CHAPTER ONE

New uses for sugar

On the 22 June 1937, Royal Marines from HMS Ajax landed at Pointe-à-Pierre in the south of Trinidad. The navy was responding to a request from the Governor for help to suppress riots that had resulted in the deaths of twelve people. The Times reported, ‘One hundred and fifty marines and blue jackets from HMS Ajax are setting up machine-guns to protect the oil fields.’ Another navy ship, HMS Exeter, arrived at Trinidad the following day. Whilst the violent protests that gripped the island had subsided by the 6 July, three weeks later, a crowd attacked Government House in Bridgetown, Barbados. Four days of unrest followed across the sugar estates of the island, including attacks on shops and lorries and instances of arson, and the Royal Navy were called again. The next year, police fired on a group of protestors at a sugar estate in Frome, Jamaica, leading to a period of violence in the colony. This time the British government responded by appointing a Royal Commission, headed by Lord Moyne, to investigate the conditions that had provoked Caribbean populations to protest on such a scale.

The riots that occurred in the British West Indian colonies during the 1930s have been endowed with much significance by both historians of British imperialism and historians of the Caribbean. Accounts of imperial policy tell how these events were crucial in allowing the Secretary of State for the Colonies, Malcolm MacDonald, to get his way in passing the Colonial Development and Welfare Act of 1940. This Act is considered a turning point in colonial policy as it marked a shift to a more assertive, interventionist form of imperialism that aimed to transform Britain’s colonies through development. For historians of the Caribbean, the strikes and riots of the interwar period are a defining moment on the journey towards political independence.
These widespread instances of rebellion illustrate the agency of the subject populations of the British West Indies as people seized the opportunity to protest their grievances over issues such as the slow pace of political change, low wages, inadequate food and housing and the racism they experienced from their employers.5

The consequences for the British Caribbean of new legislation for development have been largely unexplored.6 Almost without exception, we are told only that policy after 1940 for the British West Indies was dictated by the report of the Moyne Commission. In fact, the Colonial Office in London conceived a radical plan for the economic development of the British West Indies that marked a major departure both from previous approaches and from the recommendations of the recent Royal Commission. This policy sought a new and permanent solution to the problem of the low price for sugar that officials considered to be at the root of much unrest. For officials, the lesson of the Great Depression was that profits in the sugar industry could not be maintained on the basis of continuing increases in the volume of production. A new era of prosperity was possible, however, if cane sugar could be reinvented as a raw material for the expanding field of synthetic manufacturing. As chemical companies developed new plastics and medical products, there was increasing demand for supplies of cheap and plentiful starting materials. The Colonial Office decided a programme of scientific research was needed to transform sugar from foodstuff to industrial starting compound. Laboratory investigation was endowed with the power to reverse the long decline of the Caribbean.

This chapter will show how concerns at the Colonial Office around 1940 about the economic future of the British West Indies were expressed as concerns about the future of the sugar industry. While distress was not limited to workers in this industry, and sugar was no longer the principal export of all British Caribbean colonies, it was conditions in this industry that frequently drew the greatest criticism. In addition, the sugar industry was still the biggest employer in the British colonies of the region and when discontent spread amongst workers on the estates it threatened the stability of entire territories. British officials sought a way to revive the fortunes of the Caribbean sugar industry so as to placate colonial agitators and critical foreign governments in the short term and return economic prosperity to this region of the Colonial Empire in the longer term.

An industry in decline

Questions were raised about the long-term future of the Caribbean sugar industry from at least the 1890s, and then in 1934 the price of
NEW USES FOR SUGAR

sugar dropped to an unprecedented low. Officials at the Colonial Office perceived the crisis of the interwar years as different from previous episodes of price instability, believing the world sugar market had now reached the point of saturation. Since profits and wages could no longer be maintained through increases in production, a bleak future existed for the Caribbean. Both the character of the crisis and the timing of it led to a break with previous policy and a search for a new and different solution to the problem of Caribbean sugar.

In the eighteenth century, the West Indian colonies were said to be the richest part of the British Empire, and in 1770 it was estimated that the annual profits from Caribbean sugar were £1.7 million.7 Sugar from British imperial sources was privileged in the British market from the beginning. From 1651, the Navigation Acts restricted foreign imports to England and its colonies by dictating that only English ships could take goods to the ports of these places. Since the Navigation Acts prevented the movement of English goods directly to foreign ports, they were initially unpopular with sugar planters who wanted access to lucrative foreign markets. Planters were compensated for this loss of trade with other nations through the near-monopoly of the English market.8 Preferential tariffs were introduced from 1651, with the duties on foreign sugar rising from 270 per cent to 340 per cent of that on West Indies sugar by 1705.9 In the eighteenth century, episodes during which planters experienced falling profits and production were followed by periods of recovery, and the overall trend was of rising sugar consumption in Britain. Permanent difficulties in the sugar industry of the British West Indies did not become apparent until after 1815.10

Decline in the value of sugar from the British West Indies began to occur after emancipation, but was the result of a complex of factors rather than the end of slavery alone. Advocates of free trade first brought an end to preferential tariffs for empire sugar, before duty on sugar was removed altogether in 187411 and the Navigation Acts suspended in 1849.12 As the price for sugar fell, consumption increased sharply, however, from 18 lb per head in Britain in 1800–1809 to 84.7 lb by 1900–1909.13 Overall, between the 1840s and 1860s West Indian manufacturers saw a decline in value of around 6 per cent but production increases of around 45 per cent.14 Historians have shown that the post-emancipation pattern of production varied considerably between the colonies of the British West Indies. In Barbados, production grew substantially, with the same trend occurring to a lesser extent in Guiana, Trinidad and St Kitts. Sugar planters in Guiana, Jamaica and Trinidad secured a new source of cheap labour from East Asia with the introduction of indentureship in the 1840s, and wages for sugar labourers generally were kept low through the limited availability of
land for peasant agriculture, leaving many people with little alternative but to work on the estates. The maintenance of a source of cheap labour did not prevent rapid decline in the sugar industry in Jamaica between 1840 and 1860, however, although the consequences for the island’s economy were moderated somewhat by the production of large amounts of rum.

The factor that caused the greatest problems in the nineteenth century was increasing competition from beet sugar grown in Europe and, to a lesser extent, the growing market share of cane sugar from Java and Cuba. From 1850 to 1900, beet expanded its share of the world market from 16 per cent to 65 per cent, stimulated by the provision of bounties on beet sugar exports which were particularly generous in the case of Germany and Austria, and the introduction of improved, high-yielding varieties of beet. By the 1890s, the British West Indies sugar industry was considered to be in the midst of severe crisis. A slump in price to 10 shillings per cwt (from a high of 97 shillings per cwt in 1814) led to the abandonment of estates, low wages and riots in St Kitts and Guiana in 1896. In that year a West India Royal Commission was appointed to consider the claim that the sugar industry of the British West Indies could only survive in the future with assistance from Britain. In its report, the commission, led by Sir Henry Norman, made a number of recommendations that encompassed the need to have greater diversity of economic activity in Britain’s Caribbean territories, including the promotion of peasant agriculture.

