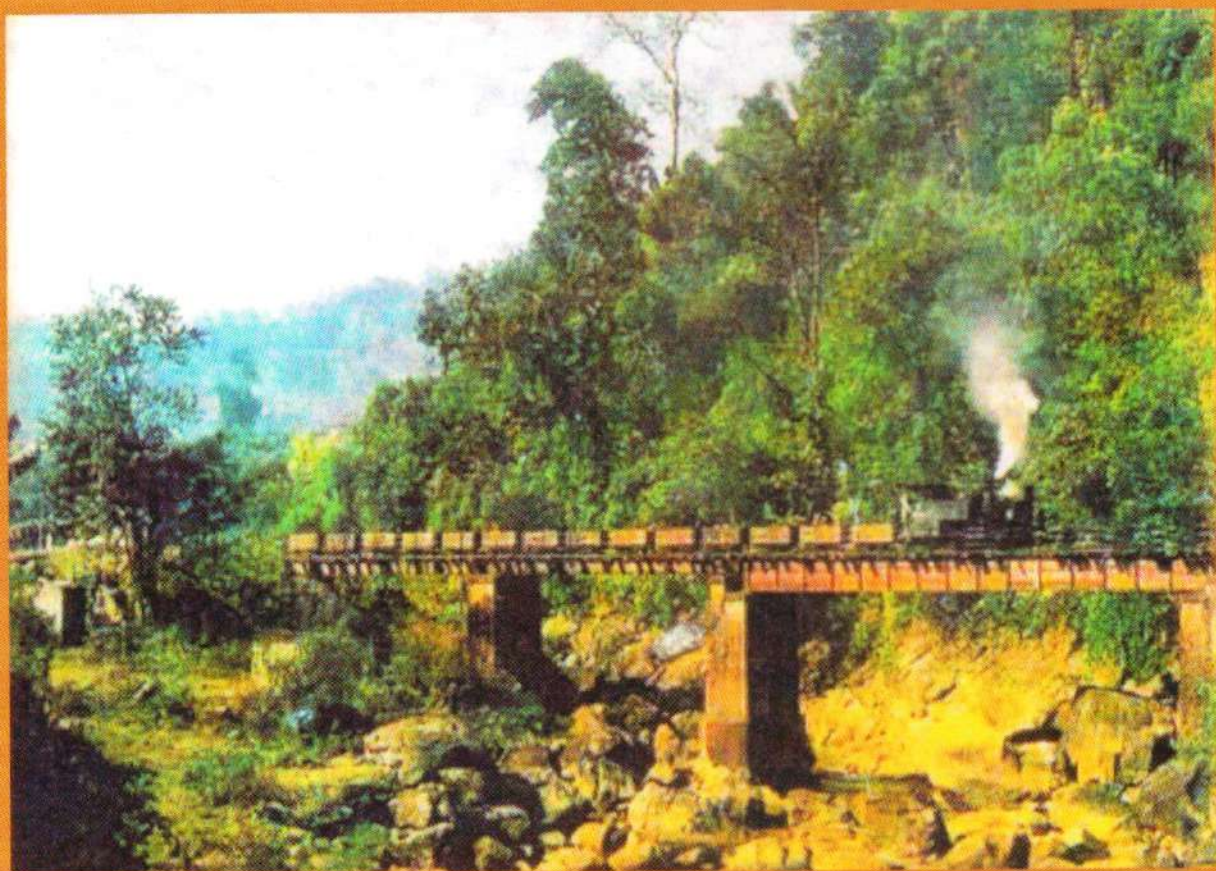


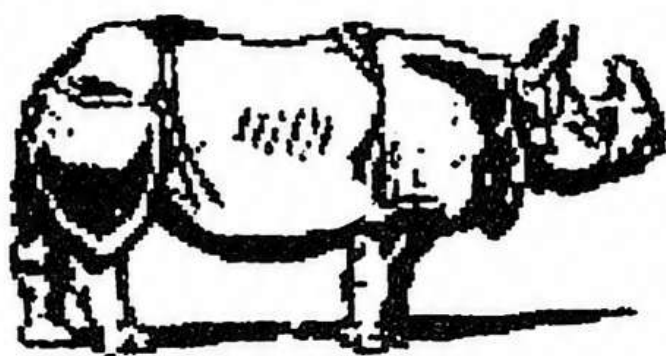
*The Story of
The Assam Railways and Trading
Company Limited*



CENTENARY VOLUME

1881 - 1981

**THE STORY OF
THE ASSAM RAILWAYS AND TRADING
COMPANY LIMITED
1881-1981**



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DR. JOHN BERRY WHITE
(Redrawn from an old photograph)

Born on : 5th June 1834
Died on : 19th November 1896

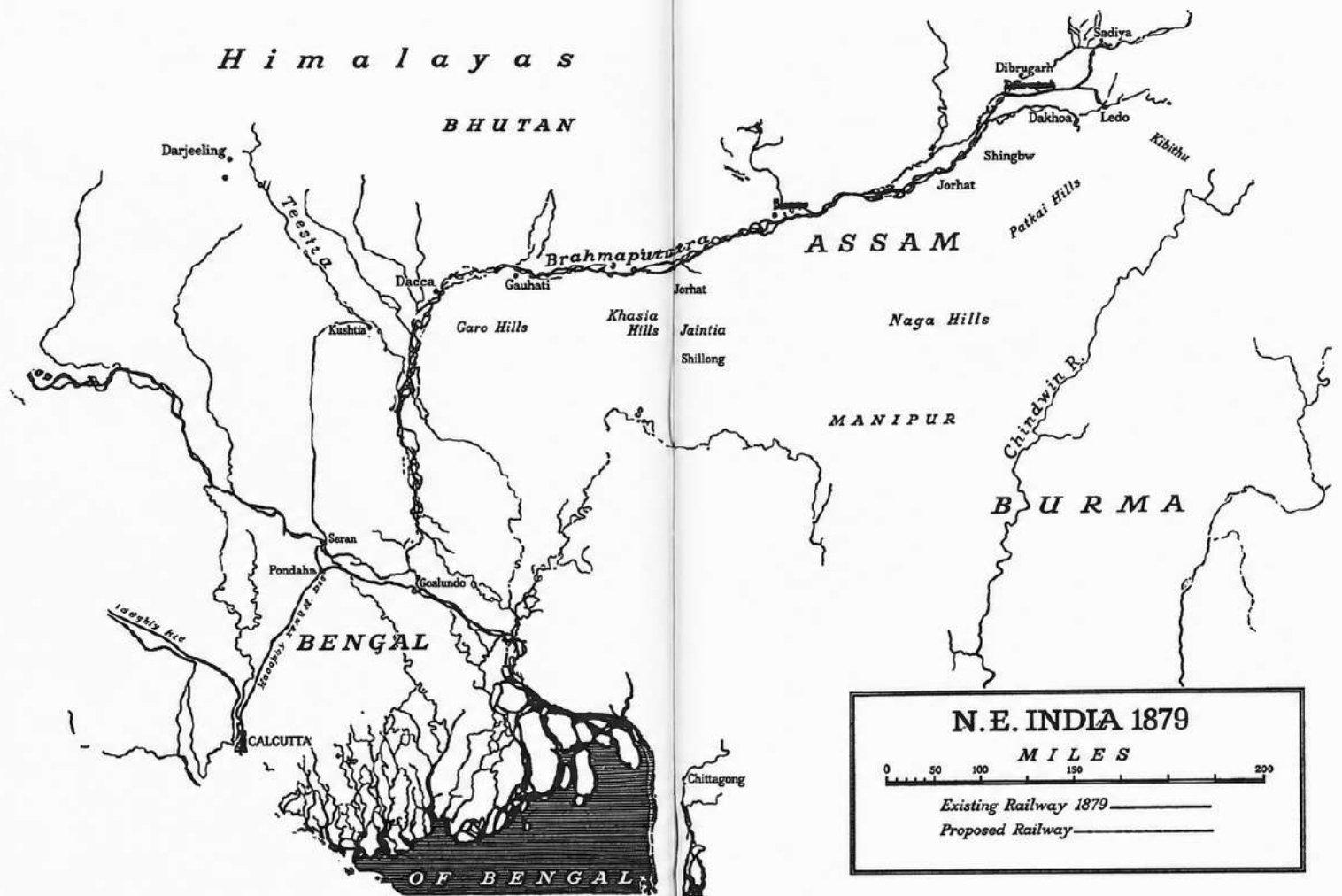


Margherita Maria Teresa Giovanna di Savoia
Queen of Italy

Himalayas

BHUTAN

Darjeeling



N.E. INDIA 1879

MILES

0 50 100 150 200

Existing Railway 1879

Proposed Railway



Mr. B.M. Khaitan
Chairman Local Board
The Assam Railways & Trading Co. Ltd.



Sir Owain Jenkins
Chairman Assam Railways & Co. Limited



Mr. N.N. Atal
Chairman A.R. & T. India Limited

*To all who by their efforts, skill
and loyal service have made possible
the achievements of the Company
during the past hundred years.*

PREFACE

One hundred years is always a special landmark. It is not generally given to many to celebrate a century of existence and more specifically in today's highly competitive industrial climate not many corporate institutions can claim to have survived for this span of times. That the Assam Railways & Trading Company has achieved this landmark is a happy enough occasion. That the centenary year coincides with the completion of the Indianisation of the Company is a matter of special satisfaction.

The Assam Railways & Trading Company story was first published in 1951 to record 70 years of the Company's operations. The current volume attempts to cover the whole story by incorporating the subsequent three decades. It recounts the continuity of Indo-British collaboration and faithfully records the fluctuating fortunes of the Company. In essence, it is a human story of men and women, Indian or British who served or today serve the Company. It will, I hope, be an interesting record of the faith of all those involved with the organisation, whose collective efforts have enabled the Company to survive the last decade and to now emerge in a new form of A. R. & T. India Ltd.

Many individuals, past and present, have contributed to the story. but it must be recorded that this volume would perhaps not have been possible as the story was ending tragically short of the century even as the fortunes of the Company hit the lowest ebb in the 1970's. It is therefore appropriate to record that the present happy situation was brought about by the timely intervention by Mr. Brij Mohan Khaitan, who accepted the challenge to restore the health of what had during the more recent years become a truncated, ailing organisation. Happily the old institution now enters a new era with renewed hope and confidence in its intrinsic ability to develop and prosper in the years to follow and to be identified, as before, with the economic development to the State of Assam of which it has been an essential and integral part for the past hundred years.

I must also record our special thanks to Mr. P. H. R. Surita who has methodically brought together in this volume the past and the present to complete what I hope will be a continuing story of success over the next hundred years.

5th December 1981

Narendra Nath Atal

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CHAPTER 1

ASSAM

Assam, the easternmost State in the Republic of India, is bounded on the north by the eastern section of the great Himalayan range, the frontier tribes front west to east being the Daflas, Miris, Abors, and Mishmis on the east by the Patkoi Hills, inhabited by the various Naga tribes, and the Burmese frontier; on the south by the Chin hills and the frontier of East Pakistan ; and on the west by the Jalpaiguri District of West Bengal.

From east to west stretches the fertile valley of the Brahmaputra, an alluvial plain about 450 miles long with an average breadth of 50 miles- interrupted halfway by the Mikir hills and by low hills on both sides of the river in the neighbourhood of Gauhati and Goalpara. South of the valley are the garo and Khasi hills.

Generally, the highest part of the plain is along the banks of the rivers from where the land slopes almost imperceptibly downwards,' the natural drainage being away from the main rivers towards subsidiary watercourses which, flowing roughly parallel to the Brahmaputra, eventually converge and spill into that great river further along the valley. During the rainy seasons the Brahmaputra overflows its banks from time to time, depositing sand and salt on the adjacent land. By this natural process the narrow plain of Assam is continually building itself up.

At the western end of the valley the Teesta, Torsa, Mariam and other fast-flowing rivers from the Himalayan slopes, further swell the mighty Brahmaputra in its onward sweep towards the Bay of Bengal.

The Assam Valley is extremely picturesque. In the east, shut off

**For example, Sissagar, a small town about one mile from the Dikhu River, is some thirteen feet lower than the flood level of that river.*

In by the mountains on three sides, is unfolded a pleasing panorama. Behind the foothills to the north the snow-covered peaks of the Himalayas glisten pure white, suffused by a delicate pink at sunset, in charming contrast to the blue of the Patkoi Hills on the other side of the Valley.

In the cold weather, the view from the deck of a river steamer near Gauhati is memorable, the changing vista being not unlike the scenery in the English Lake District. That across the five-mile stretch of river at Dibrugarh, with the Himalayan foothills in the background, is no less striking. In the sky may be seen cloud effects of great beauty, especially during the monsoon period

In the Khasi Hills, the highest point of which is the Shillong peak, the scenery also resembles that of certain parts of England, with deep gorges, smiling valleys, and undulating downs. Above 3,000 feet the indigenous pine predominates, with clumps here and there of oak, magnolia, beech and other trees. Azaleas and rhododendrons grow wild, and many kinds of orchid are found in the woods.

In the plain, particularly the eastern end of the valley, the forests are evergreen, the most notable species being hollong (*Dipterocarpus pilosus*), hollock (*Terminalia myriocarpa*), simul (*Bombax Malabaricum*) and mekai (*Shorea Assamica*).

Among wild animals may be seen the elephant, rhinoceros, tiger, leopard, bear, wild hog and deer. In the four years ending in March 1941 no less than 168 wild elephants and 84 tigers were shot in the reserved forests alone. The Indian rhinoceros is scarce but quite a number may still be seen in the Kaziranga Sanctuary in the Nowgong Districts, where they are strictly preserved. Small gains include florican, partridge, pheasant, jungle-fowl, wood cock, hornbill, stripe, duck and goose. There is excellent mahseer fishing in some rivers.

A characteristic of Assam's climate is its humidity. The year may be roughly divided into two seasons-the cold weather and the rains. The hot dry season of India proper is almost absent, especially at the eastern end of the Valley. The least comfortable months are June, July and August, when the atmosphere is often at saturation point with shade temperature reaching 95 degrees, seldom fortunately

for more than a few days in succession. In December and January, fogs are not uncommon and fires are needed at night, often as late as March. From October to February or March, warm sunny days, with occasional rain are experienced. In April, severe hailstorm occurs.

Assam is subject to earthquakes, all previous recorded being thrown into insignificance by the catastrophe of June 12th 1897 when the town of Shillong suffered extensive damage. Houses collapsed, roads and bridges were destroyed. The shock on August 15th 1950 was very severe, followed at intervals by a number of lesser shocks, felt chiefly to the north of the Brahmaputra, where the effect was devastating. Whole hillsides collapsed, valleys became blocked and the course of rivers impeded. The secondary effects, the flooding of villages and the disruption of transport, were serious, although it was possible to restore rail communications within a few days. It is too early yet to assess the long-term effects of the 1950 earthquake in the Brahmaputra Valley.

* * * * *

As to its history, Assam a hundred and fifty years ago was an independent kingdom ruled by the royal house of the Ahoms, Proud descendants of Sukapha, of Shan origin, who crossed the Patkoi Hills with about a thousand of his countrymen and settled in the Brahmaputra Valley in the early years of the thirteenth century A.D.

Having by the end of the fifteenth century greatly increased in numbers, the Ahoms were the dominant power in Upper Assam. Two centuries later they had made themselves masters-of the whole of the Brahmaputra Valley above the town of Goalpara. Their power and Prosperity reached its zenith under Rudra Singha (1696-1714).

In the eighteenth century, however, the kingdom was greatly weakened by internal jealousies and dissensions. By 1786 it had reached a state of anarchy. In despair, Gaurinath Singha (1790-1795) sought aid from the British in Calcutta. In response Lord Cornwallis sent a small force to Assam in 1792 under captain welsh, who eventually, having subdued the rebels and expelled the foreign freebooters, enabled Gaurinath to resume the throne. Despite protests by Gaurinath, who lacked confidence in his own ability to

maintain order, Welsh and his men were recalled to Calcutta two years later.

Internal strife thereupon caused one, crisis after another, and in 1817 the Burmese, in answer to an invitation by the rebels to join forces with them, entered Assam. Having achieved their purpose the Burmese soon left, but returned a few years later in response to a further appeal. This time it was plain they intended to stay. Chandra Kanta Singha (1811-1818 and 1819-1821) took refuge in Bengal, the Burmese ruling with Jogeswar Singha (1821-1825), the brother of one of the Assamese consorts of King Bodawpaya of Burma, as their nominee.

The British, whose interests elsewhere were being threatened and envoys humiliated by the Burmese were again induced to intervene, defeating the burmese in several battles in Assam during 1824-25. By the Treaty of Yandaboo, 1826, the Burmese having renounced all claim upon the territory promised to abstain from further interferences," a singularly mild word for a region of terror.

Weakened by years of internal feuds and by the pillage and atrocities of the Burmese, the unhappy Ahoms were scarcely in a position to resume power, and although the British did not at first contemplate annexation of Assam, it was realised that their with-drawal would be followed by a recurrence of internal disturbances. David Scott was accordingly appointed to administer part of the Country and a few years later Purandhar Singha was nominated as a protected prince in charge of Upper Assam. Other areas had already been left under other local chiefs. These arrangements did not last long ; for in 1838 Purandhar found himself unable to carry on. By 1842 the whole of the Valley was under British Officers.

In 1858 the "Act for the Better Government of India" established the authority of the British Crown over all territories in India heretofore administered in trust by the honourable East India Company."

Assam having been administered for a number of years as an outlying district of Bengal, it was formed in 1874 into a separate province under a Chief Commissioner. In 1905 it was combined with part of Bengal to form a new province known as Eastern Bengal and Assam, again becoming a separate administration in 1912.

Following the Montagu - Chelmsford Report, a Provincial Council* was established in 1921. The first general elections under the Government of India Act, 1935 were held in 1937 to fill the seats in the newly-constituted provincial legislature - the Assam Legislative Assembly* and the Assam Legislative Council.*

In 1947 India achieved independence and is now a self-governing republic, Assam, with redrawn boundaries to exclude areas included in Pakistan, being its easternmost State.

* * * * *

When Assam first came under British rule, it possessed four great assets, land, rivers, forests and minerals, all awaiting development. The acute shortage of labour caused by the Burmese atrocities and by pestilence, has since been remedied by immigration of workers from other parts of India and the introduction of health services to combat disease. Various skills have also been imported - tea making from China and others from Britain. These, then, were the main ingredients in the development of Assam beginning in the nineteenth century, the catalyst or flux being the readiness of British investors to risk capital abroad and of British administrators and technicians to endure exile.

In 1834 the Governor General set up a Committee to explore the possibility of tea growing in India. It was found that the tea plant was indigenous to Assam, a discovery followed by the importation of tea makers from China, leading, eventually to the great tea industry of Assam. Of the tea companies existing today the first two were the Assam Company formed in 1839, and the Jorehaut Tea Company formed in 1859.

