Ooty (Ootacamund) and Darjeeling. When she first time arrived in Ooty, she wondered like everyone else whether 'this pleasant countryside could possibly be a part of India, or if it was a piece of England transported intact, with its little English houses with names like 'Cederhurst' and 'Glen View', spouting Victorian gables or whimsical little terracotta turrets, their gardens filled with hollyhocks, Canterbury bells, and stock and their orchards with English apples and pears.'<sup>67</sup>

The Darjeeling municipality as an instrument of colonialism provided a separate social space for the European citizens living in Darjeeling or the travelers who came there to regain health. In Victorian period within their own social space the British men and women zeal up with each other and maintain their tradition and culture in the Orient away the natives. The racial discrimination became prominent in the landscape because the libraries and the clubs of the

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<sup>66</sup> See Kennedy, Dane, 1996

<sup>67</sup> Devi, Gayatri, *Princes Remembers: The Memories of the Maharani of Jaipur*, 1995, Pp.80-81

ruling class were situated in the higher section of Darjeeling. On the other hand, the native structures like a temple, mosque and the house were built in the lower elevation. After 1900, the locality of Darjeeling transformed under the leadership of late Mr. G. P. Robertson, the Engineer of Municipality.

The growth of health tourism in Darjeeling, Ghum and Kurseong lead to the formation of new hotels like Hotel Mt. Everest, Park Hotel, Darjeeling Family Hotel, Casselton Hotel in Darjeeling, Balaclava Hotel in Ghum, Clarendon and Wood Hill Hotel in Kurseong which were equipped with all facilities of pleasure for the Europeans and added Britishness to the Landscape of the hills. A parallel process of destruction and reconstruction can be charted in the British response to the fauna of the hill stations.<sup>68</sup> Hunting in the Terai and Western Dooars became a favorite pass time for the British and the Maharajas of Cooch Behar. The *shikar* in the Dooars region was guided by two purposes. As the ‘guardian of the uncivilized aborigines and outside laborers’, they protect their lives and cattle by killing the wild beasts and at the same time encourage them to settle down in the villages clearing the forest and promote cultivation. For instance, in the Mahakalguri region, santal village was founded under the guidance of Christian missionaries and many times Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar along with their British associates went there to kill the wild animals and protract the villagers. In Darjeeling and Dooars regions the Government declared price over the killing of wild beasts to ensure the safety of the human in the budding settlements close to the forests.

### **Tea garden and segregation of the natives**

With the rapid expansion of tea industry in Western Dooars, the landscape between the Tista and Diana River changed and it became traceable in the Report of C. J. O’Donnell. He clearly mentioned that the steady expansion of the tea industry completely changed the physical characteristic of the sub-mountain country over a great area thirty miles long extending from the debouchment of Tista from the Darjeeling hills to a similar point on the Diana River on the

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<sup>68</sup> *Ibid.* P.58

frontier of Bhutan.<sup>69</sup> The greater part of the primeval forest has disappeared and mile after mile has been replaced by the greater expanses of tea gardens.<sup>70</sup> The rapid population growth in the tea garden areas created unhealthy condition in the newly labour colonies. Because the outsider labours who came from Chota Nagpur, Manbhum and Singbhum they have a lack of knowledge about the surrounding and Government support was not enough. Fear of the disease like malaria a number of European bungalows in the Dooars have been partially protected with wire gauze screens to doors and windows.<sup>71</sup> According to the report of Christophers and Bently, the removal of the native huts from the vicinity of the bungalow in few cases proved effective.<sup>72</sup>

### **Road and Landscape**

Dane Kennedy opined that from the first officials who established residence in the hills, the British sought to "improve" these landscapes by introducing new plants, engineering alterations in the terrain, and otherwise reshaping the existing environment.<sup>73</sup> The construction of the pitch roads in the higher elevation, gigantic bridges over the mountain streams and railways were aimed at showing the technological superiority of the ruling class in the eyes of the 'inferior natives'. The growth of the European summer resort in Darjeeling was depended on the construction of the roads in Terai and Western Dooars. The construction of roads and clearing of the forest for commercial purpose changed the overall landscape of the Darjeeling and Western Dooars. Surgeon David Field Rennie in his '*Bhootan and the Story of the Dooar war*' vividly described the landscape of the Dooars region. At the time of the annexation of Western Dooars,

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<sup>69</sup> Bose, Shesadri Prosad, *Colonial India, Predatory State: Emergence of New Social Structure in Jalpaiguri District (1865-1947)*, Readers Service, 2008, p. 174

<sup>70</sup> For more information see Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008

<sup>71</sup> Christophers, Captain S. R, Bently, Dr. C. A, *Malaria in Duars*, Simla, 1911, p.82

<sup>72</sup> Ibid, p. 82

<sup>73</sup> Kennedy, Dane, 1996, *op.cit*, P.62

Dhamonee which located near the junction of Durlah and Tista River was a highly cultivated country.<sup>74</sup> It had circuitous paths and the peasantry had been settled in scattered almost in detached huts. He observed Ambari Falakata as a fine fertile district, well cultivated and surrounded by villages. The rapid change in the landscape of the Western Dooars occurred after the annexation of this region with the British Empire and expansion of the colonial market economy.

The European constructions in Darjeeling and Dooars became a place of pride for the Europeans. The construction of railway line in the high altitude and the deep walls to protect the roads from landslides became a pride for the Britons. Due to the colonial encounter, the place was transformed into an example of a remarkable piece of engineering. The Indians who for the first time reached Queen of Hills was mesmerized by the utterly picturesque beauty of the land and constructions. Hurry Mohan Sannial, an overseer of PWD Bengal who visited Darjeeling in the late 1870s, realize the enormous level of effort of the men behind the construction of the huge structures. According to him, it is absolutely unimaginable and all these constructions have enriched the picturesque beauty of Darjeeling.<sup>75</sup> He also noticed how during those days the dense forest which was the dwelling place for the dangerous wild animals were turned into tea estates. He also embraced the role of the tea planters to purify the climate by clearing the forest and transforming the habits of the aborigines.

The electricity installed in Darjeeling in 1896-1897.<sup>76</sup> India's first hydraulic project was started in Darjeeling in 1897 at Sidrapong Spur by Messrs, Kilburn & Co. of Calcutta. It had a capacity of 400 kilowatts which generate 2,330 volts of current. The major buildings were light up through the new technology and the darkness of night in the hills was removed from the bungalows of the upper-class British officials. The scientific superiority of the European helped

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<sup>74</sup> Rennie, Surgeon David Field, *Bhootan and The Story of the Dooar War*, London; 1866, p.168

<sup>75</sup> See for more information Sannial, Hurry Mohan, *A History of Darjeeling: Newly Translated from the Original 1880 Bengali Edition*, Pagoda Tree Press, 2009

<sup>76</sup> Dozey, 1916, *op.cit*, p.58

them to dominate the mind of the common Indians who possessed no idea about the electricity. John Ferguson in his reminiscence '*Six Weeks Trip Through India: Being Notes By the Way*' (1902) provided a clear image of the completely urbanized landscape of the Darjeeling which he has observed in the beginning of the twentieth century. He mentioned that the packa (concrete) English villas, handsome two-storied stone residences with terraces and towers, electric lighting, first class roads, pavements and walls, several churches, numerous and varied European and Parsee shops including the inevitable 'whiteaway, laidlaw', barracks, botanic gardens, bandstand, bazaar full of interest because of the variety of hill-folk and the curious wares and jewellery, charms, weapons, offered for sale all indicate a much larger and more important station than Nuwara Eliya with considerable resident population ( about 8000).<sup>77</sup>

### **Native Bazaar**

The western side of the slopes was used to build the native bazaar and Hospital. In the bazaar, many of the dingy native shops were filled with curios to attract the white resident and globe-trotter. The cultural and environmental disparity between the Orient and Occident must have been felt and cherished by the Europeans while they enter the market as an explorer. The item like Tibetan prayer wheels, lama devil-dancers masks, Chinese embroideries, roughly hammered brass gods, skins of tiger, bears, and panthers attracted the travelers. To the colonizers, the peaceful, shy, joyous aborigines with their beautiful bright colour dresses and silver ornaments living in the highland of Bengal remarkably became the part of the 'transplanted landscape of Darjeeling' and on the other hand they maintain distance from the autochthons living in the Sub-Himalayan regions and Dooars. While travelling in the Darjeeling Waddell compare the native highlanders with the 'poorest Irish Shanties'.<sup>78</sup> The poor and hardy Nepalese, who settled in the hills of Darjeeling during the early days of colonization, helped the alien rulers to change the landscape of the Darjeeling Himalayas. On the other hand the aborigines of the Chato Nagpur, Manbum and Singbhum mainly the Santals, Oraon and Mundas for the sake of money and livelihood depleted the impenetrable forest and helped the colonizers to start tea plantations in

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<sup>77</sup> Ferguson, John, 1902, *op.cit*, Pp. 108-109

<sup>78</sup> Waddell, 1899, *op.cit*, p. 20

the large portion of Western Dooars and make a permanent imprint on the landscape of the region. They utilized the power of the labour force which was brought from the outside of the newly colonized hilly region to transform the less populated highland into a perfect replica of European country sides. The distance from the populated plains helped them to create a completely separate place for the colonizers who were performing the duty for their motherland far away from their family, friends and homeland.

After the coming of the outsiders in the hills, the presence of the heterogeneous population in the hills of Darjeeling became prominent in the landscape. The Nepalese introduce terrace cultivation which is the main feature of Himalayan cultivation. The indigenous Lepchas only cultivated maize, white and barely but as the Nepalese enter into the hills they started harvesting mustard and their presence became prominent in the landscape of Darjeeling through the yellow colour mustard and terrace farming.<sup>79</sup>

The overall climatic condition of the hill slopes of the Darjeeling Himalayas including picturesque metalled paths through the familiar Oak, Pine and Birch trees, clear blue sky and soft sun rays provided them the wonderful opportunity to maintain the day to day life similar to their homeland. The Britons enjoyed an English walk in the frosty morning; the day was warm, but not hot. Those who strolled along the secluded paths in Darjeeling and Ootcamund (botanical) gardens sought the peace and purity that the Christen faith identified with the original home of Adam and Eve.<sup>80</sup> John Ferguson wrote that when the British traveler in Darjeeling roamed around in afternoon they 'feel a great superiority in many respects in their own sanatorium.'<sup>81</sup> They feel relief when they enjoyed the pleasant Sunlight in the middle of the day and no umbrella was required while going outside. The evenings were dry and clear. Many of the Britons, tried to justify the deforestation by saying that the landscape became more beautiful as the trees were cleared. Major L. A. Waddell, visited Darjeeling in the 1890s, noticed the rapid

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<sup>79</sup> O'Malley, 1907, *op.cit*, p.67

<sup>80</sup> Kennedy, Dane, 1996, *op.cit*, P.48

<sup>81</sup> Ferguson, John, 1902, *op.cit*, P. 108

change occurred in the forested areas of these regions. According to him, the British initially cleared some of the parts of the shrubs and the bushes which ‘made the landscape much more smiling’.<sup>82</sup> During the construction of the roads, a large number of trees were cut down to make the much pleasant and cheerful.

In Victorian Britain, the photographic experiments were started by a group of armature photographers who tried to project themselves as the explorer of the picturesque beauty of the ‘colonized tropical Eden’. Benjamin Simpson in his thirty-seven years (1853-1890) of Medical Service in India visited a vast part of the subcontinent in search of the picturesque aesthetic of the Orient. Many of the proud Britons were fascinated to collect the pictures as these visualized the military and commercial supremacy of their motherland over the ‘uncivilized dark land of the hidden treasures’ of the East. Capturing the unseen landscapes of the ‘savages land’ through the sophisticated camera was regards as the great discovery. The pictures displaying the hidden beauties of the Orient had a great commercial value among the upper-class society of the Victorian Britain. The reputed photographic businessman and amateur photographer Samuel Bourne in search of picturesque aesthetics roamed around in the vast portion of the Himalayas. Bourne followed the route of the reputed European traveler artists, notably Thomas and William Daniell who had toured India making picturesque views appeal to a selected British client.<sup>83</sup> The subjects of Bourne’s photography consisted oriental aboriginal community with their picturesque dresses, high altitude bridges over the cascading river, roads construction, and picturesque Darjeeling town in the lap of the Himalayas. According to James R Ryan, Bourne’s account published in the *British Journal of Photography* shows how he relished the opportunity to conquer the new terrain with his camera and to apply colonial authority to command support from Indian guides, porters and local villagers.<sup>84</sup>

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<sup>82</sup> Waddell, 1899, *op.cit*, p. 18

<sup>83</sup> Ryan, James R, *Photography and Exploration*, Reaktion Books, 2013, p. 86

<sup>84</sup> *Ibid*, p. 86

## Horticultural Experiments and Landscape of Power

Darjeeling and Western Dooars became the place for horticultural experiments. In the hills, alien fruits and flowers were introduced due to similarities of climate between British Island and the Queen of Hill. The flowers like dahlias, lilies, roses, buttercups, cannas and other European species of flowers were introduced to make the place more familiar for the British officials and citizens. The gardens in front of the European cottages and the lush green grass surrounded by Small wooden white colour wooden enclosures enhance Britishness in the landscape of Darjeeling. 'The Shrubbery' was the summer residence of the Lieutenant Governor of Bengal was a two storied commodious mansion with a beautiful garden which was build in extensive and prettily laid out the ground. The Governor's House was one of the prettiest places in India, the glorious view of the mountain range being obtainable from the grounds where primroses and blue-bells grow on the velvety lawns, and gardens that were filled with roses, carnation, geraniums and violets.<sup>85</sup> The richly flowered garden along with a large number of military and police guards in the Governor's House, the Union Jack flies high from flag staff in the lawn as a sign of dignity created a separate atmosphere in the hills. The gardens of the European bungalow had an abiding impact on the landscape of the hills.

The experimental vegetables flourished in the cottage kitchens of Nineteenth Century British holiday homes in Darjeeling. The experimental gardening in the Darjeeling was encouraged by the Lloyd Botanical garden by distributing the seeds among the dwellers of the Darjeeling. The horticultural activities were primarily guided by the memories and emotions related to the motherland of the colonizers. One of the central aims of the Botanical gardens was to make the landscape less alien, to give it more recognizable and pleasing appearance to those for whom it become a sanctuary.<sup>86</sup> In Western Dooars alien plants, fruits, flowers and vegetables were introduced as an experiment. Similar to the hills in Dooars also the Bungalows of the European became the centre for the horticultural experiment. The bungalows of the planters, the garden of

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<sup>85</sup> Dozey, E.C, *op.cit*, p. 85. The residence of the Lt. Governor of Bengal was known as 'Shrubbery' and the Bhootias called them as 'Bardhuria'.

<sup>86</sup> Kennedy, Dane, 1996, *op.cit*, P. 48

the European clubs and even at the garden of Cooch Behar Palace alien flowers were introduced. Custard apple, Peach, Pomegranate and Rose apple were introduced in Dooars.<sup>87</sup>

### **Waddell's Opinion**

After noticing the transplanted landscapes transplanted by the colonial government in the hill slopes of the Darjeeling, Waddell said: *'turning from the natural aspect of the landscape to the artificial, we find how the man himself has helped to transform the scenery, and how sudden has been the change! It is not easy to believe that the all cultivated clearings on the hillsides in the outer range, with their thriving settlements, busy marts and the village through which we have passed, their hundreds of square miles of tea gardens, the white villas with their comfortable-looking curling smoke, the network of road all over the mountains, and the din and stir life, have all sprung up within the past sixty years.'*<sup>88</sup>

Adaptation, transformation and transplantation of landscape became the policy of the imperial authority in Darjeeling and on the other hand through the replacement of uncultivated waste with the much-valued tea estates, the colonizers leave their permanent imprint in the landscape of Western Dooars. J. T. Kenny stated that the 'vibrant' town morphology of Indian plains reflected the power structure between the elite class and the common people and in the 'expressive' town plan of hill stations displayed the socio-racial differences of the ruler and the ruled.<sup>89</sup> The relationship between 'colonizers' and the 'subordinate Indians' is a 'relationship of power, of

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<sup>87</sup> Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri (1889-1895)*, Calcutta, Bengal Secretariat Press, 1895. Pp. 10-13

<sup>88</sup> Waddell, 1899, op.cit, p.38

<sup>89</sup> Kenny, Judith T, "Climate, Race and Imperial Authority: The Symbolic Landscape of the British Hill Stations in India", *Annals of the Association of American Geographers* 85 (4): 694-714; 1995

domination, of varying degrees of complex hegemony' and all these differences reflected in the landscape of Darjeeling and plantations estates of Western Dooars.<sup>90</sup>

Most of the European sanatoriums in the Himalayas were surrounded by their unique flora and faunas, but as the European constructions overflow the landscapes of the mountains, it disrupted the natural growth of the wildlife. The urbanization and the morphology of the Darjeeling and the other European hills stations in India were quite different from the towns and the cities of the plains. The sanatoriums were developed for the seasonal visit for the British civilian and the soldiers, on the other hand, most of the large cities and the commercial places of India had their distinct character as they were built and rebuild by the powerful rulers, according to their interests, culture and believes.

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<sup>90</sup> Said, Edward W, 1995, *op.cit*, p. 5

## Chapter VI

### The Forest and wildlife

The character of the biotic world is basically shaped by the climatic factors of a particular region. The climate or the natural environment has an abiding or profound impact on every livable thing.<sup>1</sup> The high elevation and the climatic factors shaped the biotic world of the Darjeeling and Western Dooars which was in many cases unique from the rest of the Bengal. The extreme variation in altitude of these regions, veering from snow clad mountains to lush green alluvial plains provides unique diversity in the natural world of these regions. According to A. B. Chaudhuri and D. D. Sarkar, the unique forest types and the flourishing growth of the forest cover is due to the fact that the heavy moisture laden clouds travelling toward the onset of the monsoon get an easy passage into the Teesta river valley within the district[s]<sup>2</sup> and strike first in the rugged precipices on either side of the basin and also of the smaller valley of the rivers Balason, Mahananda, Cheil and Jaldhaka in the neighboring areas and pour heavy rains and cling to the forest cover with a blanket of moisture.<sup>3</sup> The extreme high level of moisture helped to germinate all type of temperate plants and wildlife in the forest and it changes along with the changing elevation. Like the climate of these regions, the colonialism and its human machinery had a deep and vigorous impact on the alteration regions biotic world. The invincible nature as well as the humans is conjugally responsible for turning these regions into a magadiversity and hot spot area of the world.

The Darjeeling and Dooars are completely different in terms of the characteristics of the flora and fauna due to the dissimilarity in the elevation and climatic factors. The forested area of the Dooars was larger than the hills of Darjeeling. The entire Darjeeling region is divided into two

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<sup>1</sup> See for mor information Darwin, Charles, *The Origin of Species*, 1859

<sup>2</sup> The two districts in Tista valley include Darjeeling and Jalpaiguri.

<sup>3</sup> Chaudhuri, A. B. and Sarkar, D. D, *Wildlife and Ground flora*; p. 2

distinct geographical tracks, the hilly region is the part of the mighty Himalayas and the moist and marshy *Terai*, lies just beneath the lower or the Sub-Himalayan belt. The *Terai* district forms a very irregular belt, scantily clothed and intersected by innumerable rivulets from the hills, which unite or divide again on the flat, till emerging from the region of many trees, then enter the plains, following devious courses, which glisten-like silver threads.<sup>4</sup> The country of Dooars lies close to the foot of the hills is more or less undulating, and the jungles were chiefly composed of heavy *null*, *pundi* or wild cardamom and various kind of heavy grass.<sup>5</sup> The jungles in the Bengal and Assam Dooars were almost similar and consisted of heavy grass of different kinds, intersected by rivers and numerous *nullas*. Prior to the introduction of the commercial exploitation of the British colonialism and expansion of the human settlement in these zones, the forests of entire Sub-Himalayan region were connected to each other as a single belt of forest which consisted thickets of dense vegetation abounding with elephants, deer, tigers, rhinoceros, buffaloes, and various other wild animals, including boa constrictors.<sup>6</sup>

India served as a laboratory for environmental ‘knowledge’ and for appropriate ‘European’ adoption to the tropic.<sup>7</sup> Similar to the other parts of the world, the expansionist colonizers understand that the extensive exploration of the unknown terrain of Darjeeling and Dooars would be requisite to render the forest resources fully available for the Empire. To comprehend the natural environment of the colony the British scientist, botanist and the zoologist made an exceptional attempt to acquire knowledge about the flora and the fauna of the Darjeeling and Western Dooars. The exploration of the unknown orient and its documentation helped the

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<sup>4</sup> See for more information Hooker, J. D. *Himalayan Journal*; Vol.1; 1854

<sup>5</sup> The Maharaja of Cooch Behar (1908), *Thirty-Seven Years of Big Game Shooting in Cooch Behar, Dooars and Assam A Rough Diary*, Bombay: Printed At The Times Press; p. xxviii

<sup>6</sup> Rennie, Surgeon David Field, *Bhootan and The Story of the Dooar War*, London; 1866, p.45

<sup>7</sup> See for more information Frenkel, S. and Western, J, Pretext or Prophylaxis? Racial Segregation and Malaria Mosquito in the British Tropical Colony; Sierra Leone, *Annals of the Association of American Geographers*; 78, 1988, pp. 211-228

imperialism to extend its root deep into the untouched areas of the colony and satisfy its commercial purpose. J. D. Hooker (1849), Gamble (1875) and Clarke (1877, 1886) through their extensive tours of Darjeeling prepared a critical and detailed list of the flora of the Darjeeling and *Terai*. Sir J. D. Hooker, who had the greatest authority on the vegetation of the Darjeeling and Sikkim, divided the country into three zones, in his introductory '*Essay to the Flora Indica*'. The lower, stretching from the lowest level up to 5,000 feet above the sea, he called the tropical zone; thence to 13,000 feet, the upper limit of tree vegetation, the temperate; and above, to the perpetual snow line at 16,000 feet, the Alpine.<sup>8</sup> However, James Sykes Gamble, renowned botanist as well as the conservator of Forest, Bengal divided the forest of Darjeeling in nine divisions, viz., sal forest, Khair and Sissu forest, Savanah forest, Mixed plain forest like Dhalka Jhar, Lower hill forest also known as ridge forest or valley forest (from plains to 3,000 feet), Middle hill forest (3,000 feet to 6,000 feet), Upper hill forest sometimes called oak forest (6,000 to 8,000 feet), the Rhododendron forest from 8,000 to 10,000 feet, Fir forest generally from 9,000 to 10,000 feet.<sup>9</sup> In the Dooars region, the forests were inextricably merged with each other. But in the larger terms, it was divided into four types, viz. Sal forest, Mixed, Evergreen and Savannah.<sup>10</sup>

According to Captain Herbert, the then Deputy Surveyor-general, the mountains in 1830 were completely clothed with forest from the top to the very bottom, and formed a somber feature in the landscape, owing to the sameness of tint and want to break or variety on the surface.<sup>11</sup> General Lloyd in 1837 almost similarly described it as 'clothed from the top of the hills to the very bottom of the valley with a dense forest.' The chief feature of the forest was verities of

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<sup>8</sup> Risley, H. H. *The Gazetteer of Sikkim*; B.R. Publishing Corporation; Delhi; reprint 2010; p. 80

<sup>9</sup> Gamble, James Sykes, *List of the Trees, Shrubs and Large Climbers found in the Darjeeling district, Bengal*; The Bengal Secretariat Press; 1878; p. III

<sup>10</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p. 90

<sup>11</sup> O'Malley, L. S. S, *Bengal District Gazetteer: Darjeeling*; reprint 1999; Logos Press; p.3

valuable timber. The early settlers of Darjeeling were very much optimistic about the prospect of timber business in Darjeeling and compared it with the English woods. At the beginning of urbanization in the hills, the forests were viewed as an obstacle in the process of the expansion of the human habitation or settlements. So first clearing of the forest patches became an urgent necessity for the expansion of civilized world. The progress of the human settlements introduced an unending conflict between the men and nature.

During the early phase of British colonialism in Darjeeling and Dooars, the forest of the Sub-Himalayas was a unique place of biodiversity. The forests were the dwelling place of the Antelope, Bear (black, sloth and the sun), Bison, Boar, Cats (civet, Jungle, panther and tiger), Deer (barking, hog and spotted), Elephant, Fox, Gaur, Gayal (wild cattle of Bhutan and Burma), Hare, Leopard (black, ordinary and clouded or snow leopard), Lynx, Rhino, Porcupine, Wild dogs and verities of snakes.<sup>12</sup>

### **Insects, Deforestation and Commercialization**

Insects form a great bulk of animal life at Darjeeling and Dooars.<sup>13</sup> When the entire Darjeeling region was covered with forests, the poisonous peepsa flies or sand flies were the most dreaded insects of this region. It was a most 'troublesome pest in parts of the Himalayas.'<sup>14</sup> In the 1830s and 1840s, a large amount of stories got their genesis from the panic the peepsas in the northern part of Gangetic deltas and forested belt of Sub-Himalayas. This much-dreaded insect was

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<sup>12</sup> Information has been gathered from Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press, 1895, Waddell, L. A. *Among the Himalayas*, 1899, Mittal Publications, Delhi, Reprinted 1979, Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914, Mackintosh, L. J, *Birds of Darjeeling and India*, Part-I, Calcutta, 1915 and Dozey. E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916.

<sup>13</sup> Pinn, F, *op.cit*, p. 99

<sup>14</sup> *Ibid*, p.35

gravely described as ‘fly with sharp teeth’ or ‘big fly almost at the size of man’s finger’. One painless bite of the peepsa caused a small red circular patch in the body and infusing blood under the skin which resulted in enormous burning and pain. It also attacked the wild beasts like tigers, pigs, and rhinoceros in these regions. It was believed that this insect was responsible for the wall known deadly fever of the *Terai*. The British officials sometimes used Citronella oil, in the exposed part of the body, for getting relief from the peepsa. But in 1868, the 41<sup>st</sup> Native Infantry at Buxa was badly affected by the bite of the *pipsa*. The medical officer reported it to the Sanitary Commissioner and wrote that ‘a considerable number of the sepoy of that regiment have been incapacitated from duty, temporarily due to the attack of the insect which caused small ulcers in the body’.<sup>15</sup> In a large portion of the Darjeeling and Western Dooars forests were removed to get rid of the attacks of the peepsas. An anonymous person wrote: ‘Peepsa is now less common at Darjeeling than it was, and will be almost unknown when the woods are cleared’.<sup>16</sup>

Another annoying and loud noisemaker insect was a species of a genus of cicada which was numerous in the temperate to tropical climates of Darjeeling and Western Dooars. The Cicadas were widely recognized among all insects mainly due to their large size and uniquely annoying sound from the early morning to the late evening. The male ‘bagpipe Cicada’ (*Lembeja Paradoxa*) mainly create loud mating sound to attract the female insects. Few species of cicadas sometimes cause damage to the cultivated crops and shrubs. The early travelers of Darjeeling described it as ‘loud and melodious’ or compare it with the ‘detestable notes of bagpipe’. An anonymous traveler based on some verbal information wrote that after became annoyed by the sound of the insects a gentleman committed suicide by firing pistol on himself.<sup>17</sup>

To get rid of these deadly annoying insects, the clearing of the dense forest became essential. To transform the hills into a perfect European countryside they cleared the dense mountain forest

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<sup>15</sup> *First Annual Report of Sanitary Commissioner for Bengal*, 1868, P. 206

<sup>16</sup> Pinn, *op.cit*, p. 100

<sup>17</sup> *Ibid*, p. 100

and reshaped the nature according to their own occidental model. Forest was not only the hiding place for the wild beast or snakes, it also the dwelling place for the deadly insects. The forest was projected as the obstruction for the expansion of civilized human world. So the denudation of the large trees, clearing of the shrubs and the penetration of the sun rays in the gloomy corners of the forested lands became essential. The leeches, mosquito and tree-tricks were the other problematic creature in the hills of Darjeeling and also in the forests of Western Dooars. In the rainy season, the activity of this creature increased steadily which was extremely annoying for the British officials and the tourists. The disease-ridden jungle of the *Terai* and Western Dooars was a problem for the European civilian and the used to cross the forest in the daylight, to avoid the mosquito bite. Interestingly the explorers or the British officials in the early 19<sup>th</sup> century have no idea about the role of the mosquito in the malaria fever. They believed that in the daylight of any season, the possibility of the infectivity of malaria fever was very much less in *Terai*. At night malaria supposed to be very powerful. J. T. Pearson, the medical officer of Darjeeling recommended passing the deadly Terai region in three hours.

### **Deforestation before the Conservation**

The early settlers and even the officers of the government were impressed by the great extent of the forest and so for many years their sole aim was to expedite their conversion into timber in order to lay out the clearings as tea estates or cultivated land; in fact, reckless exploitation ran riot.<sup>18</sup> Within few years of the acquisition of the grant, the entire slopes of Darjeeling were cleared by demolishing the forests and the large trees were replaced by myrtle, flowers and sweet smelling herbs. Forested lands were cleared to construct the residence of the colonial officials like Col. Lloyd, Dr. Campbell and others. Dr. J. T. Pearson, the Medical Officer of Darjeeling, at his first arrival at Darjeeling, thought that too much clearing of trees had been done on the hill slopes.<sup>19</sup> But he changed his view as he heard the reasons of Col. Lloyd, behind the destruction

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<sup>18</sup> Dozey; *op.cit*, p.157

<sup>19</sup> For more information see Pinn; *The Road to Destiny: Darjeeling Letters 1839*; OUP, Calcutta, 1986

in Darjeeling. Col. Lloyd opined that the trees were cut down because of their roots, as it was pretended, it will harm the nearby buildings.<sup>20</sup> More than that Deforestation and bare rocks introduced, an extensive amount of landslips in Darjeeling. While travelling in the Darjeeling and Sikkim Himalayas in 1849, Hooker mentioned that already in some of the areas massive deforestation was conducted by the administrators. In the south of the Rangamally, a large sal forest existed but Hooker was informed that this forest disappeared due to indiscriminate felling.<sup>21</sup> During this period from Baikunthpur to Rummai village the entire track was covered with forest.<sup>22</sup> At the beginning of the urbanization in the hills, the sole aim of the speculators rested on the purchasing of a large amount of plots in forested areas of the Darjeeling.<sup>23</sup>

The European cottages, hotels and the administrative buildings were primarily constructed with the local woods. The wooden pillars along with the wooden roofs and Floors became the part of European construction in the hills. So the forests were transformed into a most useful government property which was fully utilized for the urbanization. The forest was visualized as the depository for the building material, fire woods and games. In the occidental mind, the forests of the colony had a feminine entity and control over the natural resources was aimed to glorify the inherent muscularity of the imperialism.

In the early days of British colonialism in the Darjeeling and Western Dooars, the wild animals regarded as 'problem' for the expansion of the settlements. The colonizer believed that due to the fear of the furious beasts and diseases, the forested land which was fit for the cultivation remained wasted. The British officials were very much optimistic about the commercial prospect

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<sup>20</sup> Pinn; *op.cit*, p.101

<sup>21</sup> Hooker; *op.cit*, p.393; The Police Jemadar informed Hooker about the destruction of the forest in Rangamally.

<sup>22</sup> Hooker; *op.cit*, p.394

<sup>23</sup> For more information see Clarke, Hyde, *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857

of the *Terai*. The imperial forest department leased the forests to the speculators to satisfy the commercial interest of the British Empire.<sup>24</sup>

Hyde Clark in his '*Colonization, Defense and Railway in Our Indian Empire*' (1857) mentioned that the British had the plan to introduce farming industry in Darjeeling and adjacent *Terai* and Doars, so they encouraged the clearing of the forest patches and raised grasses as the winter fodder which was soon proved to be a profitable speculation.<sup>25</sup> The farming industry would provide the opportunity to introduce woolen and tanning industry. In the plains, the tanning industry failed because of the extreme heat. The process of fermentation of beer, malting or brewing of leather ran on too rapidly in the plains due to the extreme heat of the sun. It was thought that the colder climate of Sonada was perfect for the production of the superior quality of crop leather. At the early stage of the British colonization in Darjeeling, the British officials cum speculators emphasized the prospect of the tannery in the Sonada area which possessed similar climatic condition like England. R. H. Irvine in one of his article published in the '*Journal of Agriculture & Horticultural Society of India*' (1846) recommended the prospects of Darjeeling as a perfect place for the construction of the tannery because of the availability of the superior quality of different kinds of oaks including *Valonia (Quercus macrolepis)* which was a precious tanning material for the tanners of England.<sup>26</sup> The building of the tannery was aimed to supply not only the leather products of the ranches animals but also manufacture tanned leather of wild animals which were lived abundantly in the nearby woods. The excessive demand for the exotic leather and woolen products in Europe encouraged the foundation of farming industry as well as other related industries in Darjeeling. Soon the roads, European cottages and luxurious hotels

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<sup>24</sup> Hunter, W. W, *A Statistical Account of Bengal: Districts of Darjiling and Jalpaiguri, and State of Kuch Behar*. Vol. X, Trubner & Co., London, 1876, p. 104

<sup>25</sup> For further information regarding the early speculation on the business economy of Darjeeling read Hyde Clark, *Colonization, Defence and Railways*, London, 1857

<sup>26</sup> Irvine, R. H; 'Observation on the Products and Resources of Darjeeling'; *Journal of Agriculture & Horticultural Society of India*; Vol. V; Part I - January to December, 1846; p.190

took the place of the dense forest in the hill slopes of Darjeeling. Most of the cases the forest tracks were cleared to construct the hotels and the forest offices. In Pashok, near Kalimpong, a bungalow was built at the clearing of the forests.<sup>27</sup> In the interior of the buildings the polished wood and stuff body parts of the wild animals, horns, and leathers were extensively used by the colonial officials. The wall of the Cooch Behar palace was crowded with trophies of sports which had fallen to the Maharaja's rifle in all over the world. The heads of bison, Indian and Cape buffaloes, moose, wapiti, sambhur, cheetal and roe deer from Germany- relics of many lands were displayed in the wall of the Cooch Behar Palace. The State drawing room and the billiard room in Cooch Behar palace were carpeted with the skins of tigers.<sup>28</sup>

With the expansion of the urban settlement of Darjeeling, the exploitation of the forested region of Ghoom Pahar increased rapidly. In 1870 the Darjeeling Municipality adopted measures for conservancy of Ghoom forest deferring the fund under their control.<sup>29</sup> But the forest was severely affected due to the policy of the Darjeeling Municipality. In *The Annual Progress Report of Forests 1867-68*, Leeds placed a complaint against the Darjeeling Municipality in the underselling of the forest products of the Ghoom Pahar Forest at the rate of Rs. 1 per ton of 50 cubic feet.<sup>30</sup> The Government of India in their review of the report mentioned that the complaint placed by Leeds was correct and exploitation occurred in the Ghoom Pahar Forest. The forest was codified as reserved forest in 1879 due to the local demand.

