

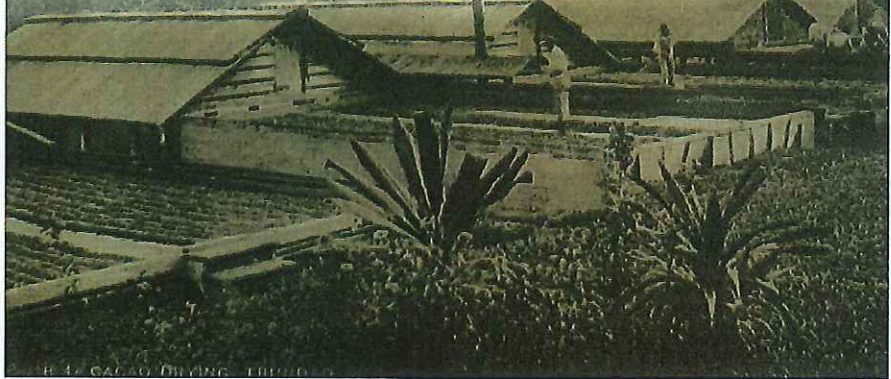
Cocoa Industry

Origins

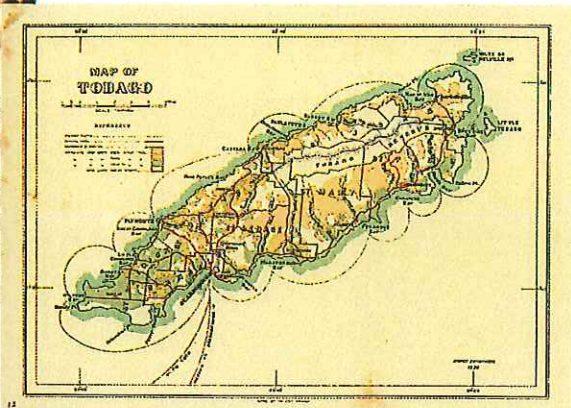
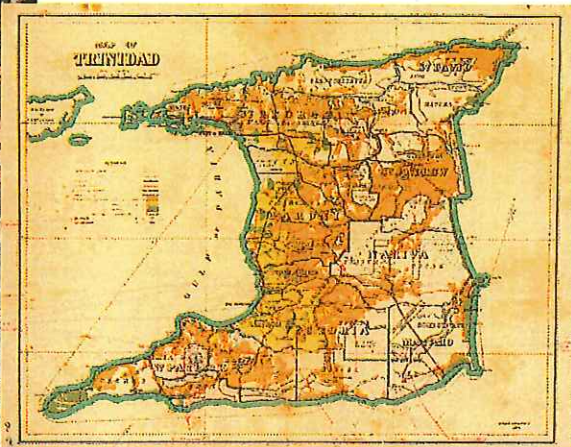


The Criollo cacao variety was reportedly first introduced into Trinidad by the Spaniards in 1525 but its commercial production did not begin until the 17th century. Following a 'blast' in 1727 which destroyed existing crops, the hardier Forastero variety was introduced from Venezuela and over time was crossed with the Criollo strain to create the Trinitario variety, for which Trinidad and Tobago is well known.

The industry expanded following the introduction of French planters under the Cedula of Population of 1783 and with the opening up of Crown lands to peasant farmers after 1869.



Milestones



1828 - Chocolate manufacturing pioneered by van Houten, a Dutchman, who created a hydraulic press to extract butterfat

1830 - Trinidad and Tobago was the world's third highest producer of cocoa, producing 20% of the world's cocoa

1866 - Cadbury Brothers introduces its 'cocoa essence' expanding the market for cocoa in Britain

1866 - 1920
The industry experienced a boon due to high market price, and dominated the economy

1866 - 1870
Governor A.H. Gordon introduces 1869 law to encourage the purchase of Crown lands. The lands were cleared and used to cultivate cocoa by smallholders

1920s - Great Depression affects the industry and price of cocoa falls

1928 - Serious outbreak of Witches' broom disease on cocoa estates

1931 - Launch of Cocoa Research Scheme at the Imperial College of Tropical Agriculture

1931-1936
Dr. F.J. Pound, a scientist with the Ministry of Agriculture, selects 100 Imperial College Selections for good yield potential and resistance to Witches' broom disease and distributes to farmers with some success