The Brahmaputra, navigable over a distance of a thousand miles from the sea, made the establishment of the tea industry possible in Assam half a century before the advent of long-distance railway communications.

In 1848 the East India Company provided steamers to ply between Calcutta and Gauhati and in 1860 the India General.

*Of the Company's staff E.A.A. Joseph was a member of the Provincial Council : H. P. Gray, R. Petgrave-Johnson and W. R. Gawthrop were member of the Legislative Council : and W. E. Mitchell-Innes a Member of the Legislative Assembly.

Steam Navigation Company agreed to provide two vessels to sail at six weeks intervals between Calcutta and the Assam Valley. From these modest beginnings grew the various steamer services of later years, including fast mail boats running to a regular time table. The first rail route from Calcutta to Assam by rail from Calcutta was the single line to Poradaha in 1862, the extension to Goalundo being completed in 1864.

In 1879 the nearest approach to Assam by rail from Calcutta was by the Eastern Bengal Railway to Kaunia on the Teesta River, or to Goalundo. The journey on to Dibrugarh from either of these two places took approximately a fortnight. By 1885 the only railways in the Assam Valley were the Dibru Sadiya Railway (metre gauge) constructed by the Asam Railways and Trading Company and the Jorhat Provincial Rahway (two feet gauge). Both these were at the eastern end of the Valley, connecting the distant tea gardens with the Brahmaputra. The river services were at this time the only means of communication with the outside world.

Work on the Assam Bengal Railway was begun in 1891-2. In 1893-6 kala-azar devastated whole districts interfering very seriously with construction work. In 1897 the Gauhati-Jamunamukh section was opened for traffic but was closed almost at once as a result of the earthquake. The hill-section from Lumding to Badarpur took eleven years to build the 37 tunnels, aggregating 15,569 feet in length, being constructed by Cornish miners.

In 1904 through communication by rail was established between Chittagong and Dibrugarh. In 1890 the journey from Calcutta to Dibrugarh took at least a fortnight : in 1904 it took over three days : in 1940 only thirty hours by rail.

Following the construction of air fields during the recent war, the journey can now be accomplished in a little over four hours.

Long-distance road traffic has been a comparatively recent development, the reason being that the rivers have made Assam less dependent upon roads than other parts of India. Consequently the areas bordering on the rivers were the first to be put under tea. the

*The India general Steam Navigation Company was established in 1844, and its first two steamers, the Assam and the Naga were purchased in that year from the Assam Company.

*The Assam Bengal Railway Company was incorporated on November 18th 1892.

Brahmaputra is indeed the great natural highway upon which the majority of the tea gardens in Assam have always depended for getting their teas to the port of shipment. Thus for many years, except- for relatively short-distance traffics, roads were not essential to the development of industry in Assam.

In 1865 steps had taken to construct a road through the whole length of the Valley, along the south bank of the river from Saikhoaghat to a point opposite Dhubri. A second main road runs along the north bank. Nevertheless as recently as twenty-five years ago, roads in Assam, except in the hills, were mostly unmetalled. In the rainy season it was seldom possible to embark on a motor car journey without considerable risk of being bogged, whilst in the cold weather vehicles were liable to be enveloped in dense clouds of dust.

During the 1930's several hundred miles of road were metalled in loose single, an extension which encouraged the extension of all the year round passenger bus services throughout the Valley, a vast difference from 1850 when even carts and carriages were almost Unknown.

During the second World War, new roads were constructed and existing roads widened and improved by the military authorities. This increase in width and mileage now means an increase in the cost of maintenance - a heavy burden on the public revenues - if these great national assets are not to be allowed to fall into disrepair.

CHAPTER II

FOUNDATION OF THE COMPANY

The name of John Berry White, Civil Surgeon, Upper Assam in the 1870s, has long been familiar to generations of medical students in Assam as the founder and the benefactor of, the Berry White Medical School, Dibrugarh.

It is not so well known that he played a prominent part in the early development of Assam's mineral resources. Indeed, it was recorded at the time that the opening of the Makum coalfield situated on the first range of the Patkoi hills, was largely due to the combined foresight, faith in the future and perseverance in the face of failure and opposition, of Mr. Berry White, who was practically the originator of the scheme."

John Berry White was also directly connected with the early development of the Assam oilfield, where in the words of Sir Boverton Redwood, an expert of worldwide reputation, his scientific and practical knowledge of this subject, coupled with his long experience, has been of the greatest service in connection with petroleum work.'

The early years of the nineteenth century were full of unhappiness for the people of Assam. The ancient kingdom of the Ahoms was in the last stages of decline and the country was suffering grievously at the hands of the Burmese. But gradually these gave way to better times. The middle of the century saw the pioneer planters slowly but surely laying the foundations of the great tea industry later to become the mainstay of that country's economy and one of the most fertile sources of foreign exchange in modern India. Even as late as 1880, however, there was no organized source of motive power in Assam to maintain its many tea factories at work. For example, in that year the Doom Dooma factory imported three thousand maunds

of coal from Raniganj, which, arriving at Dibrugarh by river steamer, had to be transhipped and brought in small boats at least fifty miles up the Dibru River, and after a total journey of a thousand miles, within twenty-five miles of the Makum coalfield. According to F.R Mallet, Geological Survey of the India (Memoirs, 1876), the freight from Raniganj to Upper Assam raised the cost of the coal to more than ten times its value at the pit-head.

The existence of coal deposits in Assam had been known for many years. One of the earliest discoveries was near Safrai, and as early as 1828 a quantity had actually been raised by a party of a hundred men who had been sent there for that purpose by the commissioner of the North-East Frontier. Five thousand maunds were quarried and a large quantity loaded into small boats. The difficulties of the navigations, however, were so great, owing to the swiftness to the current, the rapids and sharp twists in the river that four boats were lost going down stream. The rest were brought in safety to the Brahmaputra a boat-load of coal despatched to Calcutta for trial. A second party was sent out in 1865, and as a result it was considered that the Makum field was the coalfield of Assam. With all this coal nearby, but as yet worked only "by mere surface scratching" one may imagine the feelings of the planters in that area who in 1880 were still compelled to import their requirements from a thousand miles away.

The existence of oil deposits also had been known for many years. One of the earliest references to petroleum in Assam was by C.A. Bruce in 1828 when he was prospecting for coal. In 1865 H.B. Medlicott, also coal prospecting, mentioned the oil springs at Makum Pani, a tributary of the Dehing River.

Oil was struck in 1867 in the Makum area, south of the Dehing River, during operations by the Mr. Goodenough, but there was no large scale development, and by 1880 the concession was in other hands. The deposits at Digboi, north of the Dehing River, do not appear to have attracted attention until some years later.

The development of the coalfield was not the only crying need in those days the nearest point on India's railway system was at Goalundo 600 miles away. Access to Assam's great natural highway the Brahmaputra, was vital to the tea industry in Upper Assam, but

the main road to the streamer ghat at Dibrugarh, sixty miles of unmetalled cart-track built in 1865 and known as the Sadiya Road in the rainy seasons was "a perfect slough of despond, strewn with broken carts, burst rice bags and damaged tea boxes." According to a contemporary observer "one of the planters, whose garden on the Sadiya Road is about five and thirty miles from Dibrugarh, assured us that his carts had often been absent for a fortnight, either carrying to Dibrugarh or fetching there from. The state of the road is really something perfectly awful, and could only be understood by actual inspections."

Nobody knew better than the pioneer planter the truth of the old saying "what cannot be cured must be endured". It seemed that the inconvenience and frustration of the Sadiya Road might have to be endured for many years to come. The estimating cost of putting the road into a serviceable condition was greater than the Public Works Budget for the Province for a while year.

During the rainy season of 1878, Dr. Berry White, himself the owner of the tea garden on the Sadiya Road, represented to the Chief Commissioner, Sir Stuart Bayley, the shocking state to which the road have been reduced by heavy traffic and lack of timely repairs. He expressed the planters' fear that communication between the tea factories and streamer ghat at Dibrugarh might cease altogether. In this event, he stressed, they would be unable to import food for their employees or to export their produce. The nature of the discussion that ensued may be gathered from the following extracts from a letter from the Public Works Department, Shillong, to the Government of India, Financial Department "I am directed to report, for the approval of the Government of India, the following proposals, which have been under the consideration of the Chief Commissioner of Assam, with a view to the construction of a light railway on the Dibrugarh and Sadiya Road.

"I am to explain that during the last few years there has extraordinary development of the tea industry in this part of the district, there being now no less than sixty gardens along this line of road, employing 20,000 imported coolies for whom 1,50,000 maunds of rice have to be imported annually, while the weight of tea exported is 60,000 maunds.

"The existing, road, though raised in most parts above flood level, is unmetalled and Dibrugarh being the furthest point on the Brahmaputra to which commercial streamers ordinarily ply, these garden have to depend mainly on this unmetalled road for the conveyance of their traffic of all kinds. The recent opening of the numerous garden has been accompanied by a large development of cart traffic, and the unmetalled road, under the burden of this traffic, becomes hopelessly and absolutely impassable during the rains.

"The attention of Sir Stuart Barley was called to the subject when he visited the district. In the beginning of December the Chief Commissioner marched up the whole length of the road, and satisfied himself by personal examination of the great need that exists for improved communication, as the development of the tea industry continues to increase in this district with extraordinary rapidity and there is a tendency for all the capital seeking investment in tea in Assam to gravitate to this part of the country.

"On the 7th December 1878, Sir Stuart Barley had an interview with a committee of gentlemen who had taken up the subject and who were in communication with the Calcutta firm of Messrs. Shaw Finlayson and Co., through whose assistance they hoped that a company would be formed for constructing and working a light railway'

The letter contained a summary of proposals, the principal one being the construction of a metre-gauge railway from Dibrugarh along the Sadiya Road, on the expressed condition that, Government would guarantee an annual subsidy for a numbers of years. The Chief Commissioner's views on this were stated as follows

"Compared with the cost of metalling the road, Sir Stuart Barley considers, that the sum of one which the province may fairly spend. He is more inclined to encourage the present scheme, because whilst he considered it commercially not unsound, it is the first instance of a united endeavour on the part of a influential community to help themselves, and, if, successful, it will be parent of many similar projects, and will thus tend to relieve, the Assam Administration of an onerous burthen in the way of providing means of communication—a burthen, I may add, which it is difficult to repudiate, and which financially, the province is unable to bear."

The lack of a railway was, of course, the main reason why the Makum coalfield, part of which for some years had been in the hands of John James Haly, of Lepetkatta, Dibrugarh, and Tunbridge Wells, had not been developed. The coalfield was separated from the Sadiya Road tea estates only by the Dehing River but by a twenty five mile belt of dense forest as well.

It was decided therefore to extend the proposed railway by constructing the "Makum Branch" to the coalfield, which would then be in direct communication not only with the Upper Assam tea gardens but also with the Brahmaputra.

Eventually, Government having agreed to a conditional subvention of Rs.100,000, a prospectus was issued on December 4th 1879 in London by Dr. Berry White and his friends, inviting application for shares in the Assam Railway Company Limited. The main object the company was the construction of a railway from the streamer ghat near Dibrugarh to the 51st miles on the Sadiya Road, together with three branches (a) from Dibrugarh to Nagaggoolie, (b) from Panitola to Hopewell on the Rangagora Road and (c) the "Makum Branch" from Doom Dooma to the Dehing River. Meanwhile, optimistic that the necessary capital would be forthcoming, Messrs. Shaw Finlayson and Co., had sent an engineer and small staff to Dibrugarh with a view to starting operations at once.

Unfortunately application for shares in the Assam Railways Company for the public were not sufficient to warrant the Directors for proceeding to allotment. The provisional staff in Dibrugarh had to be dismissed, and the whole project seemed to have collapsed. In a note published at the time it was said that "the Sadiya Road planter resigned himself to his wonted mournful prospects of roads a sea of mud, broken carts, damaged tea, and mutinous coolies, frenzied by long delayed supplies of rice while those who believed in the mineral wealth of Makum and its environs regretted the further postponement of its development."

Happily this disappointment was short-lived. Towards the end of 1880, the project was brought to the notice of Benjamin Piercy, of Marchwiell Hall, Denbighshire, and Drapers' Gardens, London, an engineer who had been responsible for the construction of railways in England and the other parts of the world. Piercy agreed to support

The scheme, which was widened to his advice to include the opening of the Makum coalfield in the addition to timber and petroleum rights. He stipulated, however, that the statement placed before him should first be verified by his own trusted agents, and to his end he deputed his brother Robert to report on the prospect of the proposed enterprise.

In January 1881 Robert Piercy and J. Edwards Wilson proceeded to Assam, returning a few month later to report that the whole scheme promised to provide a most remunerative investment. On the following July 30th the Assam Railways and Training Company Limited was incorporated. The prospectus was duly published and within a few bonus the Company's Bankers received application amounting to twenty-eight per cent in excess, of the required capital.

The original Directors were:- James Staats Forbes, of the London, Chatham and Dover Railway and of the Metropolitan District Railway; Patrick Comrie Leckie, of Messrs. Durrant, and Co., London; Sir Arthur J. Otway, Bart, M.P., of the London Brighton and South Coast Railway;

Thomas Barnes, of the Lancashire and Yorkshire Railway; Robert Jacomb Hood, of the Alabama Great Southern Railway; Even Alexander Jack, of Messrs. Shaw Finlayson and Co., London and Calcutta; John Berry White, Bengal Medical Service.

It is noteworthy that both John Berry White and Evan Alexander Jacks had been Directors of the previously formed Assam Railways Company. Benjamin Piercy, whose faith in the project was so great that he became the largest share-holder, was appointed Directors in 1887, his death occurring in the following year.

In Benjamin Piercy's view, the inclusion of the local coal has been the sole means of attracting the shareholders and filling, the subscriptions list ... the old company had to abandon the scheme because they put forwards the railways unassociated with the coal, timber and petroleum."

It may also be noted here that it had now been agreed to terminate the railway at Talap, the furthest largest gardens on the

Sadiya Road, rather than continuing to Saikhoaghat. The previously proposed continuation between these two places, at first stipulated a military necessity, was to be omitted from the arrangement.

The immediate task the Directors set themselves was threefold, namely, the construction of the railway, the development of the coalfield, and the establishment of a steamer service. Steamers and barges were required during the construction of the railway and collieries and later for the distribution of the coal. The railway required coal not only as a fuel for locomotives and workshops but as traffic. The traffic to end and from the gardens on the Sadiya Road had been insufficient to attract capital for the railway without the collieries, whilst the collieries could not be operated without adequate rail and river transport. Thus all three objects and aims were interdependent.

CHAPTER III

DIBRU-SADIYA RAILWAY

The following extract from an account written immediately after the railway to the coalfield had been opened in 1884 illustrates the difficulties to be overcome.

“The peculiar isolated nature of the work; the entire absence of all local labour and assistance; the necessity of creating a manufacturing centre and workshops, stocked with all needful mechanical appliances, and skilled labour, in a place hitherto considered as almost beyond the confines of civilization, and of importing absolutely everything (except timber for sleepers) necessary for the construction of the line and opening out of the coal these and numerous other obstacles and drawbacks, which it would be tedious to detail, might well have daunted the boldest.”

The last great work for which Benjamin Piercy had been responsible before embarking on this new task had been the construction of a railway in Sardinia, where his brother Robert had been employed, with three Italian engineers, Chevalier Roberto Paganini and two others also named Paganini.

These four men, by their common experience in Sardinia, knew and trusted each other. Obviously it was an excellent arrangement for them to combine once more in the Assam project. On October 22nd 1881, Robert Piercy and two other Paganinis arrived in Calcutta. Paganini senior meanwhile travelled to Karachi to inspect a number of river streamers and barges, available for immediate disposal, which might prove suitable for the construction work in Assam. Roberto Paganini having overtaken his colleagues three weeks later the four men left Calcutta for Dibrugarh, where they arrived on 1st December, 1881.

The memorandum handed to the construction engineers by Benjamin Piercy, who, as consulting engineer, remained in England, included the following :

“The prospectus is of great importance as a document issued to the public by the Directors, and upon the faith of which, and of the statement it contains, a large portion of the capital was subscribed and it is therefore, as I have already pointed out to you conversationally, of paramount importance that every expectations held out in it be at least fully realized.

In fixing the line between the river Dehing and the coal, you will be guided by the coal measures, and so arrange it that it will command the spots nearest the Dehing which will yield coal of good quality, in the greatest quantities, with the simplest and least costly means of getting at it. You will bear in mind that the petroleum concession is likely to pass into the hands of our Company, and therefore whenever there is a choice of routes between the Dehing and the coalfield, you will choose that which will pass nearest to the petroleum well, leaning in that direction in proportion to the prospects of abundant petroleum. When you have thus gone over the whole project together, and decided in consultation upon some of the main points as above, Mr. Robert Piercy will return to make Dibrugarh his headquarters and direct operations at that end whilst Mr. Roberto Paganini will establish quarters for himself and assistants in the forests on the bank of the Dehing, and direct operations at the Makum or Naga end.”

Several weeks were spent in surveying the line from the steamer ghat to the town of Dibrugarh. Possession had to be obtained of the required land and a labour force had to be enlisted. As a result, it was not possible to begin construction until January 1882, when a considerable period of the working season has expired.

Soon, however, the first consignment of rails, locomotives, etc, shipped from the United Kingdom arrived at Dibrugarh. They had been brought a thousand miles up the Brahmaputra from Calcutta by the Rivers Steam Navigation Company. With sleepers cut locally, the first miles of track were promptly laid. On May 1st 1882, the first metre-gauge locomotives in Assam passed over that section of the line extending from the steamer ghat to the Jaipur Road.

The terminus on the Brahmaputra, known as Mohona Mukh, the steamer ghat during the dry seasons, was some five miles from Dibrugarh. The itself was on the south hunk of the Dibru River, a tributary of the Brahmaputra which at that time entered the main river about half way between the steamer ghat and the town. Recent generation may find this hard to believe, as in the meantime the Brahmaputra has eaten away several miles of land, for some Mears threatening part of the town itself. Indeed, the site of the first workshops and stores, some two and a half miles from the present Dibrugarh Town Station, has been under water from many years.

At the other hand of the proposed railway, the site for the crossing of the Dehing was fixed half-way between Kujugaon and Makum

Fort, near the old petroleum godown marked on the Government Survey Map. In February or March 1882, Roberto Paganini established his quarters at Kujugaon, where lie could be in a position to supervise not only the construction of the line on the north bank towards Dibrugarh, the south bank towards the coalfield, and of the bridge, but also the preliminary work at the coalfield itself.

