

Imperialism, Geology and Petroleum: History of Oil in Colonial Assam

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In the last quarter of the 19th century, Assam's oilfields became part of the larger global petroleum economy and thus played a key role in the British imperial economy. After decolonisation, the oilfields not only turned out to be the subject of intense competition in a regional economy, they also came to be identified with the rights of the community, threatening the federal structure and India's development paradigm. This paper is an attempt to locate the history of Assam's oil in the large imperial, global and national political economy. It re-examines the science and polity of petroleum exploration in colonial Assam.

Assam has not escaped the fate of the newly opened regions of having its mineral resources spoken of in the most extravagant and unfounded manner with the exception of coal.

– H B Medlicott, Geological Survey of India

The discovery of petroleum in British North East India (NE) began with the onset of amateur geological exploration of the region since the 1820s. Like tea plantations, exploration of petroleum also attracted international capital. Since the last quarter of the 19th century, with the arrival of global technology, the region's petroleum fields became part of a larger global petroleum economy, and, gradually, commercial exploration of petroleum became a reality. It was a time when geologists had not yet succeeded in shaping an understanding of the science of oil and its commercial possibilities. Over the next century, the Assam oilfields played a key role in the British imperial economy. After decolonisation, these oilfields not only turned out to be the subject of intense competition in the regional economy, but also became centrally identified with questions of community rights. Immediately after independence, the Indian state encountered political opposition to its stake on oil from Assam. This happened at a time when the share of natural resources between the province and centre was still not well-defined. Such opposition continued until a later period, when an economic blockade, with the aim of restricting oil flows outwards from Assam, was successfully imposed as part of the assertion of regional politics. This also became a counter in the political negotiations between the Indian state and its federal province.

The subject of imperial exploration of petroleum and its production in colonial and post-colonial period still awaits adequate examination. Western scientists and industrialists began to pay serious attention to petroleum only in the middle of the 19th century, after oil was discovered in the American continent and promised profits, though it was yet to become a popular energy replacement to coal.¹ Technological innovations in petroleum exploration and its conversion into various energy components were still at a rudimentary stage and there remained suspicions about its ability to replace existing energy sources. Indian historiography has paid marginal attention to imperial histories of petroleum exploration and the dense social histories which unfolded subsequently. This historiography also rarely takes notice of this significant partnership between geological explorations and its commercial dimension as well as its career into the world of science and technology.² While the existing official historiography of oil companies in NE India portrays a heroic picture of incidental discovery of oil in the dense jungles, swamps and river

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valleys way back in the 19th century, the works on Assam's colonial economy hardly address the issues of science and imperial politics, though they recognise the impact of oil.³ Oil, as a natural resource, continued to have serious repercussions on the post-colonial polity, but these went beyond the scope of these works. This paper seeks to locate Assam's oil in the larger imperial and global political economy. It begins with a re-examination of the science and polity of geological exploration, which led to the discovery of petroleum in colonial Assam, and examines how such exploration became a part of the larger imperial economy leading to conflicts over the right to control this natural resource.

Minerals in the Colony

The role played by the colonial science of geology in shaping the scope of imperialism is now well known. The earth science, geology as it came to be known, played a crucial role in establishing the colonial and post-colonial empire's technological superiority over untapped mineral resources.⁴ By the middle of the 19th century, the study of rocks, fossils and other mineral resources had acquired more status than a "provincial pastime". This was the result of the formation of the Geological Survey of India (GSI) in 1856, which played a significant role in directing state intervention towards a professional growth of metallurgy. Since then it acquired the status, not only of a national science, but an essential ingredient of imperial science shaping the fate of the India's natural resources.⁵ The East India Company (EIC) officials were not sure of the possible effectiveness of geological explorations in India. Such initial unwillingness was the consequence of two simultaneous developments: some British copper and coal operators did not want their commercial interests jeopardised by a possible discovery of Indian minerals, and a number of company officials also believed that India should primarily remain an agricultural country.⁶

The region's mineral resources did not go unnoticed before the British imperial push. Minerals like gold were key elements in political negotiations in the Ahom-Mughal conflict. The Ahom rulers too negotiated with the Naga tribes for getting access to salt-brine. Much later in the 1750s, the French traveller Jean-Baptiste Chevalier found both the working of gold sands in the river-beds and commanding display of gold in the royal palaces, despite the poverty of the people.⁷ But this early enthusiasm never converted to real prospects for the Europeans. The discovery of tea and the realisation of this plant's ability to create wealth for the British empire was, however, accompanied by a parallel investigation of coal and other mineral resources. Coal was already an important resource through which imperial Britain had already expressed its technological superiority.