1945 - Cocoa Board of Trinidad and Tobago was formed to rehabilitate the cocoa industry

1949-1980
The Department of Agriculture undertook hybridisation work involving Trinitario and Amazonian Forastero parents, producing outstanding Trinidad Selected Hybrids

1962 - Establishment of the Cocoa and Coffee Industry Board to oversee development of the industry

1963 - UWI's Cocoa Research Unit (later called Cocoa Research Centre) launched

Honouring our Industrial Roots

Cocoa Industry

Production

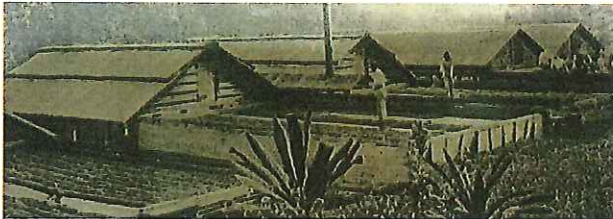
A hot and humid atmosphere is essential for the optimum development of cacao trees which are usually planted under the shade of tall trees. After three to four years, the trees begin to bear pods, which grow straight out of the trunk and main branches. The beans are removed from the pod and allowed to ferment in a box with holes at the bottom, for six to ten days. During the process, the cocoa pulp clinging to the beans matures and turns into a liquid and is drained off.

After the beans are well fermented, they are dried in the sun for five to ten days, with regular turning and are protected from the rain. In the height of the cocoa industry in Trinidad and Tobago, this was done in cocoa houses where the roof was movable to cover the beans lying on the floor. When the beans are dried, they are sorted and placed into sacks. Trinidad and Tobago produces a superior quality cocoa called fine or flavour cocoa, produced from Trinitario beans.



Management

The owners of large cocoa plantations were mainly the French Creoles. Once the owners of sugar plantations, they were forced to sell them during the depression of the 1880s and 1890s when British concerns were investing and consolidating their hold on the sugar industry.



The French Creole sought instead to buy Crown lands which had become available from 1869 and build large cocoa estates. The cocoa dealers who exported the produce and advanced supplies and credit to the planters were also French Creoles.



Labour

Cocoa was first cultivated by Amerindian labourers on Spanish-owned plantations. Under British rule and following Emancipation in 1838, peasant farmers became the pioneers of the industry, most of whom were the peons, of Spanish-Amerindian-African descent, who came from Venezuela all through the nineteenth century.



But Creoles, Africans, British West Indian immigrants and from the 1870s, Indians, also comprised the smallholding sector. When Crown lands were offered for sale at attractive prices from 1869, many smallholders grasped the opportunity to buy and undertook the work of clearing forests and cultivating cocoa. There were two ways of cultivating cocoa estates. Firstly, a peasant may buy a portion of Crown land and cultivate it, and after the trees began to bear, he would sell his plot to the cocoa planter. Secondly, there was the contract system, usually lasting five years, where the capitalist would buy a large parcel of land and fell the forest and then enter into an agreement with contractors to plant cocoa on the land. When trees were bearing, the owner took over the land, paying agreed sums to the contractor based on the stage of the tree.

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Archival photos courtesy the Cocoa Research Centre, UWI.

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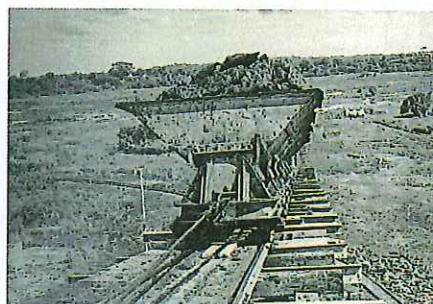
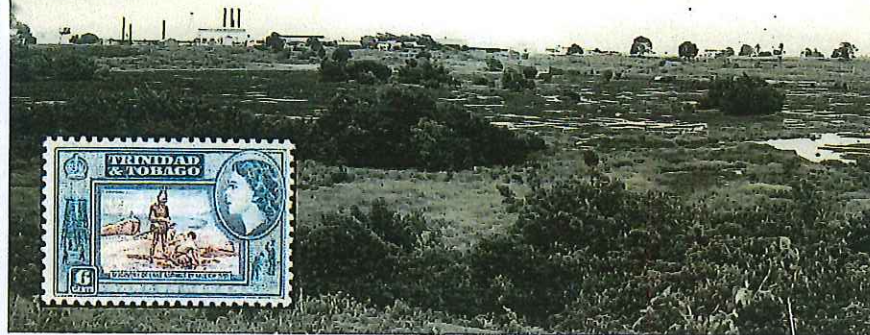
Special thanks to Frances Bekele, Cocoa Research Centre, UWI.