By now, the Company had purchased a numbers of steamers, and barges. The first of this arrived in Assam in 1882, being used to ship material up the Dehing. Until their arrival Roberto Paganini had experienced great difficulty in preventing the labourer, from becoming demoralized. Its must be borne in mind that they were in the middle of a dense forest and no doubt feared the possibility that some hitch in the commissariat arrangement might deprive them of the necessities of life. Goods traffic from Dibrugarh, only sixty miles away, might take as long as forty days by country boats.

The main trouble, however, at both the Dehing and the Brahmaputra ends of the lines was the lack of platelayers experienced and competent enough to adjust rails and lay points and crossings accurately. To overcome these difficulties platelayers were sent out from England. Another essential requirement was the supply of sleepers. In this connections, the Calcutta Agents wrote to the Directors on 2nd May, 1882.

“The rapidity with which sleepers have been cut and prepared has created considerable astonishment among the inhabitants. The forest on the bank of the Brahmaputra adjacent to the lower river

terminus, so favourably spoken of by Dr. Berry White although disparaged by many, has already yielded a large number of sleepers of very excellent quality the daily outturn was about 1000 sleepers”

In the same letter appeared the following paragraph:

“It being subversive of previous experience that an Englishman and Italian, strange to Indian customs, should come out and attempt to construct a railway without the assistance of Anglo-Indian experience, many of the officials of the district have shown a dis-position to doubt the possibility of their success. These crotchets have been discountenanced by the Chief Commissioner of Assam, who has pledged himself to a deputation of Planters, which waited upon him on the subject of road communications, to remove every, obstruction against the progress of the railways”

On August 15th 1882 the line was opened for goods traffic up to the Dinjan River and up to the Chabua on December 23rd.

The line to Makum Junction, forty miles from the steamers ghat at Dibrugarh, was opened for passenger traffic on July 16th 1883. On Christmas Day of that years the lines converging from the Brahmaputra was linked at Borbhil, in the heart completing through railway communication.

The great day, however, was yet to conic, and it was not until February 18th 1884 that the official opening of the coalfield took place.

A special train left Dibrugarh shortly after 7 a.m. for the Dehing Bridge and the Company's settlement immediately beyond. The latter had lately been named “Margherita” where were some 400 people of all communities on boards. The part included a detachment of the Lakhimpur Volunteers and the Band of the 44nd Assam Light Infantry.

After leaving Makum Junction at 10:30 a.m. the route was new to most of those on the train; T. Kinney gives a colourful picture of the scene: “The train plunged into the heart of the primeval forest, and surely never from any other railway carriage windows in the world was such a scene viewed as greeted our eyes. South

“The sketch at the top of page 35 shows Paganini's bridge, which was altered after few years vide the photograph facing page 16. It was replaced in 1899 by the present river bridge.

American lines have penetrated tropical forests before now, and have had 'considerable jungle' to tackle. But I question if even any of these lines could show such magnificent timber with such a matted and tangled undergrowth, dense cane brakes, inextricably confused creepers and parasitical growths, as the virgin forest on the Makum branch exhibits. Here and there on the line a few butts, and, perhaps a damps, dripping, disconsolate-looking tent appeared, the temporary home of a gang of workmen and their superior. The desolate dreary look of these patches of humanity in the gloom of the primeval forest, particularly on such a dark, drizzling day, gave us a vivid idea of the life led by the working pioneers of this great enterprise. One could picture the cheerless return 'home' of these men after a hard day's work, spent with toil, lacerated with thorns, their life-blood half drained by leeches, and often, notwithstanding the exertions of those concerned to keep the commissariat arrangements in working order, with poor fare to look forward to."

The Dehing Bridge, then of timber construction, was reached at 12.30 p.m. land as it was not yet ready for locomotives; the carriages were hand shunted one by one across the bridge to the Margherita side of the river. Here the Volunteers paraded, about 40 strong, and were inspected by Major Beauclerk. After the train had been reassembled the journey continued to the cooleries at Ledo. The party was then conducted by George Turner, and here again one may quote T. Kinney's description: "It was a curious sight. The rain had ceased and an occasional fifful gleam of sunshine was visible. Ladies, a considerable number of whom were present, in all varieties of costume, from the prudent dark coloured Ulster to the reckless of weather 'gala dress, donned in all its glory, gentlemen in still more varieties of costume, ranging from a regular 'masher' get up through the graduations of ordinary morning dress, riding suits, Kamjharri or round the garden in the morning, attire, down to the open shirt, turned up corduroys and big hoots of the British workman; Indian of all sorts ; the Rai Bahadur, gorgeous in many coloured skills and embroidery ; the silver bedecked and red and yellow turbaned Marwarris ; the sober grey and black chapkhan of the court amlah ; the shawl, muslim dhoti, stocking and shoes of the ubiquitous Bengali ; picture a file of pilgrims nearly 500 strong,

in all these varieties of costume, personally conducted not by Cook but by George Turner, the Mining Engineer, along a tunnel of coal right through the base of a hill—a Naga Hill, I am afraid to say now long. It was too dark to think of pacing it or of anything but scrambling out of the blackness of darkness into Heaven's blessed daylight on other side."

The train started back at 2.50 p.m. and reached Margherita at 3.15. A special coal train was sent off. The Band of the 42nd Assam Light Infantry played and the Lakhimpur Volunteers again paraded. Major Beauclerk, in command, reported their arrival, the Chief Commissioner, Sir Charles Elliott, taking the salute. They fired a feu de joie, which caused great consternation among the hill men, Nagas, Singphos and Khamphtis, who made off as fast as they could for the Jungle, which in those days came right tip to the Company's clearing. At lunch, which did not begin until 4.30 p.m. inaugural speeches were made by Sir Charles Ellicott, Benjamin Piercy, and Dr. Berry White.

After lunch, the carriage having been pushed back cross the Dehing Bridge and the engine attached, a general move was made to the train, which left at about 6PM, depositing its passengers at their various garden en route, and finally reaching Dibrugarh at 12.15 a.m.

On the evening of the 19th, Dr. Berry White and Benjamin pierce Invited some hundred and twenty guests to meet the Chief Commissioner at dinner, served in the engine shed at Dibrugarh specially equipped for the occasion. The next day, Sir Charles Elliott gave a party on board his yacht, and the festivities ended.

The Manager wrote to the Director :

"The Chief Commi8ssioner and officials and guests were much pleased at the progress of the Company and spoke highly of its prospects. The Viceroy telegraphed his congratulations and no company could have commenced with better support from Government officials."

The line from Makum Junction from the Sadiya Road to Talap, Including the Doom Dooma Bridge, was still under consideration. The First part, as far as Doom Dooma, was opened to traffic on May 2nd 1884; and the next section on February 5th 1885.

Its is a somewhat curious contradiction that whereas the name Makum Junction implies that the line from there towards the Makum coalfield was intended as a branch line, and was referred to throughout the negotiation with Government as the Makum Branch. Its has been known to the public for many years as part of the main line the line through the Doom Dooma on the other hand being known as the branch line. The explanation seems to lie that the earliest proposal was for a railway to serve the tea gardens along the road from Dibrugarh through Doom Dooma, therefore to be the "main line," the march of events proved that the line to the coalfield, through uninhabited country with no existing traffic, was of greater importance than the Doom Dooma section with traffic already offering. In that way the so called Makum Branch rightfully became known as the part of the main line and confirmed the soundness of Benjamin Piercy's view in 1880 that the coal element was the life of the project, and the good sense of the money market's refusal to subscribe to the proposed Assam Railways Company without the coal.

That the paramount importance of the coal was not at first fully recognized is shown also by title change in the proposed location of the junction. According to the 1879b proposal, this was originally to have been at Doom Dooma ; and a glance at the map will show that the line northward from the Dehing River was directed towards Doom Dooma. Eventually, however, it was decided to locate the junction nearer Dibrugarh, necessitating a change in the direction of this line at what is now Bogapani from noethward to wesrward. For if the original proposal had been put into effect, the mileage from the coalmiles to the Brahmaputra would have been appreciably greater than by the route actually followed, a matter of some consequence as the coal and oil traffic to the Brahmaputra ultimately proved to be very substantial.

* * * * *

It is interesting to note that in his address to the Shareholders, on June 27th 1894, the Chairman claimed that the quantity of goods per mile carried by the Company's railway in Upper Assam was greater than on other Metre-gauge railways in India, not expecting the Great Indian Peninsula Railway.

About this time, the Directors were concerning themselves with

a project for building a railway connecting the Brahmaputra with the Northern Bengal and Bihar railway system. In January 1897, the Company invested funds in the Brahmaputra Sultanpur Railway Co. Ltd., formed to construct a metre-gauge line from Sultanpur on the Eastern Bengal Railway eastward through Boga to Kaliganj on the Brahmaputra. The Directors took the view that this new line would open up a large market for the Company's coal and oil products.

It should not be overlooked that for many years of the company's railway was separated from the main railway system of India by many hundreds of miles. In fact, it was not until 1903 that the Assam Bengal Railway, begun in 1891, was extended to provide a junction with the Company's railway at Tinsukia, with access to the sea at Chittagong In 1904, The Eastern Bengal line to Amingaon and Gauhati was not Completed until 1910 ; so it will be seen that there was still a Considerable gap in that direction.

On August 24th 1898, the first bridge over the Dehing, of wooden construction, was severely damaged. The Agent and General Manager, Sydney S. Hawkins, reported the accident in the following words. "About 5 a.m. the river began to rise very rapidly, and drift timber to accumulate, so much so indeed that by 7 a.m. half the spans were blocked, and the water was then within about three inches of the highest flood recorded that of July 1893. The piers, against which the greatest stress was thrown by the weight of timber and debris and the force of the current, began to can't over badly, and the men working had to be called any by 8 p.m., it was hopeless, off, it being too dangerous for them to remain on the bridge any longer. About 8.20a.m. the bridge was breached, six spans (300 ft.) being carried bodily away. The last thing before stopping the men at work I had the rails disconnected in several places. Had this not been done, it is probable that the whole of the upper structure would have been torn away; as it is nearly half the bridge is gone." Mr. Hawkins pointed out that no fault could be found with the Soundness. He was not to be beaten, however of the structure of the old bridge and at once began to tackle the problem. That he was successfully was reported by the Government engineer doting, his next visit. The repairing of the bridge under exceptional difficulties was very creditable tp the management. Some 300 ft, perhaps more,

were carried away. Timber was promptly felled in the neighbouring jungle, brought in, and trestles constructed varying in height from 30 ft. To 45 ft. None of these were floated in site, tilted and fixed in place, timbers and roadway thrown across, and the first train put across in a month, in spite of two floods, which came down and undid much that had been done.”

May 8th the following year saw the old bridge finally swept away. Two days after, on May 10th 1999, the present steel under construction since 1896, was opened to traffic.

The Saikhoa Extension of the railway from Talap to the Brahmaputra at Saikhoaghat was built in 1909 at the Government's request.

In 1911 new workshops were being constructed at Dibrugarh to replace the old workshops by then nearly thirty years old. The main reason for the change, however was that the old workshops were cramped for space. And inconveniently situated at a point where the river was eroding its bank. The building and equipment, even as late as 1946 still known locally as the “New workshops,” included the Erecting Shop, Boiler Shop and Smithy, Foundry, Machine Shop and Carriage and Wagon Shop. The new General Stores buildings were completed in 1919.

The shortage of materials during the first World War seriously affected the maintenance of the railway and it was only with great difficulty that traffic was kept moving. Areas of maintenance were at length overtaken by about 1924-25, and additional locomotives and rolling stock were provided.

The old 250 feet long Timber Bridge at Doom Dooma was replaced during the first war by the present steel bridge, which was formally declared open on January 29th 1920 by the Chairman, Lord Ribblesdale.

In 1930 one of the new locomotives built for the Company by Messrs W. G. Bagnall Ltd. Was displayed at the Liverpool and Manchester Railway Centenary Celebrations.

The Company's railway was the first in India to use railcars for local passenger traffic. These were built and shipped to India by Messrs. D. Wickham and Co. Ltd., in 1938.

* * * * *

At the time of the Japanese advance northward into Burma in 1942, the military authorities decided that the operational purpose of all railways in Assam should come under one management. Accordingly, in April 1942 the Government of India assumed responsibility for the Company's railway, paying a fixed rental. The Company's staff remained in charge locally.

After three years, during which increased facilities including more than forty miles of new sidings, buildings, plant, machinery locomotives and rolling stock to convey the heavy military traffic had been furnished at Government expense, it was perhaps only to be expected that Government would wish to incorporate this busy railway into the main railway system of India, the bulk of which already State-owned. A suitable figure having been agreed by both parties, the Dibrugarh Sadiya Railway and Colliery Line were purchased by the Government in April 1945.

Following the sale, the Company's Dibrugarh office closed in 1946, sixty five years after it was first opened.

The site selected for the Company's settlement and the bridge over the Dehing River was near to the point shown on the old survey maps as “Petroleum Godown,” about halfway between Kujugaon and Makum Fort the former a riverine village and the latter a small military outpost, since disbanded. When the Company was formed in 1881 the surrounding country was covered by dense forests, broken in a few places by natural oil seepages and by what amounted to little more than surface scratching on the coal outcrop. The coalfield itself was known as the Makum coalfield ; the section of railway immediately north of the Dehing was, as we have seen, to be called the Makum Branch ; whilst in official correspondence, as late as December 1883, the site of the Company's operations in that area was referred to as “Makum.” The Times referred to it as such on November 19th 1885.

In January 1884, however, Benjamin Piercy and Dr. Berry White having then arrived from England for the opening ceremony, the Manager reported in a letter to London that he had accomplished them to “Margherita”, and in an account of the progress of the works by T. Kinney, printed in the Company's years at Dibrugarh in

February 1884, it was explained that the Company's settlement had been named Margherita "in honour of the Queen of Italy."

It is not clear whether the Directors were the moving spirit in This, as a graceful tribute to Chevalier Roberto Paganini or if it was Paganini himself out of patriotism. In either event, the result is the same : a lasting memorial to the Italian Engineer, who, having lived in the first bridge over the Dehing and the railway on both banks of that river.

During a visit in March 1900, the Viceroy, Lord Curzon said, as soon as my present tour to Assam was arranged, I wished from the first to include in it a visit to Margherita and the coal mines and oil wells and other industries which have been developed by the Company. I find here a most interesting and enterprising corner of Her Majesty's Dominions."

The Viceroy's Private Secretary at the time was W.R. Lawrence —later Sir Walter Roper Lawrence, Baronet, G.C.I.E., G.C.V.O., C.B., who became a Director of the Company in 1906, an office which he held until his retirement in 1937.

CHAPTER IV

COLLIERIES AND BRICKWORKS

The foregoing account tells something of the part played by John Berry White in founding the Company ; and shows that it was due largely to the energy, determination and professional skill of the Piercys and the Paganinis that the railway was built. It is now appropriate to recall the part played so ably by George Turner, a mining engineer from South Staffordshire, in creating the coal mines. Whereas on this arrival in the Patkoi hill at the close of 1882 lie found jungle and outcrop, on his departure a few years later he left working and prosperous collieries.

Work on the coal outcrop had already been begun in 1882 by the Railway engineers. A letter to the Director in May of that year states: "Nagas are now at work cutting the timber and clearing the jungle on the site of the settlement. Mr. Paganini has connected to open up the coal stems, i.e. removing the earth from the surface of the coal. A view of these coal seams or of this "Hill of Coal" as the Nagas call it is grand sight even to an amateur, forming, as they do, great walls of a beautiful glossy jet black colour. The scenery from the summit of the Tikak Hill is imposing. Between the Brahmaputra and the Hill there is a vast virgin forest of true Indian type the home of the wild elephant, rhinoceros, tiger and deer, mighty in the dimensions of its timber and festooned with the most beautiful tree ferns, orchids and creepers which would be the pride of a botanical garden in Europe; while behind Tikak the top of the Patkoi Range is seen, forming or close to the Burmese boundary... The Nagas are renowned for their powers of cutting down timber and clearing jungle; they appear to take kindly to the cutting of coal on

The surface of the hill; but are at present afraid of tunnelling or mining. They are not accustomed at earthwork and it has yet to be seen whether they will undertake this."

A further letter in June advised;

We are daily more convinced the real solution is Mr. Paganini's suggestions of importing from Europe skilled practical miners who shall train the Indians to this work."

Mr. Paganini was much concerned also because James Anderson, formerly Superintendent of the Equitable Coal Company in Bengal, appointed to the Company's staff in 1881, had not yet arrived. He had been diverted to Karachi to make arrangements for bringing steamers and barges to Assam, a difficult undertaking still continuing to engage his attention. He had also been deputed to inspect steamers in Rangoon.

In October 1882 George Turner sailed for India, taking with him fifty British workmen of various trades, three of whom were permitted to take their wives. Mrs. Turner and child also accompanied the party, which included about forty colliers.

This contingent sailed in the Clan Buchanan, which ran aground off the coast of Morocco, where they remained two days, after which the passengers were taken off and sent to Gibraltar whilst the ship was being refloated. Eventually they arrived in Calcutta, seven weeks after leaving Liverpool.

There were two routes from Calcutta to Upper Assam via Goalundo; and via Dhubri. The first had been taken by Roberto Piercy on his visit in February 1881, lie travelled by the Eastern Bengal Railway from Calcutta to Goalundo, hence a voyage of about 660 miles up the Brahmaputra to Dibrugarh, where he arrived about a fortnight after leaving Calcutta.

George Turner and party took the alternatives route: northwards from Calcutta by train to Damookdea; by ferry across the Ganges to sara; by train to Kaunia, where the Teesta River was crossed by boat ; thence by a two-feet gauge railway to Dharla, where there was another river crossing ; by another diminutive railway to Jatrapore; thence to Dhubri, where they joined the main steamer service to Upper Assam.

They reached Dibrugarh about Christmas 1882. Thirty-eight

of them, including one woman, started out for the coalfield on the New Year's Day following. They journeyed by rail as far as the uncompleted new line would permit, about twenty miles, where elephants and sundry ponies were waiting to carry them over the last stage of their journey. Four and a half days after leaving Dibrugarh they arrived at the Dehing River, the total Journey from Liverpool having lasted nearly twelve weeks.

The woman who accompanied them was the wife of William Powell, a titter was drowned live months later, in crossings them Dehing River.

Nothing apparently would tempt the Nagas to, take up underground work, consequently labour had to be imported from other parts of India, with good results. At the outset, Indian mine-workers were engaged from the Bengal coalfield, "but these one arrival wished to work in their own fashion. As the mining required from them was unlike anything they had seen or done before, it was soon found out that to introduce to South Staffordshire method of getting thick coal in India, it would be better once to begin at the beginning, and train up to the work young Indians who had never seen a coal mine, under selected thick coal miners. This was done, and there are now (1895) hundreds of Indians working in the mines, careful and good workmen, who were agriculturalists a few years ago"

It is a tribute to the skill with which the underground roads at Tikak were cut over sixty years ago mainly by colliers who went out from England in 1882-1883, that they are still in excellent conditions. Undoubtedly much valuable experience was imparted by these British workmen to the Italians working with them, who in turn passed it to later generations of Indian mineworkers and so on to the present day.