The empire engaged Assamese scholars who had knowledge of the region's natural resources to chart out its mineral resources. An illustrative, and frequently referred, example was that of Maniram Dewan Datta Baruah, a pre-colonial noble who had foreseen opportunities in British capital, but soon explored for his own purposes. It was Maniram who prepared a systematic narrative of local procedures of gold collection from the river-beds. As the EIC administration came to know about this, further explorations to confirm its viability were taken up. Maniram's

report on gold washing in Assam was a result of these enquiries.⁸ But soon it was realised that gold washing and collection would not be a viable project, though further investigations into the gold retaining capacities of upper Assam rivers were also made. A fresh attempt was made by E T Dalton and S F Hannay in 1855 to estimate the auriferous deposits of these rivers.⁹ They travelled up the Brahmaputra; one primary goal was to locate the "original rock containing the gold in situ". But they found that "the deposits became less and less rich as they penetrated farther into the hills" which forced them to return.

Failure of this venture never discouraged the colonial explorers to further expand their search for other mineral resources. They kept their eyes open for prospective discoveries of coal, lime and any other mineral. In the fourth quarter of the 19th century, coal was being commercially produced in eastern Assam. This came as a major respite for the already flourishing tea-plantations. Coal was found not only in the eastern districts of Assam, but was fairly well-distributed.¹⁰ Coal allowed commercial enterprises and British capital to penetrate deep into the region. British interest in coal was crucial to the colonial investments in tea-plantations and forest resources. However, the discovery of oil had an exclusive impact on the future polity and economy of Assam.

Colonial Science and Polity

The possible existence of petroleum in eastern Assam was first noticed in the early 19th century. This actually preceded the significant finding of tea plants. While tea plants were noticed only in the 1830s, one of the first recorded notices of petroleum deposits was earlier, in April 1825, a year before the EIC concluded the Treaty of Yandaboo with the Burmese to occupy Assam. R Wilcox, an army lieutenant and geologist, was the earliest observer of oil in an upper Assam village.¹¹ Wilcox's survey of Assam showed the many possibilities of geological discoveries in the region.¹² Wilcox's survey carefully noticed both the geological formations and mineral resources of the region. His chance notice of oil was no less dramatic. This occurred while he was surveying river Burhi Dihing at a place called Namchik. He noticed seepage of oil and bubbling gas at a place called Supkhong. Wilcox, describing the possibility of petroleum deposits in upper Assam, later wrote,

There were two beds, one at a little higher level than the other, but both on the plains, filled with liquid mud of various degrees of consistence. One was twenty or thirty feet across, and the other larger. In the middle, where bubbles of air are seen constantly rising to the surface, the mud is nearly white, and is there in a more liquid state. On the edges green petroleum is seen floating, but it is not put to any use by the Singphos – neither is the coal.¹³

Wilcox's observation is significant for at least two reasons. First, he initiated the long process of finding petroleum near coal-beds in this region. Whatever may have been his initial observation, it did not take long for others to realise that petroleum could be found near coal-beds. The possible connection, by source of origin, between coal and petroleum came for serious investigations by British geologists in the second half of the 19th century. Second, Wilcox's assertion that local communities had no use for these minerals significantly helped the colonial state in asserting

an exclusive claim on these resources. As further explorations took place in the following decades, many others too noted that the local populations hardly had any use for oil, though in other minerals there were elaborate local traditions of use. Wilcox's findings did not have any impact in those early days of colonial rule even though the EIC regularly arranged elaborate schemes to locate commercially viable minerals.

Several others followed Wilcox's chance encounters with oil. These included botanical surveyors, military personnel or commissioned travellers, who noted the richness of mineral resources in the region's geology. Their findings were reported in the *Journal of Asiatic Society of Bengal (JASB)*. This helped bring these findings to the notice of the government. For instance, in 1828, C A Bruce, usually credited with locating the indigenous tea plant in eastern Assam, reported how he came across several oil seepages upstream of a place called Makum. Unlike his discovery of the tea-plant and its consequences, his observation on oil hardly had any durable impact. In 1837, William Griffith, botanist and explorer, reported oil in the plains close to the Naga Hills beyond the river Noa Dihing. Griffith observed that the colour of the liquid was green to bluish white, which indicated the presence of naphtha. Compared to his predecessors, Griffith was more confident of a distinct character associated with the liquids that he had come across. In the same year Adam White, a Major in the British Indian army, also noticed "several springs of petroleum" close to the river Namrup. White too indicated that the local communities had no use for this resource.¹⁴ White's survey was followed by that of S Hannay, a geologist in the service of the EIC who found "petroleum rising from some of the coal outcrops".¹⁵