Concern about the decline of the West Indies had wider ramifications at the end of the nineteenth century, leading some politicians to advocate a shift in imperial approach towards ‘constructive imperialism’ in which tariff reform would improve empire trade and provide revenue for initiatives at home. The Secretary of State for the Colonies Joseph Chamberlain is the most famous advocate of a departure from the strict principles of free trade in favour of the promotion of imperial interests. Chamberlain hoped to counter the bounty system used by European countries producing beet sugar by introducing duties on foreign sugar imports. He also asserted that the development of the full economic potential of the colonies would require loans and grants from Britain as a stimulus to greater private investment.

The full ambitions of Chamberlain and the Norman Commission for financial assistance for the West Indies were not realised. The funds that were raised included £250,000 to establish an agricultural bank for sugar planters, a road-building grant for Dominica, and money for establishing peasant smallholdings in St Vincent. The most notable outcome of the recommendations of the West India report was the creation of the Imperial Department of Agriculture in Barbados in 1898,
NEW USES FOR SUGAR

headed by Daniel Morris, previously the assistant director of Kew Gardens in London. A programme of sugar cane breeding aimed at developing higher-yielding varieties of cane was initiated at the department, for which Morris recruited a recent Cambridge graduate, Frank Stockdale. Disease-resistant, high-yielding varieties of cane such as B111 (where the ‘B’ designated a variety developed in Barbados) were developed through this programme. Apart from this, Britain finally persuaded European countries to abolish subsidies for beet sugar through the Brussels agreement of 1902, although the return to higher prices for cane sugar producers resulted more from a general upturn in commodity prices. Jamaica and Trinidad also saw increases in foreign trade between 1890 and 1914 because of expanding production and export of products other than sugar: bananas in the case of Jamaica and cocoa in the case of Trinidad.

Overproduction in the cane sugar industry increasingly became a problem after the restoration of imperial preference in 1919. The Caribbean colonies experienced substantial increases in production made possible by the planting of improved cane sugar varieties and more efficient methods of extraction in the sugar factories. The generation of a significant surplus on the world market and competition from beet sugar meant that the open market price in London of cane sugar dropped rapidly from 25s 9d per cwt in 1923 to only 8s 3d by December 1929. The British government responded by appointing another commission of enquiry headed by the Fabian socialist Sydney Olivier. Olivier travelled to the British Caribbean colonies in 1929 and 1930 accompanied by the economist and Colonial Office administrator Sydney Caine.

Olivier’s 1929 report warned that the cane sugar industry was entirely dependent for its survival on the preference given to empire sugar by Britain, and if this was removed the result would be social disaster in the British West Indies. The imperial preference of around £3 15s per ton that was introduced after the First World War was supplemented after the Olivier Report by a system of colonial sugar certificates with a value of around £1 per ton. The result was that the price of £11 5s received by colonial producers now comprised 40 per cent of assistance. Preferences had the effect of increasing exports of West Indian sugar to the British market at the expense of foreign sugar during the 1930s. Sharply falling prices for commodities during the Depression exacerbated the problem of low price, however, and by 1934, raw sugar had fallen to 3s 10½d per cwt. In an attempt to compensate, sugar manufacturers continued to increase production, which in some islands doubled. Manufacturers in Trinidad introduced new machinery in the field and artificial manure, and deployed improved cane varieties over a greater area. Smaller estates underwent
consolidation by firms such as Booker Bros in British Guiana, and Tate & Lyle in Trinidad and Jamaica. Between 1900 and 1950 the number of sugar factories in operation in Trinidad fell from fifty to eight.\(^{35}\)

In an effort to curb overproduction and an attendant fall in price, the International Sugar Agreement was brokered in 1937 that set quotas for sugar imports. The international character of the agreement was praised at the time for its role in acting as some check against the trend of economic nationalism and protectionism during the Depression.\(^{36}\) Firms complained, however, about the level at which quotas had been set.\(^{37}\) Preferences for empire sugar were criticised for the expense to the Treasury and the resultant greater price for the consumer. Some believed that the cane sugar industry should be left to undergo a natural contraction, with all the devastating implications for Caribbean populations, as expressed by *The Economist* in 1930, ‘All attempts to artificially impede the restoration of lost equilibrium between these two factors [supply and demand] are useless in the long run, and when they take the form of State assistance, they are doubly objectionable, for they further distort the situation.’\(^{38}\) While government support for the sugar industry had its critics, officials at the Colonial Office would not contemplate withdrawing assistance for West Indian sugar producers because of the social and political ramifications of a failure of the industry. Britain received a clear warning of the potential consequences of continuing and unchecked decline of the sugar industry during the latter part of the 1930s.

**Hunger marches and riots**

The predictions made by Olivier in 1929 of a crisis for the Caribbean became reality during the course of the 1930s. A fall in the price of sugar was followed by strikes and protests amongst sugar workers in Trinidad and British Guiana in 1934, in St Kitts, St Vincent and St Lucia in 1935 and then island-wide violence on an unprecedented scale in Trinidad and Barbados in 1937 and Jamaica in 1938. There were official enquiries into the disturbances that occurred in Trinidad, Barbados and Jamaica, and in 1938 a Royal Commission was appointed to investigate the problems of the British West Indies as a whole. These official reports, along with newspaper articles and books such as W. M. Macmillan’s *Warning from the West Indies*, brought the plight of the populations of the British West Indies colonies to wider attention. Revelations about the extent of deprivation were fuel for critics of British imperialism, especially those in the US, and this fact enabled the Colonial Office to persuade the Treasury of the necessity of a new Colonial Development and Welfare (CDW) Act in 1940.
The issue that lay at the heart of the riots that had occurred across the Caribbean was a matter of debate. A number of political leaders had emerged in the British West Indian colonies after the First World War and the ability of these individuals to inspire their supporters to violent protest caused alarm amongst colonial governments. British business leaders with interests in the region, such as sugar manufacturers and oil producers, claimed the influence of communists was responsible for strikes. After seeing the conclusions of the various investigations into labour unrest and speaking with colonial governors, the Colonial Office concluded that the main factor that prompted workers to protest across so many of the territories of the Caribbean was the impossibility of living on the pay received. Much of the work on the sugar estates was seasonal and people were paid by task for weeding and planting in the fields, or if cutting cane during the harvest, by weight. In Trinidad, 56 per cent of cane was grown on estates and 44 per cent by independent farmers who then sold their crop to sugar factories. The wages or rates paid for this work were increasingly inadequate in the face of rising food prices during the 1930s, and the difficulty in making ends meet was exacerbated by a lack of full-time employment. The high cost of imported food supplies and the low level of self-sufficiency in growing provisions in the colonies of the British Caribbean meant that the issue that seems to have moved such large numbers of people to violent protest across the region was hunger. The Governor of Trinidad, Sir Murchison Fletcher, wrote after the disturbances on that island to say,

the immediate origin of the trouble is undoubtedly to be found in economic pressure. Wages of the lowest paid labour have at the best of times given little more that bare subsistence, and for some months past prices have been rising steadily. It is estimated that the increase of the cost of living above the normal level is now in the neighbourhood of 17%.