The formation of the timber market in the plains of Bengal particularly in Debigunj in Rangpur, Dhubri and Kangtapukuri in Nattor (Rajshahi) stimulated the timber extraction from the forest of the Darjeeling and Western Dooars. The villages of the timber cutters existed in the Sub-Himalayan Bengal during the mid of the nineteenth century and Hooker mentioned that these

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<sup>27</sup> Dozey, *op.cit*, p. 252

<sup>28</sup> Casserly, Major Gordon, *op.cit*, p. 221

<sup>29</sup> No. 10- 15, July 1870 (Revenue Department, Forest, WBSA)

<sup>30</sup> For further information see *The Annual Progress Report of Forests 1867-68*

were mainly inhabited by the Cooches (Kochs).<sup>31</sup> Few villages were developed by the Cooch Catechu and Sal cutters or the settler of timber -floaters. As the wood cutters cut the Sal logs in the forest Darjeeling and Jalpaiguri, they dragged the log upto the nearby river and floated it down the stream to the Brahmaputra to sale it in the wood markets of Sirajganj, Dacca and other places.<sup>32</sup>

Prior to the annexation of the Western Dooars (1864-1865) the Government of Bhutan had the customary right to lease the forest of the Dooars. The person desiring to fell timber in the forest of the Dooars had been levied a tax of Narayani rupees 13 which was known as Katai Mahal (falling Tax).<sup>33</sup> Every year on each cart conveyed timber away from the forest the wood cutters were levied with this tax and to bring that timber to the river bank of Tista the person had to pay Narainee rupees 20 each cart known as Bhasai ( Rafting or Floting Tax).<sup>34</sup> During that period the timber from the forests of the Dalimkot (Dalimcote) and Chamurchi (Chamoorchee) was sent to the Domohani Ghat on the bank of Tista and then send it to the further south in the market of the plains.

The growth of Darjeeling as the hills station leads to the large scale exploitation of the adjacent temperate forests in Sinchal and Jalapahar where the valuable trees were felled for fuel without discrimination. After 1865 the forest department interferes into the procurement of the firewood and included nine kinds of timber in the reserve category and made them available for the purchaser on payment of fixed price. The forest department included nine kinds of timbers in the reserve list. The first class reserve timbers were white and red Magnolia, Chestnut, oak and walnut. Their price varied from Rs. 8 to Rs. 15. The price of second class timbers varied from Rs. 4 to Rs. 6, it included oak, Chilauni, Cherry and Lali. In the Terai region, the first class

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<sup>31</sup> Hooker; *op.cit*, p.395

<sup>32</sup> Hunter, *op.cit*, p. 237

<sup>33</sup> Narayani currency was the widely circulated currency of Cooch Behar State.

<sup>34</sup> *Proceeding of the Government of Bengal*, The Revenue Department, Forest for the Month of March, 1865. No. 7, March, 1865

reserve timber were Sal, Urjun, Blackwood, Sissu and Chilauni and their price ranging from Rs. 8 to Rs. 10. On the other hand second class woods included seet, khair, amluki, guya, babla, semul, bamboos and gumbir and their price varied from Rs. 3 to Rs. 5. Around 1866-1867 the timber of the Dooars forests was utilized for the extension of East Bengal Railways.<sup>35</sup>

### Conservation

The gradual disappearance of the woods in the plains leads to a steady increase of the price of the timber and its related products. So the conservancy was introduced to stop 'the over-exploitation and safeguard the existing forests from total destruction'.<sup>36</sup> The plan of forest conservation in Darjeeling and Dooars, primarily took its shape through the series of surveys and observation of colonial botanists cum forest officers. The 'father of colonial forestry' D. Brandis visited the forests of Darjeeling and the Sub-Himalayas in 1862 and by the end of this year; he shared his view with another renowned botanical researcher of his time, Dr. Thomas Anderson who was the then superintendent of the Botanical Garden, Calcutta. Following the observation of Brandis, the Government of India requested the Bengal Government to give attention to the forests under its jurisdiction. In August, 1864 for the first time in Bengal, the forest conservation was introduced in 15.5 square miles of forest in Senchal range between Ghum and Kurseong in Darjeeling district.<sup>37</sup> Up to the end of 1867, there was no rule under the Forest Act 1865 was implemented in the forests of Dooars i.e., the land stretching from Tista River in the west and Sankos River in the east. The forest department had no legal right to enforce conservation in this region. But after the annexation of the Western Dooars, the situation changed dramatically and rapid influx of the outsiders and the commercial prospect of these regions became a threat to the forests the Dooars.

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<sup>35</sup> *Proceeding of the Government of Bengal*, The Revenue Department, Forest for the Month of May, 1866

<sup>36</sup> Dash, Arther Jules, *Bengal District Gazetteer: Darjeeling*, 1947, Bengal Government Press, Alipore Bengal, Reprint 2011, pp. 123-124

<sup>37</sup> O'Malley, L.S.S, *op.cit*, p. 91

K. Sivaramakrishnan referred the first thirty years of the forest conservancy in Bengal as a 'period of conservative lumbering'.<sup>38</sup> The aim of the conservation was to procure control over the forest lands, regularized the supply of woods and made a profit through scientific forest management. Dr. Anderson made a preliminary investigation into the forests of Eastern Himalayas including some portion of *sal* forests in the *Terai* and Dooars at the foot of the hills. But in April; 1864, the mission was disrupted due to the military oppressions in Bhutan and Dooars. He submitted the proposal and working plan of the forests in the Bhutan and Dooars in January; 1865. Dr. Anderson marked that in the Terai region the amount of the forest was about 80,000 acres but in which 25,000 acres was included the forested areas.<sup>39</sup> He also mentioned that the valley of the tropical rivers like Tista, Mahananda (Mahanadi) and Rungeet was filled with forest. The aim of his proposal was 'to exploit the *Sal* forests of the Terai at the foothills and the great Rungeet and the temperate forests of the British Sikkim.'<sup>40</sup> Following the report and proposal of Dr. Anderson, forest conservancy was introduced and the timber depots were formed to maintain the supply the timber. A code of rules for the better management and the control of the forest of British Sikkim, framed in conformity with Act VII of 1865, were submitted by the Bengal Government and received the confirmation of the Government of India (Gazette, 5<sup>th</sup> September, 1866).<sup>41</sup> In November; 1865 Anderson was appointed as the conservator of forests, Bengal and at the same time he remains in the post of the Director of the Botanical Garden; Calcutta.

The colonial forest divisions were created to ensure maximum resource exploitation. Soon Conservator of the Forest of Bengal asked all the commissioners of the ten divisions to gather information about the forests in their division, particularly emphasizing on the nature and extent

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<sup>38</sup> Sivaramakrishnan, K, The Politics of Fire and Forest regeneration in Colonial Bengal, *Environment and History* 2, no. 2, South Asia Special Issue (June 1996): p.150

<sup>39</sup> Stebbing, E. P. *The Forests of India*, vol. I, 1921, p.519

<sup>40</sup> Stebbing, E. P. *The Forests of India*, vol. II, 1923, p.372

<sup>41</sup> *Ibid*, p.406

of forests, property rights, the surrounding landscape including the nearby rivers, villages, nature of cultivation practiced by the villagers, markets and the price of timber and firewood in their areas.<sup>42</sup> The motives of the colonial forest conservators were to evaluate the commercial prospect of the nonagricultural resources.

In 1865 the forests of Darjeeling and Western Dooars was controlled by many legal owners who have enjoyed their right over the forested lands from centuries. The forests of Darjeeling was under the jurisdiction of the Bhagalpur division and the few portion of the Dooars forest placed under the Rajshahi division and others were under the control of Maharaja of Cooch Behar, Raikat of the Jalpaiguri and few other minor zamindars of Goalpara region of Assam. In response to the order of the Conservator of the Forest of Bengal, the commissioners of Bhagalpur and Rajshahi divisions submitted their reports which contained valuable information about the condition of the forests of Darjeeling and Western Dooars. According to the report of the commissioners of Bhagalpur division, Darjeeling *Terai* contained a large amount of quality *Sal* and it was scattered in 12,000 acres along with other valueless trees. The banks of river Mahanadi (Mahananda) possessed the *Sissu*. On the other side the hilly portion of the *Terai* amounting 50,000 acres and was to a great extent, the commissioner stated ‘cover with so far as I know valueless jungle’.<sup>43</sup> The bank of the Rungeet constituted about two to three thousand acres was full of the valuable forest of *Sal*. Interestingly no revenue was gathered from the forest division upto 1865. Regarding the shifting cultivation, the commissioner wrote: “the mode of cultivation alluded to practice in the hills without damage to the forests, except to the patches actually cultivated, the dampness of the climate preventing the fire spreading, it is now put a stop by the issue of lease for compact areas. In the *Terai* the holder of the gazing ‘*mahal*’ annually fire the long grass, the cattle subsisting on the fresh shoots. This practice has doubtless considerably injured the timber, a considerable quantity of *Sal* to the southeast of the district

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<sup>42</sup>Stebbing, E. P, *op.cit*, 1923; p. 377; Letter, No.3478, dated 19<sup>th</sup> October; 1864. In 1865 the Bengal forest department had ten divisions viz, Bhagalpur, Santhal Pargana, Patna, Rajshahye, Burdwan, Nuddea (Sunderbans and 24 parganas), Cuttack, Chota Nagpur, Dacca and Cachar.

<sup>43</sup> *Ibid*, p. 378

being apparently hopelessly dwarfed from the effects.”<sup>44</sup> The report shows that in the early phases of the forest conservation the colonial forest officials were unable to evaluate the commercial prospects of the Darjeeling and Dooars forests. The value of the forest for the colonial officials depends on the presence of Sal and other valuable timber trees. They were less interested in the protection of wildlife in the forest rather than they believed that wild animals were the problem for the expansion of the settled peasant community and cultivation.

In 1<sup>st</sup> December; 1865, Mr. Gustav Mann, a successful botanical traveler in West African forests and also in India was appointed as the Assistant Conservator of Forest in Bengal. He also possessed deep knowledge about the forest of the Sub-Himalayan region as he worked for many years in the cinchona plantation of Darjeeling. In September; 1866, the Government of India asked for a report on the forests of Western Dooars and Bhutan with a sketch map of the area. In 1867, Dr. Anderson along with Mann surveyed the forested region from Meech River on Nepal frontier in the east to the Tista River on the Bhutan border in the west and demarcated the forest tracts which were suitable for tagging as reserve forests and placing triangular-shaped pillars or making paths at the boundary of such forests. After preparing the map, Anderson submitted the report to the government with the Letter No. 15A, dated 19<sup>th</sup> May, 1868.<sup>45</sup> This report provided a valuable description about the forests of the Dooars. In the plain portion of the Dooars consisted twelve blocks of forest compassing 40 square miles and the hill portion workable forests were estimated 50-60 square miles only. After making demarcation of forest land on the basis of its commercial value, the rest of the forest tract including the weeds and grassland had been made available for lease through the Deputy Commissioner of Darjeeling with the intention to turn them into revenue producing arable land or tea garden. They rearranged the land of the colony to ensure the maximum amount of commercial profit from it.

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<sup>44</sup> *Ibid*, p. 379

<sup>45</sup> Mr. H. Leeds was the Conservator of the Forest of British Burma joined the Forest Department of Bengal in 1867 as the Conservator of the Forest. He submitted the report to the Government with his letter No. 15A, dated 19<sup>th</sup> May, 1868

### Human intervention in grassland ecosystem

The grassland has a huge role in the forest ecosystem as many of the carnivorous, herbivorous and omnivorous animals depend on the grasslands to procure food and shelter. The short of turf grass in the Terai and Western Dooars regions were *Andropogon acicularis*, *Cynodon Dactylon* or 'Dhob', *Saccharum* and in the sandy places *Imperata cylindrica* and in the wet soil *Ameletia Indica*, in the standing water the surface was rendered by *Azolla* and *Salvinia*. Sir J. D. Hooker observed that the grass was very rich due to the moister in the climate and retiring water of the river.<sup>46</sup> But at the same time, he referred it as 'the most obstacles to civilization'.<sup>47</sup> He further suggested that 'the rapidity with which it can be cleared, the adaptation of the great part of soil to irrigation during the rains, has greatly aided the bringing of it under cultivation'.<sup>48</sup> When Brandis came to Jalpaiguri Division, he primarily focused on the three heads, viz., fire protection and roads, cultural operations and timber operations. He recommended the lighting of the fire on savannah in the early season, cutting the interior and exterior lines in the most inflammable section of the forests and at the same time fire tracing camping ground where work was in progress.<sup>49</sup> The policy of the government might have affected the life cycle of the different species of animals. The destruction of the grassland means a reduction of the food for the animals in the forests. Many birds lay their eggs in the grassland. The Indian Bustard, Bengal floriken, Lesser floriken, Black Partridge or Titri, Swamp Partridge or Koyar, Gray Partridge, whistling teal or Saroli (*Dendrocygna awruree*) are particularly depend on the grassland and the marsh near the river beds for food, shelter and laying the eggs.<sup>50</sup> In the Terai Florikin was

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<sup>46</sup> Hooker; *op.cit*, p.383

<sup>47</sup> *Ibid*; p.385

<sup>48</sup> *Ibid*; p.385

<sup>49</sup> Stebbing, E. P, *The Forests of India*, vol. III, 1926, p.197

<sup>50</sup> Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895, p. 16-17

regarded as a game bird. It roams around in the cultivated fields, wide river chur lands by the side of Balasun, Tista and Mechi Rivers, nullah and among long elephant grass.<sup>51</sup> In the long run the annihilation of the animal habitat and food in the forested lands leads to the growing rate of the human-animal conflict in the *Terai* and Dooars regions. The increasing interference of the government in the forest interrupted the natural growth of forest and wildlife. The villagers believed the grasslands were dwelling place for the different species of furious animals, so it is dangerous to men and cattle. Many time they fired the savannah to get rid of the wild animals. The expansion of the tea gardens in the northern taluks between the Tista and Torsa Rivers leads to the disappearance of the long grass and reed jungle which was formerly occupied the land.<sup>52</sup> With the expansion of cultivation, many of the species of birds like the Black Partridge or Titri (*Francolinus vulgaris*) and Mallard (scientific name) became scared in the grasslands of Falakata and Alipur Tahasil within the last decade of the nineteenth century.<sup>53</sup>

When Mr. H. Leeds, the conservator of Forest in Bengal, made a survey of the forested regions of the plains he noticed the signs which indicate that once upon a time the plain was rich in large trees. But with the exception of the Nathabaree (No. 8), Deema (No. 10), Buxa (No. 11) and Naldabaree (No. 12), no trees above five feet in girth remain, and these four forests are only estimated to contain some 5000 to 6000 trees above six feet in circumference at four feet from the ground.”<sup>54</sup> According to the estimate of Leeds, the Outer Himalayas possessed approximate 5000 to 6000 sal trees and in Western Dooars approximately 10,000 to 12000 full-size trees were available in the forest. Leeds noticed the existence of the four Sissu forests in the Dooars particularly in Tondoo and Torsa Forest which were scattered by the side of the old river beds. He mentioned that the stock of the wood was very limited. From building the house to canoes,

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<sup>51</sup> Mackintosh, L. J, *Birds of Darjeeling and India*, Part-I, Calcutta, 1915, pp. 192-193

<sup>52</sup> Sunder, *op.cit*, p. 3

<sup>53</sup> Sunder, *op.cit*, pp. 16-17

<sup>54</sup> Stebbing, E. P. *Op.cit*, 1923 p.413

simple railing and shades the valuable trees had been used indiscriminately which leads to the destruction of the forest stocks.

In February; 1868 the European contractures were permitted to enter the Buxa forest to procure timber of six feet in girth and all the sanctioned and dead timber in a large quantity. Attempts were made to transport the timber to the market of Calcutta through the river but it failed due to difficulties faced conducting the operation. Later the timber was supplied to the proposed new station at Falakata (Palacoota) for the building purpose of the new station.<sup>55</sup> The growth of Falakata as the on the eastern bank of Mujnai River immensely transformed the surrounding environment. The rapid population growth in Alipurduar, Falakata, Buxa and Madari hat leads to the reclamation of the forested lands of the Western Dooars. In Alipurduar Subdivision in 1891 the population was 72,447, but within ten years in 1901 population increased to 119,353. The growth of population leads to the reclamation of the land of reserved forest for cultivation and increased the rate of human-animal conflict.<sup>56</sup>

One year after Leeds's report, Mr. Gustav Mann inspected the region stretching from Sankos River to Manas River and submitted a comprehensive report (1869) on the forests of the Eastern Dooars. The report of Mann shows that some valuable portion of the forest track in Bengal Dooars remained in the hands of the landholders till 1869 as they got the property right on them through the permanent settlement. Mann referred these types of forested lands which were mainly stretched in the Goalpara District, as 'private forests'. The area consisted of 144 square miles including the valuable sal forest of the Purbut Jooar. The Commissioner of Cooch Behar

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<sup>55</sup> For more information see Stebbing, E. P, *The Forests of India*, Vol. I, Mayflower Press, Great Britain, 1921, Stebbing, E. P, *The Forests of India*, Vol. II, Mayflower Press, Great Britain, 1923, Stebbing, E. P, *The Forests of India*, Vol. III, Mayflower Press, Great Britain, 1926 and Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008

<sup>56</sup> Grunning, *op.cit*, p. 187

took steps to negotiate with the local landholders and proposed to give land in exchange of forests areas, but the effort was failed.

The *Annual Progress Report of Forests 1867-68* written by Leeds revealed that the progress of the conservancy in Bengal unfortunately, slower than the other provinces. During this period 375,230 cubic feet timber had been yield from the Sikkim forest and the falling and the removal of the trees was not controlled by the forest department. *The Annual Progress Report of Forests 1868-69* was submitted along with a sketch map of Bengal forest including Assam. In May 1872, the report was submitted on the indiscriminate destruction of trees in these regions.<sup>57</sup> In December; 1872 Schlich was appointed as the Conservator of the Forests of Bengal and hold the post upto 1878. During his tenure number of the forest, staff increased and the demarcation of the reserve forests was completed. In 1872-73m the forested areas of the Bengal province were segregated into five divisions: Cooch Behar (including Darjeeling), Assam, Dacca, Chittagong, and Bhagalpur. In 1874, Assam was separated from Bengal province and in the next year, five divisions were created viz.: Darjeeling, Jalpaiguri, Palamow, Sundarbans and Chittagong, the acreage of reserve having risen from 120 to 1467 square miles.<sup>58</sup>

During this period, the forest administration in Darjeeling and Dooars took a new shape. In 1874-75, only the Sukna Forest in the Terai region which consisted almost 6902 square miles were examined and valued. The Muraghat Sal Forest (5 sq ml) and the Buxa Plains Reserve (110 sq ml) were included in the Jalpaiguri Division. The Muraghat Sal Forest was reported to have 171,590 *sal* trees in the form of seedling and sapling. So the forest department adopted the policy to protect the forest from ‘fire, grazing and cultivation’. According to Schlich, the Buxa forest consist the best quality of *sal* forest in Bengal. Again Schlich, the Conservator of Forest in Bengal, reorganized the forest division in 1878. The five northern divisions, Darjeeling, Tista

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<sup>57</sup> Report on the indiscriminate destruction of trees - No. 23, May 1872 (Revenue Department, Forest, WBSA)

<sup>58</sup> Stebbing, op.cit, 1923, p.195

(Kalimpong), Kurseong, Jalpaiguri and Buxa were created.<sup>59</sup> The *Administrative Report of Bengal 1873-1874* shows that the timber exploitation in the forests of the North Bengal was comparatively low during this year. The requirement of the Calcutta was satisfied by imported timber from the Burma and Australia, while the *sal* logs and planks for Dacca boat builders were imported from the Nepal forests.<sup>60</sup>

James Sykes Gamble who possessed vast authority over the flora of the Darjeeling became the officiating Conservator of Forest in 1879. In the same year around three times Sir. D. Brandis visited both the hills and plain forests of North Bengal and submitted on the major lines of conservancy in the Jalpaiguri and Buxa Division in the plains and Kurseong, Darjeeling and Tista Division in the hills. Before the forest conservation was extended in the Apalchand forest, a large portion stretching from Dalingkot road in the west to the Chel River in the north-east was completely annihilated.<sup>61</sup> The Working Plan (Revised) for the Reserved Forests of the Jalpaiguri Division; 1905 shows that the area of the Apalchand Forest was reduced to 16,062 acres.<sup>62</sup>

The Duterea, Rangbul, Sonada blocks of Rangbul Range, Rangbi block in Takdah Range and Pobong, Rishihat Blocks of Ghoompahar Range were marked for the supply for the requirement of Darjeeling in 1880. Later on, 12,257 acres of forest of Pomong, Hum, Tukdah block were opened for exploitation and meet the demand of Darjeeling as the roads were expanded upto this region. It was estimated that these forests would supply 350,000 cubic feet of solid wood per annum for fuel and charcoal, and 150,000 cubic feet of timber for building, or a total of 500,000 cubic feet of solid wood.<sup>63</sup> Brandis suggested to reduce the number of fresh falling off the green

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<sup>59</sup> Dash, *op.cit*, p. 124

<sup>60</sup> *Administrative Report of Bengal 1873-1874*, p. 218

<sup>61</sup> Stebbing, E. P. *Op.cit*, 1926, p.197

<sup>62</sup> Trafford, F, *The Working Plan (Revised) for the Reserved Forests of the Jalpaiguri Division*; Bengal Secretariat Tour Press, Darjeeling, 1905, p. 9

<sup>63</sup> Stebbing, E. P, *Op.cit*, 1926, p.204

trees and instead of this use broken stems, roots and dry wood to make the charcoal and maintain the supply the of wood. It was estimated that 2500 trees required preparing 500,000 cubic feet of wood. He also recommended the use of the axe instead of saw to reduce the waste of the woods during the time of cutting.

Later in 1882-1883, the area of the Singalila reserve forest was further extended up to 66 square miles. The area was recognized as 'valuable asset' because of its valuable woods. Interestingly these forest areas near Ghum and Kurseong remain the main source of the supply of fuel, fodder and milk for Darjeeling. In the Kurseong division, the huge number of the *sal* trees forced the government to declare it as reserve forest which included 51 square miles of area of lower hill forest. The imperial forest policy also led to the creation of new *sal* forest in the 477 acres of the land in Bamanpokhri block in *Terai*. In 1879-1880, a large number of the forested areas of the Darjeeling were gazetted as a reserved forest. To protect the hill cart road and the track of the Darjeeling Himalayan railways, the forest patches in the Paglajhora division was declared reserve in 1885. But prior to the protection of the forest, the region faced a massive deforestation because many of the lands belong to private hands. Later the Tista forest compressing an area of 221 square miles was declare by the forest department as the reserve forest. In August 1898, a portion of forest land was granted to the Calcutta Christian School Society.<sup>64</sup> In 1903, a plot of land from Senchal Forest was transferred to Public Works Department for a dynamite magazine.<sup>65</sup>

### **Fire Protection**

The government's plans for fire protection in the hills (1875-76) adversely affected the forest resources of Darjeeling. The local authority cut down many trees in the densely populated forest and many of the grassland was also wiped out for fire protection. They clear a large amount of the forest belt along the boundaries of the district. The newly built roads divided the forest into

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<sup>64</sup> File no. 10R/5, No. B. 7-12, August 1998

<sup>65</sup> File no. 4M/1, No. 4-6, November 1903

blocks which were used as a safeguard against the forest fire in the *Terai*.<sup>66</sup> The fire protection project in the hills was aimed to protect the valuable timber not from the humanitarian point of view but for commercial profit.

### **Regulation on Gazing**

In 1884 the rules and regulation on the grazing were laid down in the Darjeeling district and half areas of the forest were opened for grazing. During the time of scarcity, the indigenous Lepchas were allowed to procure various forest products like plants, roots and fruits as they used it for subsistence. The colonial officials always had the tendency to blame the *Jhuming* or shifting cultivation for the destruction of the forests, though the rate of destruction caused by them was unparalleled. But like the Lepchas in the hills, the Machs became the first dying race in the *Terai* due to the restriction on slash and burn cultivation. This was happened due to the government restriction to use the forest products and spread of settle plough cultivation.<sup>67</sup> The Forest Act led to the eviction of the Jhum cultivators from the forests of the Darjeeling and Western Dooars. Furthermore, the British authority in Western Dooars started selling the right to collect the raw materials like Jangli chireta, lac and beeswax from the forests, previously on which the aborigines had an exclusive natural right. The Government claimed Rs.68 (£ 6, 16s.) in 1870 to sale the right to collect the lac from the Government controlled forests.<sup>68</sup>

The restriction of the forest department on the gazing ground created problem to the native cattle owners by reducing the grazing ground and it also indirectly affected the public of Darjeeling. The native milkmen and cattle owners protested against the Forest Act.<sup>69</sup> The All India Cow Conference in its resolution passed in December; 1916 mentioned that the scarcity of the pasture

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<sup>66</sup> Dozey, *op.cit*, P. 157

<sup>67</sup> Grunning, *op.cit*, p.47

<sup>68</sup> Hunter, W. W, *op. cit.*, p. 245

<sup>69</sup> *The Darjeeling Advertiser*; 30<sup>th</sup> May, 1916. See also the editorial in its issue of the 13<sup>th</sup> June; 1916

ground was responsible for the high rate of the mortality of the Bullocks, cows and calves and it also affected the regular supply of the dairy products. The conference also recommended that the Government should take immediate steps by necessary legislation or otherwise to provide adequate pasture ground.

In the first few years of conservation, the taungya method was implemented in the temperate forests and the lower hill forests. The oak, magnolia in the upper regions and teak, sal and toon were planted in the low altitude forest to maintain the supply of the firewood and the packing box for the tea gardens. In 1871-1872, an experimental Teak plantation was laid out in Falakata in Western Dooars.<sup>70</sup> Up to 1880 plantation of the timbered trees had not proved successful in the Darjeeling hills.

### **Natural Restocking and Acorn**

The natural restocking in the devastated areas was extremely difficult and at the same time, the plantation had not been proved successful in the Darjeeling region due to the irregular of supply of the seeds. The Oaks did not produce seed in every year and on the other hand Maple, Magnolia, Chestnut, Toon and Pipli generate seed at regular interval. The Acorn or the oak nuts have an important place in the high altitude forest ecology. It constituted the diet of different species of birds and mammals such as pigeons, some ducks, and several species of woodpeckers. Small mammals that feed on acorns include mice and squirrels. The large mammals such as pigs, bears, and deer also consume large amounts of acorns during the autumn or in the winter when snowfall suppress the green cover of the soil. When a large number of the natural forests disappeared from the hill slopes of Darjeeling the natural restocking became a problem due to the scarcity of the seeds. It also affected the biodiversity of this region. This question of restocking the forest in this division, many parts of which wastefully exploited during the early periods in the history of the station of Darjeeling, was to remain a difficult problem for many years to come.<sup>71</sup>

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<sup>70</sup> Hunter, W. W, *op. cit*, p. 243

<sup>71</sup> Stebbing, E. P. *Op.cit*, 1926, p.205

The forest conservation in colonial India was aimed to increase the commercial profit of the British government. In many cases, the low valued trees were replaced by the trees which possessed the supreme quality of timber. The replacement of the indigenous species with the alien plants became an experimental practice in the temperate forest regions of the Darjeeling and Dooars. The extensive plantations of the alien species were made to assist the natural restocking of those areas where deforestation occurred, and about 50,000 saplings were annually transferred from nurseries to the forest.<sup>72</sup> After the declaration of the forest conservation in Darjeeling, the fir forest near the Rangneet River was denuded and its place was taken by the stiff and quick growing *Criptomeria*.<sup>73</sup> Within 1947, the entire region of Upper hill forests were replaced mainly by Dhupi (*Cryptomeria Japonica*) which was introduced from Japan in late 19<sup>th</sup> Century.<sup>74</sup> Abnormal replacement of the no valuable trees with the valuable trees had an adverse impact on the surrounding flora and fauna.

Darjeeling was situated above the 'fever zone' of Terai and Dooars. In the nineteenth century, many medical officials have opined that the 'moist and marshy' forest track was responsible for the deadly fever in the Terai and Dooars regions. To reduce the deadly effect of the insects the colonial government introduced the system of biological control. The Blue-flowered groundsel or Billygoat-Weed (*Ageratum Conyzoides*) which was native to the Tropical portion of South America especially in Brazil and Mexico was introduced in India with the intention kill insects.<sup>75</sup> To describe the impact of the Weed in Darjeeling Waddell wrote *'It is rapidly overrunning the hill sides, springing up everywhere and fast displacing the native weeds on all the fresh landslips*

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<sup>72</sup> O'Malley, *op.cit*; p. 90

<sup>73</sup> Dozey, *op.cit*; p. 166

<sup>74</sup> Dash, *op.cit*, p. 130

<sup>75</sup> Name of the plant was mentioned in Waddell, L. A. *Among the Himalayas*, 1899, Mittal Publications, Delhi, Reprinted 1979, p. 19; Among the Vietnamese the plant was known as Cut lon or pig faces as it grew in the dirty areas.

*and clearings; even the hardy worm-wood is disappearing before it.*<sup>76</sup> According to him due to the rapid growth of Billygoat-Weed the wood worm which grown in naturally on uncultivated, arid ground on the rocky slope and at the edge of footpaths and fields, virtually disappeared. *Ageratum Conyzoides* is a medicinal plant extensively used by the Native Americans to prepare ethnomedicines but it also has some toxic issues.<sup>77</sup> The plant contains the pyrrolizidine alkaloids, lycopsamine and echinatine. Among these pyrrolizidine alkaloids is hepatotoxic and responsible for liver cancer and abnormal cell division or tumor. The insects and animal which consume the plant built up the alkaloids in their body and later on suffer from the poisonous effect of the plant and die. Due to the 'biological expansion' of the colonialism, this plant spread all over Africa, South Asia, Australia and South East Asia and transformed into a rampant environmental weed.<sup>78</sup>

The officials of the alien government understand that the systematic exploitation of the natural resources of the colony required a proper management. In the Sub-Himalayan region, in few cases, the colonial authority failed to achieve the highest rate of exploitation, because of the lack of proper planning. For instance in 1914, the exploitation of Phalut ended in failure due to gross mismanagement on the part of those entrusted with the scheme, which included its extraction and subsequent floating down of its culms on the Rangneet and Tista rivers until they reached Sivoke, where the later river debouches into the plains of Jalpaiguri, and where a factory was to have been established for the manufacture of wood - pulp.<sup>79</sup> The export goods of Darjeeling during the colonial era specifically denoted the commercial exploitation going on in the hill

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<sup>76</sup> *Ibid*, p. 19

<sup>77</sup> The aborigines of South America use small amount of the plant to cure wounds and burns. Few tribal communities in India and Africa used it as bactericide and also for the treatment of fever, rheumatism and headache.

<sup>78</sup> It is regarded as a valuable weed in the rice cultivation of in Asia. This weed now extensively found in the Terai and Dooars regions.

<sup>79</sup> *Ibid*, p.226

forests. The export goods included chowries, woolen cloths, gold dust, blankets, oranges, beeswax, musk, skins, wool, excellent potatoes, cotton, tea, coffee, woods, hides and horns.

### **Roads and Deforestation**

It was predicted that the beginning of the stream tramway or the Darjeeling Himalayan Railway would open up the forested Chattackpur and Sepoydura blocks. Later the Sepoydura block was reserved for the supply of the fuel for the Kurseong. One of the intentions behind the construction of the cart road was to transport the forest resources of the Ghoompahar Range. The construction of the cart road began in 1878-79. It was proposed to extend the road up to Lepchajagat through the forests with the intention to open up the forest blocks like Chongtong and Balasan. A second road was constructed through the north-east slope of Senchal and Takdah Ridge with the intention to benefit the surrounding tea gardens and the cultivated land of Tista and great Rungeet. The road was also connected the link between Kalimpong, Pomong, Hum, Tukdah block. The expansion of the roads in the distinct forest blocks stimulated the growth of the resource extraction.

The construction of Darjeeling Himalayan Railways responsible for the annihilation of the *sal* forests in the Darjeeling, Tista and Kurseong division. The massive destruction of the forest occurred due to the growth of communication in the 1880s. The forests of Bamanpokhri and Sukna were largely depleted for the construction of the railway sleepers for the Darjeeling Himalayan Railway. During this period, the imperial forest department supported the exploitation of the forest resources of Darjeeling. Most of the *sal* forest near the railway tracks was cut down to meet the demand of the railways for sleepers. The demand of the railway sleepers in the metre-gauge lines of the Eastern Bengal Railways was unlimited. Some sections of the British officials expressed their worries about the deforestation in the hills. It is not that all the British civilian living in India supported the unprecedented destruction of the forest in the slopes of the Himalayas.

The untouched wood of the queen of the hills was further exploited due to the huge demand of the packing box for the tea industry and for the supply of the building materials and firewood. The *Bombax malibaricum* or cottonwood was used to manufacture *shukes* or tea chests and

cartoons. During the First World War, the importation of the cartoons from the United Kingdom and Japan quickly decreased. In this situation, the European capitalist and the planters who had invested their money in the cartoon making factories in India flourished due to the increasing demand of the packing box. Later the forest patches were sold by the government for the introduction of the profitable tea industry. Some portion of the hill forest near the Kurseong was sold by the government for the local consumption and some portion of the woods was used to make charcoal. They recreated the forest in Bamanpokhri and Latpanchor by cutting down of the existing trees and introducing the commercially profitable trees like *sal* and rubber etc.

A belief gradually developed among the common people in the district that the high level of deforestation carried on in the hills slopes responsible for decreasing rainfall in Darjeeling. The British officials opined that in the hilly region the forests should be protracted to prevent soil erosion and landslides, but during the colonial period, the fast clearing of the forest had an evil impact on the steep valleys which resulted in disastrous landslides. In the hills, the soil is micaceous shale easily eroded and liable to landslips, especially where the forest covering has been destroyed and rain ploughs through the exposed surface.<sup>80</sup> In the majority of cases, landslips often cause great damage to the life and property. During his visit to Darjeeling, Sir Joseph Hooker also noticed enormous landslips in the Darjeeling Himalayas. “The most prominent effect of the steepness of the valleys” he wrote “is the prevalence of landslips, which sometimes descend for 3,000 feet, carrying devastation along their course : they are much increased in violence and effect by heavy timber trees, which, swaying forwards, loosen the earth at their roots and give impetus to the mass.”<sup>81</sup> Most furious landslide in the history of the Darjeeling occurred in September 1899 when a cyclone burst upon the district and resulted in the excessive amount of rainfall. Almost 72 people in Darjeeling lost their life in this catastrophe.