Hannay's observations of 1838-39 were further confirmed by F Jenkins, a front ranking administrator of the EIC and a captain in the army. Jenkins reported that "oil flowed into the pools in the water-course, and four or five seers were collected in a few minutes".¹⁶ Another round of exploration was taken up by Hannay in 1845. He explored a limited area close to Jaipur, near Silchar. His principal aim was to "find a bituminous rock like that of Pyremont, a sample of which he had been supplied with". Though he was unsuccessful in this principal mission, Hannay could collect "earthy and indurated sandy asphalt" along with ordinary oil from a place called Nahar Pung.¹⁷ Later on, F R Mallet, reviewing what Hannay had found, wrote, "these specimens were no doubt of earth and sandstone impregnated with inspissated petroleum". Such amateur encounters continued. For instance, about a decade and half after Hannay's exploration, G Dalton, an army officer, reported oil finds at Namchik and Makum in 1854. Similarly, S E Peal, a tea planter, mentioned oil springs near Margherita in 1879. Along with amateur explorations, the first attempt at drilling for oil in Assam was made in 1854. A European speculator, John H Wagentreiber, was the first entrepreneur to take steps to exploit oil in Assam. He got a 10 years lease over a tract of land between Bappapoong and Namchik in 1854. However, the venture met with failure.

All these findings, as mentioned earlier, could not escape the fate of Wilcox's own discovery. There is little doubt that everybody proceeded along the line followed by Wilcox and

looked for the possibility of finding petroleum near established coal-beds. While there does seem a pattern in these efforts, it may not be possible to state that they were aware of the common ancestry of coal and petroleum. It was only in the early 20th century that geologists were able to confirm their assumptions about the possibility of finding coal and petroleum together.

GSI and Arrival of Geology

Years of amateur discoveries would influence the nature of investigations taken up by the GSI when it was formed in 1856, though the nature of mineral exploration acquired a distinctly professional character. This began right in 1865 when H B Medlicott of the GSI studied the mud from the eastern Assam localities.¹⁸ Medlicott research brought good news about the presence of petroleum deposits.¹⁹ He suggested that as yet, only thin layers of petroleum had been "skimmed off" by the Assamese, "everything was in a state of nature".²⁰ Crucial to his investigation was the commercial possibilities of the petroleum deposits. He noticed two favourable indications: "copious discharge of gas" and "non-discharge of water" while he also noted some contrary indications, which called for a careful testing in the face of the "disturbed condition of the rock". Based on Medlicott's findings, James Goodenough, belonging to the Calcutta based Mckillop, Stewart and Company, was awarded a right to explore petroleum over a larger tract of land in eastern Assam in November 1866. Goodenough initially drilled three bores which yielded oil, often oil and water intermittently. Some wells yielded 650 gallons per day giving further hope for the commercial exploration of petroleum. With this yield increasing to 2,000 gallons per day, the prospect for commercial exploration of these areas seemed much brighter.

The next 20 years did not see much activity on the oil front despite Medlicott's recommendation that "experimental borings should be sunk there to practically test the value of the oil accumulations". However, by the 1870s, the GSI had completed extensive explorations of the coal bearing localities of Assam. In the meanwhile, surveyors continued to speculate on the resemblance of coal- and petroleum-bearing areas. Decade later, an enquiry into Burma's oil deposits convinced GSI about the connection between coal and petroleum in this region.

Samples from various borings only indicated the presence of blue clay. Whether this presence of blue clay indicated oil was still not confirmed, but it caused some excitement for the geologists at GSI. The initial breakthrough in assessing the quality of petroleum in Assam came in 1874, when Theodore W H Hughes, of the GSI, tested samples procured from the spring owned by Goodenough.²¹ An analysis of petroleum from these springs gave some positive results. A fragmentation of the petroleum sample suggested that the first six portions contained lamp oil. The samples also carried a higher specific gravity, a key parameter in determining the character of the petroleum content. The seventh and eight portions from the fragmentation contained solid paraffin. Hughes thought that these two layers could be commercially separated for specific purposes. More importantly, Hughes said that as the findings of petroleum in the United States and Canada had given fresh impetus to the production of coal-oils, such a

profitable application of technology could also be used in British India. Nonetheless, Hughes' findings clearly indicated the commercial possibilities of Assam petroleum.