Official investigators stated that effective labour organisation would have allowed workers to negotiate with their employers on the issue of wages and hence avoid recourse to violence. Labourers reported their fear, however, that complaint would result in dismissal since high levels of unemployment meant a pool of workers ready to take the place of seemingly troublesome individuals. Overpopulation in Jamaica and Barbados worsened during the 1930s as migrants returned from work on the Panama Canal or from the US and Cuba on the loss of their jobs as the Great Depression deepened. One sugar worker who wrote to express his grievances to the Governor of Barbados told how it was pointless for labourers to ask for higher wages on the estate
he worked on since ‘Barbados is so thickly populated and the money man knows that if one refuses he can get fifty to take his place as they are starving.’43 Those who complained about the unfairness of pay arrangements noted that whilst field labourers struggled to feed their families, profits were still being generated by the sugar manufacturers and bonuses were being paid to managers. ‘Grevious citizen’ in Barbados wrote to the Governor, ‘Mr Taylor at Wakefield has a dog, it gets beef steak three times a week, Ovaltine and other things and we the working man don’t get even good salt fish.’44

The disturbances in Trinidad and Barbados in 1937 did not begin amongst sugar workers, but these workers were moved to riot in large numbers as word of unrest spread. In Trinidad, trouble on the island began in the Forest Reserves oilfield belonging to Trinidad Leaseholds, Trinidad’s largest oil producer. On the evening of 19 June, the police attended a meeting of around 200–300 oilfield workers with the intention of arresting the leader of a recent strike, Uriah Butler. Butler was a highly charismatic orator who had formed a left-wing political party in 1936, the British Empire Workers and Citizens Home Rule Party, which had a committed following in the oilfields in the south of Trinidad.45 In the commotion that ensued after police attempted to break up the meeting of strikers, Corporal Charles King of the Fyzabad police was pursued by a group of women, either fell or was pushed from a window, and was set alight. Within two days, strikes and protests had swept the island, spreading from the oil fields of the south to the sugar and cocoa estates in central Trinidad and then to workers in the capital, Port-of-Spain. Three weeks of island-wide violent protests followed, and by 6 July, fourteen people were dead, fifty-nine wounded and hundreds of people had been arrested.

Around three weeks later, on the evening of 26 July, violence broke out in Bridgetown, Barbados, when a crowd descended on Government House to protest about the threat of deportation levelled at Clement Payne, the founder member of the Barbados Labour Union. The crowd damaged street lights and parked cars and threw stones at the police.46 Payne had arrived in Barbados from Trinidad in March 1937, where he had been involved in the work of the Negro Welfare Cultural and Social Association. The NWCSA, formed in 1935, was dedicated to protesting the grievances of Trinidadians and campaigning against events that occurred on the international stage, such as the Italian invasion of Ethiopia. Whilst in Barbados, Payne had addressed political meetings, urging Barbadian workers to rise up against their employers, and he had come to the attention of the Barbados police. The order to deport Payne was officially made on the basis that he had falsely declared himself to be Barbadian on entry to the colony, when in fact
he had been born in Trinidad, but seems more likely to have been the result of a sense that he was a trouble-maker.

While the attempt to remove Payne led in the first instance to an outbreak of violence in the capital, by 28 July there were reports that sugar workers in the rural parishes had been called out to strike, and in the afternoon a group of around 200 people descended on the Brighton and Carmichael plantations, raiding fields for food and stopping people from working. Strikes spread across the whole of the island, shops and lorries were attacked and there were further instances of food theft and arson. By the end of the disturbances, four days later, fourteen people were dead and forty-seven injured. The official enquiry into the unrest noted ‘The lawless acts committed in the country were more purposeful than those committed in Bridgetown, and it would appear that hunger or the fear of hunger, coupled with the news of the disturbances in Bridgetown were the chief causes of the outbreaks in the country districts.’ In the case of Barbados and Trinidad, armed police and the Volunteer Force initially dealt with the disturbances before the governors of the two islands requested help from the Royal Navy, and sailors and marines landed from HMS Ajax and HMS Exeter in the case of Trinidad and HMS Apollo in the case of Barbados.

These two episodes of unrest were set off by clashes between police and the supporters of Butler in Trinidad and Payne in Barbados. Both men were political dissenters who mobilised people to join forces and protest against the abuses they endured. The broader context to the actions of individuals such as Butler and Payne and their followers was one of increasing awareness and anger about racial injustice, fuelled by the experiences of black soldiers such as Butler who fought for the British during the First World War, the rise of the pan-African movement and fury over the perceived betrayal of Ethiopia when Britain recognised Italian control of the country in 1938. Increasing political involvement was also found amongst the East Indian population of Trinidad, as exemplified by the radical barrister Adrian Cola Rienzi, who set up the Trinidad Citizens League in 1935 from which Butler left to form his own British Empire Workers and Citizens Home Rule Party. Whilst the interwar period saw increasing levels of political participation and organisation amongst the populations of the Caribbean, the rapid spread of violent protest across so many workers in the British colonies in 1937 and 1938 was the expression of widespread anger about economic hardship. Colonial Office officials in London believed that the imprisonment of communist sympathisers, or the creation of a permanent military station as oil company managers had requested for Trinidad, were unlikely to resolve the problem. The conclusion of the official enquiries into unrest in Trinidad, Barbados

[ 29 ]
and Jamaica was the same: the threat of further violence would not be removed without measures to alleviate the deprivation that existed in every colony. According to the commission of enquiry appointed to investigate the cause of the unrest in Barbados,

we must guard against conveying the impression that we think that the disturbances were a mere flash in the pan, a spark of revolt which might have been extinguished by such measures [as a stronger police response]. On the contrary it is our considered opinion after surveying the whole field that there was a large accumulation of explosive matter in the island to which the Payne incident only served as detonator. That the real cause of the disturbances was in fact economic can we think be convincingly shown; further we are of opinion that the conditions which rendered this culmination possible still exist and demand immediate treatment.48