* * * * *

Ledo Colliery was started in 1882. Early in 1883, whilst the railway and marine engineers at Dibrugarh were crying for coal from the mine, the men at the colliery were demanding the completion of the railway so that the coal might be despatched. They hoped, we are told, to put 10,000 maunds of coal on the banks of the Dehing by the end of May 1883, "and if the rail is complete of course that

will be run into Dibrugarh ; if not, Your steamers will have to come up the Dehing for it... All that you have to do now is to find out if he (Paganini) has been supplied with platelayers and if he has, you bet you will get your coal, if he hasn't you won't."

As already seen the last rail was laid on Christmas Day 1883, and the first coal train was sent to Dibrugarh early in 1884.

Tikak colliery was begun in 1884, and in October of that year George Turner reported that lie was able to supply 1,200 tons weekly, steadily increasing this to 2,000 tons a week if required. There were, however, many obstacles not only at the mines, but also in connection with the railway, and flotilla service, still to be removed.

Inevitably, it was a case of *festina lente*; for neither coalmine, nor railway, nor flotilla service could be expected to flourish quickly in such a backward country, particularly as all three projects were being launched simultaneously, none capable of independent development.

In 1885 the programme covered an estimated annual output of 75,000 tons, and three years later the output had risen to over tons. In 1899 it was over 200,000 tons.

Situated at the extreme east of Assam it has always been recognised that the Company's coal output would be limited for many years to come. There was no possibility of expanding the market to the mountainous country north to east. In Assam itself, until the constructions of the Assam Bengal Railway was begun towards the end of the century, sales were limited to the tea, pardons and ton steamers on the river. For many years, however, substantial quantities of coal were sent from the Company's mines to Calcutta and in 1893 the Company's stocks of coal in Calcutta amounted to 66,000 tons. From here the coal was sold to various shipping companies for consumption in ocean-going vessels, but this proved unprofitable and was discontinued.

The establishment of the Company's mines was of great importance to the tea industry, which hitherto had depended upon wood fuel. Supplies of wood were becoming less plentiful, and it must have been with feeling; of some relief that planter in the pioneer tea companies found that supplies of good quality coal had become available at reasonable prices. For example, in 1887 the price at Kokilamukh, about 125 miles from mines, was

only seven annas a maund, or approximately sixteen shillings a ton.

In order to maintain the output of coal throughout the years and to increase it, further collieries were started at Namdang (1896), Ledo New West (1911), Tirap (1904), Ledo New East (1904), Baragolai (1909), Tipongpani (1924) and Namdang Dip (1940). Some indication of the nature of the Makum coalfield may be found in the following extract from a paper* written by George Turner in 1895:

“Coal has been proved in these hills over the whole length of the Company’s area, and as a coal of very nearly similar description is found in the hills twenty miles eastward and thirty miles westward, there can be no doubt of the existence of a large coalfield. The coal in the hills is found at various heights from Zero in the plains tip to 1,000 feet above them. The hills conform in longitudinal direction with the strike of the rocks, although they do not form a continuous ridge, being cut through by several streams. The coal has a high dip towards the hills, the average being about 1 in 3, but sometimes it is as high as 1 in 2”

The Chief Inspector of Mines in India, in his annual report 1929, referred to this coalfield as being ‘where the worst natural conditions of all coal mines in India have to be faced’

Whereas in the popular conception of coal mining the coal seam is approached from the surface by a deep vertical shaft, in the Company’s mines (with one exception) the approach is through a horizontal tunnel or, more correctly one which salopes almost imperceptibly upwards from the pit’s mouth.

A tunnel (vide the sketch on paper 26) is driven into the hill until the seam is reached, at which point underground roadways known as “main roads” are driven horizontally along the seam for a distance of up to two miles. The seam itself being at an inclination varying from 30’ to 60’, inclined roadways known as chauris are then driven up the seam. At various points in the chauris, further roads are driven horizontally. Coal is brought from the working faces along these horizontally roads, and lowered down the chauris by means of gravity operated tranways known as ‘jigs” **to the main roads and so to the pit’s mouth.

Owing to the friable nature of the strata, in roadways

**Transaction of the institution of Mining Engineers, London, December 1895.*

underground the roof is supported by steel arches and girders, timber and masonry.

The meter gauge railway sidings approach as near to the pit’s mouth as the configuration of the hills permits. Nevertheless the Company has found it necessary to construct several miles of two-foot gauge track with sharp curves and gradient in some places as steep as 1 in 2 to carry the coal over the difficult country between the pit’s mouth and railhead.

Part of the Company’s coal land were bought in 1889 the balance are held under mining leases issued by the Government.

* * * * *

The construction of railway and the construction of the railway and collieries created a substantial demand for bricks. It was therefore essential that brickworks be established not only for the original construction but also for the continual development of later years. In the early days, bricks were made by hand and burnt in chimp kilns. By 1890 the Brickworks had been established at Ledo and was producing machine-made bricks fired in a Bull’s kiln.

In 1926 the Company purchased a complete new plant and arranged for the establishment of a continuous Manchester kiln. These were brought into use the following year, since when the output has been in the region of some 50 lakhs of bricks a year. The provisions of drying sheds and roofing over the kiln enables manufacture to be continued throughout the rainy season. This is the only plant in Assam capable of continuous productions.

CHAPTER V

FOREST AND PLYWOOD FACTORY

Among the original concession mentioned in the prospectus in 1881 was the timber concession. In the early days, emphasis was always laid on the in the forest areas surrounding the Company's property in Assam.

Timber was of course a prime necessity in the original planning of the railway, approximately a quarter of a million sleepers being required from the start. Large quantities of timber were needed also for the Dehing Bridge some six hundred feet long and built entirely of Wood, as well as for various bridges Including the I the Doom Dooma Bridge since 250 feet long. These must be added the considerable demands of the collieries.

Extraction from the forest was by elephants, of which the Company had a large herd. In recent years, however, are being replaced to sonic extent by tractors and Lorries.

The first Sawmill was on the south bank, of the Dehing,River, near Margherita station, conveniently placed for the bridge and collieries which for sonic years continued to absorb the major part of the output. Public demand at that time was limited mainly to tea bpx shook made of simul.

The old Sawmill was in due time replaced by the present one on the north bank of the river built in conjunction with the Plywood Factory.

Although the art of veneering has been practised from early times, it was not mull the introduction of rotary cutting of veneers that the commercial possibilities of Plywood were apparent.

Weight for weight, plywood resists the strains of ordinary use

to a much greater extent than solid boards. It keeps its size and shape better and is less liable to saturation. For these reasons, it has been widely adopted for use where lightness and strength are required, as in packing cases and especially tea chests. Until quite recently, teas were packed in boxes of sawn timber, known in the trade as shooks, each box weighing nearly twice the modern three-ply chest.

Originally shooks were cut by hand sawyers, but later a few sawmills were established and a local industry was soon flourishing alongside the tea-gardens. But by 1906-7 three-ply chests to the value of some Rs23 lakhs a year were being imported into India. Although as late as 1912 nearly three-quarters of the Assam tea crop was still being packed in shooks, it seemed that the local industry was doomed to an early demise. Nevertheless, during the first World War the supply of three-ply chests from Europe was interrupted and the local sawmills again began to thrive brilliantly for only a short period pending the inevitable revival of imports after the war should end.

By 1924-25, three-ply chests to the value of Rs. 90 lakhs a year were being imported into India; and, so far as tea was concerned the local shook industry had practically ceased to exist. This was not to be wondered at as about 10% more tea could be carried for the same freight charge by three-ply chests instead of the outmoded shooks, with the added advantages of bringing the tea to markets in better condition.

The temporary interruption of imports not only resuscitated the local shook industry but encouraged the establishment of the Indian plywood industry. Between 1917 and 1924 four factories, two of which, including the Company's Plywood Factory at Margherita, achieved a comparatively early success, were set up in India.

In the early days of the Company the main disadvantage of its timber business had been that honour (Dipterocarpus pilosus) the timber most easily obtained and most plentiful in supply, was not regarded with favour. Consequently there was little or no demand for it, except for railway sleepers. Hence, before the timber concessions expired in 1921, the future position of this department

was being very carefully considered. Not only had the future requirements of the railway and collieries to be catered for, but it was also desirable if practicable to improve the Company timber business generally. Varied suggestions were under consideration, but were shelved during the First World War.

The question was revived in 1919, when a proposal was made that veneer cutting might be considered. It was thought that hollong however despised it might have been as a timber for ordinary use, would prove an excellent raw material for three-ply tea chests. Frequently attaining a height of 100 feet, this type of evergreen tree has a long straight stem, free of branches to a considerable height, making it ideal for rotary cutting. Thus there were good grounds, for believing that reliable tea chests could be produced from it which would successfully compete with the high quality imported chests. On these grounds the Directors decided to set up a Plywood Factory; and the necessary machinery was ordered in 1912. Production began in 1924; and after the inevitable teething troubles and had been overcome the Company's chests, marketed under the name "Margherita" had achieved a great success. The total outputs of plywood today are approximately five million square feet a year.

* * * * *

Apart from nahor (Mesua ferrea) and sal (shorea robusta), both of which always been somewhat scarce, railway sleepers and building timbers in Assam are subject to attack by fungus and other pests. Some form of preservation is therefore necessary. The method of sleepers preservation first adopted by the Company, which was in 1891, was by pickling or immersion in oil.

When the Plywood Factory was being erected in 1922 the opportunity was taken to build the Wood preservation Plant nearby. A cylinder some sixty feet long, with pumps for creating a vacuum, providing a pressure of 100 lbs. per square inch, with tanks and steam-heating pipes, is used to impregnate railway sleepers and timber with a suitable preservative, mainly creosote. Very satisfactory results have been obtained.

All in all, the Wood Preservation Plant has been amply justified by its success.

CHAPTER VI

MANAGEMENT AND LABOUR

The circumstances in which the Company began was somewhat unusual. At the end of the first quarter of the nineteenth century, the Assam Valley was only sparsely populated, some having been put to death and other carried off by the Burmese as slaves, whilst many, who had fled for their lives, died of starvation or disease.

During the third quarter of the century were coming from other parts of India to work in the new tea gardens of Assam. Even so, when the Company was formed, the population of the Valley was only 90 to the square mile. In the Lakhimpur District it was only 39 to the square mile, and the area from the Sadiya Road to the coalfield and beyond was almost devoid of inhabitants. Sixty years later, in 1941, the Lakhimpur District was supporting 215 persons to the square mile. A few months before the formation of the Company, J. Edwards Wilson had reported that the undeveloped areas to be traversed by the proposed railway were "covered over literally with forest or jungle mostly the latter but often both together, and a jungle generally about as penetrable as a brick wall. The solitude of the desert may be as great, but not as desolate as here and the absence of all signs of life, when a view of any extent of the country can be had, is sadly oppressive, there being scarcely any indigenous population.

Labour had to be attracted to this desolate area, houses built, medical services and sanitation provided, foodstuff and other necessities supplied, and training made available to the majority in their new occupation.

These were many and diverse. Among them would have to be coalminers, permanent way labourers, engine drivers and firemen, carpenters, fitters, machinists, blacksmiths, boilermakers, station-

**Sixty years later, in 1941, the Lakhimpur District was supporting 215 persons to the square mile.*

Masters, clerks, printers, brickmakers, building workers, pile drivers, sawyers, shipwrights, marine engineers and pilots.

The leisurely villagers in other parts of Assam, already in a position looking for to satisfy their simple wants, were not then permanent employment. The Company was therefore obliged to recruit workers from the more distant parts, of India. The point on the main railway system being six hundred miles distant, the only existing route for immigrants was by steamer up the Brahmaputra, a month's voyage from Calcutta. Their service like that of the senior officials, became voluntary exile. It is not surprising that sharing the vicissitudes of a new life in a stranger country there grew up between them a bond of sympathy and understanding.

Mining is a hazardous occupation, and there can be little doubt that the raw agriculturalists who came from other parts of India to work in the new mines were encouraged by the presence of British miners, who taught them and worked with them. In those early days British miners were the guides, philosophers and friends of Indian workmen. Results were creditable to both. Within a short time there were hundreds of careful and skilled workmen working in the mines, who in a short time before had never seen a coal mine.

Similarly when the railway was being laid, British platelayers were employed in the words of George Turney, "If an engineer, driver, platelayers or other artisan is wanted, an agriculturalist must be taken and trained to the work. As a rule, they are quite willing to learn anything that you may wish to teach them, and in time make good workmen." We can well understand the care and anxiety of Roberto Paganini in upholding the morale of those working under him on the railway project in the middle of the dense forest, forty days journey by country boat from the nearest source of supply and how harassed they must have been by the proximity of tiger and wild elephant amid the discomforts inseparable from pioneer work at so great a distance from a populated area.

Although the colliery labour force is now almost entirely Indian, with some Nepalese, twenty years ago it included not only men from the United Provinces, Bihar and the Central provinces, Maharajahs and Peshawaris, but also Chinese. The following is an extract from a paper written in 1931 by G. E. Hines :

Transaction of the Institution of Mining Engineers, London, July 1931.

“It can be readily understood that with such a varied labour force, and with so many different dialect, the underground official who has to make himself understood by all, has to be man of much patience. Practically the whole of the new labourers engaged have never seen a colliery before, and the official’s chief duty is to teach them their work. In one quarry alone Naga”, Nepalese – Tibetan, Baluchis and Chinese are employed.”

Amongst the old labourers at that time were a number of competent pitmen each of whom had been in the Company’s service for many years and had obtained by examination a Sirdar’s (or Deputy’s) Certificate of Competency under the Coal Mines Regulations. In 1926, King Edward Medals were awarded to two of these Sirdars for life-savings. “They organized, on their own initiative, rescue-parties, entered an atmosphere containing a dangerous percentage of carbon-monoxide gas, and brought out with their helpers about forty persons, including three Europeans.”

On the subject, of technical training, T. L. Dobson said in 1931 “With regards to the training of men who come into the collieries, it must be understood that they have no pit sense whatever on their arrival. The candidates are given time off from work and the instruction is given in Hindustani. I think it will be agreed that it is a great accomplishment when illiterate labourers have been trained to obtain their first-aid certificates under the St. John Ambulance scheme.” Characteristically, he omitted to mention that the Mining classes were initiated and conducted by himself.

A trophy was presented in 1948 for competition between ambulance teams formed by the Company’s employees.

Several clubs are available for workmen and there are senior clubs at Ledo and Margherita with facilities for tennis. There is also a golf course.

Football has been popular for many years. A number of football grounds have been provided by the Company, the principal competition being the Hines Shield, presented by G.E. Hines. The games are played in the rainy season in bare feet, amid great enthusiasm.

It is of interest to note that the Assam Railways and Trading Company has almost invariably been in advance of new legislation

In its relation with employees.

From the very beginning, the Company took steps to provide free medical attendance for all employees by a qualified Indian stall of doctors and compounders, supervised by a European Principal Medical Officer. Dr. Partridge, appointed during the original construction of the railway, was the Company’s first Principal Medical Officer.

In order to reduce the incidence of malaria and other disease these medical arrangements have been progressively maintained over the years, until malaria, which used to take so heavy a toll, has with modern preventive measures become almost negligible.

The company was the first in the whole of India to prohibit the employment of women underground – several years, in fact, before the practice was prohibited by Government.

It was found when the Workmen’s Compensation Act 1923 passed that the scale of compensation laid down by Government was on the whole less than the scale which had been introduced voluntarily by the Company several years previously.

Again, payment of maternity benefits to employees was made compulsory by Government several decades after the Company first started to pay similar benefits.

When the war affected commodity prices, the Directors sanctioned payment of a “dearness allowance” to employees. This was in May 1940, once more several months such allowances became the general practice in India.

The company instituted a Workmen’s Provident Fund in 1940. This was the first time that the benefits of such a fund were made available to workmen of any coal mines in India. The benefits proved to be similar, though somewhat superior to those compulsorily applied ten years later to all coal mines in India. It was perhaps as a result of this experience that the Company’s General Manager was appointed to be one of the first Trustees of the Coal Mines Provident Fund Scheme, set up by the Government of India. It may be noted in this connection, that the Company’s Provident institution for the supervisory and clerical staff has now been in existence for half a century.

For many years the earnings of the Company’s mineworkers

have been the highest in all the coal mines in houses, water, school buildings, roads and other amenities being, provided at the Company's expense.

Of the many useful contribution, by employers in Assam towards the well-being of their employees, one of the most important and an ever-present source of anxiety to the management the purchase of staple foodstuffs such as rice, sugar, and atta, for retail distribution at less than cost. In the way, employees and their families are assured of being able to obtain supplies of food regularly and are also protected against price fluctuations.

It is gratifying to be able to report on the cordial relations prevailing between the Company's small European staff and the, large number of Indian employees. These human relationship have received favourable comment from more than one visiting Commission.

Relations with Government officials, both in Assam an Delhi, are also most friendly.

At the end of this book is a list of persons with over thirty-five years' service. Pride of place goes to Ahmed Ali, Compounder, Medical Department, whose service with the Company was continous for nearly forty-eight years, from 1882 until 1930.

Next comes George Turner who served the Company in various capacities, including that of Chairman, continuously from 1882 until his death in 1929. His son, Douglas W. Turner, who was born in Assam, became a Diretor in 1928, an office which he still holds.

Profulla Comar Roy entered the service of the Company in 1883, as cashier. Later he was appointed to a senior post in the Accounts Office, in which capacity he continued until his retirement in 1928 after forty-five years' service.

CHAPTER VII

FLOTILLA

For the past half century or more, relations between the Assam Railways and Trading Company and the Steamer Companies operating on the Brahmaputra have been friendly and cordial.

That this was not always the case can be attributed to the fact that at the very outset the Directors decided to purchase and operate a flotilla of river vessels.

There were a number of reasons for this decision. Firstly, whilst the materials to be shipped from the United Kingdom for railway purposes amounted to several thousand tons, (rails, etc for nearly a hundred miles of track, locomotives, rolling stock, workshops, etc.), the Steamer companies' flotillas were considered to be sufficient for existing river traffic only. To rely on them to carry this vast quantity of materials from Calcutta to Dibrugarh, a thousand miles by river, would be certain to involve delay in building the new railway, which in turn would prevent the Company from earning the subsidy promised by Government.

Steamers and barges were urgently required by the engineers. Although the eastern terminues of the proposed new railway was only sixty miles from the western terminus at Dibrugarh, the only possible communication meanwhile for heavy goods traffic between these two places was by country boat via the Dehing River, a journey taking anything up to forty days.

Secondly, the amount of money involved was large. River freights up-country to Assam were high.