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<sup>80</sup> Ibid; p. 134

<sup>81</sup> Ibid; p. 101

### **Impact of deforestation on the birds**

Once the Ghoom forest and Birch hill was the natural habitat for tiny Small Fairy Blue-Chat. In the early twentieth century, according to ornithologist L. J. Mackintosh, the Small Fairy Blue-Chat (*Niltava Macgrigorle*) became rare in the Darjeeling partly due to the systematic clearing away of jungle undergrowth, which used to be a valuable cover for the birds, and also the ruthless shooting of inoffensive little bird.<sup>82</sup>

The birds which were habituated to lay their eggs in the big hole in the trees they were mostly affected by the clearing of forest and the large tree. The life cycle of the large birds like Great Indian Hornbill (*Buceros bicornis*) was severely affected by the change in the forest occurred due to human intervention. When the female hornbill lay their eggs in a hole of a large tree in the forest, the male hornbill plaster the hole with mud and the female hornbill stay imprisoned there until the chicks are coming out from the eggshell. During the imprisonment, the female hornbill depends on the male hornbill for food and as the chicks came out from the eggs the male liberates the female from the imprisonment. But while collecting information about birds of Darjeeling, Mackintosh was informed by the Lepchas *sikaries* that in one or two occasions they recovered dead mother hornbill in the large trees. Mackintosh opined that no doubt the reckless shooting of its mate by thoughtless nimrods unacquainted with the identification of the bird and their breeding seasons.<sup>83</sup>

### **Human–animal Conflict**

During the early days of the Darjeeling, the Mahananda basin was full of biodiversity.<sup>84</sup> The Gangetic dolphin and different types of aquatic birds were available in the river. The larger Duster, Crane, Pelicans, Coromandel anastomus, black and white kingfisher was common. The

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<sup>82</sup> Mackintosh, L. J, *op.cit*, p. 75

<sup>83</sup> *Ibid*, p. 39

<sup>84</sup> The information gathered by a traveler from the natives living at the bank of the river Mahananda. Later the article was published in Fred Pinn, *op.cit*, p.93

reptiles like two or three specimens of mud tortoise, gurgals (the large nosed alligators) were noticed by the travellers while they were travelling through the river. The large-scale embankments such as Dam, bridges, roads, interrupted the movements of the reptiles and mammals living in the water bodies and many of the species have wiped out from these regions.

The seasonal migration of wild animals is a ‘biological requirement’ going on year after year as a ‘hereditary system of socialization’. From centuries the entire Sub-Himalayan region was covered with a single belt of forest stretching parallel to the Himalaya from Machi River in Indo-Nepal Border to Sankosh River in Assam, but after the annexation of Western Dooars by the Colonial Government, the steady population growth, human settlements, expansion of tea cultivation fragmented the entire forested regions. The human intervention in the forest and large scale construction restricted the movement of the wildlife where they were roaming from the generation after generation. According to John Ferguson in the mountains of the Himalayas, tigers roamed around as high as 7,000 feet.<sup>85</sup> Now the regular movement of elephant recorded up to 3000 feet but the *Annual Report of Forest Department 1940-41* reported that almost seventy-five years ago Asian elephant roam around at an altitude of 10,000 feet and farther into Bhutan.<sup>86</sup> As the forests were converted in the agricultural fields or human settlements, when the herd of elephants moved along with their ancestral tracks, it created a situation for their conflicts with the newly settled humans.

The human-animal conflict in Darjeeling and Dooars increased along with the human penetration in the jungle and expansion of human settlements. During 1880, a grass-cutter was killed on a spot near the Auckland road by a tiger. Later on the place was named as ‘Bagmarie’.<sup>87</sup> There were many tragic stories of human-animal conflict all across the Dooars. Major Gordon Casserly

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<sup>85</sup> Ferguson, John, *Six Weeks Trip Through India: Being Notes By the Way*. London: Forgotten Books. 1902, Reprinted 2013, p. 105. Now a day the movement of the tiger is restricted in the much lesser altitude than the last two centuries.

<sup>86</sup> For more information see *Annual Report of Forest Department 1940-41*

<sup>87</sup> *Ibid*, p. 51, The ‘Bagmarie’ means a place where a tiger had killed.

in his '*Life in an Indian Outpost*' (1914) narrated a shocking incident and described that how a ferryman, who earned his livelihood from crossing the Raidak River in Buxa Dooars, lost his wife under terrible circumstances. While his wife on her way to home, reached the opposite bank of the river where her husband raft the canoe in day-light, a huge bear appeared from the jungle. As the ferryman pushed his boat into the water he saw the bear emerging towards his wife from the jungle. On her husband's cry as she tried to move, but the bear lifted its paw and hit on her head with a great force and quickly disappeared into the forest. When her terrified husband reached the bank saw her wife laying dead with the fractured skull.<sup>88</sup>

With the increase of the commercial agriculture and reclamation of the forested land, the wildlife in Darjeeling and Dooars were badly affected. The incidents of attacked of furious elephants or tigers became regular since the early years of British colonial rules in Darjeeling and Dooars. Most of the cases the immigrant labours of *Terai* and Dooars became the victim of the attack as their camps were settled close to the forest near the animal trail. L. S. S. O'Malley reasonably opined that the man is a far greater source of danger, from his tendency to light fire and from his inability to understand that he has not the same claim to all forest produce as he has to air and water.<sup>89</sup> The British masters along with the native settlers mainly the Santals, Oraon and the Mundas in the Dooars and the Nepalese in the hills participated in shooting games to reduce the threat to the newly settled outside labourers. The illicit cutting of the trees and the hunting of animals and the birds led to the massive change in the forests of Darjeeling and adjacent *Terai*. The condition of the Dhobijhora block became worst as the thick woods were depleted for the commercial purpose.

The introduction of the commercial agriculture in these regions resulted in a boom in the population which leads to the conversion of the forest land into the human settlements. Many of the forest lands near the villages were brought under the plough and the nearby large trees were ruthlessly cut down by the planters to acquire the building materials and fuels. For instance the

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<sup>88</sup> Casserly, Major Gordon, *op.cit*, pp. 192-193

<sup>89</sup> O'Malley, L. S. S, 1999, *op.cit*, p. 94

forest track in the east of the Tista widely cleared owing to the influx of the settlers and the advance of civilization. Bulk of the new settlers have made their homes in the lands where the population was sparse or which were scattered in the tracts of forests.<sup>90</sup> Naturally, incalculable harm was done by such inconsiderate destruction of forests, especially in the more populated districts where the demand for the new land was great, and where the forest was often already of less extent than the state of the country demanded.<sup>91</sup> Cornel Waddell wrote: “whole forests have been annihilated, leaving here and there only a solitary tree or narrow belt of trees in the ravines, as evidence of the magnificent woods which have fallen a sacrifice to advancing civilization.”<sup>92</sup>

Soon the large forested areas of the Darjeeling and Dooars gradually alienated by the settlements and grants. After getting the security of life and property, the new settlers mainly the peasants and herdsman brought uncultivated woods under cultivation. At the beginning of the colonial rule, the conversion of the forests into agricultural field rapidly carried on without any government interruption. The killing of wild beasts led to the multiplication of the number of the cattle and it's resulted in the requirement of the additional grazing ground. As the market of these regions expanded its sphere, the value of the cattle increased and to protect their animals the villagers cum *khubber* (messenger) spontaneously helped the hunters by providing information about the movements of the wild beasts.

During the reign of Maharaja Nripendra Narayan the Borabisha, Khagrabari, Parokata, Malakata, Mahakulgooree, Berbera, Haldibari, Chota Bhalka, Chukchuka, Deogong, Dal Dalia, Do-Mohani, Falimari, Bara Bhalka, Rasik Bhil, Chengtimari, Takuamari, Bara Hamua, Moshamari, Pachkoldoba, Kookoor Chubi were a forested region with full of wildlife.<sup>93</sup> Maharaja Nripendra

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<sup>90</sup> O'Malley, L. S. S, 1999; *op.cit*, p. 99

<sup>91</sup> *The Indian Forester*; vol.XIX; No.7; July; 1893; P.261

<sup>92</sup> Waddell, 1900, *op.cit*, p.73

<sup>93</sup> Maharaja himself killed tiger, rhinos and buffalos in this place. Nripendra Narayan, Maharaja, *op.cit*, pp.10-11

Narayan of Cooch Behar who was regarded as one of the ‘the biggest authorities in the world on big-game shooting’ and his European allies killed the Tigers and Leopards near the human settlements of Assam and Bengal Dooars, it created utter excitement among the villagers.<sup>94</sup> After killing a furious tiger near a settlement in the Dooars the Maharaja wrote that the death of this Tiger pleased the villagers greatly, as the tiger had quite recently killed seven cows.<sup>95</sup> During those days when the small human pockets were in budding situation in the Dooars region, if the cattle of the villagers were attacked by the wild animals they instantly report it to the Maharaja or the local *shikari* with an intention to get protection from the wild and wiping out them from the adjacent jungle.<sup>96</sup> Even the villagers helped the hunters by beating the forests. The large carnivores like furious tigers of 9-10 feet, struggling for the life before the anglicized Maharaja and his European associates created utter excitement among the rulers. Some time furious tigers were referred by them as ‘splendid fighter’.

Maharaja Nripendra Narayan of Cooch Behar State in his ‘*Big Game Shooting in Cooch Behar, Duars and Assam: A Rough Diary*’ highlighted his *Shikar* expeditions from 1871 to 1907 which is important in many ways. First of all, it gives plenty of information about the lost forest patches and the wondering ground of the wild animals in Dooars and the region adjacent to the Cooch Behar state. Secondly, it shows how the human animal conflicts increase along with the expansion of the settled peasant community. It also visualized how the western educated native Maharaja destroyed the wild beasts in the forest to spread the lights of the civilized world in the remote part of the Dooars and acquired appreciation from his European allies. (Fig: X)

Because of the destructive *shikar* expeditions of the Maharaja and his European associates, the richness of the fauna disappeared from the forests of the Sub-Himalayan Bengal. While visiting the forests of the Bengal Terai, Sainthall Eardley-Wilmot, the Inspector General of Forests in India observed that the rhinos and bison became scares in the jungle of Terai. He further

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<sup>94</sup> Casserly, Major Gordon, *op.cit*, p. 220

<sup>95</sup> Maharaja, *op.cit*, P.60

<sup>96</sup> *Ibid*, 126

mentioned that the *shiker* expedition of the Maharaja of Kuch Behar with his European associates and the 'self-defensive' killing of the beasts by the planter considerably thinned down the animals in the Bengal Terai.<sup>97</sup> It was not that the Maharaja Nripendranarayan Bhup Bahadur of Cooch Behar was not aware of the consequences of the over-exploitation of the wildlife in the forest. In the hunting expedition of 1901, Maharaja realized that the searching big games in the jungle became extremely difficult due to the reduction in their number. Earlier the jungle was full of game but soon the scenario changed and the hunters put huge efforts to find out the wild animals. Maharaja realized the fact that the jungle will soon become empty if they did not control themselves.<sup>98</sup>

The hunting of the wild animals in the forests was quite normal for the British officers in the Buxa cantonment. In the early 20<sup>th</sup> century Alipurduar was a small locality near the Buxa. The clearing of the forest, expansion of cultivation, and the settled agricultural community along with their cattle hard close to the forests increased human-animal in Alipurduar. Sometimes to protect the farmers the government officials intervene and killed the wild intruders. Major Gordon Casserly narrated such an incident of Alipurduar in his memoir, where he along with Mr. Ainslie, the Sub-divisional Officer of Alipurduar and his wife Mrs. Ainslie, went to kill the tiger to protect the cattle and the human.<sup>99</sup> The tiger took his shelter in a *nullah*, three to four miles from the town. But they became unsuccessful in kill the beast. But they bagged a number of wild pigs and a fine wild boar. In another occasion, Mr. Ainslie, invited Major Gordon Casserly of Buxa and Major Burrard, the then officer at an army headquarter Dibrugarh, Assam to Alipurduar for a shooting expedition. They heard that cattle were killed in a *nullah* about four miles away, close to the edge of the forest. In day one they beat the surrounding areas of the *nullah*, but unable to

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<sup>97</sup> Eardley-Wilmot, Sainthall, *Forest Life and Sports in India*, Edward Arnold, London, 1910, p. 240

<sup>98</sup> So for the first time they got a small buff and let it free as they realized that the richness of the forest has been lost over the years because of the recurring hunting expeditions.

<sup>99</sup> Grunning, op.cit, 1911, reprinted, 2008, p. 17

kill the beast as it flees and took shelter in the forest.<sup>100</sup> On day two, as the line of beater advanced through the scrub with their usual din, Major Gordon Casserly saw the tiger and killed him.<sup>101</sup> The tiger was 9½ feet from the nose to tip of the tail. Casserly wrote ‘almost like vultures’, many people including women gather to see the tiger and a victory procession followed the body of the beast which was taken to Alipurduar. Later on, the skin of the beast ‘adorn the bungalow’ of Major Gordon Casserly.

Until the beginning of twentieth century Alipurduar and its neighboring areas were the roaming ground of the furious animals. Mrs. Ainslie, the wife of the Sub-divisional Officer of Alipurduar was a great sportswoman and had bagged many tigers, various panthers, bears and bison. One day Mrs. Ainslie, the wife of the Sub-divisional Officer of Alipurduar went to hunting, along with a former British commandant. Before the beat started a tiger burst out of the jungle and the officer fired and wounded it. But the tiger rushed toward the hunter and jumped upto the head of the elephant’s and placed his on the front rail of the howdah where the officer and Mrs. Ainslie were sitting. Within a flash the officer fired on the chest of the tiger and killed it.<sup>102</sup>

Major Gordon Casserly mentioned in his memoir that the elephants deliberately entered into the villages near the tea gardens, breaking the frail structures of bamboo and tearing down hut after hut until they reached the houses of the *banniahs*, or tradesmen who dealt in grain and foodstuffs. Then the heard feasted royally on the contents of the shops. The villagers naturally object to this, light fire around their fields, and turn out with torches, horns and drums to scare the intruders off.<sup>103</sup>

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<sup>100</sup> Casserly, Major Gordon, *op.cit*, pp.167-169

<sup>101</sup> *Ibid*, p. 172

<sup>102</sup> The story was narrated by Mr. Ainslie, the Sub-divisional Officer of Alipurduar to Major Gordon Casserly. P. 169

<sup>103</sup> Casserly, Major Gordon, *op.cit*, p.106

In last two decade of the nineteenth century a large number of waste lands in the western Dooars were brought under cultivation. As a result of this the tahsils like Mainaguri, Falakata faced a rapid growth both in the field of population and cultivation. Even in the eastern tahsils of Alipur and Bhalka population was increased fast and cultivation extended in every direction. In the Mahakalguri the missionary society took a vital role in the formation of the new settlement and in this way they guided the process of colonization. In 1890 the Rev. A. J. Shields, who was finding difficulty in getting land for his Santhal Christens in their native country, was informed by Mr. Sunder, the Settlement officer of Western Dooars, that there was plenty of good west land in the Alipur subdivision available for settlers.<sup>104</sup> Mr. Sanders who had a comprehensive knowledge about the Dooars region choose a tract of land between the Gadadhar and Raidhak Rivers and Rev. A. J. Shields shifted a group of Santhals from Godda to the newly selected spot and began the denudation of the dense Jungle which was the ranching ground of furious wild beasts like Tigers, Leopards, Buffelos, Bears and started cultivation. Owing to the clearing of the land, wild animals have disappeared.<sup>105</sup> Maharaja of Cooch Behar also took this opportunity and pitched his *Shiker* camp at Mahakalguri in February, 1893 at Mahakalguri. He spent few days by shooting in the different parts of forest reserves near the Raidak and killed Barsinghs, massive Tigers, bull Buffalos, and cow Buffalos, few Samburs. Just at the edge of the reserves at the north of the camp and also in a small patch of jungle near the camp they got two huge Tigers, and a bull Rhinos and cow Rhinos.<sup>106</sup> For many years the Mahakalguri remain the popular destination of shooting for the Maharaja and his European friends. The government introduced prohibition of mala *shikar* or noosing system in Western Dooars in 1896.<sup>107</sup>

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<sup>104</sup> Grunning; *op.cit*, p.56

<sup>105</sup> *Ibid*, p.57

<sup>106</sup> Maharaja; *op.cit*, p. 105

<sup>107</sup> File No. 3F/3, no. 55-61, November, 1896 (Revenue Department)

## Markets

In the hill areas particularly at Sikkim, the rule for hunting was not rigid. For large game Rs.30/- had to be paid to the Superintendent of the State in Gangtok and Rs. 10/- for the small or feathered game. Carnivore and pig were allowed to be shot without the permit.<sup>108</sup> The skins of the snow leopard, wolf, bear, silver fox and mountain sheep were available in the market of Darjeeling.<sup>109</sup> The weekly native bazaar of the Darjeeling was the place of attraction for the European travelers.<sup>110</sup> The commercialized exotic plants, flowers, animal skins, insects and other oriental products helped them to feel the otherness of the colonized dark land and its mysterious treasures. The aboriginal people as 'the true Arcadian of the forest' bring about all these products to sell in the local market. The Bhutia merchants based on the Chunabatti in Buxa Subdivision sold ivory, wax, wool, musk, rhinoceros horn, honey and other forest products to the shopkeepers of Buxa.<sup>111</sup> The British government levied no import duties on the Bhutia products and the Government of Bhutan also followed the same policy for the imported British goods. Kalimpong was a large bazaar and the centre for the Tibetan trade with Bengal. It mainly consists of the import and export of wool and hides. (Fig: XI)

### Exotic Products of the Orient and European Fashion

The forested moist spots by the side of the sandy and stony rivulets of Darjeeling and Dooars were the dwelling zone of the different types of Butterflies. The river beds of Great Rungeet, Tista, forested regions of Pashok, Buxa were well known to the colonial entomologists for the

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<sup>108</sup> Dozey, *op.cit*, p. 238

<sup>109</sup> Ferguson, John, *op.cit*, p. 106

<sup>110</sup> Arley Munson, *Jungle Day: Being the Experiences of an American Woman Doctor in India*, D. Appleton and Company, 1913, p. 218

<sup>111</sup> Sander; *op.cit*, p.25

colourful butterflies.<sup>112</sup> While passing through the road by the side of the River Rungeet, Charles Lionel Augustus de Nicéville, the curator of Indian National Museum who was also known for his monograph on the butterflies of the South Asia noticed a large concentration of the different types of butterflies and wrote ‘never in my life before I have seen such numbers together belonging to so many species’.<sup>113</sup> The sandy river beds and the forested areas of these regions were regarded by the colonial travelers as the ‘butterfly zone’. During the month of April to September, gorgeously colourful butterflies floated all over the Alipur-Buxa roads.<sup>114</sup> According to the observation made by Lionel De Nicéville on the butterflies of the Darjeeling and Terai shows that between Siliguri (397 feet) to Chunabhatti (2,260 feet) by the roadside he collected 64 kinds of butterflies in October 1880. From Chunabhatti to Kurseong (4,840 feet) Nicéville noticed 21 kinds and from Kurseong to Darjeeling (6,885 feet) had 5 types, from Darjeeling to Badamtan Tea Estate 12 types of the butterflies.<sup>115</sup>

The colorful butterflies and large moths became the marketable products during the colonial period. The demand of the colourful insects forced the aboriginal peoples in Darjeeling to collect the exotic insects from the forest of the Sub-Himalayas and sale them in the markets of the Darjeeling. The poverty stricken aborigine Lepchas living in the forest started exchanging the gorgeous butterflies and other forest products like orchids and honey to procure salt and other

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<sup>112</sup> Hooker, *op.cit.*, p. 152, Freshfield, pp. 50-51, Lionel De Niceville, A List of the Butterflies in Sikkim, *Journal of Asiatic Society Bengal*, Part 2, No. I, 1881, p.56

<sup>113</sup> Niceville, Lionel De, A list of the Butterflies taken in Sikkim in October, 1880, with notes on habits, *Journal of Asiatic Society Bengal*, Part 2, No. I, 1881, p. 56

<sup>114</sup> For more information see Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895, Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914

<sup>115</sup> Niceville, Lionel De, A list of the Butterflies taken in Sikkim in October, 1880, with notes on habits, *Journal of Asiatic Society Bengal*, Part 2, No. I, 1881, pp. 49-60

articles.<sup>116</sup> On the way down to Darjeeling, Colonel Waddell saw some native and British soldiers armed with Butterfly nets, wildly catching the gorgeous butterflies. Once local species of butterfly was abounded in Darjeeling, but within the last decade of Nineteenth Century it's become so rare that one specimen of it fetches about a pound sterling.<sup>117</sup> According to Dr. Arley Munson who came to Darjeeling in the early twentieth century, expressed that the most interesting thing in the market of Darjeeling was the "butterflyman's" box of Nature's jewels, for there are about five thousand varieties of butterflies and moths in the Darjeeling District, many of gorgeous beauty.<sup>118</sup>

The skins of animals, the exotic insects and other forest products became marketable products during the colonial period. Sunder in his report mentioned that the Otters or Lutra Hair were very common through the hill streams. But they were captured through nets for its skins which sold in Jalpesh Mela.<sup>119</sup> But within the nineteenth century, the Otters or Lutra Hair completely disappeared from the water bodies of the Darjeeling Himalayas. The other mammals for instance Clouded Leopard, Black Squirrel, Orange-Bellied Gray Squirrel, Hispid Hare and Rhinoceros Malayan became rare.<sup>120</sup> But up to this period, Common Indian Sloth Bear was available in the wasteland of Alipur and Bhulka tahsil. The Himalayan Black Bear, Leopard, Jungle Cat, Civet Cat, Lesser Civet Cat, wild Dog, Pigmy Hog, Hog Deer, Swamp Deer, Barking Deer were most common species of animals in the forests of Western Dooars.

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<sup>116</sup> Waddell, *op.cit*, p.44

<sup>117</sup> *Ibid*; p.40

<sup>118</sup> An American physician came to India as she became mesmerized by the stories of India which she listened from her mother during childhood.

<sup>119</sup> Sunders, *op.cit*, p. 15

<sup>120</sup> *Ibid*, pp. 15-16

The skins of the animals were used in making boots and gaiters. The fore-feet of the elephants were used to make unique foot stools.<sup>121</sup> At first, the elephant's feet were cut off from few inches below the knees then the skin was separated from its flash and bones and stuffed with other things. In the elephant footstools, panther's skins were used as a substitute for velvet or other materials like it. Its feet were also used to make cheroot or Tobacco boxes, ink stands and small boxes for ladies table.<sup>122</sup> As Darjeeling was a place for the Europeans and the globe-trotter, few dingy native shops started the business of selling the skins of tiger, bears, panthers etc. In the early 20<sup>th</sup> century the tiger skins were ticketed at £20 and the price of the other animal's skins were lower.<sup>123</sup>

The colonial domination helped them to start a 'worldwide adventurous hunting expedition' to maintain the lucrative trade of furs, ivory, feathers and other animal products. Before nineteenth century, the ladies of the aristocratic families in the Western Europe wore the hat and bonnet made of feathers.<sup>124</sup> The colourful and attractive feathers with numerous shapes of the subjugated land became an inseparable part of the British women's fashion during the Victorian and Edwardian period. The feathers of the exotic birds became valued style accessories of the European fashion industries. The feathers of the exotic bird of unknown mysterious land increased the beauty of the parasols, hats, muffs, gowns, capes and fans which mesmerized the Britons whose mind was filled with the pride of having overseas possessions. Warring fashionable accessories containing the feathers of African ostrich, Indian hornbill, peacock and hummingbirds, American egrets, the Birds of Paradise of the tropical New Guinea by the wives of the ruling class in the various social gatherings provided the colonizers a sense of authority and power in the entire globe as a superior race. According to Robin W Doughty, the global

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<sup>121</sup> See Sanderson, G. P, *Thirteen Years among the Wild Beasts of India*, London, 1893

<sup>122</sup> Ibid, p. 200

<sup>123</sup> Major Gordon Casserly, p. 270

<sup>124</sup> Doughty, Robin W, *Feather Fashions and Bird Preservation: A Study in Nature Protection*, University of California Press, 1975, p. 14

trade on the animal product was disrupted during the 1920s due to the impact of the First World War and the change of the fashion sense of the European ladies.<sup>125</sup> The findings of R. J. Moore-Colyer highlighted that the annual importation of the exotic ornamental feathers was amounted 1,277,772 pounds of weight from 1895 to 1899, but the impact of the war lead to the steady decline of the plumage trade within 1915-1919 and the import dropped to 440,564 pounds weight.<sup>126</sup>

Upto the last decade of the nineteenth century, Indian Peafowl, Red jungle fowl, Indian Bustard, Bengal floriken, Brahminy Duck, widgeon, pintail duck, red crested pochard, Merganser, Blue-winged teal, whistling teal, cotton teal, Golden Plover and green pigeon were common in the district.<sup>127</sup> The Common wild goose or Jungli Rajhas (*Anser cinereus*) was found during the winter months in the char land of Jaldhaka and Tista River. It has been shot in the Jheel of Falakata.<sup>128</sup> Fowl and duck sold in the markets of Cooch Behar at 3 or 4 rupees.<sup>129</sup> In Darjeeling Crows and Sparrows were introduced by Dr. Campbell. Lately, many English birds were imported in Darjeeling and set at liberty by the Deputy Commissioner and the funds for this purpose provided by the Darjeeling Improvement Fund.<sup>130</sup> While staying in Darjeeling L. J. Mackintosh spent his pastimes with the aboriginal Lepchas to gather in-depth ornithological

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<sup>125</sup> Ibid, 1975, p. 19

<sup>126</sup> Moore-Colyer, R. J, 'Feathered Women and Persecuted Birds', Rural History, Vol. 11, April 2000, pp. 57-73. Also mentioned in Doughty, Robin W, *Feather Fashions and Bird Preservation: A Study in Nature Protection*, University of California Press, 1975, p. 19

<sup>127</sup> *Sunders, op.cit*, p. 17

<sup>128</sup> Ibid, p. 16

<sup>129</sup> Ibid, p. 25

<sup>130</sup> Dozey, *op.cit*, p. 92

knowledge about the birds of Darjeeling and Terai.<sup>131</sup> He collected a pile of information about birds of the Ghoom forest, Birch Hill and the forests of Terai. It was not that he was only intended to romanticizing the surrounding of the unknown forests of the Orient, he also criticized in a partial way about the indiscriminate felling of trees and reckless hunting in these regions.

In 1915 Darjeeling Natural History Museum was opened for the exhibition. The life history of different types of beetles, bugs, spiders, scorpions and varieties of birds, collected from the surroundings of Darjeeling as well as from Siwalik region were exhibited in its gallery. The planter like Mr. Leicester in Pashok had some rich collection of the butterflies as the place abounded with the butterflies.<sup>132</sup> According to Stephen Mosley, the Natural History Museum was founded to ‘advertising human mastery over the animal kingdom.’<sup>133</sup> Sometimes the peoples were appointed to hunt on behalf of the Natural History Museum in London and Smithsonian Institute in Washington for enriches their collection with the ‘stuffed creatures from around the globe’.<sup>134</sup>

### **Limitations of Conservation**

The wild animals were protracted within the forest but outside the forest animals were not protracted. The colonial government was reluctant to save the wildlife outside the forest. Major Gordon Casserly wrote: “...Our joy to saw a herd of wild buffaloes. As we were not in Government forest these were fair games for the hunter...”<sup>135</sup> Most of the time the wild animals unaware of the danger enter in the harvesting areas of the nearby villages in search of food and faced a brutal death in the hand of the newly settled villagers.

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<sup>131</sup> Mackintosh, L. J, *op.cit*, 1915, p. 1

<sup>132</sup> Freshfield, Douglas W. *Round Kanchenjunga*; 1903, p. 51

<sup>133</sup> Mosley, Stephen, *The Environment in World History*, Routhledge, London and New York, 2010, p.23

<sup>134</sup> *Ibid*, p.23

<sup>135</sup> Casserly, Major Gordon, *op.cit*, p. 190

In the forest of the Dooars region, the government law about the reserved forests was not strictly maintained by the Maharaja Nripendra Narayan of Cooch Behar. In March 1901 when he unable to bagged the beasts in the outside of the reserved forest, he entered into the forest and killed a rhino in a single beat.<sup>136</sup> In February 1903, Maharaja along with Maharani Sunity Devi went to the Jorai nullah, Sunkos, and Borshikata for shiker expedition where they hear about the albino bull buffalo and planned to kill it. Maharaja in his shikar diary wrote: ‘...on the 19<sup>th</sup> we went to the Reserves after him towards Bachamari and Salmara ... after lunch, we got on his tracks and followed him up into a bit of *null*, where he was killed.’<sup>137</sup> In April 1904 Lord Curzon joined the hunting expedition of the Maharaja. They moved through the Madari hat and beat the Reserved Forest at Tondu they got two Tigers and one black Leopard but the Viceroy able to kill one of them with a single shot and they also bagged a black Leopard or panther. After sending the proposal of the partition of Bengal to the Secretary of State in London at 2<sup>nd</sup> February 1905, Lord Curzon the Viceroy of India went to the Dooars for *Shikar*. In the presence of the forest officials, the *shikar* party shoots ten tigers.<sup>138</sup> In February 1907, Earl of Minto along with Maharaja and Mr. Perrée, the forest officer conducted *shikars* in the forest reserved.<sup>139</sup>

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<sup>136</sup> Maharaja, *op.cit*, p. 287

<sup>137</sup> *Ibid*, p. 356

<sup>138</sup> *Ibid*, p. 390

<sup>139</sup> *Ibid*, p. 424

## Chapter VII

### Life and Leisure of the Rulers

The variation in the climatic conditions of Darjeeling and Western Dooars reflected in the livelihood of the British citizens dwelled in these regions during the period of colonial domination. In the Nineteenth Century like all other provincial hills stations of British India, Darjeeling was developed as a summer residence of the Lieutenant-Governor of Bengal Province as well as the Europeans living in Bengal and Burma. Along with the growth of Darjeeling the British officials realized the strategic and commercial prospect of the Bengal Dooars and drag out the Bhutanese from the foothills to expand control over the land between Tista to Sankos River. Soon the forested lands of the Western Dooars were converted into the profit generating tea estates and the area became the working place for the European planters and native workers. From 'military depot' the Darjeeling transformed into 'a pleasure colony' for the British. On the other hand, Western Dooars was transformed into 'the commercial place for the British bachelors.'<sup>1</sup> The hills stations in India gave the British men and women a particular westernized cultural environment to socialize with each other in their own familiar atmosphere which was not possible in the hot and humid alluvial plains crowded by millions of natives. The British social feelings revived in the refreshingly pure and cool mountain air of the Himalayas. The mountain air rejuvenated the tired British civilian and soldiers in the magnificent landscape of the Darjeeling hills. This chapter is aimed to find out how the natural environment of the Darjeeling and Western Dooars impacted on the socio-cultural structure of the Europeans living in India to serve the interest of their motherland. The climatic condition in the Darjeeling hills provided them the opportunity to follow the same cultural tradition in which they were born and brought up in their small island. But in a more calculated and sophisticated way they dealt with the adverse climatic condition of Western Dooars. While living in the Malarious climate of the Western Dooars and *Terai* for tea and timber business many of the European planters and

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<sup>1</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914, p. 262

officials and the native labours died due to malaria and Black water fever. This chapter will highlight how the colonial lifestyle was changed in the Dooars to deal with the adversities they faced in the foothills of the lofty Himalayas. The evidence of this chapter mainly gathered from the colonial guidebooks, memoirs, autobiographies, travelogues and also from government records to focus insight the life and leisure of the Anglo-Indians lived or posted at Darjeeling and Western Dooars.

Dane Kennedy's study on the Indian hills stations shows the environment of the Indian 'change of air station'; 'Convalescent Depot' or 'sanatorium' replicated the social institutions and cultural norms of their homeland.<sup>2</sup> To him, the formation of the hills station was associated with the memoirs and the desires of the British rulers in the Orient and the physical features of the built environment was molded by the social environment of the British men and women living in the Indian highlands. According to Cecilia Leong-Salobir, European ideas for devising places for rest and recreation in the tropical colonies were largely derived from nineteenth-century notions of race, of the need to isolate themselves as rulers from colonized, the home leave policy of the colonial administration and a nostalgic longing for the home country.<sup>3</sup> But in the case of Dooars, till now no one has discussed the impact of the natural environment on the life and leisure of the European civilian stationed at Dooars. Historians, sociologist, anthropologist and economist to some extent neglected the history of the colonial socio-cultural environment in the Western Dooars.

In nineteenth century colonial India, the Gangetic plains of Bengal compressing paddy fields, scattered native huts and huge rivers was a monotonous place for the British civilian. To the Sahibs and Memsahibs, Bengal plain was a place of different tropical insects, diseases and dirty natives with their strange habits. But the accumulation of enormous capital and power could not overshadow the memories of their homeland where landscape was dominated by lush green field,

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<sup>2</sup> Kennedy, Dane, *The Magic Mountains: Hill Stations and the British Raj*, University of California Press, Berkeley, p. 88

<sup>3</sup> Leong-Salobir, Cecilia, *Food Culture in Colonial Asia: A Taste of Empire*, Routledge, 2011, p.88

cascading rivers and picturesque Mountains. Following the feelings of the British civilians, the colonial government decided to invest capital for the development of the Darjeeling as a hill station for the British civilian and the soldiers, which was away from the 'heat', 'disease', 'dust' and 'native'. The formation and the growth of the hill station projected two types of British feelings. In the first phase it was a cool place in the sweltering hot and steamy tropic and as the station got their popularity among the colonial elite class and the native Maharajas, it got 'an expression of the Britishness of the Empire' and 'a symptom of absolute power'.<sup>4</sup>

Colonial Darjeeling symbolized the Victorian values of the nineteenth century Britain. On the other hand, the plantation areas developed in the Dooars reflect the hierarchical differences between the colonizer and the colonized. As a derivative of western colonial experience, the hill station's institutional complex and morphological images Christian churches, private schools taught in English languages, the administrative headquarter of the district and state government, and the creation of recreational facilities usually associated with the British country life or an English spa.<sup>5</sup> Both the natural as well as the built environment of the Darjeeling had a positive psychological impact on the Anglo-Indians who lived in an adverse climatic condition to maintain their powerful control over the 'profitable Overseas Empire'. The town plan of the Darjeeling and the tea garden localities of Dooars reflected the difference between the ruler and the ruled, power of the core and weakness of the periphery as well as the racial, socio-cultural and the religious differences of the colonizer and the colonized.