The most visible and obvious sign of the deprivation endured by workers in the Caribbean was the squalid housing conditions provided for them, which were condemned by every official investigator dispatched to the region. The commission of enquiry into the disturbances in Trinidad and Tobago generally avoided strong, direct criticism of the treatment of labour by the oil companies, but in the case of the sugar industry pointed to a clear connection between the poor-quality housing on the estates and the discontent of sugar workers.49 In the autumn of 1937, the Labour MP and union official John Jagger travelled from Manchester to Trinidad to attend an arbitration tribunal, convened to determine whether there should be an increase in wages in the oil industry. Jagger kept a diary of his time on the island between November 1937 and February 1938 in which he described the conditions he saw there. On visiting the barracks that housed sugar workers on the estates of central Trinidad, Jagger wrote,

I thought that I had seen the worst that anyone could show in housing conditions when we went round the oil fields, but I must hand it to the sugar firms for absolute filth, ignoring of any kind of sanitary conditions whatever, and for general misery. Words fail me when I try to describe the conditions we saw – open drains with green slime a couple of inches thick flowing both behind and before the wretched wooden shacks in which the workers were living. Three single men to a room 10ft square, and a room of white washed boards plus a galvanised roof which had rusted till the sunlight and the rain could enter at almost every point. Similar rooms where families of five or ten persons of, pigged in, regardless of age or sex. Filthy latrines where chloride of lime only served to add one more obnoxious smell to the rest, and excrement flowing down the open drains. Perhaps most dreadful of all were the round iron cisterns at each door containing the drinking water for the residents, in which
were every creeping and crawling thing imaginable, plus endless masses of mosquito larvae.50

The scene sat in strong contrast to the manicured golf course and beautiful bungalows for the European staff of the sugar estates.51

In May 1938 violence erupted in Jamaica on a sugar estate at Frome recently acquired by the sugar company Tate & Lyle. Some 3,000 workers converged on the estate to agitate for better wages, and after employees in the main office of the company were attacked, police fired their rifles into the crowd and killed four protestors.52 This episode received a great deal of coverage in the British press and an article in The Times reported that, alongside low wages, the issue that had led to the riot was the refusal of Jamaican workers to continue to accept the appalling housing conditions provided on the sugar estates.53 In a letter to the paper, Leonard Lyle, President of Tate & Lyle, rejected the argument that conditions on the company’s Caribbean sugar estates were in need of improvement on the grounds that it was wrong to consider Jamaican workers as requiring the same standard of working and living conditions as British labour: ‘We must be careful to remember that the West Indian labourer does not even remotely resemble the English labourer, either in his mode of life or his mentality.’54 Lyle denied the claim that riots in Jamaica stemmed from lack of employment and poor wages and housing, and he continued by stating that ‘by no means a small proportion of our British troubles overseas are caused by the sinister influences of the communists’.55 The Colonial Office, however, was prompted by the Jamaican unrest to appoint a Royal Commission for a comprehensive investigation of social and economic conditions across the British Caribbean and started to prepare new legislation that would provide the colonies with increased development grants, including money for welfare reform.

The reform of policy

Concern had existed about the decline of the British West Indies for a considerable period of time, but events during the 1930s had greater impact than previous episodes of depression and unrest. The disturbances in the British Caribbean during the 1930s, along with those in Northern Rhodesia and Mauritius, occurred at a critical juncture for Britain.56 The integrity of the British Empire was under threat from Germany’s demands for the return of its former colonies and Japanese expansion in south-east Asia.57 In addition, there were vocal critics of imperialism in the US.58 With the outbreak of war, the Colonial Office argued that it was imperative that Britain take action to secure the continuing loyalty of colonial peoples and ensure there
was no interruption to colonial production. Trinidad was of particular strategic importance to Britain as it was the largest source of aviation fuel in the empire; a high-octane plant had been built by Trinidad Leaseholds at their refinery at Pointe-à-Pierre in the south of the island in 1937. Beyond the need to prevent colonial revolt, officials feared that any accusation that Britain was incapable of ensuring reasonable levels of social provision for its colonial subjects raised the possibility that after the war Britain’s colonies might be removed altogether and placed under League of Nations mandate.

The importance of the unrest in the West Indies during the 1930s for the reform of legislation that led to the 1940 CDW Act has received substantial scholarly attention. The aim here is to show how the new CDW Act was used by the Colonial Office as the opportunity, and the means, to find a long-term answer to the problems of the West Indian sugar industry. In the aftermath of the Caribbean riots, over-supply of sugar on the world market was identified as a major issue. The vision of economic development that the Colonial Office subsequently produced for the Caribbean was one in which sugar was to be transformed from a low-value foodstuff to a high-value industrial raw material. Frank Stockdale, appointed Comptroller for West Indian Welfare and Development in 1940, linked the need to deal with a future sugar surplus to the alleviation of social problems in the British Caribbean:

We think, at present, of sugar only as a food but the field of consumption will have to be extended, if the post war situation is not to find us with no alternative but restriction, increased unemployment, distress and misery in the West Indian colonies.

The solution that was devised by officials in the Economics Department made use of new provision for scientific research created with the passing of the CDW Act of 1940. The announcement that Britain was making a substantial new commitment to economic and social development and scientific research through the 1940 CDW Act was timed to coincide with the publication of the recommendations of the West India Royal Commission, the findings of which were expected to cause great embarrassment to the British government. The Colonial Office appointed the West India Royal Commission, headed by Walter Edward Guinness (Lord Moyne) in the wake of the riots in Jamaica. The dispatch of the Commission to the Caribbean had the short-term function of providing some evidence that Britain was taking measures to investigate conditions in its colonies, in an attempt to counter domestic and foreign criticism.
The Commission included experts on economics, education, social reform, trade unions and agriculture, reflecting its remit to undertake a comprehensive investigation of the material, political and social issues affecting the British Caribbean. Its role as a public gesture that Britain was not indifferent to the grievances of its colonial subjects was executed by giving a voice to groups and individuals in the British West Indies themselves. During its tour of the colonies of the British West Indies and at its London meetings the Commission received 789 memoranda and 300 other communications and saw 370 witnesses or groups of witnesses. When the final report was presented in 1940, it provided a detailed and at points candid description of the hardships endured by the populations of the British West Indies.