Asphalt Industry

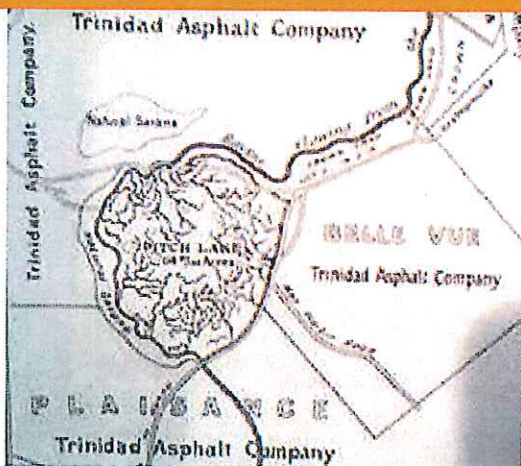
Origins

The Pitch Lake located in La Brea, Trinidad, is the largest commercially mined natural asphalt deposit in the world. Asphalt is a solidified hydrocarbon used for road and bridge-deck construction and for industrial uses. Known to the Amerindians for years, the earliest record of the Pitch Lake is attributed to Sir Walter Raleigh in 1595, when he used the pitch to fix his ship.

From as early as the 1790s, pitch was tested in Spain and by the mid-1790s a pitch refining works was set up near the Pitch Lake. The Spaniards became the first to produce and export dried asphalt or epure. It was not until 1851 however that the first patent for commercial use of the pitch lake was established. In 1864, J.W.Previte entered into business with Lord Dundonald and began commercial activity, exporting globally. Trinidad Lake Asphalt is attributed by Winston Wiltshire as being "the earliest principal engine for integrating first the Trinidad economy, and then the Trinidad and Tobago economy, into the world economy in its broadest geographical dimensions."



Milestones



1805 - British Admiral Alexander Cochrane was asked to examine and report on the Pitch Lake. In this report he stated that the pitch had to be mixed with tar and oil before it could be used

1849 - Lord Dundonald contracted Gesner of Halifax, Nova Scotia to produce kerosene from asphalt. Kerosene became known as pitch oil in early Trinidad and Tobago

1850 - The tenth Earl of Dundonald, Thomas Cochrane began experimenting with pitch

1851 - First patent defining commercial use of pitch is established by British Admiral Thomas Cochrane

1888 - The original concession to mine the Pitch Lake was granted. The concession was for 21 years covering the whole Lake.

1898 - The New Trinidad Lake Asphalt Co.Ltd. was established with H.F.Previte as the first director

1909 - The first concession renewed for a further 21 years

1930 - A new lease was granted by the Government

1949 - A new company incorporated under the Laws of Trinidad and Tobago called The Trinidad Lake Asphalt Co. Ltd. This company was wholly British owned. The company name would later change to The Trinidad Lake Asphalt Company but the ownership would remain wholly to the Previte Company based in the United Kingdom which comprised a network of about 24 public companies around the world through which the asphalt from the Pitch Lake was sold

1970 - Trinidad Asphalt Holdings Ltd. replaced the Trinidad Lake Asphalt Co. Ltd after the United Kingdom switched to coal tar and asphalt became less popular

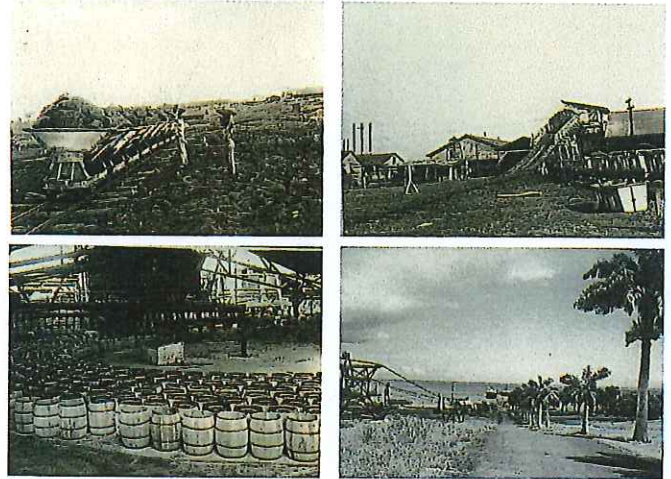
1978 - The Trinidad Asphalt Holdings Ltd became a government state enterprise