The hills station of Darjeeling and Kalimpong became the perfect replica of Mary Russell Mitford's (16<sup>th</sup> December 1787- 10<sup>th</sup> January 1855) famous creation '*Our Village*' (1825).<sup>6</sup> She

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<sup>4</sup> Morris, James, *Heaven's Command*, pp. 269-70

<sup>5</sup> Kenny, Judith T, *Climate, Race and Imperial Authority: The Symbolic Landscape of the British Hill Station in India*; *Annals of the Association of the American Geographers*; Vol. 85; No. 4; December; 1995; p. 694

<sup>6</sup> Mitford's in her famous book '*Our Village*' gave a detailed sketch of ideal English village. It was based on the life in three miles cross, a hamlet in the parish of Shinfield, near Reading in Berkshire where she lived.

wrote that the main characteristic of the perfect English village marked by the ‘delightful residence’ of a small locality where the face of the inhabitants familiar to each other like the flowers in their own garden and cordially connected to each other. To describe her brilliant and happy childhood days in Kalimpong, Shirley Odling narrated that the Kalimpong was a village where all the dwellers know each other and stand together in the happiness and grief which was quite similar to the Mitford’s description of an ideal village.<sup>7</sup> On the other hand, the life was extremely dull for the Anglo-Indian families living in the Tea Gardens of the Western Dooars. Shela Ferguson who had spent first five years of her life in the Leesh River Tea Estate of Pillans Hat post office in Bengal Dooars mentioned about the loneliness felt by the Anglo-Indian families living in the remote areas of the tea gardens of Dooars.<sup>8</sup> The outdoor activities of the European in Western Dooars depend on the seasons. In summer and monsoon, the family of the British managers and engineers were forced to live within the barrier of the mosquito nets because of the attack of deadly Malarious mosquitoes. In many cases, the Anglo Indian Bungalows in Dooars had Verandahs and rooms covered with mosquito nets.<sup>9</sup> Only in the winter months they could enjoy the outdoor activities under the sun without the fear of fever and other diseases.

In terms of the leisure and livelihood, Darjeeling became a symbol of a perfect ‘English pleasure capital’ in the Orient where the administrative officials and their families got the opportunity to socialized with each other in a familiar atmosphere like their motherland. In the late Victorian and Edwardian periods, six million Britons immigrated to the New World or to the colonies.<sup>10</sup> In

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<sup>7</sup> Flaming, Laurence, *The Last Children of the Raj: British Childhood in India 1919-1939*, Vol. I, The Radcliffe Press, London, 2004, P.254

<sup>8</sup> Flaming, Laurence, *op.cit*, P. 264

<sup>9</sup> Christophers, S. R. Bently, Dr. C. A, *Malaria in Duars*, Simla; 1911 also mentioned about the precautions adopted by the British planters in the Dooars to deal with the deadly Malarious fever.

<sup>10</sup> Mohanram, Radhika, *Imperial White: Race, Diaspora, and the British Empire*, University of Minnesota Press, 2007, p.27

the newly conquered less known countries the British women and the children were compelled to live in the lock and keys because of their protection from deadly disease, dirty natives, furious animals and adverse climate.

The life of the British women in India was extremely dull. While their husband out for the work, they became confined in a little society with less amusement. In the morning they may be go for a ride, in the afternoon they shut her selves in the bungalows to escape from the heat, in the cool evening they came out to play tennis or golf and in the they preferred to go to the Club, sit on the lawn, talks scandal with her female friends or flirts with her boyfriend. While in Britain the married women spent more time for the family doing different domestic works. In India gossip and scandal became the main focus of discussion. Before the foundation of the hill stations the British women stayed with their husbands even in the extreme heat. But as the summer resorts came into existence, the married women as well as the maidens preferred to fly to hills. The long term separation due to the climatic condition of the tropic badly affected the conjugal life of the Europeans in the East. In Victorian ideology, the women were seen as delicate and their world was restricted within the household.<sup>11</sup> But the foundation of the hills station changed the lifestyle of the Anglo-Indian families living in the tropical South Asia. Soon the British families started moving towards the newly constructed 'mini England' in the Indian highlands to experience temperate climate in the tropical new world.

In the plains, life was difficult for the women and children due to the unbearable summer, the extreme level of humidity and different types of insects. The regular supply of the desirable food for the Europeans in the alluvial plains was not possible. In contrary to the alluvial floodplains of India, the Himalayan Mountain possessed the perfect temperate climate and the naturally grown plants and herbs familiar to the British ruling class. According to Cecilia Leong-Salobir, the environment of the hill stations was transformed not just for aesthetic reasons but also for food consumption for the itinerant European hill population.<sup>12</sup> Major Garstin as early as the late 1830s marked Darjeeling as the perfect place for the introduction of the western fruits and veggies from

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<sup>11</sup> *Idid*, p.27

<sup>12</sup> Leong-Salobir, Cecilia, *op.cit*, p.92

which the Britons were deprived in the tropical South Asia. He noticed different types of edible barriers, nuts, wild cherries and Pear in the mountain inferior to the species found in the Europe, but mentioned about the superior quality of the dairy products in hills than the plains.

The familiar atmosphere of the hills stations aroused artistic feelings among the family members of the British officials and planters. The famous British romantic poet Percy Bysshe Shelley (1792–1822) in his *'Essay on Life and Nature'* shows that the beautiful scenery of mountain, river, and flowers often delighted the enthusiast people. The natural environment has a deep and profound impact on the psychology of the people living in a particular region. The natural as well as the build environment of the Darjeeling helped the alien ruler to think and act in a different way in which they were not habituated in the plains. In Darjeeling Fine Arts Exhibitions were organized to display the paintings of the European citizen in India which reflected their perception about the natural environment of the colonized land. The divine natural beauty of the mighty Himalayas mainly 'Morning-Mists', enchanting flowers like rose, poppy and orchids, splendid landscape including the tea gardens in the hill slopes increasingly became the theme of their painting. A distant view of snowy range as Sir Douglas W. Freshfield felt that had a strange power to move all poets and persons of imagination.<sup>13</sup> The mesmerizing clear blue sky, internal snow capped mountain, lush green valley and the cascading river had a psychological impact on the human who were habituated with the adversities of the tropical climate of the South Asia and nostalgic about their native island. The picturesque landscape influenced the army man to settle down in Darjeeling as the planter and turned him into a poet. Captain J. A. Keble who was an army man, settled down in Darjeeling as the manager of Happy Valley Tea Estate and gave a poetic description of eternal snows of the mountains, forested hill slopes, pure mountain air, also of the man made high altitude roads, splendid Darjeeling Himalayan Railway, evergreen tea gardens, villas, cottages, clubs, hotels and gardens accompanied by European flowers and amusements like glee singing, concerts, amateur theatricals, musical plays, band playing, races etc. It was the power of the natural beauty and climate which shaped and transformed the mind of the individuals and their feelings were reflected through their artistic creations. The famous

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<sup>13</sup> Freshfield, Douglas W, *Round Kanchenjunga: A Narrative of Mountain Travel and Exploration*, Edward Arnold, London, 1903, p.40

Russian painter Verestchagin once visited Darjeeling in the colonial period and being utterly mesmerized by the beauty of the hills, he unable to paint the beauty of the landscape.<sup>14</sup>

### **Missionary**

After the Charter Act of 1813, the view of the colonizers on Indian subcontinent took a new turn and the Christen missionaries started their civilizing mission. The European servants who could not afford to send their children in their native land also supported the foundation of the schools for their children. Within few years a large number of Convent schools were founded with the aim to provide the European and Anglo-Indian Children that type of education and upbringing to which the parents had been accustomed in their native country.<sup>15</sup> At the beginning, the schools of the hills station had a firm connection with the renowned public schools and colleges placed in abroad. Among the schools, The Victoria Boy's, The Dow Hill's Girl's, the St. Paul's School and Loreto Convent provided the children a good education up to the English standard. The aim of the school was to produce sophisticated batches of the new generation of Englishman who possessed the respect for the culture and the heritage of the Victorian Britain. In many cases, the European managed boarding houses became a prominent place for keeping the European children safe and secured in the absence of the parents. In the sophisticated Victorian society of Darjeeling, few enterprising European ladies opened the boarding houses in the hills. A guide book of Darjeeling in the 1880s suggested the 'ladies with delicate children were confidently to go to "Rockville", as Mrs. Houghton, the proprietress, makes children a specialty'.<sup>16</sup> The boarding houses like "Rockville", "Castleton House" provided the children a perfect European environment which helped them to know about the manners and the culture of the British society. In August 1898 a portion of forest land was granted to the Calcutta Christian School

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<sup>14</sup> Younghusband, Sir Francis (1921), *Heart of Nature*; p. 95

<sup>15</sup> Dash, Arther Jules *Bengal District Gazetteer : Darjeeling*; Government Press; Alipore; 1947; p.271

<sup>16</sup> O'Brien, R. D, *Darjeeling: The Sanitarium of Bengal, and Its Surroundings*; W. Newman & Co., LD., 4, Dalhousie Square; Calcutta; 1883, p.25

Society.<sup>17</sup> The Churches like Church of England, Church of Rome founded their huge cathedrals in the hills. The Christine missions such as Scandinavian Mission, Scotch Zenana Mission started self appointed civilizing activities in the mini replica of Britain in India.

### **Children and Christianity**

In the fresh cool morning air of Darjeeling, the British citizens could sense the European experience in Indian land. In the hills of the Darjeeling, the climate and idea of race shaped the cultural ecology of the colonial life. The '*Darjeeling Guide*' (1854) mentioned that the climate was the most important of all things in Darjeeling and had strikingly beneficial effects on the European children.<sup>18</sup> In 1850 Sir Joseph Hooker described Darjeeling as a 'paradise for the European children'.<sup>19</sup> He further projected that the children born and reared in Darjeeling were quite a chubby, bright, active and happy almost like the Europe, while the children brought up in the plains of Bengal suffered from anemia, flabby, pale, fretful, and disinclined to do anything but moan, and worry all who have anything to do with them. Dr. J. T. Pearson, the Medical officer in Darjeeling wrote that the British as 'a race of healthy girls and hardy boys'. In the tropical colonies, the situation was quite different, but the Darjeeling provided the opportunity to the British boys and the girls to groom in a cultural environment which was almost like their own motherland.<sup>20</sup> It was possible only due to the creation of separate social space for the colonizers in the hills.

Laurence Flaming's *The Last Children of the Raj: British Childhood in India*, Vol. I-II provided a valuable collection of the memories of the Anglo-Indian children born between 1919 – 1950 in British India and spent their adolescence in the tropical colony. Their memories provided some excellent information regarding the cultural environment in the Darjeeling and Kalimpong,

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<sup>17</sup> File no. 10R/5, No. B. 7-12, August 1998

<sup>18</sup> *Darjeeling Guide*, 1854, p.28

<sup>19</sup> O'Brien, R. D, *op.cit*, P.24

<sup>20</sup> *The Englishman*, 12 March;1839

particularly in the boarding schools of Darjeeling; the British children were able to learn about the glorious history, culture and tradition of their native land. Different churches took the moral responsibility to educate the Anglo-Indian children in the cultural environment of their country in the highlands of India. In Darjeeling, most of the boarding schools were controlled by the Church of England, Roman Catholic Church etc.

Since her childhood, Dr. Arley Munson wanted to work for the overall improvement of the Indians who were living in, as she believes in the jungle. She went to Darjeeling in the first decade of the twentieth century and observed that there were several good English schools in Darjeeling, and the climate agrees so well with the Western children that the schools have a large attendance of rosy-cheeked boys and girls, bright-eyed and energetic, who form a marked contrast to the pale, hollow-eyed, listless English children of the plains.<sup>21</sup>

### **Life of European in Darjeeling and Western Dooars**

Major Gordon Casserly who was an army man, serving the Empire in the remote outpost at Buxa, possessed a keen knowledge about the European life in Darjeeling and Dooars wrote: “the life in an Indian Hill Station is unlike anything that we have in England.”<sup>22</sup> In India all the Britons including the Viceroy, Governor, soldier, civil servant, judge, lawyer, railway staff or the merchants were compelled to do their duty to dominate the diverse people of the vast subcontinent. But in the hills, they enjoy well-earned rest. The hills station helped to develop a separate social class for the British. It gave them the chance to know each other in the various social gathering like the dance party, dinner party, garden party, bachelor’s party and regardless of private inclinations. In the afternoon they spent time in the in the tennis court, joined the conversation of the tea table in the evening, the night spent in the westernized sophisticated atmosphere of ball-room.

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<sup>21</sup> Munson, Arley, *Jungle Day, Being the Experiences of an American Woman Doctor in India*, D. Appleton and Company, 1913; p. 218

<sup>22</sup> Casserly, Major Gordon, *op.cit*, p. 267

The climatic difference between the Indian plains and hills was reflected in the lifestyle of the memsahib living in the Indian subcontinent. The memoirs and the travelogues of the nineteenth century portrayed the existence of two categories of British memsahib in India. One who lived with their husband in the bungalows of the army barracks in the plains far away from the dirty natives. Another category of women lived more colourful social life in the highlands of India far from their husband and spent plenty of times in the clubs, theater and the race course in the Indian highlands. As Foucault has argued that in nineteenth century British men and women were many cases quite fascinated with sexuality, which they discuss in endless details. The cultural environment of the Darjeeling hills some time strongly criticized by the British officials and citizens. To them the group of ladies escaped the burning heat of the plains and leaving their poor husbands to earn money in the crowded cities, while they enjoyed the hot steamy summer up in the cool mountains.<sup>23</sup> So the bachelors, who could more easily afford to take leave than the married man, were at their service to ride, play tennis, dance, and flirt with the married ladies.<sup>24</sup> In the balls and the clubs of Darjeeling, the ‘cozy corners’ or ‘Kala Jagahs’<sup>25</sup> was developed during dance to ensure absolute privacy for the occupants.<sup>26</sup> In the ‘Civil Service Ball’ organized in the Amusement Club or in Gymkhana Club, the wives of the host supervised all the arrangement along with the set up of the ‘Kala Jagahs’ under the stairs.<sup>27</sup> The similarity in

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<sup>23</sup>In Darjeeling, the British women who came to spend the summer months and remained temporarily separated from their husbands known as ‘grass widows’. They became the prominent feature of the Anglo-Indian society of 19<sup>th</sup> and 20<sup>th</sup> century colonial Darjeeling.

<sup>24</sup> Casserly, Major Gordon, *op.cit*, p. 269

<sup>25</sup> These ‘Kala Jagahs’ or the ‘Dark Places’ were responsible for the growing ‘hill gossip’ or the scandal stories and half jokes among the British men and women.

<sup>26</sup> *Truth*; London; 14<sup>th</sup> October; 1908

<sup>27</sup> On anxiety about the European women sexuality and the man sexual liaisons with the native women see Kenneth Ballhatchet’s masterly *Race, Sex and Class Under the Raj* (1980), *Original Papers Relative to the setting up of a Society in Bengal for the Protection of the Orphans of Officers* (1784)

temperature between the British Island and Darjeeling provided the European men and women a unique opportunity to mix up with each other in a subjugated land where they were less in number in comparison to the colonized native masses. According to Gilbert, the British women in India were treasured as precious stones. And for the self-same reason - for their scarcity.<sup>28</sup> In India paucity of the British women affected the men-women relation in the subcontinent. In India the British men were involved in the immoral relation with the British women. In those days a custom developed among the British girls, if they unable to find out their husband in their own country, they choose the voyage for India for getting the life partner. Because in the subcontinent a large number of British bachelors available. To describe his first arrival in Calcutta, Mr. J. H. Rivett- Carnac who was the Assistant Magistrate of Midnapore mentioned in his autobiography: “In those days the fortnightly stemmer brought not only the mails, but a concentrated stream of members of European society for Calcutta and the rest of the presidency, and early cold weather boats generally contained a considerable number of young ladies, known by the name of ‘spins,’ who, coming out to join their families in India, were in due course to become manage into society as the wives of the eligible bachelors of the presidency.”<sup>29</sup>

Along with the expansion of the British domination in the sub-continent, the colonial cultural environment was developed by the British working class in the colonies. The club houses were formed in every civil and military station in the colony as a place of get-together for the Europeans. In any towns in India the European club was the spiritual citadel, the real seat of the British power, and the nirvana for which for which native officials and millionaires pine in vain.<sup>30</sup> Charles Alan referred that the clubs were basically an ‘Anglo-Indian institution’ and the ‘hub of local society.’<sup>31</sup> Cecilia Leong-Salobir in her book *Food Culture in Colonial Asia: A*

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<sup>28</sup> Casserly, Major Gordon, *op.cit*, p. 275

<sup>29</sup> Rivett- Carnac, J. H, *Many Memories of Life in India, at Home, and Abroad*, William Blackwood and Sons, London, 1910, pp.28-29

<sup>30</sup> Orwell, George, *Burmese Days*, 1934, p.14

<sup>31</sup> Allen, Charles, *Plain Tales from the Raj*, Abacus, 1975, p.116

*Taste of Empire* mentioned the club as ‘an extended home’ of the Anglo-Indians in the colonies.<sup>32</sup> In the civil and the military stations of colonial India, clubs symbolized the socio-cultural aspects of the Anglo-Indians life. The three institutions of hills stations, clubs and rest-houses, with their customs and codes of conduct, reinforced those of the carefully guarded home against the encroachment of the colonized environment and its people.<sup>33</sup>

In the late Nineteenth century, Darjeeling was transformed into most happening places in the Indian subcontinent. The aesthetics of the Darjeeling was almost like an ‘Ordinary Alpine Town.’ The Europeans were mesmerized by the unique resemblance of Darjeeling with the European country sides. In the comparatively cool summer months in Darjeeling, the European people loved to spend their days in the sunlight and the night in the clubs. In the hills stations of India club became a meeting place of the Europeans, place of exciting sports, dance, drinks and all kind of fun.<sup>34</sup> In the cool climate of the hill stations, the British officials and their wives joined in numerous parties and feasts to try out the latest trend in European fashion and to get socialized and gain professional profits from a classy gathering. These parties of the Orient often viewed as ‘mode of climbing up the social and career ladder’.<sup>35</sup> Due to the urgent need for expansion of the clubs in the metropolises many of the Indians were allowed in the clubs in the twentieth Century. The Willingdon Club in Bombay, the Madras Club in Madras and Calcutta Club in Calcutta were mixed clubs compressing both Indian and European members. The nature of the colonial clubs and its cultural environment changed along with the political and economic changes in the subcontinent. The colonial club houses contained accommodation for the

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<sup>32</sup> Leong-Salobir, Cecilia, *Food Culture in Colonial Asia: A Taste of Empire*’ mainly deals with the colonial culinary history of Malaysia and Singapore.

<sup>33</sup> Ibid, P.10

<sup>34</sup> On club culture in colonial India see Mrinalini Sinha’s *Britishness, Clubbability and the Colonial Public Space*, 2001

<sup>35</sup> Nayar, Pramod K, *Days of the Raj: Life and Leisure in British India*, Penguin Books, 2009, p.127

members, sitting room, bed room, ball-room, billiard room etc which symbolized the utilitarian nature of the clubs in the colonies. The Gymkhana Club was ‘a sort of social club-cum-skating arena, casino and cocktail bar’ provided facilities for tennis, swimming, putting and indoor games such as badminton and in the social side, it had a restaurant, dancing, bridge rooms, billiards, mah jong and other similar activities.<sup>36</sup> A poem of Captain J. A. Keble, named ‘Darjeelingiteisticisms’ boldly highlighted the cultural and social life of the Europeans in the Darjeeling hills. During the grand holy days i.e., 15<sup>th</sup> April to 15<sup>th</sup> October the British military general in India enjoyed their annual escape at the Queen of the hills.<sup>37</sup> At that time a large number of the Europeans participated in the Medical Balls, Civil Service slow dances, Empire Day Ball in Gymkhana Club and Armature Club in Darjeeling. The newly meet couples gathered in the ‘Shameful, hidden, dark places under the stairs’ known as ‘Kala Jagahs’ and stimulated the gossips among the Britons living in India.<sup>38</sup>

In the latter half of 19<sup>th</sup> century, the families of the European working class in the Mount Abu, Coonoor, Kodaikanal and Darjeeling introduced a culture of the weekend picnic in the hills. In the holydays they spend plenty of times in the get-togethers or picnics or weekend trip in the slop of the mountain to experience the thrill of adventure in the Orient. While roaming around the ‘Queen of Hills’, Waddell saw a picnic party in Darjeeling enjoying in the sunlight and cherishing the experience of colonial life where the Memsahibs were enjoying the ride in ‘*Dandies*’ which were carried by three to four broad soldered Hillman.<sup>39</sup> The nearby places of Darjeeling in the lap of nature the Britons enjoyed the sun rays in the chill winter and hung out with the friends and family. In a homely European atmosphere, the Anglo-Indian ladies and the children were permitted to walk down in the hill roads surrounding by huge pine, Oaks, Birch and chestnuts. Whereas their movements in the plains was restricted to the military barrack or in

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<sup>36</sup> Flaming, Laurence, *op.cit*, P.289

<sup>37</sup> Keble, Captain J. A, *Darjeeling Ditties and other poem*, p. 22

<sup>38</sup> *Ibid*, p. 14

<sup>39</sup> Waddell, L. A. *Among the Himalayas*, 1899, Mittal Publications, Delhi, Reprinted 1979, p.40

the surrounding of the European residence but the hill stations give them the opportunity to become socialized with each other.

The forests were cleared to construct the clubs in the Darjeeling and Western Dooars. The lease of 32 acres of land in Senchal forest was made to the Golf Club.<sup>40</sup> The grant of the forest land was given to prepare the parade ground for the Darjeeling volunteers near Ghoom.<sup>41</sup> The stately trees of the flat surface of the Birch Hill Park were denuded to build the third recreation ground.<sup>42</sup> The cricket ground attached to the Government House and Race Course at Lebong were built in the encroached forest lands.

The job of the planters was extremely difficult in the Terai and Dooars. They had to fight not only with the diseases and adverse climatic conditions but also with the furious wild beast. At the early stage of the plantation in Dooars, forest tracks were wiped out by the native labours for commercial plantation. As the chief of colonial commercial expansion in the remote 'uncultivated waste' i.e., forest, a planter in the second half of the nineteenth century had healthy physic and a fearless mind. The planters of the Bengal Dooars were hard riders, good shots, and keen sportsmen.<sup>43</sup> On the other hand, in the forested and Malarious Dooars the British planters and their families had nothing for recreation. But along with the clearing of the forests and expansion of plantation, the British planters of Dooars became interested in building their clubs where they meet once or twice in a week for mingling with each other and play tennis, polo and enjoy dance parties. Major Casserly mentioned about a small wooden shed of the club with tennis ground near the Hatipota on the bank of Kaljani River. He further noticed the existence of

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<sup>40</sup> File No. 6F/2, No. 2- 9, March 1906 (Revenue Department, Forest, WBSA)

File No. 6F/1, No. 2- 9, March 1906 (Revenue Department, Forest, WBSA)

<sup>41</sup> File No. 6F/1, No. 44- 45, January 1906 (Revenue Department, Forest, WBSA)

<sup>42</sup> Dozey, E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.101

<sup>43</sup> Casserly, Major Gordon, *op.cit*, p.59

other club houses of the planters near the new Raidak and another in the other side of the river.<sup>44</sup> In the Victorian era, the palatial Club-Houses of Pall Mall was symbolized a perfect place for the relaxing of the British citizen after a herd day of work. In Dooars, the colonial club houses had a lack of facilities, though for the European planters these were the places which make them fell their own cultural environment. To describe the social life of her parents in the Leesh River Tea Estate in Pillans Hat, Sheila Ferguson, a daughter of the planter reminded that the Britons meet twice a week in the nearest clubs where the men enjoyed polo and the ladies participated in tennis in the daylight and in evening they would entertain and dance.<sup>45</sup>

The amusement of the Europeans in Darjeeling included cricket, hockey, golf, polo and dressed in gala attire which added picturesqueness to the scenery. The indoor amusement included Bioscope Shows at the palace of Varieties, dancing, tableaux vivants, theatricals, tennis at the squash court in the Amusement Club, flower, dog and horse shows and carnivals. The 'ghost dance' was organized in the Gymkhana Club at which the guests had to appear in the white, fantastic costumes, except one normal. The ball-room of the club was decorated in a ghostly manner, the ceiling and the walls were adorned with snakes, spiders, lizards, owls, bats and all manners of uncanny things.<sup>46</sup> The annual sports of the St. Joseph College was a refreshing event in the hills where 500 sahibs and memsahib watched almost 3,000 paharies dressed in gala attire performed in the program and added a picturesqueness to the scenery.<sup>47</sup> For recreational purpose a flat forest patch in the Birch hill Park which was recognized by the native as a sacred place for the ages was denuded and transformed into a cricket ground.<sup>48</sup>

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<sup>44</sup> *Ibid*, pp. 191-192

<sup>45</sup> Flaming, Laurence, *op.cit*, P.266

<sup>46</sup> Dozey, *op.cit*, p.117

<sup>47</sup> *Ibid*, p. 115

<sup>48</sup> *Ibid*, p. 101

The Lieutenant Governor's Cup, Lhasa Plate, Cooch Behar Cup, Chowrasta Handicap, The Curio Cup, Commissioner's Cup, The Carlton Cup and various other trophies were declared to promote the race in Darjeeling and entertained the European civilians. Major Gordon Casserly who observed the Anglo-Indian cultural environment in the Darjeeling wrote that the races at Lebung were a sporting and a fashionable event. Before the beginning of the race, many Europeans came to the miniature race course which was built on the cut away hill-top by rickshaws or on ponies.<sup>49</sup> "The excitement of the crowd of race-goers of many shades of colour, the keenness of the plunger on the totalisator or with a few bookmarkers, and the gaiety of the pleasure seekers, could not be exceeded at Ascot or Epsom."<sup>50</sup>

Games, race, dances, theatricals, and all such entertainments in European style abound in Darjeeling hill. In the morning and forenoons, the roads were thronged with riders or ladies in chairs or rickshaws, going to pay calls or on their way to luncheon-parties.<sup>51</sup> In the afternoon the polo ground, the tennis courts in the ground of Amusement Club became full with the European. In the plains, the night life was basically dull, but in the hills, it always exciting for the Europeans. Major Casserly gave a lively description of the life in Darjeeling and narrated that the skating rink inside the Amusement Club was thronged in the mornings, and when dusk falls, the lamps were lighted and the tea-tables outside the polished floor. In this colonial cultural environment, the British ladies and gentlemen gossiped over various social issues going on in the comparatively small British settlements were the people know each other very well. At night dinner parties in the bungalows, restaurants and hotels, dances and theatrical at the Club, filled with the British.<sup>52</sup> A seemingly endless series of social calls, teas, strolls, picnics, dinners, balls,

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<sup>49</sup> Casserly, Major Gordon, *op.cit*, p. 274

<sup>50</sup> *Ibid*, p. 274

<sup>51</sup> *Idid*, p. 268

<sup>52</sup> *Ibid*; p. 268

fetes, races, amateur theatricals, and other festivities dominated the daily routine of residents of Darjeeling.<sup>53</sup>

The Lieutenant Governor's mansion was established in Darjeeling in 1879. The governor along with his staff and other distinguished Europeans including the planters, speculators, merchants of Darjeeling formed a separate social space which replicated the most sophisticated and up to date English society in India. The Shrubbery had a large ball-room which spread pleasure among the European official and the Indian upper classes of Darjeeling. The sound of the English tunes and music, the laughter of the European ladies and gentlemen may have been shattered the silence of the dark nights in the hills. In the garden party of the Government House, the tune played by the state band always charmed the ears of the Europeans. After the party, the Britons called their rickshaws, ponies and dandy to reach their home.<sup>54</sup> In various parties of the Lt. Governor of Bengal's house in Darjeeling, members of the Cooch Behar Royals' participated enthusiastically.<sup>55</sup> Sometimes party was organized to show the unity, pride and otherness of the ruling race in a colonized land.

The hills station of Darjeeling had the reputation for having an up to date cultural community which was devoted to performing dramas, plays and concerts. The members of Cooch Behar Royal family along with the European dwelled in the Darjeeling including the wives of the higher officials, solicitors, daughter of the captain, District Superintendent of Police, Royal Engineers, members of the Indian Army, teachers of the schools, Medical corps, Deputy Inspector General of Police took active part in the theatricals.<sup>56</sup> The Town Hall, Rink Theatre was the centre of cultural activities in Darjeeling. The latest London Music plays were portrayed

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<sup>53</sup>Kennedy, Dane, *op.cit*, p. 4.

<sup>54</sup> Keble, Captain J. A. K, *op.cit*, pp.75-76

<sup>55</sup> *Ibid*, p.76

<sup>56</sup> Captain J. A. K. Keble in his '*Darjeeling Ditties and Other Poems*' (1912) have mentioned about the list of persons with their designations who participated in the theatricals of the Darjeeling.

in Darjeeling. After the death of Maharaja Nripendra Narayan Bhupbahadur of Cooch Behar, the Englishman reported about his great interest in the theaters and wrote that the musical comedies staged by him in Darjeeling will always be remembered for the beauty of their general excellence all round.<sup>57</sup> The British plays like “A Country Girl”, “The Geisha”, “Pygmalion and Galatea”, “The Girl behind the Counter” were portrayed in the theaters of Darjeeling to entertain the colonial officials and their families in the transplanted colonial cultural environment of Darjeeling.

The segregation between the colonized and the colonizers reflected in the landscape of Darjeeling. Indian portion of the town was situated below the market square. The native bazaars of the hills were another attraction for the sahibs and memsahib. The indigenous people of the hills were viewed as the savage. In most of the cases the sophisticated British civilian and the administrator maintain distance from the native people of the colony.

The fishing with the rod was the favorite pass time for the British. In Teesta river main fishing areas were at the junction of the Rangneet, Melli, junction of Rongli and Sakankhola and on the other hand the major fishing areas in the Rangeet River located in Badamtam, the junction of Little and Great Rangeet, Singla Bazar, Junction of Ramman and Rangneet River.

Kurseong was the first hill stage on the Darjeeling road, six miles from Punkhabari. It was close to Morung which was full of game and it was viewed as ‘a convenient residence to the sportsman.’<sup>58</sup> The forest of Kurseong was the roaming ground for tiger, leopard, deer and hog.<sup>59</sup> The walls of the army mess at Buxa were decorated with the heads of the animals killed by the army officers.<sup>60</sup> Sometimes a barking deer wandered into our gardens from the jungle, and from

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<sup>57</sup>Englishman; Calcutta; 2<sup>nd</sup> October; 1912

<sup>58</sup> Pinn, F, *The Road of Destiny: Darjeeling letters 1839*, Oxford University Press, Calcutta, 1986, p.191

<sup>59</sup> *Ibid*; P.97

<sup>60</sup> Casserly, Major Gordon, *op.cit*, p.26

the mess veranda Casserly shot a couple on the hill-side across the deep *nullah* or ravine.<sup>61</sup> The coming of the wild beast in the Buxa mess was not uncommon in the first few decade of the early twentieth century.<sup>62</sup>

Because of the climatic situation the Darjeeling became the most happening place in the Bengal province and the Western Dooars turned out as the place of adventure for the Britons in the late Nineteenth Century. The British officials in India felt the need to discover the newer and more exciting landscape to escape into. The *shikar* proved them a landscape in the less known adventurous forested regions of the colony. The virgin forest of India visualized as a dangerous, wild, unmapped, space where English imperial power would dominate even the Indian wildlife.<sup>63</sup> *Shikar* was also emphasized masculinity, racial difference and imperial power when the English *shikari* strode through the jungles discriminating game and ordering the native assistance around.<sup>64</sup> For the English educated native maharajas, *shikar* was an excellent opportunity to impress the British gentlemen and ladies by providing them all luxurious facilities while they were hunting in the forests of Orient. Huge tents were placed near the forests, the trained royal elephants were brought in the *jungal* and the native people were gathered for beating the forest for hunting wild beasts. Some high profile British officials in India participated in the hunting expedition of the Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar in the Bengal and Assam Dooars. The upper-class administrative officials of the British government like Lord Curzon with his wife Lady Curzon, Earl of Minto, Sir Ashley Eden, Sir William Eden, General

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<sup>61</sup> *Ibid*, p.33

<sup>62</sup> *Ibid*, p.34 look at the page for further reference of the incident.

<sup>63</sup> Nayar, Pramod K, ed *Days of the Raj: Life and Leisure in British India*, p.130

<sup>64</sup> Snaffles' *My Sketchbook in the Shiny* (1930), Nayar, Pramod K, ed *Days of the Raj: Life and Leisure in British India* has extraordinary visual of polo and hunting in India. On shikar and English masculinity in the colonial context see John M. Mackenzie (1987,1988), Callum Mckenzie (2000) and Joseph Shramek (2006).

Sir Frederick Roberts, General Stewart, Neville Chamberlain, and Hume were invited by the Maharaja of Cooch Behar for the hunting in the forests.

Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar and Maharani Sunity Devi were well acquainted with the anglicized lifestyle and also hosted many socializing programmers in the hills station of Darjeeling in their palaces. Whenever the Maharaja came to the Cooch Behar, he arranged a *shiker* party in the forests of the Dooars for his British guests. The fame of the Maharaja of Cooch Behar as an excellent sportsman spread all over the world in the last few decade of the nineteenth century.<sup>65</sup> The visitors in the Cooch Behar Palace noticed the hanging trophies of sports in the wall which were killed by the Maharaja. The heads of bison, Indian and Cape buffaloes, moose, wapiti, sambhur, cheetal and roe deer from Germany-relics of many lands grabbed the attention of the European guests. The drawing room and billiard room in Cooch Behar palace were carpeted with the skins of tigers.<sup>66</sup>

In the grand hotels and clubs, the comfort of the British ladies and the gentlemen were ensured by the well dressed native Indian servants. Darjeeling might well be proud of possessing one of the grandest and most up-to-date hotels in the Orient.<sup>67</sup> The name of the hotels like Bellevue, Garrets (Central House), Central Hotel, Hotel Mount Everest, Park Hotel, Rockville (The Grand), Woodlands and their architecture was connected with the Victorian and Edwardian style. The boarding houses like Ada Villa, Alice Villa, Beachwood House, Havelock House etc. The name of the roads like Mount Pleasant Road, Auckland Road, Mackenzie Road, Lloyd Road, and Hooker Road gave the colonizers a complete British filling in the hills.