While waiting for the submission of the report, the Colonial Office set about drafting reforms to its 1929 Colonial Development Act. The priority of that legislation had been the encouragement of projects of economic development in the colonies as a way to alleviate domestic unemployment. The fact that the 1929 Act had failed to stimulate widespread colonial development, and indeed many colonial economies were now in worse shape than they had been before the Great Depression, prompted a review of policy in June 1938, and by February 1940 a draft of a new CDW Act had been prepared. The reformed CDW Act included an expanded fund for development of £5 million pa (an increase from the annual £1 million allocation given in the 1929 Act), free grants rather than loans to the colonies, including grants for projects of social improvement, and the creation of an annual fund of £500,000 for scientific research.

The challenge facing Malcolm MacDonald was to persuade the Treasury to endorse the CDW Act when Britain had recently entered a war. In his communications with the Chancellor of the Exchequer John Simon, MacDonald raised the spectre of further episodes of colonial rebellion, with a clear allusion to recent events in Jamaica. The proposed Act was essential, according to MacDonald, in sending a message to aggrieved populations that the problems they faced were going to be addressed. Without such measures, there was a real danger that workers in the colonies, particularly those who possessed a wider understanding of the injustice of their situation, would cause trouble again.

We know what form such trouble takes. On some pretext or other there is a strike accompanied by rioting and sometimes even by murder; as often as not our police have to fire on the crowds; troops are even called out; and occasionally it is necessary to summon a war-ship in aid to land marines.
This would be a disaster for Britain during the war. Large-scale colonial unrest could interrupt the production of essential materials, the Royal Navy could not spare ships to contain riots, and violent protest provided propaganda for Britain’s enemies. MacDonald warned that the shooting of protestors as had occurred at Frome in Jamaica in 1938 would be used by Germany as evidence of Britain’s incompetence and willingness to act oppressively towards its colonial subjects. This could have damaging consequences for the relationship between Britain and the US. MacDonald warned the Treasury not to think that the peace that currently prevailed in the colonies was anything but a temporary lull, produced in the case of the West Indies by the dispatch of the Moyne Commission to the region.\textsuperscript{70}

It has been observed that Royal Commissions can function as a way to bring episodes of public controversy to an end and that while commissions are presented as evidence of government taking action, they can actually work to quietly shelve issues.\textsuperscript{71} In the case of the Moyne Commission the Colonial Office was clear that the launch of this independent investigation was not going to bring resolution to the angry debate about Britain’s responsibilities towards its colonial possessions. It was anticipated that the final report of the West Indies Royal Commission would generate a great deal of criticism of British imperial rule, and MacDonald told the Treasury this needed to be offset by the quick announcement of new plans and money to address the distress that would no doubt be detailed by the Commission. The Treasury was persuaded and the CDW Act was passed in February 1940. The announcement of Britain’s new provision for colonial development was made on 16 February to coincide with the publication of the recommendations of the Moyne Commission. The full report was considered so potentially damaging to Britain’s reputation that it was not published until after the end of the war in 1945.

War meant there was not a great deal of initial spending from the new CDW Fund and officials instead took the opportunity to debate and develop their proposals for the post-war period. The Act included a commitment of £1.4 million specifically for West Indian problems and the Colonial Development and Welfare Organisation (CDW Org) was created to deal with development plans for this region, headed by Sir Frank Stockdale, who had started his own colonial service career as a sugar cane breeder in Barbados. By August 1940, Stockdale was involved in discussions with members of the Economics Department of the Colonial Office about the future of the West Indian sugar industry. With the outbreak of war the International Sugar Agreement had been suspended and the Ministry of Food controlled all sugar purchasing and wholesale and retail prices from September 1939.\textsuperscript{72} Whilst
oversupply was not a problem for the time being, officials were certain that ‘sugar is going to be a post-war problem of some importance and it would be very useful, if it could be done, to get a flying start’. In their deliberations on the issue of the sugar industry the Economics Department began by considering the recommendations of the Moyne Commission.

The Moyne Report painted a gloomy picture of the future of the Caribbean sugar industry, stating that world markets for tropical commodities no longer offered opportunities for expansion. The difference between the crisis of the 1930s and the Depression of the 1890s was that, ‘Then the world demand for almost every tropical product was increasing so rapidly as to outstrip, subject to the ordinary ups and downs of trade, the available supply, and to require for its satisfaction the opening-up, one after other, of new productive areas.’ In the late 1930s, however, the world market for sugar was said to have reached the point of saturation. Whilst the issue for tropical commodities generally had become one of oversupply and price depression, the situation with sugar was particularly acute as this industry had been reliant for a long period on subsidies, preferences and protection, all of which had been extended and intensified since the First World War.

Despite the pessimistic projection of the future prospects for sugar, the Moyne Commission’s recommendations were modest. It was suggested that the system of colonial sugar certificates could be modified so that preferences were paid out not on a fixed quantity of sugar but on one half of the volume of the total exports of any colony. In addition, it was proposed that a minimum price be set so that if the price of sugar were to fall to a critical level it would trigger an increase in the preference paid out. The aim was to ensure greater stability, and some increase, in the price paid for Caribbean sugar. It was an approach that was merely palliative rather than curative, and it was clear that, in the opinion of the Moyne Commission, the sugar industry of the West Indies could not anticipate a new era of prosperity.

The idea that the world market for sugar as a foodstuff had reached saturation point was an issue taken up by the Economics Department of the Colonial Office in August 1940. Sydney Caine, the office’s Finance Adviser and someone with experience of seeing the British West Indies first-hand as part of the Sydney Olivier Commission of Enquiry in 1929, agreed that in the future there was no point encouraging increases in the production of agricultural commodities in anticipation of ever-expanding markets. Instead, he suggested, the Colonial Office should consider helping primary producers take advantage of the increasing demand in wealthy countries for non-foodstuffs such as paper, fibres and fuel. In a break with the recommendations of
the Moyne Commission, Caine and his colleagues in the Economics Department of the Colonial Office decided to seize the initiative and find a way to assure a profitable future for cane sugar by establishing it in new and more lucrative markets as a raw material for fuels and synthetic products.77

New uses for sugar

In the summer of 1940, officials at the Economics Department discussed the possibility of finding new transport and industrial uses for cane sugar as a solution to the problem of future oversupply. The inspiration for using sucrose to make alcohol-based fuels, and as a raw material for the chemical industry, came from the experiences of the interwar period. The high price of petrol and anxiety about Britain’s dependency on imported oil had led government and business to investigate the production of power alcohol after the First World War. Power alcohol was alcohol produced from a fermentable organic product such as potatoes, grapes, sugar or grains that was then blended with petrol for use in vehicles. The interwar period was a high point for the development of alcohol and petrol blends for use in cars as a number of nations in Europe and North America sought self-sufficiency in fuels and a solution to the problem of agricultural surpluses during the Great Depression.