R A Townsend, the superintendent of Petroleum Works in Baluchistan, further examined Assam's oil deposit in 1888. For the GSI, it was a crucial to get some convincing results from an "experienced" specialist. Despite the convincing quantity of oil deposits in the sample areas, Townsend had doubts about the "satisfactory proportion of burning oil on distillation". At the same time, he did not hesitate to claim that "the illuminating value of the crude oil can only be ascertained from the oil measures below the surface which have not been exposed to atmospheric influences". But a 3% presence of petrol was not still a matter of enthusiasm and the GSI thought that "until petroleum from below has been examined, it will be as well as not to examine what is as yet unproven".

Despite this early enthusiasm, the commercial viability of oil deposits in Assam remained a matter of conjecture. As late as 1920, the GSI again admitted that, "this area has not yet been adequately tested, it is still unknown, whether there are deep oil-sands of commercial value".²² The prospective enterprise, however, was free from certain worries of another 19th century colonial investment; the troubles with labour in the tea-plantation. While the petroleum industry was largely a mechanised sector, the prospect for getting both the skilled and unskilled workers was fairly high. Compared to tea-plantation, it was not a labour-intensive industry. There were trained technicians from England, Bengal and Assam, while limited manual labourers could be recruited from near the drilling localities.

Geological investigations were marred by "unfavourable" conditions. For instance, many in the GSI felt that the dense vegetation of the region was a serious hindrance. Scarcity of fossils was another impediment, but it was not unique to the region alone. Extensive searches in Burma too resulted in few fossils.²³ Further, compared to the experience of early days of colonialism, the access to interiors had also improved. Thomas Henry Digges la Touche of GSI, carried out further investigation towards a holistic understanding of the region's geology. Crucial results appeared from Burma with "large collection of fossils" and this convinced the GSI to get specialists for further investigations of Assam. The discovery of oil became a boon for coal exploration too since it was believed that the presence of oil implied the possibility of good varieties of coal. This was apparent, for example, while undertaking a survey to find out a possible Assam-Burma railway route. R A Way who was entrusted with the preparation of a report on this had commented that "with oil wells in the vicinity of coal workings, the manufacture of a very high class of compressed coal briquettes should become practicable".²⁴

By 1894, parallel petroleum explorations in places of north-west India had shown poor results.²⁵ In fact, till the first decade of next century, the total output from the Punjab region remained within 2,000 gallons. Results from Assam, despite the claimed possibilities, were still low, and this was blamed on the geologists who, despite the presence of crude in an area covering over 100 miles, had not made production a reality. In January 1894,

R D Oldham, a leading scientist of the GSI, while speaking to scientists at the Imperial Institute in London, blamed unskilled labourers and wrong and haphazard choice of fields for such failure. Oldham had no doubt that the quality and quantity Assam's coal and oil reserves would remain unsurpassed within British India. Oldham informed his audiences about the profitable findings in Burma. Thus, both Assam and Burma, according to him, held great possibilities for future oil production in the British empire, but needed help from the government. Oldham suggested that a survey of areas of Assam and Burma for oil exploration should be given high priority, while rules and regulations should be adopted, at the same time, to give mining concessions in these areas.

Beginning of Commercial Ventures

The commercial initiative to extract petroleum was taken by the Assam Railways and Trading Company (hereafter ARTC) from 1881. The company was formed for constructing a railway line in the province and was granted a lease over 30 square miles for petroleum exploration. It formally acquired the rights of exploration agencies in 1884.

As the prospect of extracting petroleum became brighter, the company began the process of acquiring a licence to explore in Digboi. The area they indicated had recently been declared a reserved forest. At that time, the revenue from the forest appeared brighter compared to the possible future revenue from petroleum. Therefore, the Assam government was unwilling to give the licence for petroleum exploration. In fact, the chief commissioner of the province came out openly against any such move to grant a licence.²⁶ The ARTC had no option but to pressurise Dufferin, the viceroy. The very tone of its request was indicative that the ARTC did not want this highly prospective chance to be forfeited. Finally, the provincial administrator could not resist and the ARTC acquire the licence in 1888 to exploit oil in the area now known as Digboi field. Another speculator was the Assam Oil Syndicate (AOS). With the commencement of commercial exploration, till the end of the century, oil was sent to for refining to Margherita, at a few miles distance which had a small refinery.²⁷