Asphalt Industry

Production

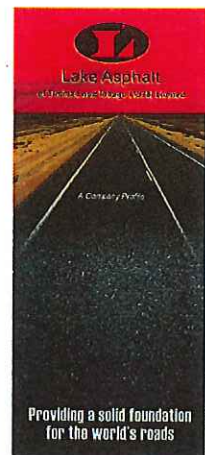
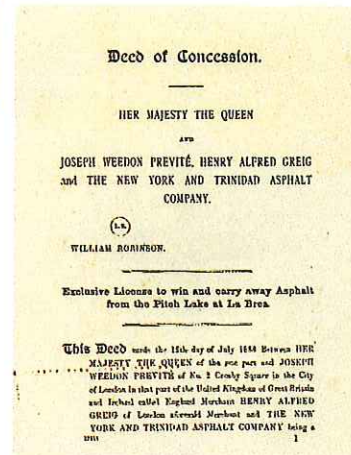
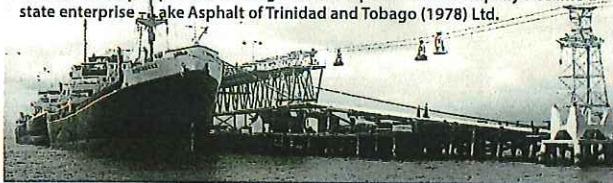
The production process for asphalt involves mining, processing and the export of asphalt products. Asphalt is mined manually or mechanically using tractors. After it is excavated, it is taken by trucks to railway cars which are on the incline. They are pulled by cables up to a trestle to be treated into dried asphalt and asphalt cement for export.

Trinidad Lake Asphalt is a premium quality enhancer for refinery bitumen, and is used in a number of applications worldwide, including the paving of some of the largest roadways (Pennsylvania Avenue and the Lincoln Tunnel), highways, bridge decks, racetracks and airport runways (John F. Kennedy, Beijing and Piarco International Airport). Apart from Trinidad Lake Asphalt, the Lake Asphalt of Trinidad and Tobago (1978) Ltd currently manufactures and markets a wide range of asphalt-related products. It holds 20 patents, the most significant of which is the pelletized Trinidad Lake Asphalt.



Management

Much of the early development of the Pitch Lake can be attributed to the private enterprise of Previte, Greig and Finalyson who consolidated their interests to form The New Trinidad Lake Asphalt Co. Ltd. This company was eventually dissolved, leading to the formation in 1949 of The Trinidad Lake Asphalt Co. Ltd. which was owned by the Previte Company. Based wholly in the UK, the Company comprised of roughly 24 joint stock companies around the world through which TLA was sold and used in almost every continent. In 1978, local ownership superceded foreign ownership when the Company became a state enterprise - Lake Asphalt of Trinidad and Tobago (1978) Ltd.



Labour

Working in the Asphalt industry just like the Oil industry was very labour intensive. Jobs ranged from Dump Car Operators to general labourers and Lake Equipment Operators. The workers themselves came from various ethnic backgrounds including persons from neighbouring West Indian territories such as Barbados, Grenada and St. Vincent.

Like in the oil industry, which was in close proximity to the operations of the Pitch Lake, workers were also organized into trade unions and Asphalt workers were involved in the labour riots of 1937 led by Uriah Butler. Presently the Asphalt workers fall under The Contractors and General Workers Trade Union which was founded on November 9th 1966 by Owen C Hinds.