The climate of Darjeeling provided them ‘occidental feeling in the oriental land’ where sturdy-limbed Bhuttias, rosy-cheeked Lepcha wearing turquoise and silver ornaments, cheery Gurkha, Pig-tailed Sikkimese and Tibetan lamas were ‘mysteriously different’ but extremely picturesque. The small number of hill tribes of Darjeeling was easy to rule than the countless natives of the

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<sup>65</sup> Casserly, Major Gordon, *op.cit*, p. 220

<sup>66</sup> *Ibid*, p. 221

<sup>67</sup> Dozey, *op.cit*, p. 29

plains. The extraordinarily picturesque ‘Devil Dance’ of the native people in the Darjeeling was extremely entertaining for the European tourists.<sup>68</sup> The presence of picturesque natives gave the colonizers an exotic feeling in colonized terrain. To the colonizers they were ‘always smiling trustworthy servant’ and ‘exceptionally well babysitters’. In the nineteenth century a culture was formed in the British households of Darjeeling and other parts of the Sub-Continent where the native ayahs (Indian nannies) were appointed by the European parents to look after their children. Shirley Olding was a kid when she spends ten years (1926-1936) in Kalimpong which according to her opinion was ‘different, brilliant and happy colonial childhood’ and to express the luxury of the ‘colonial childhood’. She mentioned that her parents had 17 gardeners, 9 indoor servants, including two ayahs to look after their comfort.<sup>69</sup> While the parents were enjoying their late night parties in the clubs or hotels, the Indian baby-sitters were sincerely nursing the European children. The success of the British administration in India was rested on the large number of native Indians who acted as the tool of colonialism by discharging their duties as the employees of the British officials. On the other hand luxury, comfort and management of the Anglo-Indian household were completely depended on the Indian servants who gave their masters a sense of superiority in the colony as a ruling race. In Western Dooars, the comfort to the European masters ensured by the outside laborers.<sup>70</sup> Wooden suburban gothic style bungalows became an essential feature of the planters’ residences in the Bengal Dooars.

Cecilia Leong-Salobir’s study on the food culture in colonial Asia highlighted that the environment of the hills stations was transformed not just for aesthetic reasons but also for food consumption for the itinerant European hill population.<sup>71</sup> The daily diet containing the Oriental foods had a physiological impact on the nostalgic Britons who were living in a tropical country

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<sup>68</sup> Freshfield, Douglas W, *op.cit*, p.256. The dance reminded Douglas W. Freshfield about Dervishes of Constantinople and the Drury Lane.

<sup>69</sup> Flaming, Laurence, *op.cit*, Pp. 253-254

<sup>70</sup> Major Gordon Casserly, p. 27 For instance the bungalow of Major Gordon Casserly in Buxa

<sup>71</sup> Leong-Salobir, Cecilia, *op.cit*, p.92

for earning money and serving the purpose of the British Empire. The unfamiliar edible tropical fruits, fishes and dairy products were not similar in terms of test and aroma of the British Island. It made the Britons physiologically and physically weak in the tropical colonies. The existing pattern of the vegetation in all over the world was changed along with the expansion of the business and commerce.

The Age of Discovery i.e., the fifteenth century was a watershed in the history of the mankind when the networks of sea root opened the hidden gateway to the tropical Eden of the South America, Africa and Asia. Along with the expansion of European domination over the new world, the ‘mysteriously different’ isolated areas of the unknown continents became a place of adventure and profit for the highly ambitious merchants and speculators of Europe. The colonial knowledge of science and technology was used to establish the greater control over the subjugated race to maximize the resource exploitation. The European voyages had impacted deeply by transforming the existing vegetation and food pattern of the humans living in the different continents. The indigenous species of flora and fauna in the tropical areas of South America and south Asia became widely circulated in all over the World through the Spanish, Portuguese and British voyages. Different species of vegetables like potatoes (sweet and normal), tomatoes, and chilly, fruits like pineapple, peanuts and coco entered into Europe from South America due to the effect of colonialism and it became the essential part of the diet of the Europeans. The food culture of India transformed along with the coming of the colonizers and opening of the sea roots.

Upto the early nineteenth century, India was regarded as ‘the land of tinned food’.<sup>72</sup> The British travellers carried with them a few boxes of Payne’s invaluable soup without which no one wanted to go to the remote mountain areas of the Himalayas. They travelled with the food like salmon, biscuits, ready dressed fowls, a bottle of the ‘cratur’, tin pots and cooking vessels.<sup>73</sup> The British scientists and civilians were the pioneer in the expansion of the experimental cultivation and farming of varieties of fruits, vegetables, herbs, flowers and alien species of animals in India

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<sup>72</sup> Casserly, Major Gordon, *op.cit*, p. 181

<sup>73</sup> Pinn, *op.cit*, p.73

to get best dining experience in the subjugated land. The hills were created as cool oases in which temperate flowers, fruit and vegetables grew, reminiscent of places in Britain where the British could, unfettered by native people, rule and recreate with their own kind.<sup>74</sup> In many cases, Indian varieties of fruits and flowering plants were replaced by the superior qualities of plants available in the other colonies of Great Britain. For the experiment with the natural vegetation of the Orient and introduction of the alien fruits, Agri-Horticultural Gardens and the Botanical gardens were founded in various parts of India. The Agri-Horticultural Garden of Calcutta, the Bhagalpur Horticultural gardens became the place of research for the European scientist. In Bhagalpur Horticultural gardens, in 1840s Major Napleton made remarkable experiments with English and Chinese flat peaches, varieties of mangos, *Eugenia Jambos*, pineapples, Litchi, Loquat and Longan, oranges, Sapodilla, apple, pear and various Kabul and Persian varieties of fruits such as figs, grapes, guava, apricots, and jujube.<sup>75</sup> In the second half of the nineteenth century, a large number of fruits and vegetables were introduced by the alien communities of Darjeeling and Dooars. Fruit trees like Ata or clustered Apple (*Anona squamosa*), Peach (*Prunus persica*), Pomegranate (*Punicagranatum*) and Rose apple (*Eugenia Jambos*) was introduced in Dooars in the last few decade of the nineteenth century.<sup>76</sup>

The early travelers of Darjeeling noted the presence of Himalayan varieties of strawberries, blackberries and raspberries in Darjeeling.<sup>77</sup> Some of them opined that the quality of the naturally grown berries in Darjeeling was almost similar to the types cultivated in the Europe in terms of flavor. There were also naturally grown species of flowers existed in the Outer Himalayas similar to its European species. To compare the Indian strawberry with the European

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<sup>74</sup> See Leong-Salobir, Cecilia, *op.cit*, p.12

<sup>75</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p. 92

<sup>76</sup> Sunder, D. H. A, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895, pp. 10-13

<sup>77</sup> Pinn, *op.cit*, p. 77. J. D. Hooker also noticed the naturally growing berries in Darjeeling.

types, Hooker mentioned that the size of the fruit was similar but in terms of flavor, two were different.<sup>78</sup>

The British residents of Darjeeling realized that these places were suitable for the cultivation of fruits and vegetables. In Darjeeling, the experimental cultivation was started by the British officials like Campbell, Mr. Hodgson and Lloyd.<sup>79</sup> In Darjeeling and Bengal Dooars, cottage kitchen gardens were constructed by the Europeans to get fresh vegetables. The rhubarb, tomato, turnips, cabbages, cauliflowers, beans, peas, beet roots, carrots, parsnip, leeks, celery and kitchen herbs like mint, parsley and thyme were cultured in Darjeeling.<sup>80</sup> The egg-shaped tree tomato was imported from America.<sup>81</sup> The superior quality of potato seed was introduced in the Darjeeling, but the cultivation of the potato did not flourish in Darjeeling due to the blights.

But in the case of Western Dooars, the European vegetables were introduced in the much later period in 1880s. Sheila Ferguson in her reminiscence mentioned about the garden in their bungalow at Leesh River Tea Estate and mentioned about the pineapples, lychees and banana in it.<sup>82</sup> The pineapple was the indigenous products of the Eastern Island and imported in India by the colonial authorities.<sup>83</sup>

The primordial natural condition of Darjeeling and Western Dooars was transformed by the colonizers according to their own desire. As a result, Darjeeling became the cultural hub of the

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<sup>78</sup> Hooker, *op.cit*, p. 65

<sup>79</sup> J. D. Hooker mentioned that the house of the Mr. Hodgson was situated in a suitable place of Darjeeling perfect for the cultivation of the European fruits. J. D. Hooker, *The Himalayan Journal*, p.143

<sup>80</sup> O'Malley, L. S. S. *District Gazetteer of Bengal: Darjeeling*, Logos Press, 1907, p.68

<sup>81</sup> *Ibid*, p.68

<sup>82</sup> Flaming, Laurence, *op.cit*, P.267

<sup>83</sup> Hooker, *op.cit*, p. 61

imperial government Bengal and Western Dooars emerged as a commercial tea producing centre in India. The desire of the alien ruler was a dominant factor for the transformation of the environment of the Darjeeling and Western Dooars.

## Chapter VIII

### Natural Calamite

The tectonic forces ever active in the converging boundary of the Indian plate and Eurasian plate shaped the geological history of the Great Himalayan ranges as well as the alluvial plains of Indus, Ganges and Brahmaputra rivers. The Himalayan region is primarily responsible for geological hazards mainly earthquakes, landslides and flood of Darjeeling and Dooars regions. The atmospheric circulation of air, drainage systems and distribution of precipitation in the foothills entirely control by the vast active mountain range of the Himalayas. The climatic factors and the natural calamities have an abiding impact on the society, economy and culture of the human population living close to the mountain or rivers. The affected people suffer from the scarcity of food, lack of proper treatment and relief, destruction of harvest and plantations, breakdown of the communication lead to the loss of confidence among the public. The catastrophes have a huge psychological impact on the mass and for a long time generation, after generation, the stories of the catastrophe remained in the memories of the mass. But through their usual patience and calmness, they adjusted with the situation and sometimes they forget the agony of the calamity and re-established the cities, town and villages. The natural calamities in many ways transformed the existing technological perceptions and turned it into a more complex and sophisticated form of knowledge to rebuild the settlements.

To understand the history of the natural calamities in the Darjeeling and Western Dooars, it is essential to study the primary sources of these regions in a chronological order. This chapter based on the information and data gathered from the Administrative Reports of the Government of Bengal, Railway Administrative Reports, Imperial Gazetteers, District Gazetteers, 'Daily rainfall of India' published by Provincial Governments of India, old newspaper and periodicals.<sup>1</sup> Along with these the contemporary official records of the British and Bengali travelogues were compared to get a complete picture of the catastrophe occurred in these regions from 1835 to 1947. In many ways, Joseph Dalton Hooker's the *Himalayan Journal*, Vol. I - II, Douglas W. Freshfield, *Round Kanchenjunga* (1903), Major Gordon

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<sup>1</sup> In Bengali periodicals the Bangabasi, Prabasi and Dainik Basumati has been cited.

Cassery's *Life in the Indian Outpost* (1914), and Rev. F. W. Warne's *The Darjeeling Disaster: its Bright Side* provided valuable information regarding their experiences during the natural calamities of Darjeeling and Western Dooars. A large number of academicians have studied the human impact on the highly fragile and sensitive hill areas of the Darjeeling from a geological and geographical perspective. But to some extent, they neglected the study of the history of the natural calamities and their impact on the living beings and natural landscape of the Darjeeling and Western Dooars from a historical point of view. In many ways, the massive natural disasters bring about catastrophic change in the existing pattern of the human settlements. It has both positive and the negative impact on the flora and fauna of a particular region. Prof. Subhash Ranjan Basu has done some remarkable work on the fluvial hazards of the Darjeeling and Sikkim regions from a geographical perspective.<sup>2</sup> Basu's research mainly concentrated on the landslide and flood hazards occurred in post colonial period. Dr. Sandipan Chakraborty and Kathakali Dutta have done their research on the human impact on the river bank erosion in Diana River basin near Khairkata and highlighted the specific contributory factors for the reduction in carrying capacity of rivers, thereby resulting in flood erosion in the Diana River basin during post colonial period. So far no one have studied the impact of the natural calamities in the colonial period consulting and comparing the primary sources in chronological order to trace the impact of the calamities on the life of the natives and the British citizens residing in the Darjeeling and Western Dooars.

### **Hydrological Disasters and Soil Erosion in Darjeeling and Western Dooars**

In Darjeeling Himalayas and the mountainous regions of Bhutan, an extreme high range of rainfall occurred in the rainy season which increased the velocity of the mountain streams and loosen up the soil. Because of the geographic location, Darjeeling Himalayas hit by the moisture-laden current of Bay of Bengal and downpour around 140 to 160 inches of rainfall per year. A heavy downpour in the Sub-Himalaya invariably increases the water level of the major rivers in Western Dooars and inundated of a vast area in every monsoon. In the outer ranges and foothills of the Himalayas, the amount of the rainfall was extremely high but it gradually decreased towards the plain in the south. The lithological character of Darjeeling

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<sup>2</sup> Subha Ranjan Basu and Sunil Kumar De, *Causes and Consequences of Landslides in the Darjeeling-Sikkim Himalayas*, India, Leszek Starkel, Subhashranjan Basu ed, *Rains, Landslides, and Floods in Darjeeling Himalaya*, National Science Academy, 2000

and Western Dooars along with the natural and anthropogenic reason caused recurring incidents of landslips and soil erosion. On the other hand, according to Mr. F. R. Mallet the alternating quartzite, dolomite, and the slate of Baxa series have had a marked influence in determining the erosion of the hill ranges in the Dooars.<sup>3</sup>

The natural slips in the Outer Himalayas sometime exposed the white soil in the hill slopes which are full of different kinds of minerals, chemical salts and soda.<sup>4</sup> The wild animals in search of nutrition gather in these salt springs. Different kinds of wild birds, mammals and insects gathered here in the daylight and in the night elephants, bison and deer came to eat the earth of which they are extremely fond. Because of the high concentration of the wildlife, native *shikaris* or hunters erected their *machans* or platforms near it to kill the animals. The British officials and native Maharajas also use the *manchas* for their pleasure hunting close to the salt springs. So the landslides in many areas of the Shivalik attracted the wild beasts for the mineral nutrition and the human utilized the geographic location to bag verities of wild animals for the food, leather and trophy.

The colonial survey officials like Gunning and Milligan noticed that the extreme denudation of the forested land increased the river erosion at the time of the flood in the Western Dooars. They opined that the increasing human intervention in nature rapidly enlarged the magnitude and duration of the flood increased over the years. In the rainy season, the rising water level of all the rivers damages the communication infrastructure by washing away the bridges and roads and badly affected the health and hygiene of the villages and towns in the nineteenth and twentieth century. The four months, June, July, August and September comprise the period of the south-west monsoon in North Bengal.<sup>5</sup> Most of the time flood devastated the

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<sup>3</sup> Mallet, Mr. F. R., On the Geology of Darjeeling and Western Duars, *Memoires of the Geological Survey of India*, Vol. XI, Part I, 1875, p. 12

<sup>4</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914, p.101

<sup>5</sup> Mahalanobis, Prasanta Chandra *Report on Rainfall and Flood in North Bengal 1870-1922*; Bengal Secretariat Book Depot; 1927; P.12 The severe floods appear to occur more frequently in North Bengal (about 14 per century) than in the U. S. A., or European countries (7 to 10 per Century)

villages by creating threat to the people's lives and property. Owing to the vagaries of the great river, North Bengal is full of silted river beds, which obstructed drainage and are largely responsible for the unhealthiness which prevails.<sup>6</sup>

The renowned Indian statistician and meteorologist Prasanta Chandra Mahalanobis had prepared and classified the flood into four heads in Bengal. These are the catastrophic flood or the flood caused great destruction to the life and property, scarce flood with small loss of human life with considerable loss of crops and cattle, moderate flood with no loss of human life and slight flood which caused slight damage to the crop and no damage to the cattle or human life. He further opined that in North Bengal the frequency of floods of some kind or other is 1 in 2¼ years, of moderate or severe floods 1 in 4 years, catastrophic floods occurred about two to three times in a century.<sup>7</sup>

In the mountainous Darjeeling and Sikkim, the aboriginal Rong or Lepchas possessed the story of great flood deluged which drowned all people in the valley. According to the legend, the flood water covered most of the peaks except Tendong peak which means 'uplifted horn'. Few Lepchas survived climbing in this pick. After few days the floodwater subsided and from the time onward the grateful Rongpas started worshipping the Tendong peak as the God which helped them to survive at the time of the great deluged. In most of the district, the distribution of the population was affected by the change in the river systems which have taken place in 1787. A massive earthquake and devastating flood in 1787 diverted the Tista basin and split it into several smaller rivers. According to the statement of Henry Frowde almost one-third of the population in this area was perished due to this catastrophe. Dr. Buchannan-Hamilton mentioned that the flood of 1787 totally change the appearance of the country and covered it with the bed of sand. Furthermore, many of the river courses were shifted due to the catastrophe.<sup>8</sup>

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<sup>6</sup> O'Malley, L.S.S, *Census of India*; 1911, Bengal, Bihar, Orissa and Sikkim; Vol. V, Part – 1, 1913

<sup>7</sup> Mahalanobis, Prasanta Chandra, *op.cit*, p. 5

<sup>8</sup> Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, p.8

Prior to the construction of railway and communication system, the European travellers used the flood water in the rivers during the rainy season to move from Calcutta to as far as possible towards the foothills. In the Darjeeling and Western Doars there are few areas which were yearly inundated by the flood water of the Tista, Torsa, Mahananda, Raidak, Manshai and Jaldhaka. In April, 1848 while going to the Darjeeling, Hooker noticed the effects of the flood in the foothills of the Himalayas. J. D. Hooker observed that Rangamally, a village close to Jalpaiguri on the western bank of Tista, possessed a sandy bank in the Bhutan side which was always been inundated in the rainy season.<sup>9</sup> While preparing the metalled road from the Ganges to Darjeeling, Captain Impey examined the flood-level and the drainage system during the rain to reduce the risk of damage to the roads during flood season.<sup>10</sup>

The most fragile part of the Darjeeling District was the 'Pagla Jhora' or 'Mad Waterfall' known for flash flood and landslides.<sup>11</sup> The soil and rocks of the upper portion of the jhora became loose due to the heavy rainfall during the every rainy season and the mud, water and stones rushed down the slope which disrupted the communication between the Siliguri and the hills. In 1885 construction was made in the Pagla Jhora to protract the road from the landslide.<sup>12</sup> On 29th June 1885, the rainfall was started in Darjeeling and it continued upto 8<sup>th</sup> July. Within 10 days a downpour of 45 inches caused 20 landslips in the hill slopes

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<sup>9</sup> J.D. Hooker was informed by a police Jemadar that the opposite bank i.e., the Bhutan side was much lower and as a result it always flooded during the rainy season.

<sup>10</sup> Clarke, Hyde, *Colonization, Defence and Railways in Our Indian Empire*, J. Weale, London, 1857, p. 58

<sup>11</sup> Pagla Jhora was also known as mad torrent.

<sup>12</sup> No. 22-23, March 1885 (Revenue Department, Forest, WBSA)

No. 54-55, May 1885 (Revenue Department, Forest, WBSA)

No. 194-198, November 1885 (Revenue Department, Forest, WBSA)

interrupting the railway traffic.<sup>13</sup> But the amount of the damage was comparatively lower than the range of the rainfall. Next year in 1886 continuous rainfall throughout June to September loosen up the soil in the hill slopes and caused a violent landslide and break up all communication by damaging the roads and bridges.<sup>14</sup> After the construction of the Darjeeling Himalayan Railway, in every rainy season, the railway track faced severe damage due to the flash flood, mud and rockslide from the 'Pagla Jhora'. Sometimes it's turned into a violent waterfall rolled down from the hills and tossed or throw big rocks in the valley and caused a great damage to the road. In such places, the roads were supported by deep walls built up from over a hundred feet below.<sup>15</sup> In July 1890, a massive rainfall occurred in the Darjeeling District and within six hours 14 inches of rainfall washed away nearly 800 feet of road and railway line in Pagla Jhora.<sup>16</sup> From the early years of the road constructions in Darjeeling, the exposed and precipitous nature of the slope interrupted the progress of the construction work. From 1895 to 1899 colonial government made continuous efforts to reserve land by the side of the Hill Cart Road to protract the land from slips.<sup>17</sup>

Prior to the September 1899, the British residents stationed at Darjeeling regarded the 'Queen of Hills' as one of the safest places in the entire Himalayan Mountains. Because the impact of

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<sup>13</sup> Colonel F. S. Stanton, *Administrative Report of the Railways in India 1885-1886*; p.69 The Administrative Report of the Railways in India is an important primary source to study the history of natural calamities in Darjeeling and Western Dooars.

<sup>14</sup> Mahalanobis, Prasanta Chandra *op.cit*, P.22 The Administrative Report of the Railways in India is an important primary source to study the history of natural calamities in Darjeeling and Dooars.

<sup>15</sup> Waddell, L. A. *Among the Himalayas*, 1899, p.23

<sup>16</sup> Ferguson, John. (2013), *Six Weeks Trip Through India: Being Notes By the Way*. London: Forgotten Books. (Original work published 1902) p. 107 incident is also mentioned in Dozey, E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.18, Mahalanobis, Prasanta Chandra *op.cit*, P.22

<sup>17</sup> No. 15-18, August 1895 (Revenue Department, WBSA)

No. 21-24, November 1898 (Revenue Department, WBSA)

the Great Earthquake of 1897 was futile in Darjeeling compared to the other parts of the alluvial plains of Bengal. But their ideas proved wrong when they witness three different types of the natural disaster within one day.<sup>18</sup> An unusual rainfall due to the effect of emerging cyclonic storm was started on 23<sup>rd</sup> September and continued up to 4.00 am in the morning of 25<sup>th</sup> September 1899.<sup>19</sup> The station faced the heaviest force of the Cyclonic storm between the evenings of 24<sup>th</sup> September to the morning of the 25<sup>th</sup> September.<sup>20</sup> 27½ inches of rainfall within these days loosen up the surface soil which resulted in a furious landslide in the history of the Darjeeling Hills. In the midnight of 25<sup>th</sup> September 1899 at about 2 am a massive landslide devastated a large portion of the town and it was followed by a mild tremor. The record backing excessive rainfall which was 8 to 18 times higher than the normal rate created numerous landslips in the different part of the Darjeeling Himalayas.<sup>21</sup>

The horrible experiences of the survivors of the slips were narrated in F. W. Warne's *The Darjeeling Disaster: it's Bright Side the triumph of Six Lee Children*. According to the last letter of Vida Lee to her father Reverent Lee, it was clear that the rolling down of rocks from the hills was started few hours before the massive slide in which she died along with her four siblings and a Bengali girl named Jessudar.<sup>22</sup> In that awful night when the entire Darjeeling town was facing the tremendous force of cyclonic wind, the branches of the tree were flying

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<sup>18</sup> A heavy shower was started in 23<sup>rd</sup> September; it continued in the next day i.e., 24<sup>th</sup> and in the 25<sup>th</sup> Darjeeling was devastated by a terrible cyclone, a massive landslide and a mild earthquake caused by the slip.

<sup>19</sup> Within few hours a heavy rainfall of 27½ inches occurred in Darjeeling. From 4 pm evening of 24<sup>th</sup> September to 4 o'clock in the morning of 25<sup>th</sup> September (12 hours) 14 inches of rainfall occurred.

<sup>20</sup> Warne, F. W, *The Darjeeling Disaster: it's Bright Side the triumph of Six Lee Children*, 1900, p.13

<sup>21</sup> Mahalanobis, Prasanta Chandra *op.cit*, P.22

<sup>22</sup> Another brother of Vida Lee named Wilbur rescued in an injured condition and later on died in the Sanatorium after few days. While in the sanatorium Wilbur told to his mother, what he faced in that horrible night.

everywhere, rain water rushed down from the mountain slopes along with mud and boulders and small pieces rocks showered from the hill top, the Lee children realized that their beautiful little house will no longer survive. So they tried to escape from their house but failed and again returned to the house, but unfortunately all of them were died due to the massive landslide and rolled down almost 100 feet in the hill slope. The tragic death of six Lee children in the landslide of September; 1899 created a wave of sorrow in all over the world. Many of the renowned personality of that time including Leady Curzon, Leady Woodburn, Bishops of Calcutta, Cincinnati, and Philadelphia express their sympathy to the Rev. Lee and Mrs. Lee.<sup>23</sup>

Two survivors of this calamity Miss. Stahl, a teacher of the Arcadia Girl's School and Mrs. Warne; the wife of Rev. F. W. Warne, narrated their experiences of that night.<sup>24</sup> At about 8 o'clock night they heard the sounds of a peculiar roar and thought that it was a thunder or the sound of a river roar. But after few moments they understand it was a landslide and somehow they manage to protect their lives in that awful night.<sup>25</sup> During the rain storm huge boulder said to weigh over hundred tons each went tumbling down the hillside into the Balasan Valley and caused the bungalows in that locality to rock and sway as if shaken by a mighty earthquake.<sup>26</sup> While expressing the fearful experience of the horrible stormy dark night Mrs. Warne said, 'the ground shook beneath our feet, and put my arms around Edith (her daughter) and said, darling it is the end.'<sup>27</sup> All the night they hear the roar of the falling hills.

In the Arcadia Girl's School, four children died, when a huge boulder rolled down from the hillside and hit the wall of the room and wall fall on them. The slip engulfed the American Methodist School located in the Observatory Hill on the Rangneet Road. In Darjeeling 10

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<sup>23</sup> For more information Warne, F. W, *op.cit*, 1900

<sup>24</sup> Mrs. Warne; the wife of Rev. F. W. Warne the writer of the book *The Darjeeling Disaster: it's Bright Side the triumph of Six Lee Children*

<sup>25</sup> Warne, F. W, *op.cit*, p.33

<sup>26</sup> Dozey. E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.141

<sup>27</sup> Warne, F. W, *op.cit*, p.32

Europeans and 45 Indians lost their lives, in Kalimpong the number was 9, while in the entire district around 219 souls perished either from exposure that followed the storm or by being engulfed in the falling debris or slips.<sup>28</sup> The rushing water swept away the machinery of the Old Cedar Tea Estate and piled up the debris in Tirrianna crossing which was almost 10 miles below the Terai. The Suspension bridge near Rammum and the Poole Bridge was washed away.<sup>29</sup> Many animals both domestic and wild drowned in the water. According to an estimate, the total loss of property was around one lakh rupees India's first hydraulic plant built at the Sidrapong Spur by Messrs, Kilburn & Co. of Calcutta was washed away due to the heavy flow of water.<sup>30</sup> As a consequence, the entire town went to darkness for two months.<sup>31</sup> It washed away a village near the Tista Bridge and native bazaar near Rammum.<sup>32</sup> On 25<sup>th</sup> September when the water level suddenly increased in the Tista River, it sank a boat on the river carrying one passenger, two railway officials, two planters, four native boatmen and two trolley men. But unfortunately only two trolley men survive and others were drowned.<sup>33</sup> The Darjeeling Advertiser informed that "there was no house, there was no plantation, and there was scarcely a road or highway in the district which have not suffered".<sup>34</sup>

Just after the disaster, Miss Fanny Perkins, a Christian nun reached Darjeeling on 27<sup>th</sup> September along with four European gentlemen who helped her to reach the destination as

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<sup>28</sup> Dozey. E. C, *op.cit*, p.140

<sup>29</sup> Freshfield, Douglas W, *Round Kanchenjunga: A Narrative of Mountain Travel and Exploration*, Edward Arnold, London, 1903, p.260

<sup>30</sup> The plant built at the cost of Rs. 1, 20,000/- was buried in the great slips which occurred in September; 1899.

<sup>31</sup> Dozey. E. C, *op.cit*, p.97

<sup>32</sup> Freshfield, Douglas W, *op.cit*, p.260

<sup>33</sup> *Administrative Report of the Railways in India 1899-1900*; p.214

<sup>34</sup> Dozey. E. C, *op.cit*, p.141 The Darjeeling Relief Fund distributed a lots of money among the Europeans and the Indians.

the railway lines were devastated between Kurseong and Darjeeling. They were the first group of people to reach Darjeeling after the catastrophe.<sup>35</sup> From Kurseong onward she walks up to Darjeeling and witnessed the damage in the roads of Kurseong, Toong, Ghum and Darjeeling. They watched hanging railway lines, huge rocks, fallen trees, mud and hear the constant roar of falling water from Kurseong to Ghum. In 29<sup>th</sup> September, Rev. F. W. Warne counted almost in 80 places between Kurseong to Ghum the rail line either washed away or buried.<sup>36</sup>

According to the '*Administrative Report of the Railways in India 1899-1900*', the Darjeeling Himalayan Railway suffered from this calamity and in some place near 'Mary Ville', the lines suspended in the air and the passengers were compelled to cross the gap through a ropeway. Almost 26 miles of the DHR line was affected due to the calamity but 18 miles of the line was severely damaged.<sup>37</sup> After the storm, it was observed that the railway connection existed up to Gayabari i.e. 23½ miles from Siliguri and towards the Darjeeling it completely stopped due to innumerable slips. Almost three months after the catastrophe the railway connection completely normalized.<sup>38</sup>

After devastating Darjeeling and its tea-gardens, the cyclonic storm swept across Kanchenjunga into Tibet in the form of a premature snowfall, lowering the snow-level nearly 4000 feet and practically closing the highest region.<sup>39</sup> Few days before the cyclonic storm and landslide, Douglas W. Freshfield reached Darjeeling and moved to Sikkim for an expedition. But after returning from Sikkim, Freshfield observed that the Darjeeling was not only wrecked, the tea garden also scarred and tons of freshly dug torrent beds and landslips were in everywhere. He also hoped that this devastation might be useful lesson for the planters and

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<sup>35</sup> Warne, F. W, *op.cit*, p.19

<sup>36</sup> Warne, F. W, *op.cit*, 1900, At the beginning he counted the number of the land sleep but later on realized that these were innumerable

<sup>37</sup> *Administrative Report of the Railways in India 1899-1900*; p.208

<sup>38</sup> On 11<sup>th</sup> October

<sup>39</sup> Freshfield, Douglas W, *op.cit*, p. ix

the builders in Darjeeling.<sup>40</sup> To some extent, Freshfield blamed the planters and the builders who cut down the primeval forest for their own interest for destroying the balance in the hill slopes. A massive destruction occurred in the forests of Darjeeling, particularly at the Birch Hill Park. In 1900-1901 the government sanctioned an extra grant to repair the damage caused by the heavy rainfall on 24<sup>th</sup> September, 1899.<sup>41</sup>

In the foothills, most of the rivers have the tendency to inundate the neighbouring regions during the monsoon. In 1895-1896 a wooden bridge was constructed upon the Balasun River but after five years the bridge was washed away due to flood.<sup>42</sup> But again in 1910, the wooden bridge over the river washed away because of the heavy flow of Balasun.

A rainfall of 12 inches within twenty-four hours in Darjeeling on 27<sup>th</sup> September; 1902 caused a sudden increase of water level in Tista. In Jalpaiguri, the rate of the rainfall recorded two times higher than the normal in the month of September. The river began to rise rapidly at about 3.00 p.m. and continued to rise steadily till 5.30 a.m. In the next day, the water of the river reached a height of eighteen inches above the highest flood level of the last ten years. Within fourteen hours its rise was six feet and created a flood in the inundation in the Jalpaiguri and its adjacent regions.<sup>43</sup>

Mr. Forrest the then Deputy Commissioner of Jalpaiguri recorded a detail description of the flood. The inundation of Tista in 1902 was restricted in its own basin. The flood water over topped the banks at Rangdhamali, eight miles west of Jalpaiguri and it inundated the country up to the river Karala. The railway track and a bridge between Ghoramara River and Mandalghat railway station were washed away. In the western bank of Tista, communication between Jalpaiguri to Haldibari entirely disrupted due to the heavy flow of water. In the eastern bank the flood water spread below Gazaldoba upto Domohani on the Bengal Dooars Railway in the south. It moved towards Mainaguri through an old canal (Khal) and the railway track near Bhotepati station washed away and the water again meet the Tista. A vast

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<sup>40</sup> Ibid, p. 50

<sup>41</sup> No. B. 39-43, February 1900, (Revenue Department, Forest, WBSA)

<sup>42</sup> Dozey. E. C, *op.cit*, p. 36

<sup>43</sup> Grunning, J. F, *op.cit*, p.98

area south of Jalpaiguri was engulfed by the flood water. One bridge in Jalpaiguri road and another in Jalpaiguri - Alipur road completely washed away. But the roads in the other parts of Jalpaiguri received minor damages. The casualty of this flood was low. Only ten people, 350 cattle and 20 buffalos drowned.

The floods in 1902 and 1906 were caused by heavy rainfall coming at a time when the rivers were full and the soil so saturated that it could not retain more moisture. In 1902 there was exceptionally heavy rain in September following August in which the rainfall was quite up to the average. In the next year i.e., August, 1903 again the flood situation was developed in Alipurduar due to the sudden rise of the Rydak River.<sup>44</sup> During that period the flow of the Rydak River started taking a new turn, so to resist the shift of the river bed the Government constructed bandh by the side of the river near Alipurduar.<sup>45</sup>

In August 1906 a heavy rainfall of 40.05 inches in Jalpaiguri created flood situation in the Tista basin. An overnight rainfall in 3<sup>rd</sup> August led to the abrupt increase of the water level in all the rivers of Jalpaiguri on the morning of 4<sup>th</sup> August. The span of the flood water was higher than the flood of 1902 but interestingly not a single man or cattle drowned. The communication system was severely affected by the rushing water of the Tista. Many of the bridges in Jalpaiguri simply washed away. The masonry bridge near Mandal ghat which connected Gitaldaha Junction to river Torsa, a culvert near Alipurduar, Railway Bridge over the Kumlai River near Mal Bazar were damaged due to the force of water. In many places the tracks of the Bengal Dooars Railway simply broken into many pieces. The Chalsa and Nagrakata areas were badly affected by the flood. In Hathinala the railway bridges remain intact but the large embankment was completely swept away. After the flood it was noticed that all the protective works destroyed. In this destructive flood Diana River also cut away 900 feet of embankment. In the east of Nagrakata most of the tea gardens depended on the Ramshai Hat railway station. As a result of this devastating flood, the rail network entirely stopped and pressure of traffic build on the river and roads especially on Ramshai Hat - Sulkapara and Ramshai Hat - Gairkata Road. In water way dependency increased on Burnes Junction and the ferries over the Jaldhaka and Daina River.