Thirdly, steamers and barges would prove useful for developing markets throughout Assam for coal from the Company's mines.

Fourthly, where as tea sent by cart from gardens on the Sadiya

road often arrived at the steamer ghat all higgledy-piggledy, chests of one invoice mixed with those of others and many of them broken, it was suggested that if the new company possessed a fleet of river vessels in addition to its railway, it could serve the whole route from garden to Calcutta expeditiously and smoothly and might reasonably, expect to acquire a more profitable business than would be possible if it had no fleet.

The position was summarised at the time by the Calcutta Agents In the following words : "It is evident that the River Companies Never could carry the coal and timber without enlarging the present Fleets, and running steamers and lighters to suit the convenience of The Assam Railways and Trading Company. This they are not likely to do.

"The success of the railways is as much dependent upon the River service as it is upon the coalfields. In fact the three schemes, Railway, coal and steamers, are inseparable, being dependent upon Each other to work to the fullest success."

There can be little doubt that in attempting simultaneously to Establish not only a new railway and new collieries but also a new Service or steamers within a short space of time, in country both Difficult and inaccessible and largely devoid of even unskilled labour, The Directors were setting, themselves a severe task. In the result, They found themselves compelled by the march of events to ask the Steamer companies to carry part of the material for building the railway; Nor did they succeed in monopolizing the tea traffic from the Sadiya Road gardens.

Nevertheless, the establishment of a steamer service by the Company was a useful achievement. It undoubtedly speeded the Construction of the railway and collieries, and helped too in the Development of markets for the coal output.

To have ordered new steamers and barges from the United Kingdom or elsewhere would have involved serious delay in Com-pleting the railway, an important matter in view of the promised Subsidy. From the outset it had been in the Directors' minds to Purchase from the Scinde, Punjab and Delhi Railway a number of Steamers find barges which were then available for sale second-hand And could, on the score, be purchased for about half the price of

a new flotilla.

These were lying at Kotri, a hundred miles up the Indus, in North West India. James Anderson was deputed to make arrangements For their long and hazardous journey to Calcutta. Two of the barges Which were sent in two of large ocean-going steamers were lost in a Storm of Galle, the crew having to jump Into the sea to save their Lives. The steamer De Grey foundered in the Gulf of Kutch. Others Proceeding independently at their own pace, arrived safely in Assam.

The Frere a paddle steamer 167 feet long, beam 28 feet, draft light two feet eight inches and four feet when loaded, built at Birken-head in 1862 by Messrs. Laird Brothers, left the Indus on December 7th 1881, arriving at Bombay on the 11th, leaving again, With one barge in tow, on January 20th 1882. She proceeded via the Pamban Channel between India and Ceylon, and was signaled off Madras on February 3rd Calcutta was reached on February 11th. After Some alterations to her superstructure, she sailed from Calcutta, this Time with two barges on March 8th and arrived at Dibrugarh towards The end of April 1882, a period of four months after leaving Kotri.

One barge, the Hoogly, with a cargo of rails, sank in the Dehing River in August 1882. A year later another boat with a cargo of wire Rope for the collieries capsized near Jaipur.

Over and above the eight barges purchased on the Indus, the Board arranged for eight more to be built on the Thames and the Clyde. These were shipped to India in 1882-1883 in sections, and Assembled on arrival there.

In August 1883 the first flat was launched at Dibrugarh.

In June 1883, by which time the railway construction was well Advanced, thereby reducing the need for steamers and barges Ear-marked for this purpose, the Company issued a flotilla tariff Showing rates at which cargoes would be accepted from the public For carriage between various river stations. Despite this announcement, In February 1884 it was stated that although the Company's vessels Have all been employed in the jute carrying trade between Serajgunge And Calcutta for the past six months yet it is not intended, at all Events for the present, to seek other freight than the Company's own Products."

All five steamers having been purchased second hand, it was not surprising that in 1886, three were laid up for repairs. By this time arrangements had been made with the Steamer Companies to tow the Company's coal barges.

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It would be unreasonable to suppose that the establishment by the company of a permanent service of steamers on the Brahmaputra would have been welcome to the existing steamer companies.

Conversely the Company's collieries were now a dependable source of good quality coal, so that the Steamer Companies were no longer obliged to transport coal a thousand miles from Bengal to Assam merely to provide fuel for the return journey from Assam to Calcutta. This meant more space for carrying cargo. The Assam Railways and Trading Company's activities were, therefore, both welcome and unwelcome to the Steamer Companies. Equally unwelcome to those companies would have been the formation of a new company, as was contemplated by the Directors in 1886. This was to be known as the "Planters' Line of Inland Navigation," to which the company's flotilla was to be transferred. Indeed, the mere existence of a separate flotilla was a potential source of trouble to the established public carriers on the river.

The dilemma was happily solved in 1887 by an agreement with the Rivers Steam Navigation Company, who purchased the Company's flotilla with the exception of one small steamer and two barges still required for railway purposes, whilst the Company on their part acquired a substantial interest in the Rivers Company. In short, the Company withdrew from the river, the primary purpose for which they acquired the flotilla having been fulfilled.

CHAPTER VIII

OIL

An attempt was being made about 1866 by Mr. Goodenough, of McKillop, Stewart and Company, to utilize the petroleum of Assam. He was granted certain rights over a large tract of land on both sides of the Dehing River, from Jaipur to the Noa Dehing. Oil was struck in one hole on March 26th 1867 at 118 feet, as many as eight holes having been put down about this time. Notwithstanding these results, Mr. Goodenough was not successful in establishing a petroleum industry.

In 1882, a concession was acquired by the Assam Railways and Trading Company covering the petroleum rights over thirty square miles at Makum, situated on the south bank of the Dehing, including the sites in the area on which Mr. Goodenough had worked. Hitherto, this concession had been held by a private company, of which Dr. Berry White was a shareholder.

The Directors were pre-occupied for several years with the railway and collieries. The Company was also short of capital and it was not until about 1887-88 that boring implements were sent out to Assam to begin work in the oilfields. Three wells were drilled in the area on the south bank of the Dehing River. The Company had also become interested in the area on the north bank, which the railway had penetrated a few years previously.

During the first few years after the advent of the railway the only station between Makum Junction and the Dehing Bridge was it Borbhil which, to quote again from T. Kinney's account of 1884, "from the magnificent forest in its neighbourhood, is likely to become an important timber depot."

There was a platelayers' camp at the crossing of the Digboi

River; and it had been noticed that there were oil shows in the vicinity. In March 1888, the Company applied to Government for a licence to Extract petroleum in this area, now known as the Digboi field. The Revenue Department's reply included the following " Great as is the Important the Chief Commissioner attaches to the, operation of the Company as a means of promoting the advancement of the country, Lie finds himself unable, at all events for the present, to support the Application. The land applied for is situated within a tract which has Recently been constituted a reserve forest, that is to say, a forest which, In the public interest, it has been decided to maintain as such under a Proper system of conservancy; and a proposal to burden a considerable Portion of such a forest with rights the exercise of which would involve The destruction of the timber, is one which cannot be lightly Entertained."

The Department added that if the area already held by the Company on the southside of the Dehing River should turn out to be Worthless, the Chief Commissioner would then be prepared to consider An application for a concession elsewhere. He promised that for two Years no concession would be given to anyone 'else within the six Mile plot applied for by the Company at Digboi on the north bank; And also undertook to furnish reasonable facilities for examining the Plot by borings or otherwise, "it being of cource understood that no Trees can be cut or anything else done in the forest without the previous Authorization of the forest officials.

A further letter from Government expressed the hope that, if And when the time came for action, the Chief Commissioner's views Would prove to be acceptable to the Government of India but Meanwhile he obviously cannot undertake that they will."

In spite of this unsatisfactory reply the Company continued its Quest for oil, informing the Government in June 1888 that in addition To the borings on the south side of the Dehing River arrangements Were being made to start borings at Digboi, near Borbhil station about Nine miles north of the river. By September of that same year, the Company submitted a Memorial to the Viceroy, Lord Dufferin, asking That "all the terms and conditions of the lease or deed of concession To be granted by Government may be forth with considered and Definitely decided upon."

On October 19th 1889, oil was struck at a depth of 178 feet at Digboi.

That year a station was built at Digboi, preparatory to Dis-mantling the old station at Borbhil nearby.

Another strike occurred in January 1892, described by Dr. Berry White as follows : "All arrangements had been made for starting the 4th bore and abandoning No. 3 just before the oil was struck. Mr. Slack, senior had indeed practically abandoned it already, and had Gone into Margherita to make sonic arrangements about tools for the New boring, when his brother, not having, any other occupation for The day, thought lie would bore a few inches deeper, and hed scarcely Been at work half an hour when he struck the crust of the reservoir And the oil rushed up forty feet high and nearly engulfed them."

In 1893, the negotiations with Government having been Completed, the boundry of the Company's area at Digboi and the Terms upon which it was to be held were finally agreed. A syndicate Known as the Assam Oil Syndicate was granted a similar concession Covering an area adjacent to the Company's area.

In the same year the Company built a small refinery at Margherita, to which oil was sent from Digboi.

One of the first things which a pioneer of a petroleum industry Has to do is to get that minimum of geological information which will Anable him to select sites for a few wells, and which leter may be Developed into a system on which he will work the whole area. The Peculiar nature of the Digboi area made the collection of such information in those early years very difficult, and inevitably the first wells were drilled some what blindly. Luckily failures were relatively few; and over the years a steady and continuous search produced much evidence for consideration. In 1893 there were six wells yielding oil. The next year, there were eleven wells took both a great deal of money and a long time to drill. The territory was new, and there was no previous geological knowledge or experience to guide those in control. All supplies, tools and casing for the wells, everything had to be carried from the main settlement by elephant, the sole means of transport to the site itself. Working in the Jungle was very unhealthy, frequent sick leave being unavoidable. Against

All the, time in proving territory and getting results was of the utmost Importance. Better results could only be obtained by improved methods And more plant. More plant meant expenditure of more money, not Forthcoming without improved result. It was, for the time being, a Vicious circle.

After much careful thought the Directors came to the conclusion That the profitable development of the oilfields could best be secured By a separate organization. To this end, the Assam Railways and Trading Company promoted in 1899 another Company, the Assam Oil Company, to take over its petroleum interests, including the Makum and Digboi concessions.

The new Company established its headquarters at Digboi, which Field had been found to be more important than the Makum field on The south side of the Dehing. It also took over rights from the Assam Oil Syndicate which had been working in the same neighbourhood. Lord Ribblesdale, Chairman of the Assam Railways and Trading Company, became the first Chairman of the Assam Oil Company.

The Assam Railways and Trading Company did not relinquish Their interest in oil entirely, as they took a large numbers of shares in The new company and the two Boards were intimately connected. Continuity of interest and management survived for over twenty years Until January 1921, when by arrangement, the shares were sold and The Burmah Oil Company were appointed commercial and technical Managers of the Assam Oil Company.

The story is brought up-to-date in a pamphlet issued in December 1950 by the Assam Oil Company in connection with the Raw Materials Of India Exhibition, London, in which it is stated that under the new Management money was poured in for five years with very little return, Until 1925 when the first large well was successfully completed. This Was followed by extensive refinery building, but many further Disappointments were experienced, and it was not for another six years That sufficient quantities of oil were forthcoming to maintain Through-put at the full refining capacity. At last the hard work and Heavy expenditure of so many years were to bear fruit. The Assam Oil Company's output is now stable at 250,000 tons a year.

Digboi, formerly a small camp in the jungle is now one of the Cleanest and best laid out towns in Assam, with nearly 40,000 Inhabitants.

CHAPTER IX

TEA

It has been seen that the advent of the railway in 1882-1883 and the development of the Company's timber trade opened areas previously covered by forest and jungle. This was likely to be of special value south of the Dehing River in providing adequate breathing space and elbow room for the Company's settlements at Margherita and ledo. These would not be either satisfactory or comfortable until the neighbourhood was cleared, not merely of heavy jungle, but of tiger and wild elephant.

But the original clearance of the forest was quite a different Thing from keeping the land clear thereafter. In Assam, the growth of Vegetation is remarkably quick and the cost of regular clearance of New growths of jungle an expensive item. Obviously crops of one Sort or another would need to be introduced into the immediate Neighbourhood of the Company's main settlements. Tea was selected As the most suitable.

In 1890 the Assam Railways and Trading Company obtained Land for this purpose, the original clearings of the Margherita Garden Being started the same year. By September 1891 Seventy-eight acres Had been planted. Eventually this garden was handed over to the Makum (Assam) Tea Company and incorporated in 1892, with Dr. J. Berry White as its first chairman.

By June 1894- a thousand acres were under tea, another four a Further five hundred cleared of hundred ready for planting and forest, The total labour force being about fifteen hundred. It interesting to Note that the average price realized for the crop that year was 1/51/2 Per Lb., which was unusually high in those days.

Dividends of 2 per cent, 3 per cent and 4 per cent were paid for 1896, 1897 and 1898 respectively.

Planting out a further area on the north bank of the Dehing River was begun in 1998. Two years later, when Margherita was Honoured by a visit of the Viceroy, Lord Curzon, accompanied by Lady Curzon, His Excellency said :

“Man has made great strides, remarkable strides, in this Province. Some years ago your Industries were hardly known, but a Few years hence it will be quite unnecessary... to extol your Makum Teas. Will they not be drunk and appreciated all over the world teas Once tasted, never abandoned”

Whatever was to lie in the future, however, no dividends were Forth becoming from 1899 to 1905. In July of the latter year the Chairman of the Makum Company announced that the Directors had Been paid no fees for three years. The following February a reduction Of capital was sanctioned by the Court, halving the nominal value of The shares, which became ten shillings instead of 1 pound.

Seventeen years were to pass before the position was reversed By the issue of an equivalent number of ten shilling shares, restoring The total nominal value of the Makum Company's share capital to its Original figure. This year, 1923, planting began at Dirok on the south-Bank, under J.M.Kilburn, who had joined the company in 1909 and Became Superintendent in 1919. He was elected Chairman of the Assam Branch of the Indian Tea association in 1931, and later was Awarded the C.B.E. for public services in India lie became Chairman Of the Makum Company in 1946.

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Some 2,000 acres of land were obtained at Namdang in 1908. The first clearances and planting were made the next year tinder the Supervision od D. J. Mackintosh on behalf of the Assam Railways And Trading Company. By 1915, under William Warren, in charge of The garden continuously from 1912 to 1934, the planted area had Increased to nearly 500 acres, with a labour force of some 800 and the Factory in course of erection.

In 1916, the Assam Railways and Trading Company formed Another new company, the Namdang Tea company Ltd. to which This new garden was handed over. As this was during the war and

Treasury sanction to the issue of shares was not forthcoming, other Arrangements had to be made. The shares were issued in due course, But the parent company continued to bear the main financial burden For some years. The first Chairman of this Company was Walter Butler.

The Namdang Company being- the fourth promoted in the Assam Railways and Trading group, it was decided to incorporate The Saxon fourth figure, in the trademark. This unique and distinctive Symbol appears in the armorial bearings of the Merchant Guild of Stirling, which was the fourth of the four original burghs' forming the Court of Royal Burghs instituted by Royal Charter in 1133. The Jack Family, associated with this group of companies for sixty-five years Was, like William Warren, of Scottish descent.

It is noteworthy that since the inception of the railway in 1882, The bulk of the development along the line from Makum Junction to Its eastern terminus – the collieries, sawmills, brickworks, oilfield, Makum and Namdang tea estates had been started by the Assam Railways and Trading Company. Approximately half this thirty miles Of line, from Digboi to Makum Junction, traversed country which at The time of the first World War was still undeveloped.

In 1919, Lord Ribblesdale informed the shareholders that a site Had been selected for a new tea garden between Digboi and Tingrai Stations and that the Company had already acquired the requisite land At Derrickchungi, later known as Bogapani. 'Berwick, Roxburgh, Edinburgh and Stirling'

W.R. Noble was Manager of this garden from 1917 until 1919, And was succeeded by A.M. Whitten. Most of the planting, how-ever, Was done under Terence Moran after his appointment as Manager in 1921. in 1928 the garden was absorbed by the Namdang Tea Company. J. M. Kilburn was appointed Superintendent in 1934 and became Chairman in 1946.

In 1950, the total area under tea belonging to the Makum and Namdang Companies was some 5,000 acres and the crop six and a Quarter million Lbs.

Berwick, Roxburgh, Edinburgh and Stirling.

CHAPTER X

WAR

The rapid advance of the Japanese in 1942 and the closing of The Burma Road to Kunming in China clearly indicated that Assam Was soon to become an important theatre of war.

The Brahmaputra Valley began to figure prominently on the Maps at Washington, Whitehall and Chungking. As a first essential, it Was to be made the starting point of the new road over the Patkoi Hills; as a second the location of a new air base.

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Other materials.

Although we are concerned primarily with the Assam Railways And Trading Company, it is also appropriate to record the splendid Work of the Indian Tea Association in assisting the escape of thousands Of refugees from Upper Burma into India during the summer of 1942. In this great drama, the staff and workers of the two associated Companies, the Makum (Assam) Tea Company and the Namdang Tea Company, played important parts. Geoffrey Tyson, chronicler of The Association's efforts in assisting the evacuation, wrote in *Forgotten Frontier* : "Early in March 1942 the India Command and the Government of India decided upon an Urgent road building programme Designed to connect Assam with Burma and China. By tile middle of The month, the Indian Tea had begun operations on road making Projects, based on the Burma border, of the, highest political And strategic importance." Thus it was that by May 1942, when the Civilian evacuations of Burma got under way, "the Indian Tea Association was already to a large extent mobilized to help the Authorities in whatever emergency might arise. Seasoned planters and Their labour had already left work on the gardens for the roads, and Had already begun to get the feel of the terrain in which their energies Were soon to be diverted to relief and rescue operations on a scale That has probably never been attempted before....And so it happened That when the call for succor came from across the Burma border, The Indian Tea Association's forces in the field were already disposed In the direction of those very gaps in the mountains through which Distressed humanity was to pour in its thousands in the next few Months."

In the preface to the book, Lord Wavell wrote of the escape as A tale of human suffering, human endeavour and human endurance. No large scale migration of people can surely ever have taken place In worse conditions. The vast majority of the refugees were ill-clad, And ill-euipped, the movement took place at the height of the Monsoon in one of the wettest parts of the world the country Through which it was made could hardly have been more difficult. It was almost unknown, almost trackless the thick jungle was Infested with all the tropical plagues of mosquitoes, leeches, flies and Similar pests ; there were long steps ascents and descents, deep,

Swift, swollen rivers lay across the path ; there were no local supplies Of food available."