Both the ARTC and the AOS went through an intricate process of negotiation to retain control over the existing land leases. Bureaucratic and commercial interests of the influential members of the AOS played a significant role in providing the new company with exclusive rights to explore oil. By 1897, the clauses became clear which would be instrumental in the making of a new company by taking over the property of the AOS.²⁸ By the end of the century, the ARTC signalled its willingness to do away with the exploration and drilling of oil in eastern Assam. The company did not want to lose its technical operation which would come handy in future. The impending news of the formation of an exclusive oil exploration and refining company was also in the air. One of the complex things that the ARTC needed to sort out was to negotiate with the Assam government for acquiring land leases with prospective oil deposits. The Assam Land Revenue Regulation of 1886 removed several ambiguities of land rights and essentially allowed land leases for the

oil-speculators. In 1899, the British Indian government further issued rules to govern licence and mining leases in several parts of the country. The new rules allowed the government to retain rights over the minerals and granted concessions for exploration. Annual licence was given to prospective speculators without any exclusive or preferential rights. Exploration in unoccupied and unreserved land was, however, not prohibited. With the liberal licence regime, the number of such grants also increased rapidly.

While the Assam administration was unsure about the advantages of further oil exploration compared to coal exploration,²⁹ by end of the 19th century, the stakeholders in Assam's oil were convinced about their prospects. They knew that it would be possible to explore and market Assam oil commercially. Some of the early anxieties were over. The GSI could safely claim that despite Assam's oilfields being commercially less prospective than the Burmese oilfields, it could claim priority in age. The occurrence of oil in both Assam and Burma was analogous too. As such these minerals were lying "along a narrow strip or belt of country running parallel to a river valley of which it forms a part", they had no doubt that minerals were to be found in tertiary rocks "succeeded by a considerable belt thickness of soft, coarse, fluviatile sandstone containing fossilised wood". Years later, the GSI confirmed the assessment of the speculators when it stated, "the belt of tertiary rocks, stretching from the north-east corner of Assam for about 180 miles south and west, shows frequent signs of oil nearly always in association with coal and sometimes associated with brine springs and gas jets". Extensive exploration and big commercial prospects changed the face of Indian mineral exploration. Petroleum had already acquired a significant status as a priority mineral in India.³⁰ In 1899, the Assam Oil Company (hereafter AOC) with a capital of £3,10,000 was formed to amalgamate the joint capital of both the ARTC and the AOS. Its initial capital outlay was £4,50,000, a meagre amount compared to the investment in tea-plantation.

AOC and the Imperial Economy

Early in the 20th century, the European press began to report the expansion of investor interests in oil. After this, geological challenges could not hinder the region's petroleum deposits being entrapped within the imperial political economy. The AOC declared a profit of £18,960 in 1904. Later, the first world war created an unprecedented increase in the demands for oil.

With the commercial production of petrol and other products in Digboi, petrol was sold in limited quantity within the province. The larger portion of wax, "of fine quality with a melting point of as high as 135° F" was sent to England. There was a good reason for quality wax being produced in Digboi. Already the fractional distillation demonstrated a high percentage of wax and it was claimed that "one of the heaviest ever found in world". Apart from petrol and wax, Digboi began to produce jute-batching oil, kerosene and fuel oil. Till the end of 1911, a total of 32.4 million gallons of crude oil was refined. This was much lower than the Yenangyaung field in Burma which produced 1,400 million gallons in that period.

It was during the first world war that the United States began to produce huge quantities of petroleum for its consumption, more than 60% of the world share, which gave it an unparalleled position in the world market.³¹ This was also supported by the movement of global oil prices which also increased the flow of capital to this sector. There was already a better transport system in the Atlantic to reach the crude oil to the international markets. Though comparatively at a lower scale than that of the US, even British capital began to flow into the oil markets. British India, at that time, had only a marginal share of 10,00,000 tons which was less than 1% of the total global oil production.

At the end of the first world war, with good prospects of an international oil market, the AOC began to emphasise restructuring and re-strengthening of the geological department of the company. By 1920, with the great boom created by the first world war, the Assam oilfields attracted more international attention. But despite this the AOC could not make a good profit from its Digboi fields till 1925 when it began to report a growth in its profit.³² Intensive drilling operations began from 1922.³³ The AOC claimed that this was achieved despite the shortage of "native efficient labour". The AOC also hired trained scientific staff like geologists from the Burma Oil Company (BOC). The company continued to apply for licences in various other areas which showed signs of oil reserves. This also meant that the rights over some areas which had been explored and had already been relinquished. Over the years, though the AOC began to concentrate essentially on Digboi, it also, gradually, diverted its attention to other areas. As such exploration required financial investment and careful geological exploration preceded any such attempt. Additional money required for new exploration was generated on loan from the international market.