The interwar years had also seen British chemical firms searching for cheap and abundant raw materials for the manufacture of their expanding range of products. These products included synthetic plastics such as polythene, developed by Britain’s largest chemical company ICI during the 1930s. For companies such as ICI there were three possible options in terms of raw materials for manufacturing organic chemicals – coal, oil or molasses. In Britain, government legislation had given domestic producers of industrial alcohol an inconvenience allowance intended to be compensation for the stoppages that occurred because of inspection of factories by Excise officials.78 According to Ronald Weir, ‘of the possible raw materials for organic chemicals, molasses “was the least likely of them all”’, but the allowance made alcohol from molasses the cheapest raw material available in Britain for the chemical industry.79

The most important firm in Britain in terms of producing fermented alcohol from molasses for the manufacture of chemicals was the Distillers Company Ltd (DCL). The success of DCL in producing power alcohol, industrial solvents and other products from molasses encouraged the Colonial Office to consider the potential of a market for industrial products derived from sugar in the early 1940s. Another
N
EW USES FOR SUGAR

legacy of sustained interest and activity in the field of power alcohols and organic chemicals during the interwar period was growth in expertise in organic chemistry and fermentation processes amongst British scientists, both in university departments and chemical companies. The endorsement by some eminent chemists of the potential of using sugar to make fuels and synthetic goods was crucial in persuading officials at the Colonial Office of the validity of a programme of research in this area.

The first suggestion raised amongst Colonial Office officials was to use sugar to make power alcohol for use as aviation spirit, thereby meeting a wartime need. Treasury funds were likely to be forthcoming for a proposal to examine alternatives to fuels from oil during wartime because, as noted by Gerald Clauson, Head of the Colonial Office Economics Division, ‘the Treasury would be favourable to anything which tried to substitute alcohol for oil, for oil to them is dollars’.

In August 1940, Stockdale met with the Fuel Research Board (FRB) of the DSIR in order to solicit their opinion of the proposal to convert Caribbean sugar into alcohol for aviation fuel. The FRB was the most expert government body on the matter of power alcohols in Britain and had produced a series of detailed memoranda between 1920 and 1927. These reports had been prompted by widespread demand for an alternative to imported oil following a steep rise in the price of petrol after the First World War. Fear had existed that Britain was dangerously dependent on supply from just two companies, Royal Dutch Shell and Standard Oil, who were accused of wielding excessive power in the international market for oil. As an alternative, the derivation of liquid fuels from coal was considered to have possibilities but it was feared that existing sources of fossil fuels would be exhausted at some point in the near future. In contrast, alcohols from plant materials had the great advantage of being produced from sources that could be indefinitely replenished.

A desire for greater self-sufficiency in fuels was not restricted to Britain, and a number of European governments initiated national power alcohol programmes during the interwar period. In France a law was passed making the use of alcohol blends by motor vehicles compulsory using alcohol originating from the grape harvest. The aim was to protect a domestic alcohol industry that was considered essential in case France was ever at war again. Interest in the use of agricultural products to make fuels was also high in America. The chemist William Jay Hale advocated the production of power alcohols as a method of using the agricultural surpluses that arose during the Great Depression. Hale christened the use of farm products in the chemical industry as chemurgy. In response to the chemurgic movement, the
US Department of Agriculture created four new research laboratories that dealt with local agricultural surpluses, including the Northern Regional Research Laboratory at Peoria, Illinois, which was to go on to play a crucial role in the development of penicillin.83

In Britain, the need for government action to allow cheap imports of alcohol, or cheap domestic production, to meet the future needs for fuel by the British motorist was promoted by the Inter-Departmental Committee, appointed by H. M. Petroleum Executive in 1918. This body asserted a need for government intervention to ensure the quick and efficient resolution of the issue of finding a competitively priced fuel for the motoring public:

We think that the development of the alcohol industry cannot be left entirely to the chances of private enterprise, individual research and the ordinary play of economic forces. No doubt in the long run, after a tedious process of trial and error, alcohol would find its proper place as a power fuel, but only with the maximum of friction, great fluctuations in price and serious waste of time and energy. The situation needs to be watched continuously and measures taken from time to time to ensure a smooth and rapid adjustment of supply to demand.84

The FRB was given responsibility for overseeing scientific research into producing power alcohol at reasonable cost.85 Sir Frederick Nathan, chair of the Inter-Departmental Committee and who had previously worked at the Nobel Explosives Factory and the Royal Gunpowder Factory, was appointed Power Alcohol Investigation Officer in December 1919. In 1920 the inconvenience allowance for domestic users of alcohol produced from fermentation was extended to power alcohols.

The FRB oversaw a programme of research in the 1920s into two possible routes to alcohol production: chemical transformation and fermentation by microbes. The latter was investigated at a laboratory at the Royal Naval Cordite Factory in Wareham, Dorset, where scientists studied the fermentation of Jerusalem artichokes.86 A research group had been established at this laboratory during the First World War under Chaim Weizmann, future President of Israel, who was then Reader in Biochemistry at Manchester University. The initial purpose had been to develop the large-scale production of acetone based on a process worked out by Weizmann. Acetone was a key military material used in the production of smokeless cordite, a propellant for shells and bullets favoured by the navy as the absence of smoke meant that it did not allow the position of a ship to be determined.87 Before the war Britain had imported acetone derived from wood from Austria, Canada and the USA. By 1915, reserve stocks were extremely low and the Admiralty
engaged Nathan and William Rintoul of the Nobel Explosives Company to secure new sources of desperately needed chemicals. The search for acetone had not been successful until Weizmann contacted Rintoul offering a new chemical process for its manufacture.88

Weizmann’s research group included a number of well-known microbiologists who subsequently worked for government or business, including A. C. Thaysen, who was employed by the Colonial Office after the end of the Second World War, and T. K. Walker, who went on to establish the new department of Industrial Fermentation at the College of Technology in Manchester in 1925.89 According to the fermentation chemist John J. Hastings, who was trained by Walker, 'It was this small band of workers and those they trained after them, who produced a generation of craftsmen in industrial bacteriology, with a skill that made most medical bacteriologists look like plumbers.'90 Hastings himself went on to work at the Commercial Solvents Corporation, a Liverpool-based manufacturer of industrial alcohol that used Weizmann's process.91

Aside from attempting to resolve the technical problems associated with producing alcohol from plant materials, the FRB considered practical and economic issues related to the production and marketing of alcohol. The goal was to find a raw material and method of production that produced alcohol at a cost cheap enough to make a fuel that could compete with petrol. One key problem was obtaining sufficient quantities of a suitable raw material. The FRB dismissed molasses relatively quickly because the producers in the empire were too small and scattered. Jerusalem artichokes and mangolds were considered good potential domestic sources of alcohol, with the additional benefit of also being a source of cellulose for making paper and, in wartime, nitrocellulose.92 The FRB was concerned, however, that a domestic power alcohol industry could only be sustained by a considerable expansion in the farmland given over to these crops. The FRB estimated that consumption of motor fuel in Britain for 1920 was around 250 million gallons. Fuel based on alcohol would require a crop of mangolds of 25,000,000 tons. In 1919 the total year’s crop had been 7,769,000 tons. The increase in farmland to make up the shortfall was estimated by the board to be an additional 810,754 acres.93

By 1924, the FRB had concluded that a power alcohol industry based in Britain would find it very difficult to secure substantial volumes of suitable raw materials at a sufficiently low cost to be able to produce a fuel that could compete with petrol, and the FRB made this point to Stockdale in 1940 when he enquired about the potential of using sugar to make alcohol fuels. Despite the reservations of the FRB, however,
an example did exist of a commercially successful power alcohol blend that had been marketed in Britain in the 1930s.