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Petroleum Industry

Origins

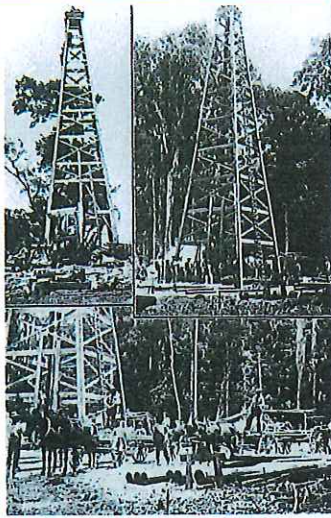


Fig 18: Best VGDs Guayaguayare No. 4 and A, drilled 1903 and 1904 respectively. (Photo: J D Henry, *Oilfields of the Empire*, 1910)

The first oil well in Trinidad was reportedly drilled by Merrimac Oil Company of the USA at La Brea in 1857. However, this drilling was never proven as the Merrimac well was never found. The first recognized oil discovery is Aripere #1 drilled by Walter Darwent in 1866. In 1865, Walter Darwent founded the Paria Oil Company and drilled wells at Aripere and San Fernando in 1866-7, with at least three striking oil. Another company, the Trinidad Petroleum Company drilled at La Brea in 1867 and struck oil.

By 1868, a few wells were in operation around the Pitch Lake and crude oil was shipped to the USA and Britain. Operations were eventually suspended due to a combination of factors including primitive equipment and lack of capital. In 1902, Randolph Rust, an Englishman, teamed up with Edward Lee Lum, a Trinidadian-Chinese businessman to drill for oil in Guayaguayare, with Canadian financial backing. They struck oil and drilled eight more wells, most yielding oil but the Guayaguayare field, the first discovered oilfield, was not developed at that time due to lack of transportation.

After 1904 the British government became interested in developing the Trinidad oil industry. The first commercial oil production was attributed to Well No. 3 in Guapo (now Point Fortin) drilled by Arthur Beeby Thompson of the Trinidad Petroleum Co. and completed in December 1907.

The first commercial oil field was thus the Point Fortin Field, (called Guapo at the time).

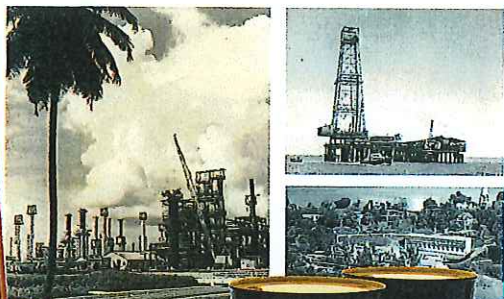
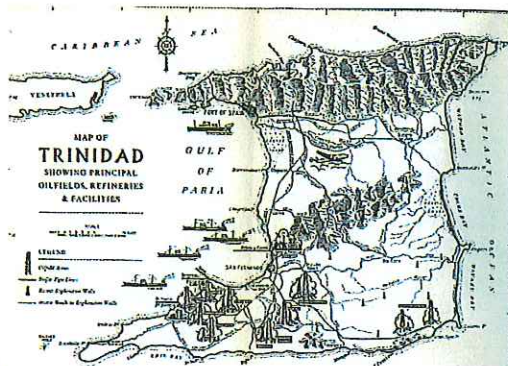


Fig 15: Walter Darwent in the uniform of captain, Union forces, in the American Civil War, roughly 1861-1863. (Photo courtesy Mrs E Lillycrop)



Fig 19: Messrs Randolph Rust and Lee Lum. (Photo: J D Henry, *Oilfields of the Empire*, 1910)