Camps, porter corps, medical units were hastily improvised On the forbidding mountainous routes taken by the refugees. The Company was concerned with only one, via Ledo. The base camp Near Ledo was described by Geoffrey Tyson as follows At the base Camp itself reception arrangements were on a relatively lavish scale, And railcars belonging to the Dibru-Sadiya railway met the evacuees As they arrived at Tipong to take them to Lekhapani. Says a Contemporary account which has been sent to me : 'Stout Cortez Upon his-peak at Darian can scarcely have viewed the Pacific with Greater joy than the evacuees welcomed the first sight of the trolley Line from the top of the last slope leading down to tipong Camp.' I Will not attempt to improve on the description. Here, at LEkhapani, Was the immediate reception station known as the Tea Pot Pub where, On arrival, evacuees were given hot tea, biscuits, cheese and jam. If They arrived in time they went straight by train to Margherita : if not They halted overnight and travelled by the first train in the morning. Each day two special trains were run for this purpose. During the Period May 18th to July 31st, 20,344 evacuees were brought to safety And the Association's rest camp at Margherita." In a commendatory Note, Lord Linlithgow wrote of the Conspicuous success which Attended the efforts of the Indian Tea Association, and added: "Nor Do I overlook the devoted and often heroic conduct of the labourers From the tea gardens. I am aware that both planters and lobourers Have risked and someyimes even lost their lives in these great causes To which they set themselves"

The Makum(Assam) Tea Company presented special medals, Inscribed " Pangsau Pass 1942," to a number of labourers in Recognition of their part in this great work. It M. "Thomson, Super-intendent of that Company, was awarded the M.B.E.

Considerable assistance was given by the Assam Railways And Trading Company. J.h. Burgh, of the Timber Department, took Elephants to help in transporting foodstuffs. The services of the Entire staff and labour of Ledo Colliery were enlisted to widen the Road from Margherita to Ledo. In May 1942, when it was decided to Attempt the demolition of the airfield at Myitkyina, R. Petgrave-

Jhonson, A. Tuck, N.M.Warmington and T.F. Carty volunteered to fly over to Burma. This work, however, was cancelled at the last hour.

Soon after the mass movement of evacuees from Burma had ended, U.S. Army road-builders moved in, and demands on the Company's railway became heavier than ever. In the first two years of the emergency net ton miles were nearly trebled.

Extra locomotives and rolling stock were provided by the Indian State Railways, and subsequently by importing from the U.S.A. Under "Lease Land" labour was obtained from three sources: civilian labour, Indian Army Railways Units, and U.S. Military Railways Units. Equally pressing was the need for extra unloading places so that loads might be removed clear of the railway without impeding the flow of traffic; and during the first two years, forty miles of new sidings were added.

In this great task the railways administration were assisted by Railways Construction Companies of the Indian Engineers. Valuable help was also rendered by the tea industry. At one airfield siding, two miles of earthwork were completed in record time by tea-garden workers, in the face of appalling difficulties.

The traffic over the Company's railway was tremendous and diverse. It included labour and stores for the Indian Tea Association and military projects; refugees from Burma; railway construction material; Indian, Chinese, British and American soldiers, doctors and nurses. Lease-lend "materials for China; stone for roads and airfields bulldozers for the Ledo Road; wounded men from Burma; supplies for the civil population; stores for service and maintenance of airfields, Assam coal for railways and river steamers; Assam tea for export to Europe and elsewhere; and exports from China to her allies, ferried over the "Hump" by U.S. Air Transport Command.

Traffic for the civil population had to be severely curtailed. Passenger trains were reduced to one-half of the pre-war figure and all railcar services cancelled.

Manpower was an extremely difficult problem. In North-east Assam, practically all industrial labour was already engaged on work of military importance, viz., transport, oil, coal and tea. The last-mentioned was a necessity for the troops in all theatres of war. A

Large part of the remainder of the civil population was engaged in the cultivation of rice, also a vital necessity.

Plans were made to recruit men from outside Assam, but meanwhile there was a great shortage of labour. The problem was solved to a large extent by the Indian Tea Association, with commendable foresight and public-spiritedness, but with much inconvenience to the tea industry itself. Planters arranged to release employees for airfield works, including earthwork for the new railway sidings, and transshipment of goods traffic at rail-cum river junctions.

A number of officers from the Indian State Railways were transferred to assist and supplement the existing Dibru-Sadiya Organization. The assistance was not entirely one-sided, arrangements being made in return to repair a number of Bengal and Assam locomotives in the Company's workshops in Dibrugarh, the Chittagong workshops having been evacuated owing to their proximity to the Arakan front. Machinery and workmen were transferred to Dibrugarh, and a new housing colony built.

A large number of the Company's employees on the railway volunteered for service in the Defence of India Units, and were enrolled in maintenance and operating companies of the Indian Engineers under their own officers who were Major F.J. Salberg, M.B.E., Major W.W. Lawrie and Major F.E. Sheppard.

In 1944 U.S. Military Railway Units took over operational control of the line, bringing with them a large number of locomotives, and thousands of wagons from the U.S.A. At all important stations and running sheds, Americans and Indians worked side by side as examiners, pointsmen, shunters and so on.

All of the company's products, coal, plywood, sawn timber and bricks, were in urgent demand for war work. It was no light task, to maintain output in the heart of a busy military zone. To add to the difficulties, contractors and others new to the neighbourhood were competing keenly for the limited number of workers available, and many skilled men were being attracted by these new prospects. To maintain the colliery labour force the Company was obliged to recruit some 2,000 men annually, all of whom had to be trained on arrival from other parts of India. There was keen competition for the limited supplies of food available.

The importance of the coal from the Company's mines does not appear to have been fully appreciated by the military authorities in 1942, perhaps on account of the extreme urgency of road building and other work at that time ; but it became clear in 1943 that this was no longer so. Coal output which had dropped in 1942 was increased substantially.

The Company's efforts were acknowledged in the American Newspaper Roundup in July 1945. "the rail line..... is a vital link in the American supply lifeline which stretches 14,000 miles from the United States to ever-growing war depots in the interior of China... And the coal mines of Assam are diverting their production to this American supply line and to American installations. Working on a round the clock schedule, the mines have upped production 30 per cent.... This fuel powers the trains which bring war materials from the docks of Calcutta to hump cargo plane bases in Assam or to convoy assembly depots in Ledo at the beginning of the Road. It powers the Brahmaputra river boats which carry troops and supplies up that great inland water-way.

The following were on military service in other theatres of war, though some of them were seconded back to the Company during the Assam campaign : Dr. P. H. Lomax, G. Eyre-Higgins, W. E. Mitchell-lanes, B. L. Shepherd, J. Rashleigh, O. E. Cromwell, J. 11. Leonard, R. 1. Newton, J. M. Stirling. F.J.Salberg was awarded the C.I.F.

The womenfolk too did their share, particularly in the care of evacuees coming through the hills into Margherita and those coming by air from Myitkyina to Dibrugarh. They formed a branch of the Women's Voluntary Service with its many activities and did sterling work. All departments of the Company had reason to be proud of their war record.

CHAPTER XI

PAST AND PRESENT

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this reluctance was the prevalence of the mysterious and deadly disease known as kala-azar, which as far back as 1869 was reported to be causing a high rate of mortality in the low and densely-wooded Giro hills. Whilst various attempts had been made to improve health by Government and by industrial concerns (the Jorehaut Tea Company Brought out their first medical officer from England in 1863) progress Generally was slow, as shown by the following table of the mean ration Of birth and deaths throughout Assam for the five years ending 1896.

District			Births per 1,000	Deaths per 1,000
Goalpara	...	...	39.7	40.0
Kamrup	...	...	26.3	31.9
Darrang	...	...	25.7	37.0
Nowgong	...	...	22.4	40.2
Sibsagar	...	...	26.7	27.6
Lakhimpur	...	...	29.6	33.3

It was against the need for this kind of background colonization Was discussed in a Resolution by the Government of India dated October 19th 1888, from which it appears that " the obstacles of Climate and language and the risks to health in reclaiming lands in Assam "coupled with "the initial mortality to be expected " had at That time led to the conclusion that " it would seem unwise to interfere With or hasten the development " of the Assam waste lands which Were " already being opened up under the influences of European Capital and improved communication."

The views of the Chief Commissioner of Assam were Expressed in a lengthy note to the Government of India dated September 24th 1898 in which he said :

"The high mortality of Assam is not necessarily of long Duration. As soon as the tree growth has been cleared off, and the Land has been planted out and exposed to the action of the sun and Air, the unhealthy influences soon pass away, and many of the Healthiest tea gardens in the province are those which only a few Years ago had very heavy death rates. A striking instance of this is Afforded by the gardens to the northwest of Tezpur, which are served By, and support, the Tezpur-Balipara Tramway..... The great work

done by the Assam Railways and Trading Company represents clearances on a still larger scale, and with similar results. If the argument had been admitted that special encouragement ought not to be given to the exploitation of an unhealthy country, these tracts would still have been a dense and impenetrable forest : there would have been no Borjuli tea, no Margherita settlement, no Digboi oil, and no Makum coal."

In spite of a spirited attempt by the Chief Commissioner to Persuade the Government of India to authorize a colonization scheme Under zemindars, an attempt supported by various local interests Including the Jorhat Sarbojanik Sabha, the Government of India's Replay dated January 26th 1899, was as follows :

"....The Government of India, therefore, are inclined to believe That indirectly the tea industry is already doing, and ultimately will Do, much more in the, course of the next ten years to colonise Assam Than any capitalists who may be attracted under the proposed Colonization scheme. Looking at the present circumstances of the Province, the tea industry would seem to be the natural training ground For immigrants. They are probably better looked after and protected Against the climate on a tea garden than they would be on a Zemindars grant"

It would serve no useful purpose to speculate on what might Have been the results if the Chief Commissioner's scheme had been Adopted. Let it suffice to say that the course actually followed, generally In line with the above mentioned views of the Government of India, Has resulted in Assam becoming one of the greatest sources of foreign Exchange in modern India, whilst during the second world war the Rice crop of Assam was reported as being more than sufficient for her Own internal consumption.

Although there is still much room for improvement, notably In rice-growing and cattle-husbandry, Assam's economy today is well Supported on its four corner-stones : agriculture; the tea industry; the Coal and oil industries ; and transport by river, rail, road and air.

Of these great achievements, it may be said that the Assam Railways and Trading Company, with its manifold activities, has Been directly or indirectly responsible for opening up many square Miles of country which, not long ago, was unhealthy and tiger-

Infested ; for building thousands of houses and providing medical Aid, water supplies and other services ; and for instructing many in Useful occupations. The Company may well be proud of its record And history throughout seventy years of service.

CHAPTER XII

THE STORY CONTINUES

The story and the very important events that followed are now Taken up by Mr. G. E. D. walker who, in his introductory paragraph, Writes as follows:

“The story of The Assam Railways and Trading Company Limited ostensibly covers the first seventy years of the Company’s History namely 1881-1951. In reality however the story ends in 1945-46 with the end of the Second World War and the sale of the Dibru-Sadiya Railway to the Government of India. While both these events Were of great importance and interest to the Company, the former Leading to a return to normal peace-time trading and the latter reducing The Company’s interests to the industrial and mining installations at Margherita, Baragolai, Ledo sand Tipong, two other events occurred Between 1945-40 and 1951 of great significance. First the transfer of Power from British to Indian hands in 1947 and secondly the Assam Earthquake of 1950.

At first, the transfer of power seemed to have little Relevance to the trading activities of the Company which by 1947, as Mentioned above, consisted of the timber and Veneer mills at Margherita, the four collieries plus the brickworks at ledo. All Continued to work as before. It was not long however before the Creation of East Pakistan brought considerable transport difficulties In its train-there no longer being a direct rail link with Calcutta- And a falling off in the markets for coal which had previously been Supplied to some areas in the east of the old province of Bengal. These Markets were lost for good, while the transport difficulties led to

an increasing shortage of raw materials and spares, which was not immediately overcome even when the new rail link between Assam and West Bengal was established later.”

Kedar Majumder also discusses events of that time and tells us That the story of The Assam Railways and Trading Company Limited Since 1951 to 1972 is the story of diversification in its various fields Of activity to make it economically viable and also the part played in Assisting the development of the north eastern region of Assam to Attract more people to help an all round improvement for industrial Growth. Immediately after the take over of the Dibru-Sadiya Railway In 1945 the Company was faced with the stupendous task of repayment Of money to debenture holders as well as to pre-preference share Holders and also 50% repayment to ‘A’ stock holders and by so doing More than half of its share capital was repaid. The company, Thereafter, with scanty resources, engaged in the gigantic task of Mechanizing its operational units with the object of raising the output Of coal to the optimum level and, by importing up-to-date machinery, Diversified its manufacture of timber products. Also by mechanising Working conditions in forests and brickworks it sought to improve its Financial position so that it was not unduly handicapped due to Depletion of funds required after the nationalization of the railway.

Walker goes on to say that Assam suffered few if any of the Communal riots, which were such an unpleasant feature of the transfer Elsewhere in India – perhaps because of the earlier amicable relations Between the various communities but more probably because of the Fact that the Assam Valley was predominantly Hindu apart from some Section of the districts of Kamrup, Goalpara and Nowgong.

The Company’s relations with the Government of Assam had Always been cordial and these excellent relations continued under the New regime. Some difficulties arose over delays in the taking of Decisions but this was to be expected as the new Ministers made Themselves familiar with the machinery of Government.

Shortages caused by the transport bottlenecks between Assam

and the rest of India with the consequent effect on production was the only cause of worry to management in the first few years of the transfer of power.

While the Assam Earthquake of 1950 devastated the foothills of the Himalayas only some 50 miles to the north of the Company's installations and less than that distance to the East, its effects on these installations were minor, a crack in the veneer mill power house wall, another, more serious, in the brickworks chimney and damage to the wall panels in those bungalows using ekra or wirecrete walling. Strangely enough or perhaps not so strange, there was little or no damage underground in the mines where the shocks were hardly felt.

The epicenter of the earthquake which measured 8 on the Richter Scale was probably in South Eastern Tibet and the full effect was felt in the hills to the north as mentioned earlier. The first shock occurred at 8 p.m. and was severe enough at Margherita to throw people to the ground. The noise of the hills falling some 50 miles to the north which resembled gunfire was such as to cause observers to believe that the oil tanks at Digboi were exploding – luckily the latter only suffered minimal damage. Shocks continued throughout the night. Serious damage occurred elsewhere in Assam, but the major effect as far as the Company was concerned was on communications. For a few days all road, rail or river communication in Upper Assam was disrupted. The railway was restored a week after the earthquake and river steamers found a new channel to Dibrugarh in a fortnight. The Assam Trunk Road which had been breached was repaired by the end of September. Long term damage to river communications was however caused by silt, for all the major tributaries of the Brahmaputra, and indeed the latter itself, had been blocked by landslides in the hills and when the dams broke the day after the earthquake the debris was carried down silting the channels and causing severe flooding in the lower reaches.

Some reference must be made to the change over from a war-time to a peace-time economy which occurred during the years 1946-51. Instead of operating in a centre of military activity where

The temporary army buildings including four major hospitals each with several hundred beds, transport parks and an airfield, far outnumbered the Company's installations, the latter soon returned to their pre-war eminence. Instead of 2,000 vehicles and both passing up and down the road from Margherita to Ledo it was lucky if there were half a dozen. Instead of a population of 170,000 there was now probably only a total of 20,000 to 30,000 in the whole immediate area. The Company and its subsidiary and associated companies were once again the major employers and the dominant influence, the latter naturally somewhat diminished after 1947 by the change in the political scene.

Another event of considerable importance took place in the nineteen fifties. The Directors in London, no doubt influenced by the nationalization of the coal industry in the United Kingdom, considered the possibility of a similar step taking place in India. At this time all the Company's interests in India, including the tea subsidiary Namdang Tea Company Limited and the associated tea company (in which there was a large shareholding) Makum (Assam) Tea Company Limited, were part of the Assam Railways & Trading Company Limited. If the latter was nationalized because of the major colliery interest – it was felt to be undesirable that the tea interests should fall into the hands of government. Consequently in 1957 the Directors formed a sterling holding company in London to take over all the Company's interests in India by means of a share exchange. Outside shareholders having approved, the scheme was completed and the new company, Assam Trading (Holding,;) Limited commenced business in April, 1957.

Thereafter a decision was taken to progressively reduce the number of foreign nationals employed in the Company in phases. This policy had been spelt out very clearly by the Government of India, but all care was taken by the Company to ensure that nothing was done which might hamper the development plans already undertaken by judicious handling of the situation and by the completion of most of the development projects it was possible to reduce expatriate staff by 1972 to only one and this was last of the British Managers in India, Mr. Harry T. Beattie.

CHAPTER XIII

VENEER AND SAW MILLS

In 1951 the Company was the main supplier of indigenous tea chest panels in India. The earthquake in 1950 had virtually put an end to the Assam Saw Mills production at Murkong-Sellek, where their mill had been inundated by the floods on the Brahmaputra River. They were contemplating their move to Namsai up river from Sadiya, but had not yet finalised their plans. Production at Margherita at that time was 450,000 sets of panels per annum to be increased to 650,000 sets by 1957 when a record profit of Rs. 14, 00,000 was made. But there were ominous signs of severe competition developing. Already small Indian controlled firms had begun to operate near Calcutta and even in Assam itself, and while their products were not in the same class as the "Margherita" panels, their prices were low and consequently attractive to the Calcutta agents of the tea gardens. Difficulties were also starting to be experienced in the supply of raw timber for the making of veneer. Competition for the limited supply in Assam was rising, and although the Company had its long term forest leases, these by themselves were barely sufficient to meet requirements. None of these difficulties were sufficiently serious in the years 1951-57 to cause management to believe that in a few years time competition would become so fierce as to menace the Company's sales of tea chests with consequent pressure on profit margins. A further problem was the market's preference for light coloured chests, a hangover from the time when most components of tea chests were imported. Of the tropical hardwoods used in indigenous chests only Mekai (Shorea Assamica) complied with this requirement and supplies of this timber were limited. This prejudice in

favour of the light-coloured wood continued to exist for many years even when the import of tea chest components was banned after the indigenous industry was fully established.

Up to the end of the nineteen fifties, the veneer mills output consisted largely of 4 mm plywood for tea chest panels but in the last years of the decade attention was turned to the manufacture of commercial plywood and flush doors, largely to recover output reduced by the competition for tea chests; although a limited output of each, was maintained throughout the sixties neither produce was as successful as it should have been, due to the lack of sales know-how and-possibly more so to the distance from main markets in Calcutta and elsewhere in India. In the middle of the sixties the Company entered into an agreement with Aaronson Bros. to produce the man-made veneer "Artao" and obtained the sole rights for this product in India. But after considerable capital expenditure on the presses and a slicer to produce this product and after a favourable initial reception in the market, the project turned into a financial disaster due again to poor salesmanship and control in India, and was abandoned at very considerable cost.

After this debacle the veneer mills restricted output to the manufacture of tea chest panels, commercial plywood and flush doors which continues to this day.