A couple of decade after its formation, the AOC had three distinct forms of activities: production and refining of crude oil and the distribution and sale of the refined products. But the company was still struggling to overcome various initial difficulties in every field of its operation. For the next couple of years, the primary task of the company remained essentially focused on the important dimension of proving the productive capacity – oil-bearing capacity of the wells which would have an important bearing on the crude oil position of the state. To expedite drilling in a number of speculative fields, a rotary outfit was sent from London to Assam.³⁴ Proving the contiguous character of a few separate oil-bearing regions had remained the core scientific concern of the AOC.

There was a growing competition for prices of kerosene, the product which was most sought after by the general customer. By the end of the first quarter of the 20th century, the AOC began to look for markets beyond the traditional markets in Assam to sell their kerosene. This was mostly necessitated by the increased volume of kerosene production. It was a difficult time for the AOC to face the increased instability in the world oil prices, especially with the increased global participation of oil companies whose intense international competition was mostly done by "rate cutting". At the same time, there was a general feeling of trust on the future prospect of India's petroleum industry by the first decade of its operation.

Forming a Partnership: AOC and BOC

Despite profits earned in the wake of first world war, the AOC could hardly sustain its commercial operations independently against the aggressive us-based oil companies. The best possible option for it was to seek a joint venture with another British oil company, both commercial and technological. The logistical operation of BOC and years of technological cooperation encouraged the AOC's management to seek further support for its future works from the former. The BOC, initially formed in 1886 and restructured in 1902, had monopoly control in British Burma, which acquired substantial rights in the Assam oilfields a couple of years earlier and had already expanded its territorial limits to Burma, Assam and Punjab.³⁵ While oil exploration in the south-east Asian soils had already made a significant headway.³⁶ The BOC was under possession of the rich oilfields of Irrawati and by the first decade of the 20th century, it was in a position to provide good dividend to its shareholders. The BOC also had drilling rights over 500 acres of lands in southern Assam.³⁷ The BOC had already declared its intent for aggressive expansion into the crude oil market of British India:

We have devoted a fair proportion of our profits to this exploratory and testing work because your directors have recognised that it in the interest of the company and of the oil industry of Burma and India that we should do so. After all crude oil is the life blood and very existence of the company, and I am sure you will all agree that no stone must be left unturned in order to try and discover fresh sources of supply, particularly in Burma and India where the company both holds such a commanding position in the market and possesses all the transport, refining and marketing organisation required to deal with a large production of crude oil.³⁸

This meant that the BOC would vigorously pursue oil in "every area of reasonable geological promise". The only method to prove and disprove this speculation was the technology of drilling. Even finding of oil does not necessarily mean the commercial viability of extracting oil. The BOC geologists had also predicted that compared to the existing estimate of oil capacity of Assam fields, the possibility was much higher. And the BOC at this stage began to contemplate staking more claims in the affairs and properties of the AOC. With this intention, in 1920 the BOC offered £2 cash for each AOC share.³⁹ Alternatively, the BOC suggested, the shareholders of AOC could opt for two share of BOC for nine shares of AOC. Despite the chaotic nature of oil prices, taxes on oil remained uniform which was a matter of serious concerns for the BOC. After its amalgamation with the BOC, the AOC could fight out these core issues more elegantly. However, what remained most central to the oil industry was the great unevenness in equilibrium in the supply- and demand-side of the industry. The first few decades of the oil industry saw uncontrolled and speculative production, resulting in great instability in the oil prices. Concerns existed about the actual limited reserves of oil, but it was generally believed that new exploration and discoveries would work as a deterrent to any probable decline in the oil capacities.⁴⁰ Faced with growing concern raised from various platforms, Britain began a political move to control the production of crude oil.

By 1927, a couple of years after AOC came under the direct management of the BOC, it became clear that there was little

likelihood of the company adding to its existing resources. Prices of petroleum products remained volatile and unpredictable as before adding innumerable miseries to various oil companies. In the next year, the rate-cutting wars had severely threatened AOC with its potentially small capital. The geographical location of Assam leading to unfavourable transport became another concern for the company.

One possible way to escape these economic uncertainties was to gain greater political clout within the provincial government. This could be done by gaining privileges similar to those enjoyed by the tea-plantation lobby. The AOC also tried to carve out more space within Assam's legislative political domain. Protracted political battles ensued claiming such privileges as that of Assam plantation lobby. However, despite intense lobbying they could not secure such a place within the political machinery. On the eve of the second world war, the oil industry came under severe labour unrest. A series of labour strikes disrupted the production of oil. This unravelled the role played by the Indian state and political class in this industry.⁴¹ This also ensured a conflict of interest between the provincial Congress government and imperial interests.

During this time, like its colonial counterpart the tea-plantation, the oil sector also remained crucially dependent on imperial capital mechanism. The Indian government reacted slowly; it had no other way, but to handle the oil economy, with a careful eye at international flows of capital.