Milestones

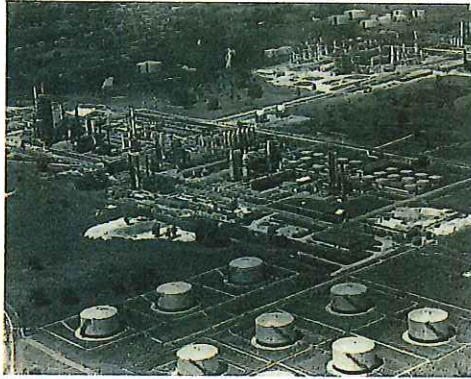


- 1903 - Guayaguayare No. 3 first well to be drilled with rotary equipment
- 1908 - Commercial oil production begins in Trinidad in Point Fortin
- 1910 - First export cargo of crude oil was shipped by tanker from Brighton, La Brea
- 1911 - Discovery of Tabaquite field most northerly oilfield found on land, at that time
- 1912 - Small refinery built at Point Fortin
- 1913 - Two major companies entered the industry: United British Oilfields of Trinidad (UBOT), a subsidiary of Shell and Trinidad Leaseholds Ltd (TLL)
- 1914 - Trinidad oil production passes the 1 million-barrel mark for the first time
- 1917 - Pointe a Pierre Refinery begins
- 1937 - Widespread labour unrest in the oilfield area
- 1954 - Marine drilling for oil began in the Soldado Field by Trinidad Northern Areas Limited (TRINMAR)
- 1954 - Deepest well drilled on land Apex, Fyzabad Well No. 560 drilled to 16,155 feet
- 1958 - First well started on platform 1.2 miles offshore from Brighton
- 1962 - Formation of the Ministry of Petroleum and Mines
- 1969 - New Petroleum Legislation enacted Act No. 46 of 1969

(Source: "Historical Facts on the Petroleum Industry" Ministry of Energy and Energy Industries. Ministry of Energy and Energy Industries, n.d.)

Petroleum Industry

Production



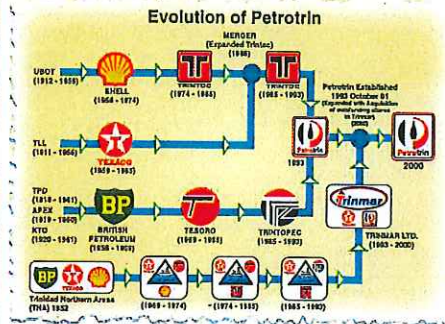
Crude Oil or Petroleum is the product of naturally decaying plants and animals buried deep in sedimentary rocks in the earth and is formed over millions of years. It comprises of hydrocarbons which are the starting points for numerous useful products.

The process of extracting oil involves geologists locating oil traps embedded in geological structures deep in the earth by using field mapping techniques, seismic surveys and other methods employing gravity meters and magnetometers. Once located, an environmental impact assessment is done and other infrastructural and legal arrangements are made in preparation for the drilling of an oil well.

The oil well is created by drilling a deep hole into the earth with an oil rig, which comprises a derrick, power system, rotary equipment, mud circulation and mechanical systems, casing and blowout preventers. Once the rig is set up, drilling operations can commence. When oil is discovered the well is put on production by using well completion methods and equipment to send oil down pipelines to the storage tanks.

At the refinery, crude oil is separated into various components by a process of Fractional Distillation, utilizing differences in boiling temperature. Essentially, crude oil is heated up, vaporized and then the vapour is condensed. Through this process numerous substances are produced such as Liquefied Petroleum Gas, Gasoline, Kerosene, Lubricating Oil, and Heavy Gas/Fuel Oil.

Management



After 1904, the British government took an interest in developing the oil industry, driven by plans to convert its navy to oil-powered ships. The success of British engineer, A. Beeby-Thompson in drilling several successful wells from 1907-9, paved the way for further investment of British capital in the oil industry.

The leading companies included Trinidad Oilfields Ltd, Trinidad Leaseholds Ltd, United British Oilfields of Trinidad (UBOT), a subsidiary of Shell, Trinidad Lake Petroleum Co, Apex (Trinidad) Oilfields Ltd, Kern (Trinidad) Oilfields, and Trinidad Petroleum Development Co. In 1962 the Ministry of Petroleum and Mines was formed and new Petroleum legislation was enacted in 1969. In coming years, the state acquired shares in some major oil companies.

Labour



In the pioneering years, labourers referred to as the "Tatoo Gang," helped to clear the forest and establish sites for drilling oil often using primitive means and with little or no safety precautions. Blow-outs, gushers and oilfield fires were frequent occurrences. As the industry expanded, it was dominated by expatriates - British and European administrative

and technical staff and American drillers, and semi-skilled or unskilled labour from Trinidad and other Caribbean islands, mostly Grenada, St. Vincent and Barbados. In addition to work related to the oilfields, the construction of roads, buildings and settlements in previously uninhabited areas, were pull factors for employment. By the 1920s the oil companies began to train locals as technicians and it was not until the 1950s that significant numbers took up supervisory positions. In 1923, P.E.T. O'Connor became the first local university graduate to enter the oil industry.

Oil workers organized their own trade unions such as the Trinidad Labour Party and the Oilfield Workers Trade Union. In 1937 oil workers agitated for better wages and working conditions, led by Uriah Butler.

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- Special thanks to Victor Young On and NATT Research Team.