The saw mills continued to produce building timbers through-out the period utilizing logs unsuitable for peeling as well as specially purchased timber. An interesting development in the sixties was the preparation of prefabricated house frames for the tea industry and for the Government of India for use in what is now Arunachal Pradesh.

Double and single unit houses with components parts were marketed at an amazingly low price to ensure popularity and a steady 'stream of orders. These houses saved time in erection and money and requests for them were soon arriving from the Military Authorities in this region.

The manufacture of the type of hut popularity known as the 'Hillary Hut', which had been used by Edmund Hillary in his

expedition to Mount Everest, was also taken up by the Company, but never met with any great demand. However, the demand for "Air Drop Houses" for the Army, particularly following on the Chinese aggression, increased considerably. It became immediately apparent that the need for mechanization in the manufacture of component parts and the use of surplus machine capacity in the Saw Mills rather than the use of carpenters was a very real one.

At about this time a British firm of Consultants advised that they had designed and could provide waterproof plywood roofing which was covered with roofing felt bituminized paper or plain bitumen. Using this type of roofing might create a promising future for the type of houses being made whether these were to be air dropped or not. An order was obtained from the Army, but weight problems presented themselves. However, these were finally overcome.

An attempt was also made to manufacture plywood boats for the Army for use in the Brahmaputra and other rivers but orders received were not encouraging.

The house and barrack frames for Government were made upon the lines of do-it yourself construction kits and were intended to be dropped from the air to isolated sites in the hills. The timber frames were all pressure treated in the timber treatment plant originally installed in the nineteen-twenties to treat wooden sleepers for the Dibru-Sadiya Railway. The Royal Air force establishment at Farnborough was consulted as to the best method of dropping these kits and suggested the use of a sled attached to a parachute. Unfortunately the Government of India was unwilling to bear the cost of the parachutes required and after attempts had been made to free, drop the kits with unsuccessful results, the experiments and the preparation of these house frames was abandoned. Those for the tea industry were discontinued also. The sale of pressure treated timber was of course continued and some success on increasing market penetration was achieved but inertia and the failure to appreciate the savings to be made with the use of pressure treated timber, under the Assam conditions, on the part

of the Public Works Department of Government, and other purchasers including the tea industry, led to only partial success in what should have been a flourishing business.

Throughout the period the Company continued to purchase the latest machinery available to the timber industry. New peeling lathes, hot presses and a veneer slicer were installed together with the latest joinery equipment.

Up to the mid-sixties when grid power became available in the Margherita area, the mills supplied the power for the whole of Margherita township including the Company's colliery workshops and the Margherita hospital. Three modern Bellis and Morcom Stream generating sets were in use. Still maintained in good running order was a Bellis & Morcom set originally installed at Baragolai Colliery in 1898.

CHAPTER XIV

TIMBER SUPPLY

For many years before the War the Company had enjoyed Forest leases from the Government of Assam permitting them to extract a given quality of hardwood chiefly Hollong (*Dipterocarpus Macrocarpus*) for the Timber mills. These leases were an extremely valuable asset in that they guaranteed a ready supply of timber. Their working was immensely eased by the fact that the ownership of the Dibru-Sadiya Railway facilitated the laying of metre gauge sidings right into the interior of the forests enabling timber trucks to be loaded in the forest and dispatched to the mills on the main line. The dragging and loading of the logs cut after felling was done by elephants and for many years the Company maintained an elephant herd of some animals. In later years after 1951 the herd was gradually reduced, their place being taken by tractors and dragging arches although elephants were retained for the loading of trucks. At a meeting of the Board held on the 16th August 1976, a decision was taken to gift the Company's last elephant, Shahjahan to the Kaziranga National Park. It was reported at the meeting held on 3rd February 1977 that he had been accepted reported by the game sanctuary.

In the 1960's after some years of negotiation the Company and the North East Frontier Administration of the Government of India agreed that the Former should be granted a lease of a large part of the Namsang Reserved Forest to the South-west of Margherita in Tribal Territory. A new company, a subsidiary of Assam Trading (Holdings) Limited, Nocte Timber Co. Private Limited was formed with The Assam Railways & Trading Company

Limited as Secretaries and Technical Consultants. It was agreed that a peeling plant should be established in the forest. The supply of logs and veneers to the Margherita Mills was thus ensured. Later the manufacture of tea chest panels was started at the factory, and this continued until 1979 when the Company was taken over by the Government of Arunachal Pradesh.

The venture was an interesting one in that a new factory was built from scratch and established with some trials and tribulations in the middle of what was hitherto largely unknown area and the venture must have produced many parallels to the original establishment of Margherita in the late nineteenth and early twentieth century poor communication, difficulties with moving plant on unmade roads, and the ever present delays in deliveries of goods and services. But the pioneering spirit of the Company and its staff was obviously still present.

CHAPTER XV

BRICKWORKS

The brickworks, originally established to provide an engineering brick for use in collieries and with the only continuous fired kiln in Eastern India had expanded its output and sales during the War- chiefly to defence service, but with the end of hostilities demand declined, although local sales particularly to the Assam Oil Company continued at a useful level.

In 1950 clay suitable for the manufacture of glazed chinaware was discovered below the 60' coal seam in the collieries and two German technicians were engaged to explore the possibility of the manufacture of such ware. Many samples of cups, saucers and plates were made but the project never came to anything as difficulties were found in washing the clay clean enough for full scale manufacture and in obtaining a suitable fuel for the operation of a modern tunnel kiln for the firing of the pieces.

It was also observed that decorative plates from Assam clay could also be made even if the underglaze pink seemed to be a bit washy probably as a result of high borax in the glaze, but the other colours were excellent. In the absence of the tunnel kiln this item had also to be shelved. This in some respects was unfortunate for within a few years thriving chinaware manufacture was to be established elsewhere in India. On the other hand the long distance from the main markets in India, which manufacture at Ledo entailed, could well have militated against a profitable return on the investment required to bring the project to full scale manufacture.

CHAPTER XVI

COLLIERIES

In 1951-52 there were four collieries producing good coal with a total annual output of 340,500 tonnes. These were at Namdang Baragolai- Tikak, Ledo and Tipong. The dip mine at Namdang begun in 1940 was still being developed – this was the first mine to be developed below the drainage level- and work was commencing on the new levels at Tipong West mine. The latter development was interesting in that the roadways were being driven in coal in the manner of horizon mining, the wide coal seams being nearly vertical.

Open cast mining was still being carried on at Ledo and Namdang output rising or falling as demand for coal varied. Demand as maintained earlier had fallen with the partition of India in 1947, but by 1951 had been restored more or less to the optimum figure. Output was however depressed from time to time by a shortage of railway wagons, until the new rail link between Bengal and Assam was in full operation, and many local deliveries had to be made by road.

The possibility of installing a low temperature coal carbonisation and tar distillation plant was a matter that had been under tentative consideration from time since 1946 and it was discussed the U.K. but as it transpired that Company were actually producers of coal and not coal treatment experts, the idea was dropped.

It was also thought that the installation of a low temperature carbonisation plant would absorb a considerable part of the

Company's coal output in view of the demand for indigenous fertilizers at the Company's doorstep.

Namdang, Baragolai, Tikak and Ledo collieries were on the retreat and in the mid-nineteen fifties only Namdang Dip mine and Tipong were in the process of development, to replace the output from the older collieries. In the early 1960's consideration was given to the mechanization and expansion of open cast mining and experts from the United Kingdom visited Assam to assess the possibility of such a development. Their report was favourable, but the capital required to fund the operation was found to be beyond the Company's resources and there were doubts over the marketing of the increased production that would result. For many years it had been known that the coal from the Makum coalfield was suitable as feedback for a distillation plant. From time to time various proposals were put forward but none of them came to fruition, perhaps again because of the remote location of the coalfield.

In the 1960's fears of a shortage of metallurgical coke developed in India and it was found after experiments that a blend containing 20% to 30% of washed coal from the Makum coalfield with the balance of Bengal coal would provide such a coke, although tests carried out were led to a temporary glut of coke and the proposal to use the Company's coal was abandoned.

At the end of the decade, the threatened exhaustion of Baragolai colliery led to the development of a further dip mine at this colliery and the driving of a new adit to link up with these new workings which having reached the agreed depth would be developed to link up with Namdang Dip mine to the West, and a possible new dip mine to Ledo to the East. This was probably the most ambitious development undertaken since the collieries were first developed and when the operation was complete it should ensure plentiful supplies of coal for many years.

Although the output from the collieries as long ago as 1899 was 200,000 tons, and had only risen to some 350,000 tons 60 years

later, the reasons are not far to seek. The market in Assam was limited, with railway being the largest customer. The discovery of oil and the switch from the use of coal to oil on the tea gardens further restricted the off take. Transport costs to markets in India made the coal uncompetitive in these areas, while the partitions of India removed overnight the market in East Pakistan. All in all it was perhaps surprising that output remained as high as it did. Nevertheless one cannot but regret that the development of the distillation plant was not preceded with many years ago. Perhaps the high cost of oil may lead to this development in the not too distant future.

CHAPTER XVII

POST PARTITION MANAGEMENT

After the partition of India in 1947 it was natural that Government of India should press for the Indianisation of the Senior posts in commerce and industry in India. The first Indian officer to join the Company was appointed in 1948 and by 1960 there were only some half dozen European officers employed. In 1972 only one, the General Manager was working for the Company in India.

At the start of the Company's business in Assam, all labour had been imported since the area was virtually uninhabited except for the local Nagas, Kachins and Shans, none of whom were interested in taking up regular employment with the Company. By 1951 the great majority of employees working in the collieries were Nepalese although at that time there were still a few Pathans working at Namdang and Baragolai collieries. These few were soon to return to their country with their places being filled by other Nepalese. All worked for a few years to accumulate money and then went back to Nepal, some returning again to Assam when their funds ran out.

Relations between the Company and its workers have generally been very good. Isolated incidents occurred from time to time, but there were no serious outbreaks and any disagreements were usually settled with the labour Unions, of which there were two within a short time.

More recent years in the Company's history have been fully

discussed by Kellar Mazumder who tells that in the year 1969 there were reshufflings in The Assam Trading (Holdings) Limited. Mr. C. G. Montgomery, who had joined the Company, visited the installations in India to have a thorough survey of its internal affairs and report to the management on taking effective measures to improve working conditions to achieve better results.

The forest lease obtained from the State of Assam to operate on areas for extraction of timber expired on the 16th September 1970. Thereafter for supply of the timber the Company had to depend on private sources which were scanty like those from lease areas of the North East Frontier Administration. In the bidding of coupes the Company could not make much headway.

It is at this juncture that Mr. Montgomery approached the Khaitans to come to a working arrangement with them but substantial progress could not be made then.

Bearing in mind the nature of the Company's business in India and the conditions under which they were carried out the Board of Directors at a Meeting held on 5th October 1971 appointed a Local Board pursuant to Article 88 of the Company's Article of Association delegating all the powers of the Company to be exercised in India subject to the overall policy of the General Board of the Company in London.

It was agreed that with a view to increasing the operational efficiency and building a management structure in India which would be responsible for making policy decisions, the chairman and the Local Board would communicate with and consult the Board of Directors as and when necessary. The General Manager at Margherita would be closely associated with such decisions and would be responsible to the Local Board for the implementation of all Executive and Policy decisions. At this stage Mr B M Khaitan finally agreed to become the Chairman of the Local Board.

The first meeting of the Local Board was held in Calcutta on Friday, the 19th November 1971 at which Mr. B. M. Khaitan's appointment was confirmed and it was announced that the Local

Board, according to a resolution passed by the General Board in London on the 5th October would consist of, in addition, N. N. Atal, H. T. Beattie, B. K. khaitan, T. R. Swaminathan, J. C. Varma and L. K. Gopalakrishnan.

Mr. Beattie proceeded to give a resume of his discussions in Delhi with regard to the problems of the Coal Division saying that he was given a sympathetic hearing and that he expected that favourable results in regard to selling prices would be following shortly.

Meetings of the Board followed regularly and the closest contact was maintained with London through Mr. J. M. Guthrie and Mr. C. G. Montgomery. Items of expenditure and the sale of some of the Company's capital assets were sanctioned and everything began to be tidied up considerably.

However, the financial position continued to remain somewhat unsatisfactory and the general management of the Company was further aggravated by sporadic outbreaks of labour unrest.

At a meeting held on the 9th March 1973, the Chairman stated that, consequent to the promulgation of an Ordinance by Government and the take over of the management of the coal mines, it had been decided to terminate the services of Mr. H. T. Beattie and that he had been authorised by the Board to convey to the latter the Company's deep appreciation of the services he had rendered as well as for steering the Company through some of its most difficult times.

Mr. L. K. Gopalakrishnan was there upon appointed the General Manager of the Company.

Another important decision that had been taken at the time arose from the agreement reached with the State Bank of India whereby a Stock Cash Credit Limit of Rs. 20 Lakh against the security of the Company's timber products would be made available to the Company Messrs L. K. Gopalakrishnan and J. C. Varma were authorised to execute the security documents.

The prolonged negotiations with the Government in regard to the Indianisation of the Company continued in the course of which the question of dilution of the shareholding was also discussed. Mr. C. G. Montgomery, the Managing Director, was in India in October 1975 to participate in discussions in this regard.

At this stage the Company Board itself passing through most difficult times mainly due to the non-availability of cash finds brought about by the unsympathetic attitude of Government, who appeared unwilling to take any final decisions in regard to its long drawn out financial negotiations with the Company. Every avenue was explored without much headway being made and it began to become more evident day by day that it was necessary for the seat of power of the Company to shift to India.

Towards the end of 1976 there was a pleasing change in the Company's fortunes and meetings of the Board held monthly the Company was happy to report a steady increase in surplus from its in the supply of timber and stabilizing of prices.

At the Board Meeting of the 10th November 1981 it was reported that the Reserve Bank of India had finally approved the proposal for transferring the Indian business of the Company with effect from 1st April 1981 to A R & T India Limited in this regard was laid on the table and the terms and conditions of the transfer noted by the members present.

It was then decided to request the Board in London to pass the necessary resolution approving the Scheme of Arrangement for the transfer of the Indian business to A R & T India Limited and to provide a copy of the shareholders' register.

This in the course having been done the new Company at long last began to operate as a totally independent unit and as enter this, the hundredth year the old man or the new child finds himself going strong.

Earlier upon the formation of the Local Board- Mr. B. K.

Khaitan, one of the members accompanied by a representative from Andamans Timber Industries Limited, visited the Timber Mill to discuss various problems that confronted it and it was tentatively agreed that the factory should produce 160,000 sq. ft. of Company, 100,000 sq. ft. Champs Plywood and 56,000 sq. ft. of doors and table tops per month and for better realisation it was decided to produce 70% of 3 mm and 4 mm and the rest in 6 mm and 9 mm and 12 mm. It was also decided to purchase timber during the dry months after chalking out a yearly programme of timber requirements so that the factory did not face shortage of timber during the rainy season. As all other plywood to consume less coal by converting or replacing the existing boilers so that entire waste material could be consumed which would result in a substantial saving under Power and Fuel.

The Selling Agency of timber products with Macneill & Barry Limited was discontinued and given to Andamans "Timber Industries Limited in 1971 and thereafter it passed to Balmer Lawrie & Company Limited in 1972.

The Agency later returned to Macneill & Magor Limited, the Company which had resulted from the merger of the Macneill & Barry Limited and Williamson Magor & Company Limited, and thereafter from 1976 that Company is managing A R & T's sales through branches at Calcutta, Delhi and Bombay.

In view of the takeover of the management of Coal Mines by the Government of India under the Coal Mines (Taking over of Management) Ordinance 1973, promulgated on 30th January, 1973, the Custodian, Coal Mines Authority, by virtue of the powers delegated to him by the Custodian General appointed by the Government of India, not only took over all colliery including cash but froze the Company's bank account. Division of common assets pending negotiations was the subject of dispute. In that process the Company's interests in all matters not directly affecting pertaining to coal were in jeopardy as a result of the nationalization of Coal Mines under the Coal Mines (Nationalization) Act. 1973

with effect from 1st May, 1973 the Government of India acquired off the assets of Coal Mines, for which compensation was payable, but did not accept the liabilities.

Before the Company could improve upon the adverse results unprecedented in the history, a series of events that followed in quick succession threatened its very existence. Problems arising from the Coal Mines nationalisation created management problems due to the resignation of the General Manager and the prolonged sickness of the new General Manager-designate, Mr. L. K. Gopalakrishnan

During April 1974, the State of Assam initiated Bakijai proceedings to realise its arrear Coal Royalty outstandings, which had remained in dispute from 1951 by attaching all A R & T property. The State Bank of India after protracted negotiations declined to grant Cash Credit facilities for running the Company's Timber Mills and went to Court in March 1975 to realise the amount already financed up to the 30th January 1973.

There was a slump in the timber business, funds could not be generated, banks refused to accommodate the Company with credit facilities and suppliers threatened to stop suppliers. The prospects of the Company became very bleak.

As the working of the Company amidst many predicaments and the ensuring losses had eaten up a substantial amount of the working funds it was considered imperative to arrange finance for the Company immediately by tapping all other sources to stem the losses.

It was at this crucial period that some important changes were made. Reorganization of the Company had become an immediate necessity particularly as, due to the Foreign Exchange Regulations Act of 1973, it had become obligatory for the Company to Indianise. For this purpose an agreement was drawn up with Khaitan Sons & Company whereby Assam Trading (Holdings) Limited agreed to transfer the management of the Company and also to transfer 60% of its shares to Indian shareholders. An

application was made to the Register of Companies, Shillong for the registration of the new Indian Company's name as A R & T India Limited and permission to do so was received on the 11th June 1976. It was reported at the meeting of the Boards on the 16th September 1976 that the Registrar of Companies, Shillong, had given his consent to the new name of the Indian Company and the requisite forms and papers along with the Company's Memorandum and Articles were thereafter filed.

Mr. Binod Khaitan had in the meantime, been appointed a Director on the Local Board on the 22nd October 1975 and at this most crucial period, Mr. J. C. Varma, the Secretary of the Company, under the advice and guidance of Mr. N. N. Atal, continued to until the direct control passed to Mr. Binod Khaitan.

Immediate steps were taken to rejuvenate the Mills. The Local Board placed the Timber Mills under the direct control of Mr. Binod Khaitan in 1976 and the, under the guidance of Mr. H. M. Khaitan and with the invaluable advice of Mr. B. P. Khaitan, who had by now also developed a keen interest and freely gave of his wide experience in legal matters, saw that the Company managed to pass through this most critical period.

Mr. G. P. Bose, who had vast experience in timber technology, was appointed by the Local Board as Timber Superintendent in mid-1976 and since then he has steered the Company most successfully and with grim determination and it has now become a distinctly viable unit.