Afterwards

At independence the Indian consumers were still primarily dependent on imported petroleum. After that the Government of India (GoI) tried to pursue a policy of "developing oil resources under the exclusive control of the state". An industrial policy clearly indicated that the management of the oil resources would be under the public sector, but the government was yet to formulate a policy towards its effective control.⁴² There was an attempt to control various foreign oil companies, but in reality the GoI could hardly exert firm control over them. At the same time, independent India's oil policy came under harsh criticisms of the World Bank, which had already begun to regulate international economic policies.⁴³

In the absence of a widely accepted production and distribution policy in petroleum, the Assam provincial government

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played a crucial role in the evolution of a temporary but independent oil programme within the emerging, but yet unstable, Indian federal polity. As the rights over the regional natural resources were yet to be clearly formulated, the Assam government asserted its rights to negotiate with the AOC. Accordingly, the Assam government renewed the AOC's exclusive licence for geological exploration in 1950. Another year later, in 1951, still pursuing an independent oil policy, the Assam government extended another mining lease to AOC to explore oil in Naharkatiya of eastern Assam. After a couple of years of exploration, in 1953, more oilfields were discovered, which were commercially viable. This encouraged the AOC to further renew its licence with the Assam government. The Assam government renewed licences to the AOC on the condition that the Indian government's share in the new venture would be limited at 33.5%.

With the increasing interest of the GOI in the country's oil resources, a committee was formed to look into the matter of the rights of Indian government and various contested oil policies.⁴⁴ The committee suggested that the crude oil from Assam should be processed and refined at another location. The committee suggested Calcutta, also agreed upon by the AOC, as the favoured site with Barauni as the next possible site. A site in western Assam could be considered only if political circumstances compelled to do so. As it became clear that Assam would not have a refinery in the beginning of the Second Five-Year Plan, widespread public protests emerged. Political parties across their ideological stand came together to articulate Assam's unwillingness to share oil with the entire country. A public coordination committee was

formed to spearhead a movement ostensibly aimed at having a new refinery in Assam. The new refinery would be supplied with crude oil from eastern Assam. Legislators in the state assembly raised their concern of Assam's claim for oil eloquently in the floor of the assembly: The Indian government's decision to establish the refinery at Barauni was challenged by the Assam government and all the parties representing the hills and the plains stood united for the cause supported by the people of Assam who actively participated in the movement led by the All Assam Refinery Action Committee.⁴⁵

A resolution that the refinery should be established in Assam was taken in the legislative assembly in April 1956. The popular movement was jointly spearheaded by the leadership of the opposition party and the All Assam Oil Refinery Action Committee. Under popular pressure and the constant negotiation by the Assam government, the GOI decided to appoint an expert committee to resolve the question of the location of the refinery. Though the committee was a relief, people were apprehensive about the committee, a sentiment reflected in the vernacular press. In October 1956, the action committee met Prime Minister Jawaharlal Nehru, during his visit to Assam. They represented their demand that the committee should work towards establishing the refinery in Assam and the objectives of the committee should have been to find ways to overcome the hurdles.⁴⁶ The technical and commercial angles of setting up of the refinery had already been discussed by the AOC and Assam had already protested against it.

By June 1957, the GOI decided to set up the refinery in Barauni against the popular demands of Assam. This was sure to raise

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further political outburst. By June 1957 all the members of the Assam Legislative Assembly came together to stand by the cause. The assembly was convinced that the refinery was even technically and commercially possible in Assam. The members argued that the refinery was essential for the economic development for Assam as it would generate petroleum-based industries and have a wider developmental impact. An Assamese legislator, substantiated this view by drawing a similarity with west Asian countries. The Assamese socialist leader Hareswar Goswami had no doubt that even if such claims were categorised as “parochial”, he would “suffer to be parochial rather than to live in a house where I have no rights over my belongings”. He added that retention of oil inside Assam was a “question of regional development” and he appealed for a united stand on this issue. The demand for a refinery was not merely confined to the legislative politics but the protest drew a large popular participation. The ideological apparatus of this outrage

was directed largely by the Assamese middle class. The condemnation of the state against these protests was feeble. Finally, under tremendous pressure from a member of the central government, the GOI decided to agree to a separate refinery to Assam apart from the one at Barauni.⁴⁷ The pipeline which was constructed for carrying out this oil was one of India’s major international engineering cooperations.