Sugar Industry

Origins

Sugar cane was introduced in Tobago by the Dutch in 1655 and in Trinidad, in the 1780s under Spanish rule. Its initial use was for domestic consumption.



In Trinidad...

...commercial production of sugar began in the 1780s following the proclamation of the Cedula of Population in 1783.

The Cedula allowed French Catholic planters, accompanied by their enslaved Africans, to immigrate to the colony with the concession that they would be granted land to cultivate as well as tax concessions.

By 1787 the first sugar mill was established by Picot de Lapeyrouse on his Tragarete Estate. Within the next decade over one 150 sugar estates entered into commercial production and after the capture of Trinidad by the British in 1797, sugar became the main export crop.



Roume de St. Laurent initiated the Cedula of Population



In Tobago...

...commercial production began under British occupation with sugar first being exported in 1763. The crop assumed primary importance in the 1790s, with exports peaking in 1799.

By mid-19th century however it began to decline due to various reasons. When bankruptcy hit Gillespie and Co, the owner of 4/5ths of Tobago's sugar estates in 1884, this signaled the end of Tobago's sugar industry.

Due to the collapse of Tobago's sugar economy the British Government annexed the island to Trinidad thus creating the Colony of Trinidad and Tobago in 1898.



Tobago's Sugar Industry

Milestones



1804 - First steam engine introduced in Camden, Couva

1841-1917

Immigrant labour introduced - liberated Africans, Chinese, Portuguese and Indians

1846 - Sugar Duties Act introduced in Britain resulting in loss of preferential treatment for British West Indian sugar exports and fall in sugar prices

1847-1848

Financial crisis in Britain led to business failure especially of small estates

1860-1897

Small refinery built at Point Fortin

1866 - Incorporation of the Colonial Company hailed to be the first example of conglomerate capital in Trinidad

1872 - Erection of Usine St. Madeleine factory, the largest of the British empire at that time

1884-1885

Sugar prices fall; competition from beet sugar as a result of subsidies on beet sugar exports

1896 - Trinidad Island Wide Cane Farmers' Association established

1934 - Strikes and riots by sugar workers

1937 - Establishment of Caroni Ltd

1937 - All Trinidad Sugar Estates and Factory Workers Trade Union formed

1951 - Price of sugar negotiated under Commonwealth Sugar Agreement

1975 - Caroni (1975) established by Government

2003 - Caroni (1975) Ltd. closed

Sugar Industry

Production



Sugar cane was planted on several acres of land in continuous rows and manual, mechanical and aerial methods of weed and pest control were employed. Cane was harvested from January to June and transported by animal-drawn or mechanical means to locations where it was weighed and recorded. It was then transported to the factory by locomotive with 10-ton rail cars or on 10-ton cane haulage trucks.

At the factory, the juice was extracted and clarified and put through an evaporation process to produce a dense syrup, in which the sugar separates by crystallization. By-products of sugar include molasses which is used in the production of rum, and bagasse which can be used as fuel. Sugar is a key ingredient for several industries – candy, food, soft drink and chemical.

Management



The sugar plantations were first managed by estate owners who were mainly French Creoles. Thereafter, following the labour shortage after Emancipation, the loss of preferential treatment in British markets and the financial crisis in Britain, sugar estates were amalgamated and bought by British interests, the Colonial Company being the first.

In 1937, Tate and Lyle, a multinational British conglomerate acquired and amalgamated various estates under Caroni Ltd. By the 1970s there was a decline in profitability which led to a reluctance in investment by Tate and Lyle. The Government of Trinidad and Tobago took this opportunity to purchase 51% of ordinary shares in 1970 and by 1975 had obtained the remaining shares. Liquidating Caroni Ltd, the government registered a new company, Caroni (1975) Ltd. Despite the best efforts to revitalize the industry in the twentieth century, the company was closed in 2003.

Labour



A large skilled, disciplined and reliable labour force was required for the labour-intensive work on sugar plantations. Numerous sources of labour were used during the industry's history. The labour of enslaved Africans were first used and after Emancipation, Chinese, Portuguese and Indian immigrants came to work as indentured labourers, the largest group being the Indians.

When the period of indentureship ended, some indenture-free Indians acquired land, and became cane farmers. The cane farmers formed their own organization while sugar workers employed by Caroni Ltd established their own trade union.

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