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<sup>44</sup> No. B. 72-76, November 1903 (Revenue Department, Forest, WBSA)

<sup>45</sup> No. B. 55-57, April 1904 (Revenue Department, Forest, WBSA)

After the flood, the Government realized to build a feeder road connecting Ramshai Hat with the tea gardens between Jaldhaka and Torsa River. Later on, a road was constructed through the Tondu forest connecting Ramshai Hat to the tea gardens of the eastern branch. More or less the telegraph lines remain intact between Jalpaiguri, Alipurduar, Mal Bazar, Ramshai Hat and Mal Bazar. In 1906 the Bengal- Dooars Railway was cut to pieces by the flood and the price of the rice rose temporarily to three seers a rupee in parts of the district, the Santhal coolies who were brought from the Santhal Pargana as a plantation labours combined to loot the markets of Jalpaiguri.<sup>46</sup>

Another great storm followed by a landslip occurred in Darjeeling on 5<sup>th</sup> August 1914. It also affected Kalimpong. It washed away the bridge at Setikhola on the Peshok Road to the Hum Cantonments. It disconnected the fuel supply of the town, as the charcoal kilns were chiefly located in the forests of this region. In the Hum the number of the death and loss of property were great. The storm caused 8 landslips in the adjoining Sikkim hills. In one spot the hillside for the width of a ¼ of a mile and from a height of 5,000 feet to the very bed of the Rangneet River was washed away and with it all the hamlets that studded its sides.<sup>47</sup> The number of deaths remains unknown.

On 8<sup>th</sup> August 1915, another disaster occurred in Darjeeling. The last week of July gauged an abnormal rainfall. After a gap of few days, rainfall again started on 6<sup>th</sup> August and it continued till the 8<sup>th</sup> August. A downpour of 9½ inches caused two slips on the same site where Miss Roby's School was located (now the Diocesan High School). A part of the premises was carried away along with a small cottage located on the east of the building. In the slip, only a servant shanty in which five people were sleeping was buried beneath a large slip. Another slip occurred in the east of the Observatory Hill. A part of the grounds of the Volunteer Headquarter measuring 80 feet in depth and width, standing over a stable was carried away at 4 a.m. on August 8<sup>th</sup>. Of the 11 horses stalled therein, 7 were killed. Two landslips in Sonada and one in Ghum affected the railway track of the Darjeeling Himalayan Railway.

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<sup>46</sup> For more information see Grunning, J. F, *op.cit*, reprinted N. L. Publishers, 2008

<sup>47</sup> Dozey. E. C, *op.cit*, p.142

In the first week of August 1915 more than 27 inches of rainfall caused a rise in the water level of the Jaldhaka River. In the Tista Valley road, a large number of slips occurred which interrupted the running of the train. But the roads were speedily cleared to maintain the traffic. The water of the Gel Jhora which crossed the Cart Road 2 miles below the Tista Bridge turned into a violent torrent. The forced water of the Leish and Geish Rivers affected the roads in Kalimpong side by causing numerous slips which uprooted the telegraph poles also and interrupted the communication between Gangtok, Rungpo in Sikkim. The Jaldhaka River which debouches into the Dooars and flow to the east of the Chalsa Station in two small streams running close to and parallel to each other, and which was spanned by two iron bridges, united and assuming one channel carried away the embankments between the two bridges as also the approached to the east of the further bridge to an extent of over 600 feet, leaving the two structure standing as if they formed the connecting link to a very large structure which had vanished.<sup>48</sup> In the south of Darjeeling, the Mahanadi and Balasun overflow their embankments. The Mahanadi caused temporary inundations at the bridge just outside the Siliguri town. Due to an unprecedented rainfall of 20 inches in one night, a portion of Jaldhaka Bridge on the Bengal Dooars Railway for about 600 yards was washed away.

From the middle of the Nineteenth Century, the British officials posted at the Western Dooars regions realized that the frequent changes of the river bed in this region occurring due to the rapid denudation of the forest belts along the banks which proved a natural means of real control over the movements of the rivers.<sup>49</sup> The natural forests were also cut down for the cultivation of the crops near the river bed where the irrigation was easier than the other parts far from the natural source of water. The local irrigational canals of Bengal Dooars popularly known as *Jampo* interrupted the natural flow of the rivers and responsible for the inundation of a huge area and caused the sudden change of the course of the rivers during the monsoon. In many cases, during the first flood of the season the *Jampo*s were turned into big canals and ultimately as the rainy season goes on the river turned bodily down into it by lying waste a whole tract of the country. The expansion of the cultivation in Dooars resulted in the

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<sup>48</sup> Ibid, Pp.144-145

<sup>49</sup> Milligan, J. A, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*, The Bengal Secretariat Book Depot, Calcutta, 1919, P.18

increase in the number of the *Jampo*. The imperial government knew that the man made canals were responsible for the frequent changes in the river courses but they did not take any steps to stop the unscientific construction of the *Jampo*s as it necessary for the cultivation in the jote lands which were the source of the lucrative revenue of the alien government. Sometimes the British officials were in favour of controlling the flow of the river for the benefit of the agriculture and settlements. J. A. Milligan in his settlement report mentioned that the river turning was necessary in Dooars because the rivers like Tista, Chel, Daina, Rehti, Pagli, Sukti, Pana, Kaljani and Rydak were ‘problematic’ as their natural movements and the flood water threatened the tea plantation, human settlements, railways, roads and other man made constructions.

During 1919, the Tista threatened to sweep away the whole section of the Bengal Dooars Railways on the one side and the Jalpaiguri Cantonment on the other, the Chel threatened the areas of Manabari Tea Garden and the Jote lands and few areas of railways near its bank, the Daina threatened the 20 square miles of land encompassing two tea gardens, few jote and forest lands, Rehti for many years regarded as a problem for the people lived near the tea gardens of the Binaguri, Kaljani threatened the Alipurduar Civil Station and few portion of the railways. According to Milligan, the Rydak was the problem of problems, although the country through which its flows were very jangly and undeveloped, it created problem to many tea gardens situated near its bank.<sup>50</sup> The Daina often referred as the ‘troublesome river’ as it frequently changes its course and threatened the life and property in the Moraghat *Pargana*.<sup>51</sup>

In the *Survey and Settlement Operations in the Jalpaiguri District 1906-1916*, J. A. Milligan suggested the government must take steps to accumulate local experience for future action to control the heavy flowing flood water of the rivers and the construction of the irrigational canals. The government surveyors realized that the clearing of the jungle for tea plantation have changed the whole appearance of the country in several localities of Western Dooars

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<sup>50</sup> Ibid, P.18

<sup>51</sup> Grunning, J. F, *op.cit*, p. 11

and communication infrastructures have interrupted the natural drainage system of the newly formed localities in the plantation areas.<sup>52</sup>

As a result of the massive destruction of the forests, the devastation of the flood increased in the Western Dooars in the first half of the twentieth century. But the colonial officials believed that the flood had increased due to the practice of jhuming or shifting cultivation in the watersheds of the large rivers of the Western Dooars. According to Grunning ‘there was no doubt that large areas have been deforested in this way in Sikkim and Bhutan, but there was nothing to show that the floods were deadly and more frequent now, then they used to be in the former years’.<sup>53</sup> But he further mentioned that the most of the people in the district believed that the jhuming had a little or no effect on the quantity of the water which goes into the rivers and it was not responsible for causing the flood.

The deadly season commenced with the yearly floods receded in September, and from then until late November malaria was at its height, leaving some localities so badly affected that the inhabitants existed ‘in a state of perpetual fever’.<sup>54</sup> In colonial India, the month of September had the ‘most evil reputation for sicknesses.’ As the heavy rainfall and flood came to end a round the last week of July and the sky became clear and cloudless over the plains of Bengal. A large number of water-borne and vector-borne infectious diseases spread all over the province. Flood was associated with contamination of the drinking water facilities because the vast body of the flood water carries along with it the dead bodies of the animals, rank vegetation, garbage and people used it for their drinking and cleaning purposes.

The well-being of the human life and property depend on the mercy of nature. James Howard Thornton who was stationed at Jalpaiguri as both civil and military medical officer narrated the life of the common during the rainy season and flood in the Jalpaiguri in the 1890s. The violent turbulent Tista forcefully brought down ‘quantities of driftwood, logs, fallen trees, and other debris’ from the mountains and sometimes as mentioned by Dr. Thornton, people

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<sup>52</sup> Milligan, J. A, *op.cit*, p.19

<sup>53</sup> For more information see Grunning, J. F, *op.cit*, reprinted N. L. Publishers, 2008

<sup>54</sup> Arnold, David, *The New Cambridge History of India: Science, Technology and Medicine in Colonial India*, Cambridge University Press, 2004, p. 79

jumped into the current to collect the drifting logs for firewood.<sup>55</sup> In those days the house of the ordinary British officials was not fit to resist the thunderstorm and the discomfort of the rainy season was far more increased because of the emergence of the harmful reptiles including the cobra (*Naja tripudians*), krait (*Bungarus cceruleus*), and Russels viper (*Daboia Russellii*), all of them exceedingly venomous and deadly.<sup>56</sup>

### **Earthquakes and casualties**

The Himalayas is a perfect example to address a verity of geological problems associated with mountain building processes. According to the Bureau of Indian Standards, Darjeeling falls under the seismic zone-IV, near the convergent boundary of the Indian and Eurasian Tectonic plates and is subject to frequent earthquakes. The foothills Eastern Himalayas are well known for the seismic disturbance. The formation of the highest fold mountain in the world proves massive tectonic activities in the entire north India. The Himalaya was formed due to the constant movement of the earth and this movement is still going. In ancient and medieval era some of the Sanskrit, Persian and Arabian literary sources mentioned about the occurrence of massive tremors in the North Bengal and adjoin Assam. The *Ahom-Buranji*, Dineswar Sharma's '*Mangaldoi Buranji*' and '*Yogini Tantra*' mentioned about a devastating earthquake in 1548 which destroyed the Kamakhya Temple and affected the flow of the Brahmaputra River.<sup>57</sup> '*Khunlong Khulnai Buranji*' also mentioned the occurrence of a massive earthquake at the time of Maharaja Naranarayan in 1548.<sup>58</sup> It described how the land was cracked and stream, sand mixed with hot water and rock forcefully lifted in the air due to the massive quake. Sir Edward Albert Gait's '*A History of Assam*' (1905), eyewitness accounts of Shihabuddin Ahmad Bin Muhammad Wali Talish's Fathiya- E Ibriya and the Journals of Asiatic Society recorded the frequent occurrence of earthquakes in the North

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<sup>55</sup> Thornton, James Howard, *Memoires of Seven Campaigns: A Record of Thirty-Five Years' in the Indian Medical Department in India, China, Egypt, and Sudan*, Westminster, Archibald Constable and Co., 1895 , pp. 163-164

<sup>56</sup> Ibid, p. 164

<sup>57</sup> Barua , Tr. and ed., *Ahom Buranji*, 1930, pp. 81-82, para 61

<sup>58</sup> Khan Chaudhury, Amanatulla, *History of Cooch Behar*, English Translation, 1936, p.489

Bengal and Assam region prior to 1835. In last two centuries, a large number of multidisciplinary efforts were made to understand the mechanism of the lithosphere and the seismic cycle in the Himalayas as well as in Indian Subcontinent. The descriptive catalogue of Indian earthquake was first drawn up by Colonel Baird Smith and then by Dr. Oldham.<sup>59</sup>

Darjeeling and Western Dooars not fallen within the epicentral tracks of the north-eastern India where the moment of the plates most of the time caused massive earthquakes since the ancient period.<sup>60</sup> The study of the earthquake and its destructive impact in these regions since 1842 recorded that in the last two centuries when Assam and bordering region of Cooch Behar suffered from the fatal distraction as a result of the quakes, whereas Darjeeling and Western Dooars to some extent escape from the devastations. The *Journal of the Asiatic Society of Bengal*, Vol. XI - XII and Dr. Oldham's catalogue of Indian Earthquake shows that the ground of the Darjeeling vibrated three times in between May to November 1842.

According to the reports of the contemporary newspaper three successive quakes were felt in the Bengal and Assam on 23<sup>rd</sup> July, 26<sup>th</sup> July and 6<sup>th</sup> August, 1845.<sup>61</sup> The first two earthquakes were rather small than the tremor of 6<sup>th</sup> August at 11.30 PM. Huge damage of the construction occurred in Guwahati, Cherrapunji and Sylhet. Strong tremors were also felt at Darjeeling.

In the first month of 1849, a severe shock was felt at Guwahati and Eastern Himalayan region. In 22<sup>nd</sup> January 1849 at about 8.45 AM, the ground of the Guwahati sharply vibrated and created panic among the people. The aftershock continued in the next few days. By this

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<sup>59</sup> Baird Smith, R. (1844), Memoir of Indian earthquakes - part III, *Journal of the Asiatic Society of Bengal*, 12 (156), 964–983. Oldham, T. (1883a), A catalogue of Indian earthquakes from the earliest time to the end of A.D. 1869, *Memoirs of the Geological Survey of India*, 29, 163–215

<sup>60</sup> Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling*. Alipore, Bengal: Bengal Government Press, 1947, p.10

<sup>61</sup> July 26–August 27, 1845, *Bengal Hurkaru*, July 26–August 26, 1845 *Englishman*

period few major tremor was also felt in the Darjeeling and Sikkim Himalayas.<sup>62</sup> When J. D. Hooker came to Darjeeling, the aftershocks of the Guwahati earthquake were regular in the Darjeeling and Sikkim Himalaya. To narrate his observation regarding the earthquake, J.D. Hooker wrote: “*In the evening (28<sup>th</sup> February; 1849) we had three sharp jerking shock of an earthquake in quick succession, at 9.8 P.M., appearing to come up from the southward: they were accompanied by a hollow rumbling sound like that of a waggon passing over a wooden bridge.*” The shock was felt strongly at Darjeeling, and registered by Mr. Muller at 9.10 P.M. The motion may therefore quickly transmitted northwards through the intervening distance of forty miles in two minutes. Both Mr. Muller and Mr. Hodgson had noticed a much more severe shock at 6.10 P.M. on 28<sup>th</sup> February; 1849. This caused a good deal of damage at Darjeeling, in cracking the well-built walls.<sup>63</sup> Hooker noted that the earthquakes were most common towards the eastern and western extremities of India, owing in the former case to the proximity of the volcanic forces in the Bay of Bengal. Catch and Scindh, as was well known, have suffered severely on many occasions, and in several of them the motion has been propagated through Afghanistan and Little Tibet, to the heart of Central Asia.<sup>64</sup>

A severe tremor was felt in almost every district of Bengal on 10<sup>th</sup> January 1869. The earthquake was one of more than usual violence.<sup>65</sup> The amount of destruction caused by the earthquake indicated that the epicentre of the quake lied near Cachar and Manipur. The tremor was also felt at Darjeeling and it created a ‘sharp blow-like sensation at Darjeeling’.<sup>66</sup> Sharp jerking was also felt Kurseong, Punkhabari, Siliguri and the aftershock continued upto

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<sup>62</sup> Jenkins, F, Earthquakes in Assam, *Journal of the Asiatic Society of Bengal*, Vol. XVIII, 1849, pp.172–175, *Bengal Hurkaru*, January–February,1849

<sup>63</sup> Hooker, J. D, *The Himalayan Journals*, Vol. I-II, John Murray, London, 1854, p.377

<sup>64</sup> *Ibid*, p.377

<sup>65</sup> *Bengal Administration Report 1867-68*; Pp. 286-287

<sup>66</sup> The Cachar Earthquake of 10<sup>th</sup> January 1869, by Late Thomas Oldham, LL.D, F.R.S., &c., Superintendent of the Geological Survey of India, *Memoirs of Geological Survey of India*, Vol. XIX, Part. I, P.34

March and August.<sup>67</sup> From the data, it was calculated that the earth-wave travelled at the rate of 11,256 feet a second.<sup>68</sup>

The earthquake of 1881 severely felt at Darjeeling and Western Dooars.<sup>69</sup> Within next four years another tremor effected the various part of the Bengal province. The epicentre of the Bengal earthquake of 14<sup>th</sup> July, 1885 was in Bangladesh.<sup>70</sup> But the rate of casualty was low in Darjeeling and Western Dooars.

In June 1897 the entire Eastern India was suffered by a terrible earthquake.<sup>71</sup> The earthquake of 12<sup>th</sup> June 1897 was one of the greatest natural calamities in the history of the British rule in the Indian Empire. In the evening of the fateful day, the earth shocked for two and a half minutes and ruined 150,000 square miles, interrupted all means of communication, water and sand poured out of the surface soil and created unaccountable landslips in the hills cantering on Shillong.<sup>72</sup> The one third quarter miles felt the shock and everywhere people recognized it as rather abnormal in nature. On that day station masters, the officer posted at the telegraph office or the tea planters of Darjeeling and Western Dooars recorded the time of the catastrophe. The Darjeeling Himalayan Terminal station in Darjeeling and Eastern Bengal

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<sup>67</sup> Dash, Arthur Jules, *op.cit*, p. 10

<sup>68</sup> *Bengal Administration Report 1867-68*; p.286

<sup>69</sup> Oldham, R. D. (1884), Note on the earthquake of 31st December 1881, *Records of the Geological Survey of India*, 17(2), 47–53.

<sup>70</sup> Middlemiss, C. S. (1885), Report on the Bengal earthquake of July 14th, 1885, *Records of the Geological Survey of India*, 18(4), 200–221. *Englishman*, July 15-28, 1885.

<sup>71</sup> Oldham, R. D. (1899), Report of the Great Earthquake of 12th June 1897, *Memoirs of the Geological Survey of India*, XXIX. List of Aftershocks of the Great Earthquake of 12<sup>th</sup> June 1897, compiled by R.D. Oldham in *Memoires of the Geological Survey of India*, Vol.XXX; pp.1-102. *Englishman*, June 23–June 24, 1897

<sup>72</sup> These were also known as systematic aftershock. *Memoirs of the Geological Survey of India*, Vol. XXIX, p. 1

Terminus station in Siliguri reported that the earthquake started at 16.26 PM and ended at 16.29 PM or around 16.30 PM.<sup>73</sup>

The horrible experience of this catastrophe was vividly depicted in the autobiography of Sir Henry Cotton who was then along with his wife moving in a car in Shillong, just 594 km south-east of Darjeeling. He wrote ‘without a warning with no predominantly rumble, such as the ordinary precursor of an earthquake, I heard a clattering on the roof, I felt a swaying of the earth, and the high-spirited pony, I was driving dashed off *ventre à terre* like an arrow from a bow... we galloped along... The road yawned opened with cracks beneath our feet, the pine-trees overhead shook and trembled as though under the influence of mighty storm, and pine-cones showered an avalanche upon our heads.’<sup>74</sup> Many women thought that this was the ‘Day of Judgment.’ The noises of the earthquake blended with cries of terror. Further, he wrote ‘it was no disgrace for the boldest of men turn into pale, or for strongest to be unstrung.’<sup>75</sup> Mr. F. H. Smith of Geological Survey of India wrote that the surface of the ground vibrate visibly in every direction, as if it was made of soft jelly and long cracks appeared at once along the road.<sup>76</sup>

The illiterate peoples of the different areas interpreted the causes of the natural calamities on the basis of their ignorance, misconception and traditional beliefs. The native sepoy posted in the Buxa station opined that the earthquake ‘arise from the movements of a dragon slumbering in the centre of the earth and occasionally shaking itself or turning round in its sleep.’<sup>77</sup> In the aftermath of the great quake, some people thought that the massive shakes would be followed by an outburst of an active volcano.<sup>78</sup>

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<sup>73</sup> *Ibid*, p.63

<sup>74</sup> Cotton, Sir Henry, *India and the Home Memories*, Fisher Unwin, London, 1911, p.230

<sup>75</sup> *Ibid*, p.231

<sup>76</sup> *Memoirs of the Geological Survey of India*, Vol. XXIX, 1899, p. 5

<sup>77</sup> Casserly, Major Gordon, *op.cit*, p.310

<sup>78</sup> *Memoirs of the Geological Survey of India*, Vol. XXIX, 1899, Calcutta, P.XXV

After the Great earthquake of 1897, a large number of aftershocks were felt at Darjeeling District though it was laid well outside the epicentre of the principal shock. But a number of quakes originated in the Darjeeling region just after the massive tremor. According to R. D. Oldham, the displacements of the earth's crust under the epicentre of the great shock caused a change and increase of the strains in the Himalayas outside that tract, which resulted in an increased number of earthquakes.<sup>79</sup>

The Great Indian Earthquake opened up a new era in the research on the seismic activities in India. Previously there was no regular system of recording the data of the earthquakes in India. The people who have watched the calamity recorded their observation and the data of the aftershocks. After the massive earthquake of 1897, the British geologist followed the pattern of the scientist and investigators such as Omori and C. Davison who have studied the aftershock of the great Japanese Earthquake of 1891 and throw light on the laws which governed the gradual diminution of the aftershock in number and gradual shifting of the main centre of seismic activities.<sup>80</sup>

Because of the massive span of the destruction, it was not possible for one person to survey and report about the Earthquake of 1897. The four officials T. D. LaTouche, was appointed to inspect the Assam valley, Shillong, Cherapunji and Sylhet. Mr. Hayden was entrusted to examine the railway tracks from Calcutta to Darjeeling and at the same time inspect several towns of the North Bengal. Mr. Vredenburg examined the country located at the West of the North Bengal and Mr. Grimes made a report on Eastern Bengal and Cachar valley. P.N. Bose was appointed to inspect the eastern deltaic district and many volunteers were appointed to maintain the records of the aftershocks. In 1897-98 R. D. Oldham was entrusted to find out the epicentral track of the Great Earthquake. But his attempt was failed due to three reasons, viz, the vastness of the area, the impassible character of the country and time constrained.

Mr. H. H. Hayden mentioned that from the Atrai River onward a considerable damage had been notable in everywhere. In the North Bengal fissures were visible parallel to the Atrai River and stretching from east to west upto several hundred yards with an average breadth 6

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<sup>79</sup> These were also known as systematic aftershock. *Memoirs of the Geological Survey of India*, Vol. XXIX, 1899, p. xxvii

<sup>80</sup> *Memoirs of the Geological Survey of India*, Vol. XXIX, 1899, p.124

to 8 inches. In Raninagar the railway tracks in many areas displaced due to large fissures. In the areas of Nilphamari and Haldibari the effect was severe. Because of the impact of the quake the southern half side of the station had been subsided and the ground beneath the railway track had sunk and the rail along with sleepers remained suspended.<sup>81</sup> In Haldibari the railway station platform was cut up by fissures from north to south and portion of this had been subsided. Between the railway station and dak Bungalow there were fissures and circular holes which were said to have injected sand and water during the earthquake.<sup>82</sup> He observed large scale devastation occurred to the railway and telegraph lines after leaving Haldibari station. But according to the report of Mr. H. H. Hayden rather small damage was done to the Jalpaiguri town where the two storied post office and newly build club was badly cracked. In Balakoba station also no severe damage have occurred only the wall of the station house and a small brick house have been cracked. Due to the peculiarities of the dark loamy nature of the soil, there was absence of fissures between Mandalghat and Siliguri.

Mr. Hayden observed that in Siliguri no damage appeared to have been done, in fact all signs of the violent earthquake were strictly absent; the railway station was slightly cracked but does not appear to have suffered any damage beyond the loss of a few loose bricks; and it was not till the Mahanadi river was crossed and the observers come on any marked effects of the shock.<sup>83</sup> Between the Mahanada and Sukna Station, the earth was cracked in several places and Cart Road was also affected by the tremor. Very little damage occurred in the railway tracks of the Darjeeling Himalayan Railways. But the damage happened to the factories and the gardens near the spar.

In the Tindharia railway station building was cracked and some stones fall from gables. After 12<sup>th</sup> June two small landslips occurred in the south of the hill slopes. But in 24<sup>th</sup> June a massive landslip occurred at the hillside of Tindharia below the station master's house.<sup>84</sup> The

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<sup>81</sup> *Ibid*, p. 280

<sup>82</sup> *Ibid*, p. 280

<sup>83</sup> *Ibid*, p. 282

<sup>84</sup> *Ibid*, p. 282

landslips were observed in north-eastern Sikkim, and on the south face of the hills were formed even as far as Darjeeling...<sup>85</sup>

In the aftermath of the earthquake, the most striking effect was seen in the Darjeeling where the large numbers of chimneys were fallen down.<sup>86</sup> Most of the house was damaged due to the fall of the huge chimneys in the roofs. According to Hayden these were not severe in determining the direction in which the wave travelled. In the Old Bhutia Cemetery below the Calcutta Road on the eastern side of the ridge several tombs stones which were made of loose stones and uncemented badly affected by the tremor. In the European Cemetery below the Shrubbery no severe damage have done, only two to three obelisks were damaged. But the effect of the tremor in Senchal was quite different from the Darjeeling proper. In Senchal the walls of the Old barracks completely disappeared but the Old chimneys remained as isolated towers. T. Oldham prepared a catalogue of the aftershocks of 16<sup>th</sup> June earthquake.<sup>87</sup>

A striking damage was done to the Kuch Bihar Railway. In many places, platform subsided and fissured. The bridges have been broken horizontally. In several places the bricks buildings were overthrown. Because of the closeness to the epicentre of the quake a great destruction occurred in the railway tracks between Nilphamari and Haldibari.<sup>88</sup>

In the aftermath of the Great Earthquake of 1897, Maharaja Nripendra Narayan observed the sudden change in the forested regions of the Western Dooars and wrote that the country which was once full of various games was completely emptied as if the animals have left the land. Furthermore, he wrote that the earthquake has altered the whole face of the country, and many patches of the good jungle that once he got the game in 1896 were transformed into

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<sup>85</sup> *Ibid*, p.119

<sup>86</sup> *Ibid*, p. 282

<sup>87</sup> Oldham, R. D. (1900), List of aftershocks of the Great Earthquake of 12th August 1897, *Memoirs of the Geological Survey of India*, 30, 1–102.

<sup>88</sup> *Memoirs of the Geological Survey of India*, Vol. XXIX, 1899, p.172

mere swamps full of *fasan*.<sup>89</sup> Within two years the damages were repaired in the Cooch Behar State Railways.<sup>90</sup>

In 2<sup>nd</sup> July 1930, another strong tremor was felt at Bengal, Assam, Bihar and Nepal.<sup>91</sup> The movement of the land was severe in the Northern part of Bengal, especially in Cooch Behar, Dhubri, Lalmonihat, Nilphamari and Tura.

Blake Pinnell and Martin Pinnell, two sons of L.G. Pinnell, the Deputy Commissioner of the Darjeeling district witnessed the Bihar earthquake of 1934 while they were camping at Bagdogra just below Darjeeling and narrated that the ground suddenly shook and it was difficult for him to stand up.<sup>92</sup> When the earthquake started they were listening to their favourite song 'Forty-seven ginger-headed sailors' in a child gramophone. But because of the strong quake, the pin of the gramophone sailed across the record and ruined it. Their own house along with the other houses was destroyed in the Darjeeling due to the violence of the tremor. John Langley while in a school at Darjeeling experienced a minor tremor which caused a little damage in the Darjeeling.<sup>93</sup> The earthquake causes massive damage to the manmade structures created cracks in buildings, bridges, roads and railway tracks and also leads to the displacement of the earth's crust.

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<sup>89</sup> 246/286

<sup>90</sup> Railways in India, *Administrative Report for the Year 1898-1899*; p. 23

<sup>91</sup> Gee, E. R. (1934), The Dhubri earthquake of 3rd July, 1930, *Memoirs of the Geological Survey of India*, 65. Gee, E. R. (1952), The Assam earthquake of 1950, *Journal of the Bombay Natural History Society*, 50 (3), 629–635.

<sup>92</sup> Laurence Flaming, *The Last Children of the Raj: British Childhood in India 1919-1939*, Vol. I, The Radcliffe Press, London, 2004, Pp. 248-249

<sup>93</sup> *Ibid*, P. 287

## Fire Hazard in Darjeeling and Western Dooars

On 1840 a violent fire broke out in the hillside stretching from the Salt Hill right up to the place where the Depot was later on constructed. The violent fire swept away the vegetation from the hill slopes. This incident gave the name of the place as Jalapahar or 'burnt hill'.<sup>94</sup>

After spending almost one year in Darjeeling hills when Hooker started his journey for Calcutta on 27<sup>th</sup> of February, 1850, saw the forest fire rising in the various parts of the Terai forest and he noticed that the white smoke spreading for miles in eastward. It filled the air with black particles of grass-stems, carried 4000 feet aloft by the heat ascending currents that impinge against the flanks of the mountains.<sup>95</sup> The Sibhok and Bamanpokri blocks were well known for the fire hazards during the colonial period. In the Bumunpokri forest during the early days of the implementation of the colonial forest policy incidents of the fire was normal in the dry seasons when the exceptionally strong winds blow. In Bamunpokri once the fire was rise upto 100 feet up in the sky and came very close to the plantation.<sup>96</sup> Because of the extremely inflammable nature of the forest, the government strictly maintain fire patrol to protect the woods.

In Terai and Dooars the forest became extremely inflammable due to the lack of water during the dry season. During the forest fire, the atmosphere became intensely hot and the smoke veiled the sun.<sup>97</sup> Later on the acidic smell of the ash spread all over the nearby areas along with the hot wind. Sometimes the resident of the Darjeeling complained about the pall of smoke cover them in the altitude of 7,000 feet.<sup>98</sup>

Major Gordon Casserly gave a lively description the forest fire in Buxa in the first decade of the twentieth century and mentioned how the fire swept the jungle and the wildlife. In one occasion forest fire Brock out in the hill just below the Buxa station. The wind, dry timber

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<sup>94</sup> Dozey. E. C, *op.cit*, p.51

<sup>95</sup> Hooker, J.D, *op.cit*, p.374

<sup>96</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p. 29

<sup>97</sup> Casserly, Major Gordon, *op.cit*, p. 203

<sup>98</sup> *Ibid*, p.198

and tall grass helped the fire to spread upwards to the military hospital. The British officials and the native soldiers immediately rushed to the spot and work shoulder to shoulder to break the branches of the tree to combat the advancing flames. But unfortunately, due to the flow of the wind, the fire became louder and all the army personals ran towards the summit, but one sepoy stumbled and fell into the wave of flame. The sepoy tried hard to escape from the fire and struggled to run towards the hill top. Unfortunately, the man was severely burned and died in the hospital of the Buxa detention camp.<sup>99</sup>

The jungle fire in the Terai and Western Dooars were very violent and difficult to control.<sup>100</sup> In 1876-77, the Rajabhatkhawa and Poro Block were protected by the government from forest fire. Only 60 acres was burnt due to fire. Within these years eight forest fires occurred in Buxa and one in Bholka. In these fires, 35,440 acres of the Buxa forest and 1,000 acres of Bholka were burnt.<sup>101</sup> Among these eight fires six were stopped quickly so that no massive destruction occurred in the forest. In other two cases, the fire was spread over 35,440 acres of land due to the flow of the wind and reached to the core of the forest. To common people who lived inside the Rajabhatkhawa forest came out and joined the work of the forest department to stop the fire. In another occasion out hose of the Rajabhatkhawa rest house destroyed due to fire.<sup>102</sup> The fire spread in an unusual way as it started in the house of the blacksmith and from there it spread into the outhouse of the Rajabhatkhawa rest house and then it caught the elephant shed. Thereafter it quickly jumped over a clear belt 100 feet board into the jungle. Because of the wind, the fire engulfed everything which ever came into its path.<sup>103</sup>

Mr. Richardson the divisional officer of the Buxa reserve made an account of the forest fire. During 1877-1878 the fire watcher or fire-guards were appointed in the Bholka reserve in

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<sup>99</sup> Ibid; p. 200

<sup>100</sup> *Progress Report of the Forest Administration in the Lower Province of Bengal for the Year 1876-1777*, p. 6

<sup>101</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p.38

<sup>102</sup> *Ibid*, p.38

<sup>103</sup> *Ibid*, p. 39

Haldibari and Buxa range. Fire season last from 15<sup>th</sup> February to 31<sup>st</sup> May in every year and during this time fire petrol was appointed by the forest department. The frequent vigilance had been done by the fire guards to ensure control over the situation. But despite every efforts fire broke out inside of the Bulka reserve on the east bank of the Kalcooli River near the Dulduli village. The high wind spread the fire in the centre of the forest across the Bhulka River and extended upto Sankos.<sup>104</sup> The high wind helped the fire to burn the 11 square miles of the forest of the Bhulka reserve. Within few months another fire broke out at the hilly portion of the Buxa Reserve which devastated almost 58 square miles stretching from the north boundary upto the 22<sup>nd</sup> miles of the road.<sup>105</sup> To restrict the fire within a particular boundary, the smouldering logs and woods were removed quickly by the coolies and government officials.<sup>106</sup> In the night a piece of burning wood falls from a tree into the dried grassland at the east side of the Bola River and the strong wind smouldering into the eastwards upto the Jangli River. Again along with the movement of the wind, the fire move to the eastern side of the forest and burned the forested land upto the Santrabari. Fortunately, the entire Poro block, half of Panbari and the large portion of the Rajabhatkhawa have been saved.

Upto the end of 1870s the fire protection measures were not applied in the Borojhar range. The incident of the manmade forest fire was not unknown to the forests of the Western Dooars. In 1877, a native man set the fire in the south east corner of the Borojhar range in a plot located between Bunia and Buri Bursa River and it leads to the annihilation of the considerable portion of the Borojhar range. Later on, the man was identified and punished by the government. In another case, 39 native sikaries were arrested as they deliberately fired the grassland of the Haldibari range, the Dhumpora and Raidak forests. They were arrested and sent for trial. All of them were convicted and punished by the sub-divisional officer of Buxa.

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<sup>104</sup> Gamble, G. Sykes, *Progress Report of Forest Administration in Bengal for the year 1878-1879*, p. 31

<sup>105</sup> *Ibid*, p. 31

<sup>106</sup> *Ibid*, p. 31

The five were sentenced to three months and a fine of Rs. 3, and 34 to 7 days' imprisonment and Rs. 3 fine.<sup>107</sup>

Due to the heavy rainfall, forest fire was not regular in Darjeeling. But the greater part of the Darjeeling Division of forest suffered badly from the serious fire in 1876, 1879, 1882, 1903, 1909 and 1939.<sup>108</sup> In December 1910, a severe forest fire was started in the west of Ghum at the bordering regions of Nepal and Darjeeling. The fire engulfed an area over 70,000 acres.<sup>109</sup> The Forest Department and the common people of Darjeeling actively participated to prevent the fire from spreading. As the consequence of the forest fire, the entire Darjeeling town coved with a dense smoke for days, the ashes and the charred bamboo leaves three inches in length covered the town in a black mantle.<sup>110</sup>

Another fire broke out in Darjeeling in the end of April 1914 in the Tista valley. The fire first appeared in the savannahs by the side of Rilli River, a tributary of Tista. The fire gradually moved upwards to the hill slopes and burnt the *sal* forest in the both side of the river. Almost in a similar way of December 1910, the rain of ash continued for days and the opposite hills of Darjeeling remained invisible for days due to dense smoke. The Forest Department and the Police force took steps to stop the fire.

On 23<sup>rd</sup> March 1916 fire broke out in several places of Kalimpong. In Rangpu fire was stopped after 10 days with the help of 1,000 coolies. Secondly in the bed of the Rilli River, three miles away from Kalimpong forest fire was started. The fire continued for fortnight despite 500 men was engaged in counter-firing.