Discol was a mix of alcohol and petrol that had been made by DCL using molasses. DCL had overcome the problem of securing a supply of molasses by purchasing a shareholding in the newly formed United Molasses Company, the largest importer of molasses to Britain, and in 1926, research staff at the firm succeeded in producing a form of denatured or absolute alcohol with no water content, thereby overcoming an important technical obstacle to the manufacture of an alcohol for a blended fuel that might prove attractive to the oil companies.94 This absolute alcohol possessed anti-knock properties and so could compete with new types of petrol containing tetra ethyl lead.95 From 1933, the Cleveland Petroleum Company marketed a fuel named Cleveland-Discol utilising absolute alcohol manufactured by DCL, and this product proved popular with motorists. The success of Discol prompted Stockdale to suggest that there might be interest amongst Trinidad oil companies in producing a similar alcohol and petrol blend.96

DCL proved to be a major source of inspiration to the Economics Department of the Colonial Office in other ways. Stockdale reported to his colleagues that there was increasing demand in Britain for industrial alcohol (methylated spirit) to produce solvents for the manufacture of paints, varnishes and other products. By 1939, DCL was the dominant producer of industrial alcohol in Britain, controlling over four-fifths of the supply. Alcohol derived from molasses formed the basis of an array of new chemical products produced and consumed in Britain and its empire, including plastics such as polyethylene. The largest customers of DCL included ICI, National Benzole and British Celanese, makers of artificial silk and other acetate products.97 DCL itself had diversified from being a drinks manufacturer, with a focus on whisky production, into a producer of yeasts, motor fuels, ethylene oxide, ethylene glycol, synthetic resins, acetone, aldehydes and ketones, mainly through the strategic acquisition of patents and other businesses.98 DCL was able to expand its range of products so substantially as alcohol fermented from molasses was a starting material of enormous versatility.99

Demand in Britain for raw materials for the chemical industry expanded hugely during the interwar period as the volume and range of chemical products grew. Between 1924 and 1934, the value of the fine chemicals and synthetic organic sector in Britain increased from £2.6 million to £7.7 million.100 Government had an important role in fostering this growth. As well as providing a discount on industrial alcohol from molasses through the inconvenience allowance,
the Safeguarding of Industries Act in 1921 protected domestic manufacturers of synthetic chemicals through tariffs.¹⁰¹

Stockdale attempted to persuade his colleagues at the Colonial Office in 1940 that expanding demand for solvents indicated that there was a market for using sugar as a raw material for the chemical industry, and he proposed that the Colonial Office pay for a programme of research.¹⁰² Sugar was presented as a comparable raw material to molasses; it was cheap and plentiful and even had the advantage of greater purity. The suggestion that sugar might be a raw material for fuels and industrial alcohol capitalised upon the unprecedented level of interest in using molasses and vegetable products as raw materials during the interwar period amidst concern about the price of motor fuels and the growth of the chemical industry in Britain. For officials at the Colonial Office it seemed that a fantastic opportunity existed to divert Caribbean sugar to use as an industrial raw material. The fact that DCL's future business as a producer of alcohol from molasses was dependent on continuing government support in the form of the inconvenience allowance did not deter the Colonial Office from deciding to promote sugar cane as a raw material for making fuels and synthetics as a way of resolving the economic problems of the British Caribbean.

**The Colonial Products Research Council (CPRC)**

Stockdale, Caine and Clauson decided that the next stage in their plans to find new uses for sugar was some scientific investigation, using the Research Fund created as part of the 1940 CDW Act.¹⁰³ The idea that the Colonial Office sponsor research into sugar was endorsed, perhaps unsurprisingly, by the scientist they consulted on this point, Sir Norman Haworth, a leading figure in the field of sugar research. Haworth had trained with W. H. Perkin and had held the position of Mason Professor of Chemistry at the University of Birmingham since 1925, where he established a major school of research in carbohydrate chemistry. In 1937 he was awarded the Nobel Prize in chemistry for the development of a process to make synthetic vitamin C.¹⁰⁴

Haworth was enthusiastic about the suggestion that research could be done with the goal of broadening the use of cane sugar and told the Colonial Office that Philip Lyle from Tate & Lyle had assured him that refined sugar could be made available at a price as low as £7 a ton, making it a raw material for the chemical industry that was competitive with coal and oil. Haworth went on to say that he had recently been in discussion with ICI Dyestuffs Ltd on the issue of using sugar to make synthetic products and a preliminary programme of research had already
been started at the University of Birmingham. Haworth then went on to offer his services to the Colonial Office to undertake further work.¹⁰⁵

The Colonial Office created a committee of scientists and business representatives to determine other areas where scientific research might be of use, the Scientific Committee for Examining Alternative Uses of Colonial Raw Materials [SCEAUCRM].¹⁰⁶ The committee was told that before the war the problem of oversupply of colonial products had been tackled with international agreements that regulated production but that in the future it was thought more likely that new markets could be found for manufactured goods based on tropical commodities than that new markets would be found for food products in excess supply.¹⁰⁷ The need for research into new uses for colonial foodstuffs was therefore linked to expectations about the longer-term economic development of the Colonies.¹⁰⁸

One of the first actions of SCEAUCRM was to meet with Chaim Weizmann with regard to a letter from Weizmann to the Secretary of State for the Colonies, Thomas Lloyd.¹⁰⁹ Weizmann had lobbied Thomas Lloyd to follow his instructions for manufacturing high-octane aviation products.
By September 1941, SCEAUCRM had secured the agreement of the Treasury for the funding of research into a range of tropical products at British universities, and for the formation of a new body, the CPRC, overseen by a salaried director of research. Lord Hankey was offered the chairmanship of the CPRC in November 1941 and the post of director was taken by a chemist from the University of North Wales, Professor John Simonsen. One of the first projects approved by the CPRC was a programme of research into sugar in Haworth’s laboratory at Birmingham University.