In the meantime, due to the nationalization of the coal mines of the Company and the non-receipt of properly audited accounts from the Coal Mines Authority Limited and Coal India Limited, it had not been possible to determine the net worth of the Company but protracted negotiations with the State Government of have at lat enabled A R & T India Limited to arrive at an amicable settlement of the long outstanding dispute mainly through the good offices of the State Bank of India.

As has been seen in the years since 1976, four major problems of great importance have engaged the attention of the Directors at all times. They are (1) formation of an Indian Company with foreign participate of 40% (2) settlement with the State Bank of India to obtain credit facilities to make the Company more viable (3) acceleration in disposing of claim cases before the Commissioner of Payments to ascertain actual liability due to nationalization of Coal Mines and (4) settlement of the dispute pertaining to arrear coal royalties with the State of Assam.

It is gratifying to note that all these have been completed with amazing speed and A R & T India Limited has emerged very recently as a full-fledged Company to replace The Assam Railways & Trading Company Limited.

G. E. D. Walker brings our narrative to an end by writing.

"There are of course many things which might have been, if events over the last 100 years had taken a different course. But the Company can surely be proud of a century of achievement in opening up the North East corner of India to commerce and industry at a time when others "feared to tread" the jungle paths, of pioneering the oil and coal industries in the state of Assam and of continuing these developments through two world wars " one of which threatened to erupt over its installations " two earthquakes and an invasion by enemies of the State apart from providing work and looking after the health and welfare of many hundreds of persons, some from the United Kingdom but many, many more from India itself."

**THE ASSAM RAILWAYS AND TRADING COMPANY
LIMITED**
Incorporated 30th July, 1881
CHAIRMEN AND DIRECTORS, PAST AND PRESENT

CHAIRMEN

James Staats Forbes	1881-1885	James Mackenzie	1929-1933
George Webb Medley	1885-1898	Eustace A. A. Joseph	1933-1947
Lord Ribblesdale	1899-1922	Charles Folliott Birney	1947-1956
George Turner	1923-1929	Sir Frederick C. Bourne	1957-1966
		Sir Owain T. Jenkins	1967-1981

DIRECTORS

John Berry White	1881-1896	Sir Walter R. Lawrence,	
Evan Alexander Jack	1881-1885	Bart.	1906-1937
and	1908-1917	Sydney S. Hawkins	1917-1940
Thomas Barnes	1881-1887	James Mackenzie	1921-1939
J. Staats Forbes	1881-1885	Sir Richard Taylor	1922-1928
R. Jacomb Hood	1881-1882	Douglas W. Turner	1928-1968
Patrick Comrie Leckie	1881-1900	George Eliot Harris	1929-1930
Sir Arthur J. Otway,		Eustace A.A. Joseph	1930-1953
Bart	1881-1883	Charles Folliott Birney	1937-1961
Charles Sanderson	1882-1906	Balfour Smith	1939-1958
Philip Gossett	1884-1885	Frank James Salberg	1947-1960
George Webb Medley	1885-1898	W.R.Gawthrop	1955-
Sir Annesley C. C. de		Sir Fredrick C. Bourne	1951-1966
Renzy	1885-1914	Fergus M. Innes, C.I.E.	
W. Barton Wright	1886-1892	C.B.E.	1956-1970
Benjamin Piercy	1887-1888	George Eric D. Walker	1958-1981
Evan Morris	1888-1890	Sir Owain T. Jenkins	1959-1981
Henry de Courcy		James Latimar	1961-1970
Agnew	1893-1910	Graham Eyre-Higgins	1961-1970
Sir Charles Tennant	1896-1906	Colin G. Montgomery	1970-1981
Walter Butler	1897-1921	John Malcolm Guthrie	1969-1981
Lord Ribblesdale	1899-1925	Narendra N. Atal	1971-1981
George Turner	1900-1929	J. Guthrie	1971-1981

SECRETARIES

W. Tudor Johns	1881-1882	G. E. D. Walker	1958-1969
C. S. Dawson	1882-1883	C. G. Montgomery,	
W. Hill	1883-1885	C.A.	1970-1972
Evan Alexander Jack	1885-1908	S. F. Macpherson	1972-
Stuart Maclean Jack	1908-1946		
William R. Gawthrop	1947-1955		
R. Petgrave - Johnson	1956-1957		

MANAGERS IN INDIA

Christopher Hill	1882-1885	George Eustace Cuffe	1928-1935
Ferdinand Beauclerk	1885-1888	Hugh Percival Gray	1935-1947
John E. Williams	1888-1891	Reeve Petgrave -	
George Turner	1891-1895	Johnson	1947-1954
Sydney S. Hawkins	1895-1906	George Eric D. Walker	1955-1957
George E. Harris	1907-1912	G. Eyre - Higgins	1958-1962
Arthur Sydney Burnett	1912-1915	William Harvey	
Edward Lawrence Green-		Whitfield	1963-1964
hough	1915-1921	Harry T. Beattie	1965-1972
Eustace A. A. Joseph	1922-1928	L. K. Gopalakrishnan	1973-1975
		Guru P. Bose	1976-1981

CALCUTTA AGENTS

Shaw Finlayson & Co.	1881-1883	Andamans Timber	
Barry & Co.	1883-1886	Industries Limited	1971-1972
Macneill & Company	1886-1949	Balmer Lawrie	
Macneill & Barry Ltd.	1949-1970	& Co. Ltd.	1972-1975
		Khaitan Sons & Co.	1975-

THE MAKUM (ASSAM) TEA CO. LTD.

CHAIRMEN

John Berry White	1892-1896	Stuart Maclean Jack	1938-1946
Sir Annesley		John Maurice Kilburn	1946-1965
C. C. de Renzy	1896-1914	C. B. E.	
Edward Wauhope	1914-1917	G. A. Rainey	1965-1971
Sir Walter Lawrence, Bart	1917-1938	Sir Owain T. Jenkins	1971-1974
		Indianised with retrospective effect from 1.1.1973	

SUPERINTENDENTS IN INDIA

A. W. Madden	1892-1896	R. M. Thomson	1937-1945
J. A. H. Jackson	1897-1899	W. Alan Connell	1945-1954
C. H. Holder	1899-1903	J. H. kilburn	1954-1959
D. J. Mackintosh	1904-1912	J. E. Maltby	1959-1964
F. H. Hawkins	1912-1919	H. A. Lakin	1964-1967
J. M. Kilburn	1919-1937	J. P. F. Furst	1967-1976
		Indianised w. e. f. 1.1.1973	

THE NAMDANG TEA CO. LTD

CHAIRMEN

Walter Butler	1916-1921	John Maurice Kilburn	1946-1965
George Turner	1921-1929	G. E. D. Walker, MBE.	1965-1969
Stuart Maclean Jack	1929-1946	Sir Owain T. Jenkins	1969-1974
		Indianised with retrospective effect from 1.1.1973	

SUPERINTENDENTS IN INDIA

William Warren	1916-1934	J. E. Maltby	1959-1964
John Maurice Kilburn	1934-1938	H. A. Lakin	1964-1967
W. Alan Connell	1939-1954	J. P. F. Furst	1967-1976
J. H. kilburn	1954- 1959	Indianised w. e. f. 1.1.1973	

OVER THIRTY-FIVE YEARS SERVICE WITH THE COMPANY

	DEPARTMENT	YEARS OF SERVICE	
Bom Chandra Dutta	Timber Mills	53	1921 - 1974
Jiten Chandra Das	Timber Mills	50	1923 - 1973
Niranjan Tanti	Timber Mills	49	1924 - 1973
Ahmed Ali	Medical	47	1882 - 1930
George Turner	Assam and London	46	1882 - 1929
Pyari Mohan Chakraborty	Timber Mills	46	1932 - 1978
Prafulla Cornar Roy	Accounts	45	1883 - 1928
Stuart Maclean Jack	London	45	1901 - 1946
Kolia Das	Loco and Carriage	45	1885 - 1930
Basudeb Das	Loco and Carriage	44	1895 - 1939
Jatindra Ch. Roy	Colliery	43	1929 - 1972
Parshanath Bhattacharjee	Colliery	43	1927 - 1970
Jogananda Bordoloi	Colliery	43	1930 - 1973
Nagor Bhowmiz	Timber Mills	43	1930 - 1973
Narendra Kr. Dutta	Timber Mills	43	1930 - 1973
Birsing Urang Murari	Timber Mills	43	1930 - 1973
Bholaram Maji	Loco and Carriage	42	1884 - 1926
Molan Chandra Singh	Printing	42	Record after 1951 not available
Banda Ali Khan	Ghat	42	1896 - 1938
Umacharan Ghose	Accounts	42	1895 - 1937
Debendranath Rajkhowa	Accounts	42	Record after 1951 not available
Siboo Bowri	Timber Mills	42	1936 - 1978
Debendranath Das	Ghat	41	1910 - 1951
Sukurmoni Kurmi	Timber Mills	41	1935 - 1976
Abdul Mazid	Timber Mills	41	1933 - 1974
Sydney Sanderson Hawkins	Assam and London	40	
Moni Mahanti	Way and Works	40	1897 - 1937
Bhikhoo	Way and Works	40	1896 - 1936
Dama	Way and Works	40	1903 - 1943
Suladhar Sarmah	Traffic	40	1893 - 1933
Md. Rajna	Loco and Carriage	40	1883 - 1923
Kartic Chandra Nandi	Loco and Carriage	40	1883 - 1923
Rup Chand Dutta	Loco and Carriage	40	1884 - 1924
Jahanoor Khan	Ghat	40	1884 - 1924
Md. Rafoo Khan	Ghat	40	1891 - 1931
Saligram Kumar	Timber Mills	40	1933 - 1973
Gordon Ewart Hines	Assam and London	39	1911 - 1951
George Eliot Harris	Assam and London	39	1890 - 1930

	DEPARTMENT	YEARS OF SERVICE	
Sew Prosad Singh	Traffic	39	1883 - 1923
Aswini Kumar Deb	Stores	39	1903 - 1942
Akhil Ch. Chakravarty	Colliery	39	1930 - 1969
Md. Abdul Kadir Laskar	Colliery	39	1934 - 1973
			Taken over by
			Coal Mines
			Authority Ltd.
Gobinda Baisnab	Timber Mills	39	1937 - 1976
Nitai Tanti	Timber Mills	39	1942 - 1981 Still
			serving
Jamini Bhusan Gupta	Colliery	38	1895 - 1933
Satish Chandra Rai	Colliery	38	Records after 1951
			not available
Lahor Chandra Neog	Colliery	38	-- do --
Mohendra Nath Sen	Accounts	38	1883 - 1921
Sarat Ch. Chatterjee	Accounts	38	1895 - 1933
Sarafatuddin	Loco and Carriage	38	1882 - 1920
Kedar Nath Dutta	Way and Works	38	1887 - 1925
Ghana Kanta Baruah	Colliery	38	1911 - 1949
Rabindra Nath Gupta	Colliery	38	1935 - 1973 Taken
			over by Coal
			Mines Authority
			Ltd.
K. K. Chakraborty	Timber Mills	38	1942 - 1980
Sukhoo Goala	Timber Mills	38	1940 - 1978
Ghaneswar Saikia	Timber Mills	38	1936 - 1974
Iakhi Prasanna Dey	Timber Mills	38	1935 - 1973
Amalendu Bose	Timber Mills	38	1934 - 1981 Still
			serving
Girija Prasanna Deb	Medical	37	Records after 1951
			not available
Akbar Ali	Accounts	37	1885 - 1922
Parbati Charan Das	Accounts	37	1907 - 1944
Thomas Coleridge			
Anderson	Traffic	37	1887 - 1924
Moniruddin Ahmed	Traffic	37	1885 - 1922
Munshi Fateh Ahmed	Colliery	37	1932 - 1969
Sishir Kanta Das	Colliery	37	1936 - 1973 Taken
			over by coal
			Mines Authority
			Ltd.
Jogesh Chandra Saikia	Colliery	37	1936 - 1973 -do-
Ghana Mura	Timber Mills	37	1940 - 1977
Joghee Gowalla	Timber Mills	37	1941 - 1978
Sashi Mohan Sutradhar	Timber Mills	37	1937 - 1974
Amar Charan Chowdhury	Timber Mills	37	1937 - 1974

	DEPARTMENT	YEARS OF SERVICE	
Surendra Nath Bose	Timber Mills	37	1936 - 1973
Manindra Ch. Paul	Timber Mills	37	1936 - 1973
Jibakanta Das	Traffic	37	*
Bholanath Changkakaty	Loco and Carriage	37	*
Evan Alexander Jack	London	36	1881 - 1917
Richard Thomas Lewis	London	36	1909 - 1945
Bhagyswar Das	Accounts	36	1885 - 1921
Indra Kanta Baruah	Loco & carriage	36	*
Tin Kowri Burman	Accounts	36	1894 - 1930
Bolo Kanta Baruah	Accounts	36	1922 - 1958
Gajendra Nath Dutta	Colliery	36	1930 - 1966
Hrishikesh Deb	Colliery	36	1937 - 1973 Taken
			over by Coal
			Mines Authority
			Ltd.
Hiteswar Neog	Colliery	36	1937 - 1973 -do-
P. N. Talukder	Colliery	36	1937 - 1973 -do-
Hemanta Kr. Dutta	Colliery	36	1937 - 1973
Dhaniram Gogoi	Timber Mills	36	1941 - 1977
Lakhiram Goala	Timber Mills	36	1939 - 1975
Rabindra Nath Das	Timber Mills	36	1938 - 1974
Chunilal Bora	Timber Mills	36	1937 - 1973
Sarat Chandra Dutta	Timber Mills	36	1945 - 1981 Still
			serving
Kandra Bhowmiz	Timber Mills	36	1945 - 1981 Still
			serving
Sanika Munda	Timber Mills	36	1945 - 1981 -do-
Hari Tanti	Timber Mills	36	1945 - 1981 -do-
Miss V. G. Hurst	London	35	Records after 1951
			not available
Miss J. C. Forsyth	London	35	-do-
Surendra Nath Sen	Accounts	35	*
Boloram Dutta	Traffic	35	1898 - 1933
Lutfur Rahman	Traffic	35	*
Sitaram	Loco & carriage	35	1887 - 1922
Chandra kanta Das	Printing	35	1888 - 1923
Taraprasanna Sen	Stores	35	1897 - 1932
Satya Kr. Dowerah, ADM	Colliery.	35	1938 - 1973
S. K. Purkayastha	Colliery	35	1937 - 1972 Taken
			over by Coal
			Mines Authority
			Ltd.
Golap Mahammed	Colliery	35	1938 - 1973 - do-
Sailesh Ch. Chakraborty	Colliery	35	1938 - 1973 - do-
Sibnath Bordoloi	Colliery	35	1938 - 1973 - do-
Amar Chandra Das	Timber Mills	35	1942 - 1977

	Department	Years of Service	
Bishnupada Bhattacharjee	Timber Mills	35	1943-1978
Sukhamoy Das	Timber Mills	35	1946-1981 still serving
Arun Ch. Das	Timber Mills	35	1946-1981 -do-
Kalipada Majumder	Timber Mills	35	1946-1981 -do-
Chakari Kar	Timber Mills	35	1946-1981 -do-

THIRTY-FIVE YEARS SERVICE OR OVER WITH THE COMPANY

INDIAN OFFICERS (INCLUDES SERVICE AS SENIOR STAFF)

Kedareswar Majumder	Accounts	44	1937 - Still serving
Dhirendra Nath Ghosh	Accounts	39	1927 - 1966
Birendra Nath Ghosh	Accounts	39	1936 - 1975
Dr. Benoy Krishna Goswami	Medical	37	1936 - 1973 Taken over by Coal Mines Authority Ltd.

Apologies are offered to those names it has not been possible to trace.

Includes service as a Director.

*Railway employees who were still in service at the time when the Dibru-Sadiya Railway was sold to the Government of India in 1945, when they became State Railway employees.

HISTORY OF COAL MINING IN MAKUM COALFIELD

The history of coal mining in this region of Assam dates back to the later part of 19th century by the erstwhile Assam Railway and Trading Company (AR&T). A Civil Surgeon, Dr. John Berry White, while founded the Assam Railway & Trading Company. Played a very significant role in the early development of Assam's mineral resources including opening of Makum Coalfield. Mr. George Turner, a mining engineer from South Staffordshire, also played a prominent role to transform the jungles and coal outcrops in the area into prosperous collieries in a few year's time. Skilled practical miners were first brought from abroad to train Indian Workmen in "South Staffordshire" method of wining thick coal seams.

The first mining of coal was started in 1882 at Ledo by Railway's Engineers, when the erstwhile AR&T Company was laying its own Meter Gauge line. In order to increase the output of coal, the following collieries were started : at Tikak (1884), Namdang (1896), Tirap (1904), Baragolai(1909), Tipong(1924) and Namdang Dip in

1904. The establishment of these mines were of great importance to the Tea Industry which hitherto was dependent upon wood fuel. All these erstwhile company's mines were nationalized on 1st May. 1973 and vested with Central Govt.

At present, the entire coal production of North Eastern Coalfields comes from Makum Coalfield of MArgherita area, comprising of six mines of which Tipong, Ledo/Lachit Khani and Baragolai are underground mines (temporarily operation suspended due to DGMS violations) and Tirap, Ledo and Tikak are opencast mines. Both productivity & safety improved significantly after nationalization. At present this coalfield is producing 1.11 million tonnes of coal per annum.

Coal Mining in Assam is extremely difficult. The area represents a typically folded & faulted mountain belt of Tertiary strata bounded by Thrusts. The problems which are being encountered in this coalfield are steep inclination of coal seams, complex seam structure like inter-banding, irregular with thickness variations. The seams are highly gassy, susceptibility to spontaneous combustion, friable coal and poor roof & floor conditions. The Chief Inspector of Mines, in his annual report of 1929 referred to this coalfield as being **“where the worst natural conditions of all the coal mines in India have to be faced”**.

On the environment management front, NEC plants over lakh saplings every year and takes extra care in OB management to ensure the ecological balance of the area. Chemical measures like effluent treatment plant, settling tanks and neutralization pits are also being taken to bring the water pollution parameters within the allowable range before discharge into natural streams. While biological measures are used for plantation and survival management of saplings, physical measures are effectively used for construction of boulder check dams, gully plugging and construction of the toe walls to ensure safety and greenery in the mines.

Extraction and reclamation go hand in hand to utilize the area for use ful purposes. Ledo Valley Recreation Centre (LVRC), a reclamation area converted into an echo park in North Eastern Coalfields, greets any visitor with serene scenery and chirping melody pf birds. This lush green echo park with a picturesque artificial lake is a main attraction for school childre to use it for picnic and botanical excursions. Recently a butterfly park including a butterfly museum and an orchid garden has been constructed at Tikak Colliery (2010). A Coal museum is also being planned to be constructed at Margherita.