The colonial Forest Department adopted different masseurs in Darjeeling, Terai and Western Dooars to protect the valuable timber from the forest fires. In Darjeeling deforestation was made in few areas as protection from the fire. But in Buxa government made an experiment where fire protection measure was merged with the plantation of the valuable *sal*. A dense

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<sup>107</sup> Ibid, p. 31

<sup>108</sup> Dash, Arthur Jules, *op.cit*, p. 131

<sup>109</sup> Dozey. E. C, *op.cit*, p.168

<sup>110</sup> Ibid, p.168

belt of young *sal* trees 100 feet broad was raised along with the boundary of the forest and it was believed that this belt of *sal* would resist the expansion of the fire in the core areas of the forest.<sup>111</sup>

When Brandis came to Jalpaiguri Division, he primarily focused fire protection. He recommended the clarification savannah in the early season and cutting the interior and exterior lines in the most inflammable section of the forests.<sup>112</sup> The colonial forest policy might have adversely affected the life cycle of the different species of animals dwelling in the woods. Before the dry seasons, the savannahs in the forested regions of the Darjeeling and Western Dooars were fired by the labours of the forest department. The destruction of the grassland for fire protection leads to the reduction of the food, shelter and the roaming ground for the animals and the birds in the forests. The Indian Bustard, Bengal floriken, Lesser floriken, Black Partridge or Titri, Swamp Partridge or Koyar, Gray Partridge, whistling teal or Saroli (*Dendrocygna awruree*) were particularly depend on the grassland and the marsh near the river beds for food, shelter and laying the eggs.<sup>113</sup> In the Terai Florikin was regarded as a game bird. It roams around in the cultivated fields, wide river chur lands by the side of Balasun, Tista and Mechi Rivers, nullah and among long elephant grass.<sup>114</sup> A number of the birds and the animals became endangered due to the destruction of the savannah as a method to resist the fire in the dry season. In the Darjeeling Hills and Terai, a large number of the trees was cut down and savannahs were wiped out (1875-76) as a preventive measure to control the fire in the dry season. The newly built roads divided the forest into blocks which were used as a safeguard against the forest fire in the *Terai*.<sup>115</sup>

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<sup>111</sup> Schlich, W, *Progress Report of Forest Administration in Bengal for 1876-1877*, Superintendent of the Government Printing, Calcutta, 1878, p. 2

<sup>112</sup> Stebbing, E. P, *The Forests of India*, vol. III, p.197

<sup>113</sup> Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri* (1889-1895), Calcutta, Bengal Secretariat Press,1895, p. 16-17

<sup>114</sup> Mackintosh, L. J, *Birds of Darjeeling and India*, Part-I, Calcutta, 1915, p. 192-193

<sup>115</sup> Dozey, *op.cit*, P. 157

The forest fire is a natural process and it's increases the fertility of the soil which leads to the germination of a different kind of flora. Again the forest became lively with the coming of different kinds of insects and wildlife. But the British fire protection policy interrupted the natural growth of the forest in the Darjeeling and the foothills of the Himalayas. The fire protection project in the hills was aimed to protect the valuable timber. It was not guided by any humanitarian motives but only aimed at the commercial interests of the British colonialism.

### **Cyclonic Strom and its impact**

The cyclonic storms were not regular in the rainy season and winter months in the Darjeeling and Western Dooars as these areas located close to the Himalayas far from the Bay of Bengal. Although the southern slopes of the Himalayas known for massive rainfall as the moisture laden cloud from the Bay of Bengal passed through the alluvial plains and hits the mountain, it's created heavy discharge. The intense flow of the wind sometimes threatened the life and property of the people living in the regions.

As early as in February 1828 when Lt. General Lloyd for the first time visited Darjeeling and he observed a snow storm which continued for three successive days covering the station and the adjacent hills with white mantle for a week.<sup>116</sup> In 1835 while revisiting Darjeeling he saw a severe snowfall which covered the ground to a depth of one foot and remains cover for one week. A violent storm occurred in Terai region on March 20<sup>th</sup> 1849. The size of the hail was measured half inches. During the storm the large masses were followed by a shower of the separate conical pieces and by heavy rain. The effect of the storm in the mountain was severe. The hails laid in Darjeeling for seven days and it amalgamated into masses of ice several feet long and a foot thick in sheltered places.<sup>117</sup> In 24<sup>th</sup> March when Hooker reached Darjeeling saw the great masses of crumbling ice still lying in sheltered spots.<sup>118</sup> The incident suggested that the temperature of Darjeeling in the last week of the March was cool that why hail remains in the ground for four days.

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<sup>116</sup> Ibid, P. 124

<sup>117</sup> Hooker, J.D, *op.cit*, p.405

<sup>118</sup> *Ibid*, p.405

The cyclone sometime affected the timber market of a particular region by supplying large quantity of the fallen trees. In 1876 a severe storm passed through the Jalpaiguri and devastated the nearby forested regions. In the district the government imposed certain restriction to stop the over-exploitation of the valuable timbers. But in 1874-1875 large numbers of the trees were cut down which was over the limit fixed by the government. Dr. Schlich in his report revealed that the timber became over stock in the market due to the cyclone of 1876 and the spread of the epidemic of cholera was responsible for the condition.<sup>119</sup>

On 18<sup>th</sup> March 1913, a snowstorm devastated entire district by causing 8 inches of snow fall in a night which covered for a whole week down to 5,500 feet. The storm caused a massive damage to the forest stretching from Senchal to Takdah Cantonments at Hum. The range of the destruction of the forest could understand from the fact that the fallen trees and the broken branches supplied fuel for 18 months for Darjeeling.<sup>120</sup> The road from Darjeeling to Sonada covered with a heavy layer of snow and in some places, the snow cover was 3 feet deep. To maintain regular traffic between these areas the snowplough was introduced to clear the road. In 1882-83 heavy snowfall occurred in Darjeeling and this time also snow plough was used to clear the road for traffic.<sup>121</sup>

Major Gordon Casserly narrated a details description of a number of awful thunderstorms in the Buxa Dooars. Sometimes the size of the hail was so big that it killed animals and damaged the iron roofs of the factories.<sup>122</sup> While staying at Buxa, Casserly noticed the falling of two and quarter inches long, one and a half broad, and one inch thick hailstone.<sup>123</sup>

The British architecture in the hills and Western Dooars connected with the weather of the region. Many times the officials of the Public Works Department inspect the government

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<sup>119</sup> *Progress Report of the Forest Administration in Bengal for 1876-1877*, p. 5

<sup>120</sup> Dozey, E. C, *op.cit*, p.123

<sup>121</sup> *Ibid*; p.123

<sup>122</sup> Casserly, Major Gordon, *op.cit*, p. 210

<sup>123</sup> *Ibid*, p. 210

constructions to locate the durability of the buildings during the natural calamities. The chimney was a vital part of colonial residential buildings. But in the Dooars and Himalayas, if it was not perfectly installed in the building it sometime caused huge danger to the residence of a house by attracting the lightning.<sup>124</sup> The electric fluid sometimes caused deaths in the Darjeeling and Dooars during the stormy seasons. In colonial period efforts were made to understand the pattern of natural calamities in the tropical colonies.

Mr. Christison adopted measures to stop soil erosion in the steep hill surfaces and resisting the effects of drought. His measures became useful for the tea gardens of Darjeeling. His policy was to prolong the life of tea plants up to 20 years by treating them in scientific methods, preservation of the standing trees in the garden and also introducing afforestation on the garden. He realized the evil effects of the deforestation in Darjeeling. He constantly protested against deforestation through his speech and writing. Due to his initiative, the Birch Hill was rescued from the hands of the despoiler.<sup>125</sup>

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<sup>124</sup> Ibid, pp. 211- 212

<sup>125</sup> Dozey, E. C, *op.cit*, p. 206

## Conclusion

The grant of Darjeeling received by the colonial authority in 1835 and after thirty years, the annexation of the Western Dooars completely secured the northern frontier of the Bengal Province. In the early stage of expansion of colonialism in Darjeeling and Western Dooars, the British officials faced numerous problems in dealing with the untouched nature. The accumulation of the knowledge about surroundings regions and proper management of the labours became essential for the colonial authority for the transformation of the existing environment of the Darjeeling and Western Dooars. In Victorian period the British scientists who were specialised in the fields like geology, botany, zoology, entomology, anthropology extensively move around the planate to gather data about flora, fauna and the minerals to serve the exploitative interest of the British Empire. The colonialism merged the colony with the worldwide capitalist market economy which was aimed at the implementation of the scientific knowledge in the colony for the surplus production. Soon the colonized tropical Eden was converted into the laboratory of the scientists of the West. The colonial voyage to the 'new world' led to the intensive exploitation of the resources of the colonies. They not only exploited the natural resources but also changed the perception of the colonized mass about the resource exploitation.

Dane Kennedy argues that the political disturbances in Indian during 1857 may have been a vital cause of the mass exodus of the British civilian in the Indian highland. Philippa Levine argues that Indian hill stations served as havens of safety for the British which were almost like a part of England apart from India where the colonizers thought to be the safest place for the reproduction of race.<sup>1</sup> The settlements of Darjeeling and Western Dooars were formed not only because of their strategic location but also for the geological and the climatic factors. The healthy climate and scenic beauty mesmerized the nostalgic colonizers to settle down in the hills of Darjeeling which reminds them about the majestic beauty of the Scottish high lands or the small townships of the European Alps. In Dooars, the urge to make profit from through the plantation enforced them to start settlements in the adverse climatic condition.

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<sup>1</sup> Levine, Philippa, 'Sexuality, Gender, and Empire', in Philippa Levine (ed.), *Gender and Empire*, Oxford: Oxford University Press, 2004, p. 74.

In all over the planet the colonialism inseparably connected with the massive expansion of the infrastructures to maximise the resource exploitation in the untouched remote areas and to connect them with the greater capitalist market. Prior to the coming of the British colonizer, the area was dominated by the Tibetan, Bhutanese and Sikkimese and for centuries the region was involved in the trans-Himalayan trade. When the Tibetan control established in the Darjeeling Himalayas, they bring with them their culture, religion, medicinal practices etc and imposed it over the autochthons living in the mountain slopes of the Himalayas. The use of animal products in the medicines to cure different diseases was introduced by the Tibetan Lamas in the Darjeeling, though the aborigines have their own medicinal practices.

While exploring the botanical world of the Eastern Himalayas and foothills, the colonial scientist took the help of the aborigines to know the utility of the oriental flora in the 'dirty and disease-ridden' Orient. In the 'new world' the European colonizers were haunted by number of unknown deadly diseases. The forested colony with large number of carnivorous, herbivorous along with diversified insect world enforced the colonizers to acquire the knowledge about the colony as much as possible. The annoying insect world consisting of Peepsa, Spider, Cicada, Bumblebees and Crane flies were quite unbearable for the European colonizers who were born and brought up in the temperate maritime climate. To reduce the growth of the insects the bushes and trees were cut down in different places of the Darjeeling and Western Dooars. Furthermore, in the hill slopes of Darjeeling, the colonizers introduced biological control to stop the growth of the indigenous insect by planting the Central American floras like Blue flower groundsel or Billygoat Weed (*Ageratum Conyzodes*) and Cannas.

The reclamation of the forest tracks of western Dooars was started during the time of the Mughal invasion in Cooch Behar in the first decade of the eighteenth century. The Koch and Mech were the agriculturalists and cultivated the vast amount of the tracks just outside of the forests. Prior to the coming of the colonizers the timber business in Bengal province was extended upto the foothills of the Himalayas in the North Bengal. The exploitation of the forests of Darjeeling and Western Dooars was started in the last half of the eighteenth century due to the growing demand timber in the markets of the Deviganj in Rangpur, Kangtapukuri in Nattor (Rajshahi). According to Dr. Buchanan- Hamilton, the *sal* and *sisu* wood of Baikunthapur was almost exhausted prior

to the annexation of the Western Dooars with the British Empire.<sup>2</sup> The *Dafader* employed the workmen or labours in monthly wages to cut the timber in the forest of the Western Dooars and floated it in the river. They deliver the *dhura* of timber to the merchants in a particular place.<sup>3</sup> In every year 150 to 160 canoes were made in the Baikunthapur (Battris-Hazari). At the time of the *Sannyasi-Fakir* rebellion, the insurgents extensively used river roots of the Brahmaputra, Tista and Mahananda to escape in the forested areas of the Bhutan Dooars and Assam through the huge country boats known as Bojras to protect themselves from the advancing British troops.<sup>4</sup>

After the annexation of the Western Dooars, the reclamation of the uncultivated waste became an urgent necessity for the colonial officials to accumulate revenue from the newly conquered region. The distribution of the tax free land to the outsiders and the creation of the non-toll-paying markets near the reserve forests mainly in Jalpesh, Lataguri, Appalchand and Chalsha stimulated the resource exploitation in the Western Dooars. The steady population growth in Dam-dim, Chalsha, Mainaguri, Alipurduar, Dhupguri and Falakata since 1870s, increase the amount of the agricultural land and expanded the market economy in western Dooars.

The rapid population growth in Alipurduar, Dam-dim and Chalsha lead to massive denudation of the forests covers in the Dooars and creation of unscientific irrigation canals known as *Jampoi* near the large rivers were responsible for regular shifting of the riverbeds during the monsoon. The amount of the human animal conflicts increased day by day with the creation of the tea plantations and spread of the communication network in the nearby areas of the reserve forests. According to the Christopher and Bently excessive population growth in Western Dooars was responsible for the recurring incidents of the malaria in the tea garden areas. The coming of the

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<sup>2</sup> Dr. Buchanan- Hamilton Report, p. 242

<sup>3</sup> According to Dr. Buchanan- Hamilton two *dhuras* means 252 logs.

<sup>4</sup> The forested places in the foothills of the Sub-Himalayas where the rebels took shelter to escape from the British troop has been discussed Dr. Ananda Bhattacharya's, Sannyasi and Fakir Rebellion in Bihar (1767-1800), *Islam and Muslim Societies: A Social Science Journal*, Vol. VI, No. 2, 2013, pp. 28-44

outsiders including of the European colonizers and the labouring classes like Kole, Mundas, and Santals in the Western Dooars and Nepalese in the hills changed the process of the resource exploitation. The indigenous people living in the forests of Darjeeling and Western Dooars were habituated to use the natural poisons for fishing but when the outsiders enter into the untouched haven they in many cases started using dynamite for fishing in the hill rivers which had a serious ecological affect on the environment.<sup>5</sup>

In terms of resource exploitation in the colonies, the British colonizers used superior scientific knowledge and implemented it through the highly educated British administrators in the colonies. The Upper Controlling staff of the Forest Department of India, consisting of the Conservator, Deputy and the Assistant Conservators received their scientific training in forestry from France or from Germany. But since 1885, the education of such officers has taken place at the Royal Indian Engineering College, near Windsor.<sup>6</sup> The sophisticated scientific knowledge provided them the power for systematic exploitation and grab long term control over the resources of the colonies.

The colonial authority blamed the tribal for the unplanned and massive destruction of the forest resources. They use the legal mechanism to ensure the control of the forest resources of the Sikkim, Darjeeling and Western Dooars. The forest acts provided the colonizers a legal basis to 'control' and 'destroy' the forest and the wildlife of the country. The indigenous people lived in the mountain of the Darjeeling Himalayas were evicted from their lands. Many of the Lepchas fled to the Kalimpong and Sikkim region as their own forested lands were cut down for the commercial purpose of the outsiders. After the annexation of Western Dooars, the aboriginal people living in the Buxa forest who were referred as the 'Joomeahs' in the forest administrative reports were evicted from their lands.<sup>7</sup> As the government introduced restriction on the

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<sup>5</sup> File No. 4A/1, No. 1-2, February 1900, Revenue Department, WBSA

<sup>6</sup> The Indian Forester; vol.XIX; No.7; July; 1893; P.263

<sup>7</sup> Progress Report of the Forest Administration in the Lower Province of Bengal for the Year 1876-1777, p. 21

utilization of the forest resources, the aborigines were driven out from the forest. The tax was imposed upon the tribal people for the collection of the forest resources.

In colonial period the reproductive measure in the forest means planting the sal trees, demarcation of the forests from the private estate, removal of the aboriginal village etc. But the commercial trees are not fruit producing trees on which the wild animals thrive. The grass was cleared to reduce the danger of fire. Creeper cutting in the reserve forest had an evil impact on the forest ecology. In Rajabhatkhawa, the colonial forest department employed the labours for the removal of the creepers from the forest.<sup>8</sup> To the colonizers the forests were only the place of the timber deposit. Colonial forest reports did not mentioned the name of the fauna living in a particular forest. They were only interested in the timber exploitation. The mixed forest contains the fruit trees like Chalta (*Dalbergia sissu*), jackfruit (*Artocarpus heterophyllus*) Chestnuts, horse Chestnuts, figs, Mango (*mangifera Indica*), bel or Bengal Quince (*Ægle marmellos*), Jalpai (*Eleocarpus serratus*), Kalajam (*Eugenia Jambolana*), Lichi (*Nephelium litchi*), Lotka (*Lansium domesticum*). If the mixed forest grows in a dry zone it contains some sal trees but in the wet and low grounds the sals not grow with the mixed forest.<sup>9</sup>

In Ghoom forest, the birds like tiny Small Fairy Blue-Chat (*Niltava Macgrigorle*) became rare partly due to systematic clearing. The birds which lay their eggs in the hole of the trees were mostly affected by the clearing of the forests. Moreover, the colourful feathers of the Indian Peacock, Indian Hornbill (*Buceros bicornis*) and others became the inseparable part of the European fashion in India. The foot of the elephant was used as a chair, the tusk of the elephant used to make show pieces and on the other hand, the skin of the tiger, leopard, bear and Deer were used to decorate the bungalows of the British officials. The hide of the animals like bear and fox were used by the European ladies for fashion. Once tiger is found in all over the Western Dooars, in the neighbour-hood of the forests...<sup>10</sup> The Clouded Leopard already became rare in

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<sup>8</sup>Ibid, p.38

<sup>9</sup> Ibid, p. 20

<sup>10</sup> Grunning, p.15

the early twentieth century but it was only available in the Buxa forest.<sup>11</sup> A large number of wild animals of the Dooars were killed by the maharaja of Cooch Behar and his British associates in the last two decades of the nineteenth century.

According to Cecilia Leong-Salobir the environment of the hill stations was transformed not just for aesthetic reasons but also for food consumption for the itinerant European hill population.<sup>12</sup> Except the aesthetic and gastronomic reason there were other causes also which was responsible for the environmental change in the hills stations. The hills became a place for giving expression to the superior colonial science and technology which reflected in the landscape of the Darjeeling hills. To Kenny the landscape constitutes 'a culturally produced expression of social order'.<sup>13</sup>

The colonial administrators, scientist, entrepreneurs as well as the European civilians were the first to notice the climate change in the Eastern Himalayas as early as in 1840s. They observed that there is a certain link between the denudation of the green cover with the climatic factors like rainfall, snowfall and rise in temperature. The first annihilation of the primeval forest and the expansion of the agriculture and settlement had an abiding impact on the climate of Darjeeling and the old dwellers of Darjeeling recognized it during their life time. The deterioration of snowfall in Jalapahar and Singalila by the end of Nineteenth Century, indicate a gradual change in the climate of the entire Darjeeling district. While on an official visit to Darjeeling in 1828, Lt. General Lloyd faced several days of continuous snow fall in the hills which covered the entire station and the nearby hills for weeks. On revisiting Darjeeling in 1836,

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<sup>11</sup> Ibid, p.15

<sup>12</sup> Leong-Salobir, Cecilia, *Food Culture in Colonial Asia: A Taste of Empire*, Routledge, 2011, p.92

<sup>13</sup> Judith T. Kenny, Climate, Race, and Imperial Authority: The Symbolic Landscape of the British Hill Station in India, *Annals of the Association of American Geographers*, Vol. 85, No. 4 (Dec., 1995), p.711

he observed a snow-fall covered the ground to the depth of a foot and remained unfrozen for over a week.<sup>14</sup>

The Colonial land revenue and forest policy were responsible environmental degradation of the Darjeeling and Western Dooars. Before the implementation of the forest act already large portion of the forest has been destroyed. Prior to the coming of the colonizers the exploitation of the timber was started in the Western Dooars. When the colonial soldiers enter into Bengal Dooars in 1864, they observed that the large portion of the Dooars was already cultivated by the native people of these regions, villages were existed. The hill areas of Darjeeling and Sub-Himalayan Bengal were transformed into the laboratory for the colonial scientist, place of shikar for the administrator and area of profit for the planters. The attitude of the Indians to the nature changed due to the coming of the colonial market economy. The environmental degradation occurred due to the human behavior toward the nature. W. W. Hunter mentioned that there was no market for skins in the western Dooars and Darjeeling. But from the early days of the colonization in the hills there was a steady market for the forest products in Bengal. The Nepal was an exporter of skins to Calcutta market via Purneah. Wax, hides, horns. From Tibet, Sikkim, Darjeeling and Bhutan beeswax, mask, skins, wool, woods, hides and horns were products.

The government policy of leasing the wastelands for the commercial plantation was associated with the massive destruction of the forest and wildlife in the Darjeeling and Western Dooars. The land became the commodity and used to acquire high profits. The British Colonizers for their own profit replace many of the indigenous plants with alien flora. It developed a worldwide framework to extract the natural resources from the lands which were conquered by them through the power of superior knowledge and the greater ability to control and utilize human resources. The annihilation of forest from the outer Himalayas disturbed the balance of nature. The Sub-tropical forest of the foothills was the thriving ground for the different species of flora and fauna. But the biodiversity of the region was destroyed by the colonial officials. The massive destruction of the forests leads to the increase in the landslide and flood hazards in the Darjeeling

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<sup>14</sup> Dozey. E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p. 124

Himalayas and the foothills. Moreover, the Western Dooars became a ground for constant human-animal conflict. Many of the cases, the newly settled villagers were attacked by the elephant or tigers. In the tea garden areas, the European planters took a leading role in the distraction of the wild animals as they were regarded as the obstruction to the expansion of cultivation. Sometimes, the villages informed the colonial officials or the Maharaja Nripendra Narayan Bhup Bahadur of Cooch Behar about the movement of the wild animals in the surrounding areas of the village. It was a welfare duty for the native ruler and the European officials to kill the wild beasts.

The thesis is not dealt with the ongoing debate on the on the impact of colonialism on the natural world of the colony or it is not aimed to blame the European colonizers for destroying or transforming the existing balance of the natural resources in the colony. Rather it provided a holistic approach to understand the nature of ecological exploitation in the colonies due to the human impact. The thesis is also an effort to gather data and information regarding the natural event which influenced the life of the common and on the other hand it has critically analyzed the pattern of the natural calamities in the Darjeeling and Dooars. At the same time the thesis analyzed the possible physiological impact of the natural events on the human beings on the basis of the biographies, autobiographies and the travelogues of the colonial period.

The water, soil and temperature have played a great role in the Indian history. The availability of water for cultivation depends on the temperature as it controls the wind current, air pressure and rainfall. All though from centuries the human were trying to control the nature for their own benefits, but nature as the supreme force sometime destroyed all human efforts through the violent calamities. Every living being have equal right over the nature. By birth they have the right to exploit the natural resources of the blue planate. But in reality, the physically and mentally superior human beings grab the opportunity to exploit more and more amount of the natural resources than they require.

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**Table: I****The list of the Tibetan-Bhutia Amulets used by the Natives of Colonial Darjeeling**

<b>Animals</b>	<b>Parts of the animal body used to make amulets</b>	<b>Uses of the amulets</b>
Marmot ( <i>Arctomys caudatus</i> )	foot or a skull	stop the attacks of the malignant devils
Badger ( <i>Aldes leacura</i> )	Foot	stop the attacks of the malignant devils
Snakes	Backbone	stop the attacks of the malignant devils
Various animals	Chew	stop the attacks of the malignant devils
Tiger	Whiskers, either with or without the skin	stop the attacks of the malignant devils
Tiger	jaw	Protect the children from the malicious Gods
Wild Black Cat	foot	Protection from all kinds of evils
A kind of stag of Sikkim	Horns and skull	Fixed firmly to a door, in order to resist devils from entering the house
A kind of Monkey	Paw	Carried by the people to get protected from the attack of a demon who caused serious illness effecting the entire body
Indian wild dog ( <i>Cuon primaevus</i> )	knee-cap, or bone of the frame	protection from all kinds of sicknesses

Bear	Male organ	Tied upon the abdomen, cures affections of the testicles.
Rhinoceros	Male organ	Tied upon the abdomen, cures affections of the testicles.
Boar	Tusk	Carried to get protection against all kinds of sicknesses and also used in magic
Elephant	Hairs from the tip of tail	set in gold or silver finger rings, and are carried in order to bring good luck
Elephant	Ivory	Powder of ivory used to cure child disease (Dr. Hildburgh believed that the Bhutias use it to cure diphtheria or similar disease)
Chank-shell	shell	Amulet of shell worn by the women and the girls as a protection and as a means to securing good luck, earring of shell carrying a ring of chank shell used by the Lamas in order to protect himself from diseases
Masked Deer	Hair	Carried as an amulet curative of fever

**Table: II**

**Diseases and their remedies in the Lama Medicinal Practices in Darjeeling**

<b>Diseases</b>	<b>Remedies in the Lam Medicinal Practices Darjeeling</b>
Plan's Fever	Finely powdered hoof and bones of the foot of the masked deer mixed in water and taken by the ill. Sometimes pills made of these things put inside the tentacles
Coughs or Sore Throats	Bone of a large white sea-bird is rubbed in water and drunk, as a cure for a child's coughing sickness. Another procedure of treatment is a piece of a tiger's tongue rubbed in water and drunk, for the cure of a throat infection
Tongue disease	A piece of rhinoceros' tongue is to be ground in water, which is then used as a mouth-wash (and spat out, not swallowed)
Stomach problems	A black subsistence eaten as a purgative (unidentified by W. L. Hildburgh), A white subsistence which was presumed by Hildburgh as salt taken by dissolving in milk to cure 'hot inside'
Internal pain in stomach	The skin of a rhinoceros' foot and a piece of internal from a kind of deer (apparently, from the name, a kind of musk-deer) are to be rubbed together, in water, and drunk as a cure for internal pains

Bloody excrement	A piece of bone and flesh of a small variety of deer (the carcass of the animal was kept by the medicine-seller for the supply of pieces) is to be boiled in water and drink, for the cure of trouble
Bloody excrement of the cattle	A red stone (unidentified) to be rubbed into water and given to the cattle
Loss of appetite	A small loofah, brought from the plains of India, is to be eaten to cure loss of appetite
Beri-Beri	Piece of the hoof of an ass ( <i>Equus asinus</i> , var. <i>Tibeticus</i> ) is to be rubbed in water and drunk.
Syphilis	Solution of sulphate of copper in water is to be used to wash the parts affected
Sore Eyes	Certain stone, brought from Tibet, is to be scraped to form a powder, which is to be rubbed on the eyes
Wound	An alabaster-like stone is to be rubbed on them, with a little saliva or warm water. A certain blackish mixed substance is to be rubbed in water which is to be used as a lotion
Pains	Piece of tiger's fat is to be rubbed on the part affected, to cure pains in any part of the body excepting the head. A certain vegetable substance is to be cut up and boiled in water, to form a poultice to cure any kind of a pain

	in the arms or legs
Parturition	piece of a horn of Hodgson's antelope (Pantholops Hodgsoni) is to be rubbed in water and drunk
Poisoning	Piece of one of the scales of a scaly manis is to be placed amongst food suspected of containing poison; should the food be poisonous the dish will break. A piece of a certain kind of wood (or root) is to be rubbed in water and drunk as an antidote for poisoning.
Miscellaneous Sicknesses	A dried gekko is to be boiled in water and taken as a cure for any terrible sickness. Wild cats' dung, sold either crude or shaped into forms, is used for the cure of some sickness, the nature of which was not known to the seller.

**Table: III****List of the ethnomedicinal Plants in Darjeeling and Western Dooars**

Scientific name/Identification	Usage of the plants <sup>1</sup>
<i>Rhododendron arboreum Sm</i>	Used to cure diarrhoea and dysentery
<i>Allium Sativum Linn</i>	Help to cure mountain sickness and indigestion
<i>Coriandum sativum</i>	Help to expel gas from the stomach
<i>Mentha arvensis Linn</i>	Remedy from headaches and cholera
<i>Mimosa pudica</i>	Used for piles
<i>Rosa clamasena Mills</i>	Used to stop discharge of blood
<i>Citrus gaurantifolia Christum</i>	Cure stomach worms
<i>Hordeum vulgare Linn</i>	Easy to digest and given to the sick
<i>Datura fistulosa Linn</i>	Useful in rheumatic swelling and inflammation complaints and asthma
<i>Bauhinia variegata Linn</i>	Useful in ulcers, skin diseases and diarrhoea
<i>Amaranthus tricolour Linn</i>	Used to cure diarrhea, dysentery and heamorrhoeage of the bowels

<sup>1</sup> The name of the medicinal plants gathered from K. P. Tamsang, *Glossary of Lepcha Medicinal Plants*; Mani Print Press, Kalimpong; 1981, Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri (1889-1895)*, Calcutta, Bengal Secretariat Press, 1895, Milligan, J. A, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*, The Bengal Secretariat Book Depot, Calcutta, 1919, Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914

<i>Urtica paviflora</i> Linn	Clearing agent after child birth
<i>Hydrocotyle asiatica</i> Linn	Good for throat and lungs
<i>Hibiscus esculentus</i>	Useful in gonorrhoea
<i>Rubus ellipticus</i> Sm	Used in colic pains and to kill internal worms
<i>Lyonia ovalifolia</i> Wall	Insect killer
<i>Juglans regia</i> Linn	All types of rheumatism
<i>Purnus pudum</i> Roxb	Applied in healing fracture of bones
<i>Ananas comosus</i> Mar	Leaves useful in expelling worms
<i>Semicarpusan acardium</i> Linn	All types of skin diseases
<i>Piper longum</i> Linn	Useful in asthma, cough, rheumatism
<i>Stephania hernandifolia</i> Walp	Useful in fever, diarrhoea and urinary diseases
<i>Entada scandens</i> Benth	Used for skin diseases
<i>Gynocardia odorata</i> R.Br	The oil is used as a remedy for leprosy
<i>Momordica charantia</i> Linn	Juice of leave rubbed in burning of the soles of the feet
<i>Dichroa febrifuga</i> Low	Taken during malaria and other types of fevers
<i>Curcuma caesia</i> Roxb	It relives flatulence
<i>Michelia champaca</i> Linn	It helps to reduce fever
<i>flemingia congesta</i> Roxb	Used for external application to ulcers and swellings
<i>Luffa acutangula</i> Roxb	Used as purgative
<i>Shorea robusta</i> Gaertn	Used in dysentery and fermigation, drive out mosquitoes and other insects
<i>Albizia julibrissin</i> Durazz	Used for piles, diarrhoea, strengthen gums and teeth, cure night blindness
<i>Artemisia vulgaris</i> Linn	Very useful medicines
<i>Paederia foeda</i> Linn	Very useful medicines
<i>Mussaenda frondosa</i> Linn	Used in cough, asthma and jaundice

<i>Marsdenia roylei</i> Wt	Juice is taken in gonorrhoea
<i>Amonum subulatum</i> Roxb	Various use
<i>Cucurbita pepo</i> Linn	Seeds help to destroy intestinal worms and leaves are used externally for burns
<i>Bombax malabaricum</i> DC	Juice is used in dysentery and young roots are used in gonorrhoea
<i>Dicentra thalictrifolia</i> Hfn	Juice from the root used to stop overflow of menstruation
<i>Abies webbiana</i> Lindl	Leaves are used against asthma, bronchitis and periodic diseases
<i>Acacia concinna</i> DC	Leaves are used as purgative and for bile and liver trouble
<i>Zanthoxylum acanthopodium</i> DC	Seed and bark are used in fever, dyspepsia and cholera; Fruits are use against gout and rheumatism
<i>Colocasia esculenta</i>	Roots are used as medicine in tuberculosis
<i>Abies webbiana</i> Lindl	Leaves are used against asthma, bronchitis and periodic diseases
<i>Acacia concinna</i> DC	Leaves are used as purgative and for bile and liver trouble
<i>Zanthoxylum acanthopodium</i> DC	Seed and bark are used in fever, dyspepsia and cholera; Fruits are use against gout and rheumatism
<i>Colocasia esculenta</i>	Roots are used as medicine in tuberculosis
<i>Cynodon dactylon</i> Linn.	Used in dropsy, syphilis, piles, gonorrhoea, diarrhoea and dysentery
<i>Drymaria cordata</i> Wild	Cures headache, diphtheria, pneumonia and sinus infections
<i>Leea robusta</i>	Pain reliever in fractures and strained body parts
<i>Alstonia scholaris</i> Br.	Bark is used in skin disease and rheumatism; Root juice cures leprosy
<i>Dillenia indica</i> Linn.	Fruits are used in cough; Leaves and bark are used to stop bleeding
<i>Lens culinaris</i>	Used to cure measles
<i>Citrus medica</i> Linn.	Used to cure dysentery; also helps in digestion
<i>Ficus religiosa</i> Linn.	Bark helps to cure gonorrhoea

<i>Phyllanthus emblica</i> Linn.	Various usage
<i>Adhatoda vasica</i> Nees	Various usage
<i>Lycopersicon esculentum</i> Will	Very rich in vitamin A and C
<i>Carica papaya</i> Linn.	Fruits keep the digestive power good
<i>Morus indica</i> Linn.	Bark is used as purgative; Leaves are used in inflammation of the vocal cord
<i>Delima scandens</i> Burkill	Used to treat boils and burns
<i>Curculna linga</i> Linn.	Various usage
<i>Allium cepalum</i>	Promotes menstrual discharge and prevents sunstroke in summer
<i>Ipomoea batatas</i> Linn.	Roots are used as laxative
<i>Madhuca butyracea</i> Roxb	Used in rheumatism
<i>Trachelo spermum</i> Fragraus Hook	Used to cure malaria, diarrhoea and ulcers
<i>Celastrus paniculata</i> Will	Used in rheumatism, paralysis, leprosy and to cure scabies
<i>Costus speciosus</i> Smith	Rhizomes are used to cure many diseases including eczema and bowel movement
<i>Swertia chirata</i> Haiu	Various usage
<i>Cactii</i>	Used to cure bowel evacuation and toothache
<i>Zinziber officinale</i> Rose	Various usage
<i>Rubia cordifolia</i> Linn.	Used as skin ointment
<i>Rubus molnecannus</i> Linn.	Remedy for passing of urine at sleep; Promotes menstrual discharge
<i>Cedrela toona</i> Roxb	Bark is used to cure various ulcers
<i>Helianthus annus</i> Linn.	Promotes urine; useful in lung disease, cough, cold and bronchitis
<i>Cucumes melo</i> Linn.	Promotes urine, relieve pains in passing urine and suppression of urine
<i>Curcuma aromatica</i> Salish	Rhizome is useful in giddiness, nausea and stomach ache
<i>Cydonia oblonga</i> Will	Cures headache and stimulates the heart in case of heart failure

<i>Evodia fraxinifolia</i> Hook	Useful in typhoid and helps in digestion
<i>Abies webbiana</i> Lind	Leaves used in asthma, bronchitis, tuberculosis and internal haemorrhage
<i>Viscum album</i> Linn.	Used to treat fractures and muscular pain
<i>Schima willichii</i> Choisy	Bark is used to treat gonorrhoea
<i>Cinnamum impressmervium</i> Meissn	Bark is used in gonorrhoea; Leaves are used in rheumatism, colic and diarrhoea
<i>Ficus cunia</i> Ham	Fruits can cure leprosy
<i>Viscum album</i> Linn.	Used to treat fractures and muscular pain
<i>Schima willichii</i> Choisy	Bark is used to treat gonorrhoea
<i>Cinnamum impressmervium</i> Meissn	Bark is used in gonorrhoea; Leaves are used in rheumatism, colic and diarrhoea
<i>Ficus cunia</i> Ham	Fruits can cure leprosy
<i>Coriandrum Sativam</i>	Appetite in cooking
<i>Ægle Marmelos</i>	Cure bawl complain
<i>Andropogon Muricalum</i>	Remedy for cardiovascular and gastrointestinal disorder

**Table: IV****Population Growth in Darjeeling and Western Dooars (1865-1951)<sup>2</sup>**

YEAR	Darjeeling	Western Dooars	Rate of increase in Population (%) in Darjeeling	Rate of increase in Population (%) in Western Dooars
1865-1867	-	49,620	-	-
1871	94,712	1,00,111	-	101.67
1881	1,55,179	1,82,687	60.467	82.48
1891	2,23,314	2,96,964	68.135	62.55
1901	2,49,117	4,10,606	25.803	32.27
1911	2,65,660	5,91,372	16.433	26.49
1921	2,82,748	5,58,971	17.198	7.62
1931	3,19,635	6,,04,234	36.887	8.10
1941	3,67,369	6,94,206	56.734	14.09
1951	-	7,47,356	-	7.66

<sup>2</sup> The data gathered from O'Malley, L.S.S. *Bengal District Gazetteer: Darjeeling*. Delhi, Logos Press, 1907, Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling*. Alipore, Bengal: Bengal Government Press, 1947, Sunder, D. H. E, *Survey and Settlement of the Western Duars in the District of Jalpaiguri (1889-1895)*, Calcutta, Bengal Secretariat Press, 1895, Grunning, J F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, Milligan, J. A, *Final Report on the Survey and Settlement Operations in the Jalpaiguri District 1906-1916*, The Bengal Secretariat Book Depot, Calcutta, 1919 and *Census of India (1871 to 1951)*.