At the close of the previous century the Indian government had strongly asserted that minerals and their development play a significant role in its programme of national development. In doing this, the role of the State and technology has been clearly outlined. In Assam, the oilfield townships have come to symbolise the prosperity of the Assamese elite. On the other hand, oil has also emerged as one of the key “regional” resources with claims of exclusive nationalistic rights. Oil exploration came to be seen as a major example of Indian internal colonialism.

NOTES

- Several works have discussed on the aspects of oil exploration in the age of imperialism.
- Jones has discussed the steps taken by the Indian state in shaping India’s oil policy in pre-Independent period G G Jones, “The State and Economic Development in India 1890-1947: The Case of Oil”, *Modern Asian Studies*, Vol 13, No 3 (1979), pp 353-75.
- H K Barpujari, *The Comprehensive History of Assam*, Vol 4, Assam Publication Board, Guwahati, 1990 is among works which were published in the 1990s but failed to look comprehensively at the complex issues of science and technology, imperial competitions, imperial and federal politics, etc. For instance, we know little about the transfer of technology to Assam refinery from western institutions or to what extent this important industrial unit benefited from an alliance with the Burma Oil Company.
- David Cahan, *From Natural Philosophy to the Sciences: Writing the History of Nineteenth-Century Science* (Chicago: University of Chicago Press), 2003; Simon J Knell, *The Culture of English Geology, 1815-1851: A Science Revealed Through Its Collecting* (Farnham, United Kingdom: Ashgate Publishing Company), 2000.
- For an excellent account of the 19th century science of geology and its works in the different parts of the world see, David Cahan, op cit. For an account of the British geology in the 19th century, see Simon J Knell, op cit. Also, Roy Porter, *The Making of Geology: Earth Science in Britain, 1660-1815* (Chicago: Chicago University Press), 1972.
- David Arnold, *Science, Technology and Medicine in Colonial India* (Cambridge: Cambridge University Press), 2004, 44-46. Arnold, however, fails to locate the intensive, though chaotic, search for mineral resources in eastern India closely. For instance, as discussed in the following section search for gold became part of company administration much earlier.
- Jean Baptiste Chevalier, *The Adventures of Jean-Baptiste Chevalier in Eastern India, 1752-1765: Historical Memoir and Journal of Travels in Assam, Bengal, and Tibet*, translated by Caroline Dutta-Baruah and Jean Deloche (Guwahati: LBS Publishers), 2008.
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- The British home intelligence notified the visit of Wilcox in its report, *The Asiatic Journal and Monthly Miscellany*, p 380.
- Wilcox, op cit.
- F R Mallet, “On the Coal-Fields of the Naga Hills Bordering the Lakhimpur and Sibsagar Districts, Assam” in *Memoir of Geological Survey of India*, Vol 12, Part II, 1876.
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- For a broad outline of the Burma Oil Company, see Thomas Anthony Buchanan Corley, *A History of the Burmah Oil Company: 1866-1924* (London: Heinemann), 1983.
- G M Lees, “The Search for Oil”, *The Geographical Journal*, Vol 95, No 1 (January 1940), pp 1-16.
- The Economist*, 18 June 1921.
- Speech of Sir John Cargill, Chairman, Burma Oil Company Ltd, quoted in *The Times*, 28 April 1911, p 7, col E.
- The Economist*, 18 June 1921.
- The BOC chairman was forthcoming in giving a grim picture of what was in the stake: “There is going on, too, all the time natural decline inherent in the fact that whatever the world’s resources are they are being consumed while no process of replacement is going on; in recent years in the United States at any rate, and I suppose also in Roumania, a feature uncompensated for by fresh discoveries of deposits of consequence” quoted in *The Economist*, 15 June 1935.
- For an outline of the labour strike in Digboi see, Dipankar Banerjee, *Labour Movement In Assam – A Study of Non-Plantation Workers Strikes Till 1936* (Delhi: Manohar), 2005 and Amalendu Guha, *Planter Raj to Swaraj: Freedom Struggle and Electoral Politics in Assam 1826-1947* (New Delhi: Tulika Books), 2006.
- Kaul, op cit.
- Consequent to this strong international criticism the GOI entered into a new agreement with the BOC which allowed BOC to have only 50% equity and also allowed all financial investment made by BOC for oil exploration as income tax deductible, *The Times*, 2 June 1961, p 12, col A.
- The committee consisted of Jawaharlal Nehru, K D Malaviya, Krishna Menon, G B Pant, Morarji Desai, T T Krishnamachari, Swaran Singh along with a representative of Planning Commission.
- Under the leadership of Hareswar Goswami and Hem Baruah, both leaders of the Praja Socialist Party.
- Natun Asomiya*, Saturday, 20 October 1956.
- Unpublished seminar paper, Ditee Moni Barua.