**Table: V****The Number of Tea Gardens and Land under Plantation in Darjeeling (1866-1940)<sup>3</sup>**

Year	Number of gardens	Area under tea garden (acres)
1866	39	10,392
1867	40	9,214
1868	44	10,067
1869	55	10,769
1870	56	11,046
1872	74	14,503
1873	87	15,695
1874	113	18,888
1885	175	38,499
1895	186	48,692
1905	148	50,618
1910	148	51,281
1915	148	54,024
1920	148	59,356
1925	148	59,356
1930	148	59,356
1935	148	59,356
1940	142	63,059

<sup>3</sup> Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling*. Alipore, Bengal: Bengal Government Press, 1947, p. 114

**Table: VI**

**The Number of Tea Gardens and Land under Plantation in Jalpaiguri including the Tea Estate of the Western Dooars (1876-1877)**

Year	No. Of gardens	Lands under Tea garden (in acres)
1874	1	—
1876	13	818
1881	55	6,230
1892	182	38,583
1901	235	76,403
1907	180	81,338
1911	191	90,859
1921	131	1,12,688
1931	151	1,31,074
1941	189	1,31,770
1951	158	1,34,473

**Table: VII**

**Plantation of the Alien Trees in Darjeeling and Jalpaiguri (1876-1877) <sup>4</sup>**

Divisions	Oaks, Chestnut, Magnolia & Walnuts	Conifers	Spanish Chest Nuts and Toon	Teak and Toon	Bamboos	India Rubber	Total Acres
Darjeeling	144	43	3	153	1	1	344
Jalpaiguri	-	-	-	3	-	-	3

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<sup>4</sup> Progress Report of Forest Administration in Bengal 1877-78, p. 5

**Table: VIII**

**List of the number of Passengers and Goods carried in the Darjeeling Himalayan Railway (1882-1917)**

Year	Passengers	Goods
1882	8,000	380 tons
1905	29,000	31,570 tons
1916-1917	2, 39,696 <sup>5</sup>	59,740 tons

**Table: IX**

**The list of the Timber Exported through the Bengal Dooars Railways (1900-1904)**

Years	Timber Export (Tons)
1900	393
1901	514
1902	199
1903	459
1904	1,010

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<sup>5</sup> Nearly all were third class passengers.

**Table: X**

**A Rough Table of Total Big Game Shot by the Maharaja Nripendra Narayan of Cooch Behar State in Dooars and Cooch Behar (1871-1907)<sup>6</sup>**

<b>Wild Animals</b>	<b>Number of Wild animals killed by the Maharaja of Cooch Behar</b>
Tiger	365
Leopard	311
Rhino	207
Bison	48
Buffalo	438
Bear	133
Sambhur	259
Barasingh	318

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<sup>6</sup> The Maharaja of Cooch Behar, *Big Game Shooting in Cooch Behar, Duars and Assam: A Rough Diary*, Bombay, Times Press, 1908, p.449

**Table: XI**

**The List of the Animal Products mainly exported to China in 1914<sup>7</sup>**

<b>Name of the Animals Products</b>	<b>Number of Products Exported to China</b>
Yak Hides	2,000
Sheep Skins	10,000
Goat Skins	3,000
Lamb Skins	10,000
Sables	3,000
Snow Leopard Skins	2,000
Wolf Skins	5,000
Brown Fox Skins	10,000
Fox (E) skins	5,000
Fox (Be) Skins	5,000

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<sup>7</sup> Dozey. E. C, *A Concise History of the Darjeeling District since 1835*, Mukherjee, Calcutta, 1916, p.176

**Table: XII****The list of the earthquake in Darjeeling and Western Dooars (1842-1947)<sup>8</sup>**

YEAR	DATE	TIME
1842	21 <sup>ST</sup> MAY	Between 8.00 - 9.00 PM
	8 <sup>th</sup> September	4.30 AM
	11 <sup>th</sup> November	9.38 PM
1843	10 <sup>th</sup> August	4.30 PM
1849	28 <sup>th</sup> February	6.10 PM
	28 <sup>th</sup> February	9.8 PM
1852	31 <sup>st</sup> May	
1858	24 <sup>th</sup> August	
1862	18 <sup>th</sup> June	At night
1863	29 <sup>th</sup> March	10.00PM
	8 <sup>th</sup> July	8.50 PM
	11 <sup>th</sup> August	2.15 PM
	21 <sup>st</sup> August	5.15 PM
	17 <sup>th</sup> October	Between 10 & 11PM
1864	30 <sup>th</sup> August	11PM
1865	9 <sup>th</sup> September	9AM
1865	16 <sup>th</sup> November	7-8 AM
	16 <sup>th</sup> December	10PM

<sup>8</sup> The chart prepared by collecting data from Journal of Asiatic Society, Memoire of the Geological Survey of India, Oldham, R. D. (1900), List of aftershocks of the Great Earthquake of 12th August 1897, *Memoirs of the Geological Survey of India*, 30, 1–102, *Administration Report of Bengal*, Grunning, J. F, *Eastern Bengal and Assam District Gazetteers: Jalpaiguri*, The Pioneer Press, Allahabad; 1911, reprinted N. L. Publishers, 2008, Dash, Arthur Jules, *Bengal District Gazetteers: Darjeeling*. Alipore, Bengal: Bengal Government Press, 1947

	19th December	
1866	23 <sup>rd</sup> May	
1868	30 <sup>th</sup> June	
1869	10 <sup>th</sup> January	
	21 <sup>st</sup> March	9.30 PM
	23 <sup>rd</sup> March	2.15 AM
	9 <sup>th</sup> June	6.30 PM
	9 <sup>th</sup> August	Evening
	10 <sup>th</sup> August	8AM
1897	12th June	5.00 PM
	13th June	9.00 AM
		1.00 PM
		4.45 PM
	14th June	7.00 AM
		7.30 AM
		11.00 AM
		11.30 AM
		12.00 PM
		12.15 PM
		12.45 PM
		1.30 PM
		2.30 PM
		4.30 PM
	15 <sup>th</sup> June	6.00 AM
		7.00 AM
		10.45 AM
		2.00 PM
		5.00 PM
		6.00 PM
		7.45 PM
10.35 PM		
10.45 PM		

1897	16 <sup>th</sup> June	11.00 PM
		11.45 PM
		12.03 AM
		12.08 AM
		1.15 AM
		1.33 AM
		2.00 AM
		2.21 AM
		2.51 AM
		3.04 AM
		3.45 AM
		4.26 AM
		11.25 AM
		11.52 AM
		1.52 PM
		2.15 PM
	2.45 PM	
	8.00 PM	
	9.30 PM	
	11.05 PM	
	11.15 PM	
	11.40 PM	
	17 <sup>th</sup> June	3.10 AM
		3.25 AM
		4.25 AM
		8.00 AM
		11.00 AM
		7.00 PM
	18 <sup>th</sup> June	1.40 AM
		5.40 AM
		8.30 AM
		12.00 PM
		6.00 PM
7.00 PM		

1897	19 <sup>th</sup> June	5.00 AM
		6.18 AM
		8.30 AM
		9.34 AM
	20 <sup>th</sup> June	1.00 AM
		7.20 AM
		2.00 PM
	21 <sup>st</sup> June	1.20 AM
	22 <sup>nd</sup> June	8.00 PM
	23 <sup>rd</sup> June	1.20 AM
		6.00 PM
		7.05 PM
	24 <sup>th</sup> June	4.10 PM
	25 <sup>th</sup> June	9.00 PM
		9.10 PM
	26 <sup>th</sup> June	1.30 PM
		1.33 PM
	27 <sup>th</sup> June	10.00 PM
	28 <sup>th</sup> June	3.10 AM
		7.55 AM
		1.30 PM
		3.00 PM
		3.43 PM
		10.30 PM
	29 <sup>th</sup> June	2.53 PM
		3.00 PM
		12.00 AM
	30 <sup>th</sup> June	2.30 AM
10.30 AM		
10.45 AM		
11.35 AM		
1.30 PM		
1 <sup>st</sup> July	11.15 AM	

1897	2nd July	1.15 PM
	3rd July	11.30 AM
		2.35 PM
		7.00 PM
	4th July	8.15 AM
		8.15 PM
	5th July	5.30 AM
		7.45 PM
	6th July	11.40 AM
		1.30 PM
	7th July	4.30AM
		1.12 PM
		9.00 PM
	8th July	3.00 AM
		7.25 AM
		8.00 AM
	8th July	12.30 PM
	10th July	5.30 AM
		5.40 AM
	12th July	1.00 AM
		7.45 AM
		11.00 AM
		2.30 PM
13th July	4.00 AM	
14th July	2.45 PM	
	3.30 PM	
	5.00 PM	
	8.00 PM	
15th July	8.00 AM	
	10.20 PM	
16th July	5.30 AM	
17th July	2.15 PM	
18th July	12.05 AM	
19th July	5.13 AM	
	6.60 AM	

1897	19th July	11.30 AM
		8.30 PM
	20th July	6.40 AM
	21st July	2.30 PM
		9.30 PM
	22nd July	After mid night
	23rd July	4.00 PM
	24th July	10.50 AM
	25th July	12.10 PM
	26th July	3.00 AM
		10.25 PM
	28th July	12.10 PM
	30th July	2.50 AM
		9.54 PM
	31st July	3.10 AM
	1st August	6.31 PM
	2nd August	9.00 PM
		9.57 PM
	3rd August	9.05 PM
		9.20 PM
		11.22 PM
	4th August	11.00 AM
	6th August	3.30 AM
		11.25 AM
	7th August	6.00 AM
	13th August	7.35 PM
	15th August	4.10 AM
	16th August	7.26 AM
	17th August	11.48 PM
	18th August	12.10 AM
		6.30 AM
11.10 AM		
19th August	4.00 AM	
21st August	11.00 AM	

1897	22nd August	2.50 PM
	27th August	11.00 AM
	28th August	4.00 AM
		6.30 AM
		2.50 PM
	29th August	7.00 AM
		7.30 PM
		11.30 PM
	31st August	4.15 PM
	1st September	3.20 PM
	18th September	2.00 PM
	19th September	4.30 PM
	20th September	1.30 PM
	27th September	10.00 PM
	3rd October	7.15 AM
	5th October	10.45 AM
	9th October	9.30 PM
	11th October	1.15 AM
	17th October	5.00 AM
	22nd October	6.00 AM
		3.30 AM
		12.00 PM
		3.30 PM
	23rd October	2.00 PM
	25th October	10.30 PM
	2nd November	5.00 AM
		11.21 AM
12.15 PM		
4th November	8.25 PM	
8th November	8.20 PM	

1897	21st November	2.10 AM
	29th November	2.45 PM
	7th December	1.32 PM
1899	25th September	
1930	3rd July	
1934	15th January	

## Glossary

Anna – Subdivision of Rupees. 1 rupees = 16 annas

Basti- Slum or group of native house

Bazaar- Indian market place

Bojras- The huge country boats used for the transportation and business purpose.

Chowrasta – Four cross roads

Cantonment- Military headquarter of a colonial town in India

Chur- The sandy grassland by the side of a river

Coolie- Labourer

Dafader- The timber merchant of the Western Dooars

Dak-bungalow- Indian rest house for the European travellers in Bengal

Dandy – A kind of human-powered transportation

Dhura- The Dhuras means 252 logs of timber

Dooars- The word *Dooar* means “door,” “gateway,” and originally referred to the passes leading through the mountains regions of Bhutan into India

Dorje – Thunderbolt

Gram – Village

Haat – Native open air market

Jampuis- Irrigation canals

Jhora- Small Stream

Jotders- The owner of a ‘Jot’ or plot of land

Joomeahs- Slash and burn cultivators

Jhum- Slash and burn cultivation

Jungal- Forest

*Khagrah*- A type of reed grows in the uncultivated regions close to the river bed.

Khedda- A system to capture or trap the herd of elephants.

Khubber- The messenger who spontaneously helped the hunters by providing information about the movement of the wild beasts

Khola- Stream

Kutchery – Court House

Lama – A spiritual leader of Tibetan Buddhism or Buddhist priest

Mantra – Charm

Maund- Unit of Weight

Nullah- Small watercourse

Pagla- Mad

Paisa- A monetary unit of India, 1 rupee = 100 Paisas

Palki- Palanquin

Puja- The act of worship

Punkah- A type of cloth fan

Rickshaw – Two wheels hand drawn Indian vehicle

Sadar – Headquarter of a district

Saheb – An Arabic word means Master or owner. The word used by the native to show respect to the Europeans.

Sepoy- Indian Soldier working under the control of the British

Shikar – Hunting

Shikaris- Hunters

Tahasil- An administrative division in India

Taluk- An administrative division for the collection of taxes comprising of few villages

Thana – Police Station

Terai- Terai is a moist track at the very foot of the Himalayas

Tongas- A horse driven carriage used for the transportation in South Asia

## Map of Darjeeling and Western Dooars<sup>1</sup>



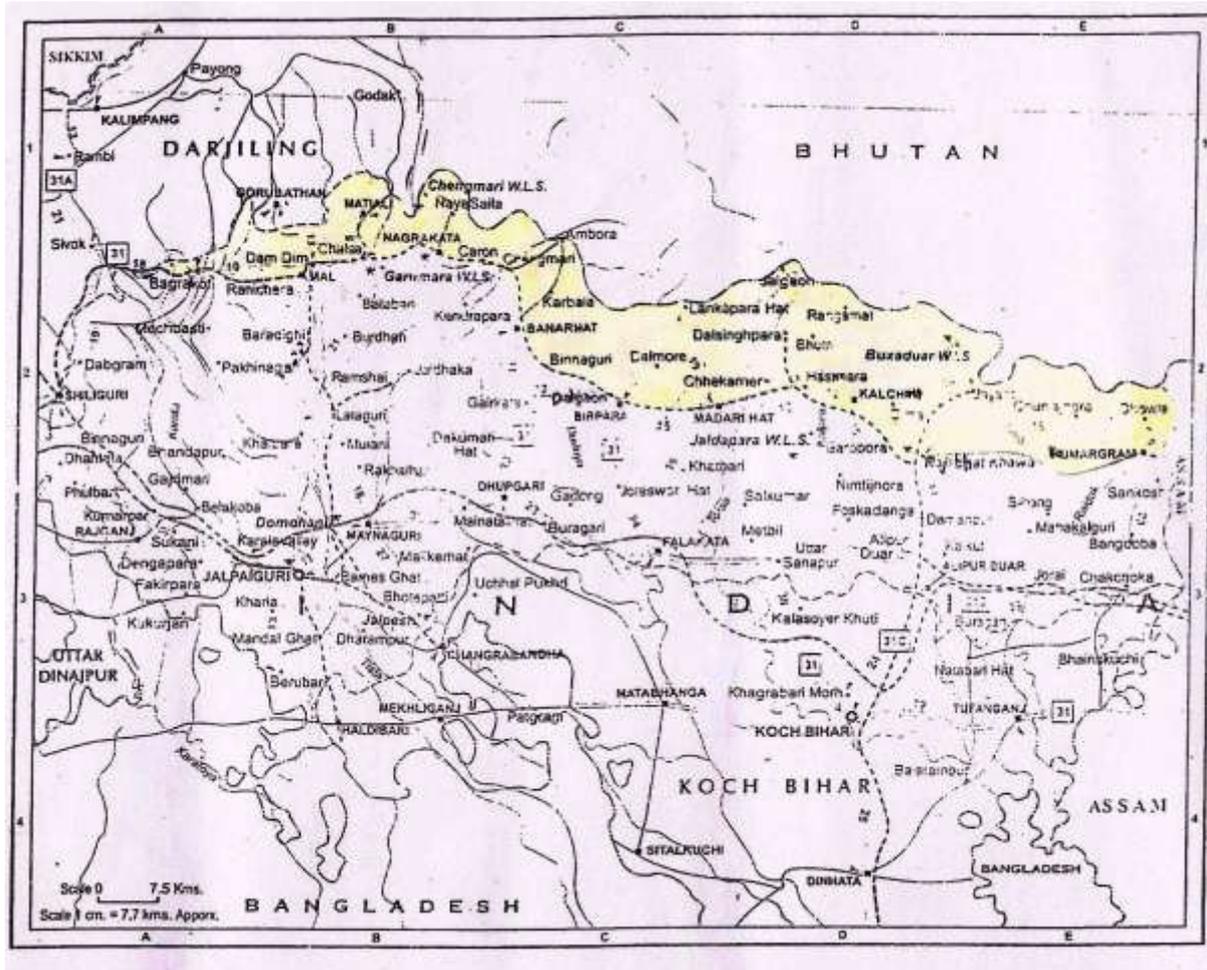
<sup>1</sup>[https://www.google.co.in/search?q=map+of+darjeeling+and+dooars&rlz=1C2CHBD\\_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=jYs-MkaLA9n36M](https://www.google.co.in/search?q=map+of+darjeeling+and+dooars&rlz=1C2CHBD_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=jYs-MkaLA9n36M): Access time: 08.08 AM, Date: 10.04.17

## Location of Darjeeling and Western Dooars<sup>2</sup>



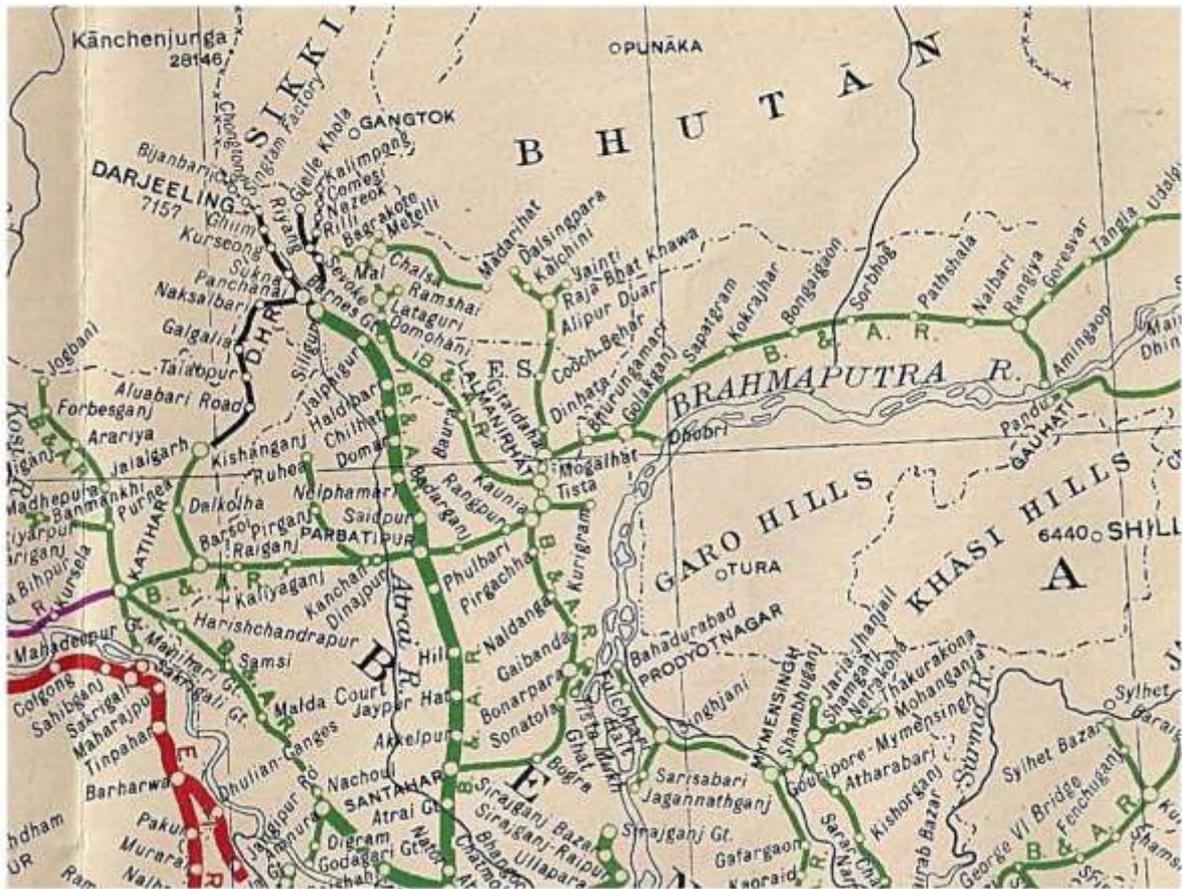
<sup>2</sup>[https://www.google.co.in/search?q=map+of+darjeeling+and+dooars&rlz=1C2CHBD\\_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=I14JK1jq3i6tsM](https://www.google.co.in/search?q=map+of+darjeeling+and+dooars&rlz=1C2CHBD_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=I14JK1jq3i6tsM): Access time: 08.19 Date: 10.04.2017

### Map of Western Doars<sup>3</sup>



<sup>3</sup>[https://www.google.co.in/search?q=map+of+darjeeling+and+doars&rlz=1C2CHBD\\_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=mt8LZVXgNHrxIM](https://www.google.co.in/search?q=map+of+darjeeling+and+doars&rlz=1C2CHBD_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAA AUMQsAQIGA&biw=1366&bih=662#imgrc=mt8LZVXgNHrxIM): Access Time: 08.11AM, Date: 10.04.2017

## Railway routes in Colonial Darjeeling and Western Doars<sup>4</sup>



<sup>4</sup>[https://www.google.co.in/search?q=map+of+darjeeling+and+doars&rlz=1C2CHBD\\_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAAUMQsAQIGA&biw=1366&bih=662#imgdii=MAfw2eajz8rotM:&imgcr=u5Whs3Eg\\_4iVjM](https://www.google.co.in/search?q=map+of+darjeeling+and+doars&rlz=1C2CHBD_enIN735&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjDrPfk7JjTAhXIDMAKHSAAUMQsAQIGA&biw=1366&bih=662#imgdii=MAfw2eajz8rotM:&imgcr=u5Whs3Eg_4iVjM); Access time: 08.27 Date: 10.04.2017

**Plate No: I**



Darjeeling Hill Road Entrance to Pearson's cutting, 3 miles below Kurseong 1865<sup>1</sup>

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<sup>1</sup> <http://www.oldindianphotos.in/2010/10/construction-of-darjeeling-hill-road.html>

**Plate No: II**



Picturesque bridge over the Rungnoo below Ging, Darjeeling<sup>2</sup>

**Plate No: III**



Samuel Bourne- Darjeeling Cane Bridge over Tista River

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<sup>2</sup><https://www.google.co.in/search?q=old+indian+photograph+darjeeling&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwiy3uIgJnTAhWsL8AKHfabB7kQsAQIGA&biw=1366&bih=662#imgrc=lnO563IjWMcEfM:>

**Plate No: IV**



Darjeeling Terai Tea Association date 1868<sup>3</sup>

**Plate No: V**



Nepalese group with wicker basket bush knives. Date taken – 1875

<sup>3</sup> Plate: IV-XI collected from <http://www.oldindianphotos.in>

**Plate No: VI**



Pickers and owners, Darjeeling, 1880's

**Plate No: VII**



Pickers and owners, Darjeeling, 1880's

**Plate No: VIII**



Tea Planter with Tea Pickers, Steinthal Tea Estate 1930s

**Plate No: IX**



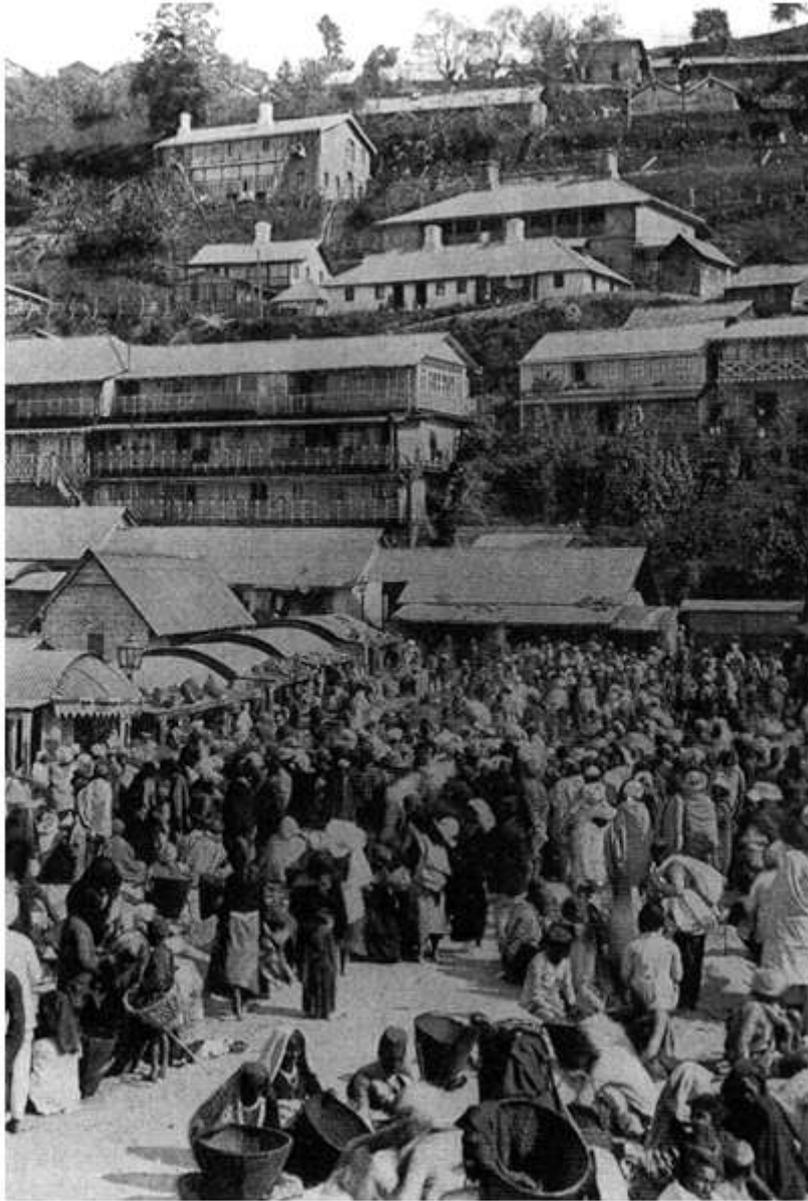
Picturesque view of Darjeeling during 1880s

**Plate No: X**



A group of Lepcha shingle cutters at Darjeeling

**Plate No: XI**



Darjeeling bazaar

**Plate No: XII**



This view 1/4 miles above Kurseong shows the effects of the landslide due to flooding in June 1865.<sup>4</sup>

**Plate No: XIII**



The Darjeeling Hill Road Damage at June 13<sup>th</sup> at 2 miles above Kurseong, with temporary bridge 1865

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<sup>4</sup> <http://www.oldindianphotos.in/2010/10/construction-of-darjeeling-hill-road.html>

**Plate No: XIV**



The House of the Lee Children before the Landslide of 1899<sup>5</sup>

**Plate No: XV**



The House of the Lee Children wiped out after the landslide of 1899<sup>6</sup>

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<sup>5</sup> Lee, A. H. J, Warne, F.W, *The Darjeeling District, it's bright side: the triumph of the six Lee children*, Evangelical Literature Depot, Calcutta, p. 186

<sup>6</sup> Ibid, p. 187

Plate No: XVI



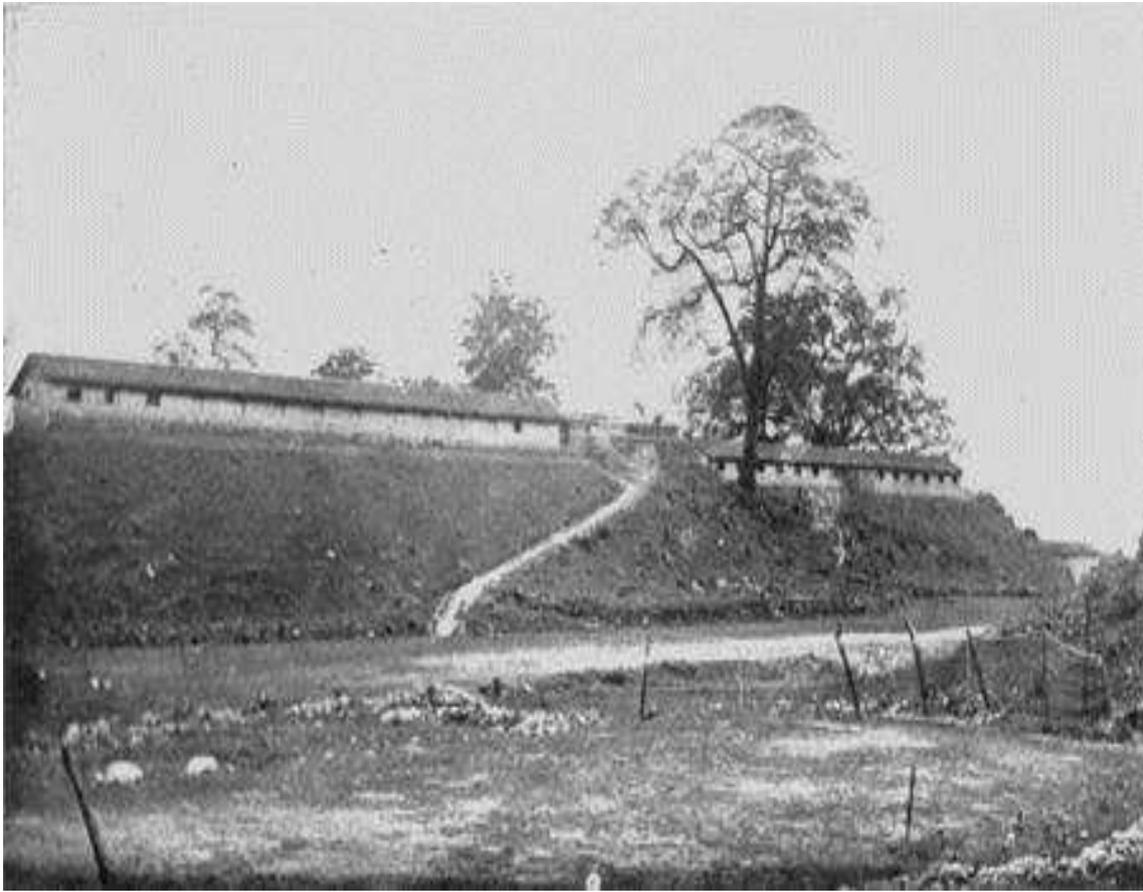
AS BIRDS' FEATHERS AND TRAIN DRESSES ARE ALL THE GO, MISS SWELLINGTON ADOPTS ONE OF NATURE'S OWN DESIGNS.

The Feather of the bird in European Fashion in Nineteenth Century<sup>7</sup>

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<sup>7</sup>[https://www.google.co.in/search?q=Exotic+Insects+and+European+Fashion+in+Nineteenth+Century&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjF7fyh\\_ZjTAhUqAcAKHdmkBzMQsAQIHA&biw=1366&bih=662#tbm=isch&q=European+women+with+feather+hats+in+Nineteenth+Century+cartoon&imgsrc=M0EAnXMvYVEgoM](https://www.google.co.in/search?q=Exotic+Insects+and+European+Fashion+in+Nineteenth+Century&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwjF7fyh_ZjTAhUqAcAKHdmkBzMQsAQIHA&biw=1366&bih=662#tbm=isch&q=European+women+with+feather+hats+in+Nineteenth+Century+cartoon&imgsrc=M0EAnXMvYVEgoM): Access time: 09.24 AM 10.04.2017

**Plate No: XVII**



Buxa Fort in 1903-04<sup>8</sup>

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<sup>8</sup> Casserly, Major Gordon, *Life in an Indian Outpost*, T. Werner Laurie LTD, London, 1914, p.16