Conclusion

Histories of the Caribbean colonies from the interwar period to independence from Britain often rely upon a narrative in which the riots in the 1930s prompted an investigation by the Moyne Commission, and the report produced by this body then set out the blueprint for Britain’s post-war policy for the region. This chapter has shown that the British response to unrest in the Caribbean in the 1930s was comprised of more than the appointment of the Moyne Commission and the passing of the 1940 CDW Act. The events of the late 1930s prompted a discussion at the Colonial Office about the future of the Caribbean sugar industry.
that quickly diverged from the recommendations of the Moyne Report for modest adjustments to preference arrangements. The solution to the problems of the sugar industry devised by Clauson, Caine and Stockdale at the Economics Department represented a significant break with the past. The proposals of officials gave a central role to laboratory studies of sugar with the goal of finding new industrial and fuel uses for this commodity. This was a suggestion that emerged from the search for cheap and reliable raw materials as fuels and starting compounds for the expanding British chemical industry that had been under way since the First World War. The Colonial Office ambition was to exploit this need in order to find a permanent solution to the problem of the low price of cane sugar and the social deprivation it produced. The intention was to bring to an end a lengthy period in which the only way government could avert social and political disaster in the British Caribbean was by using public funds to supplement the price paid for sugar.

Whilst officials drew upon the experiences of British firms in the interwar period when promoting the idea that sugar could be a raw material for the chemical industry and to make fuels, the fact that the Colonial Office decided to fund a programme of scientific research into the chemistry of sugar requires further explanation. The CPRC was the product of the Research Fund created as part of the 1940 CDW Act. This substantial research fund marked a wider technocratic turn at the Colonial Office after 1940 in which scientific research was given a privileged role in an invigorated programme of development for Britain’s colonies.

Notes
1 *The Times*, “Marines landed at Trinidad: disorders spreading” [23 June 1937], p. 15.
2 *The Times*, “Another warship at Trinidad, three strikers shot” [26 June 1937], p. 13.
4 Bolland, *On the March*.
5 Bolland, *On the March*.
NEW USES FOR SUGAR

26 Saul, “The economic significance of ‘constructive imperialism’”; Havinden and Meredith, *Colonialism and Development*, pp. 87–90; Will, “Colonial policy and economic development”.
28 Chalmin, *Tate and Lyle*.
29 *Report of the West Indian Sugar Commission* [1929], Cmd 3517.
30 *Report of the West Indian Sugar Commission* [1929], Cmd 3517.
31 *Report of the West India Royal Commission* [1945], Cmd 6607.
33 See table in *Report of the West India Royal Commission* [1945], Cmd 6607, p. 25.
34 *Trinidad and Tobago Disturbances 1937: Report of the Commission* (HMSO, 1938); Havinden and Meredith, *Colonialism and Development*, p. 155, Table 7.3.
35 Library of the University of the West Indies, St Augustine Trinidad, “Caroni Ltd, Annual Report” [1975]; Chalmin, *Tate and Lyle*.
36 *Report of the West India Royal Commission* [1945], Cmd 6607.
37 *Report of the West India Royal Commission* [1945], Cmd 6607.
40 *Report of the West India Royal Commission* [1945], Cmd 6607.
41 TNA, CO 295/599/14.
42 *Report of the West India Royal Commission* [1945], Cmd 6607.
43 Barbados National Archives [BNA], GH4/111.
44 BNA, GH4/111.


48 Beckles, *Barbados Disturbances*.

49 *Trinidad and Tobago Disturbances 1937: Report of the Commission* [HMSO, 1938].


51 Jagger, “Trinidad and the Tribunal", p. 53.


53 *The Times*, 5 May 1938.

54 *The Times*, 6 May 1938.

55 *The Times*, 10 May 1938.


62 *Report of the West India Royal Commission* [1945], Cmd 6607.

63 *The Times*, 3 July 1940.

64 TNA, CO 852/280/8.


66 It included the economist Hubert Henderson, Rachel Crowdy, Morgan Jones, Walter McLennan Citrine [General Secretary of the TUC], the agriculturalist Frank Engledow, Percy Graham Mackinnon, Ralph Assheton and Mary Georgina Blacklock, assisted by Thomas Lloyd and Charles Carstairs from the Colonial Office.

67 *Report of the West India Royal Commission* [1945], Cmd 6607, p. xiii.


69 TNA, CO 847/15/9.

70 TNA, CO 847/15/9.

71 For an interesting consideration of the range of functions of Royal Commissions, see B. Lauriat, ““The examination of everything”: Royal Commissions in British Legal History”, *Statute Law Review* 31 (2010), 24–46.

72 Chalmin, *Tate and Lyle*, p. 220. Sugar rationing began on 8 January 1940.

73 TNA, CO 852/280/8.

74 *Report of the West India Royal Commission* [1945], Cmd 6607, p. 27.

75 *Report of the West India Royal Commission* [1945], Cmd 6607, p. 27.
NEW USES FOR SUGAR

76 TNA, CO 852/280/8.
77 TNA, CO 852/280/8.
80 TNA, CO 852/280/8.
81 The Times, 1 July 1919; The Times 28 January 1920.
83 Bernton et al., Forbidden Fuel, pp. 15–23.
84 H. M. Petroleum Executive, Report of the Inter-Departmental Committee on various matters concerning the production and utilization of alcohol for power and traction purposes [1919], Cmd 218, p. 7.
85 Ibid., p. 8.
88 Vernon, “Microbes at work”, p. 600.
90 Hastings, “Development of the fermentation industries”, p. 11.
96 TNA, CO 852/280/8.
101 Haber, Chemical Industry, pp. 90–92.
102 TNA, CO 852/280/8.
103 Ibid.
104 Ibid.
105 Ibid.
106 NA, CO 852/280/8. The committee included Haworth, G. S. Whitby [Director of the DSIR Chemical Research Laboratory at Teddington], H. M. Bunbury [a Research Director of ICI], H. G. Paul [technical adviser to the Paper Controller of the Ministry of Supply], Philip Lyle and the Colonial Office’s Agricultural Adviser, Harold Tempany.
107 TNA, CO 852/280/8.
108 Ibid.
109 TNA, CO 852/482/11.
110 TNA, CO 852/482/13.
111 TNA, CO 852/280/8.
112 TNA, CO 852/482/14.
J. Reinharz, “Science in the service of politics”, pp. 572–603, Reinharz disputes the idea of a quid pro quo as too crude.

John Lionel Simonsen (1884–1957), assistant lecturer, Manchester University, 1907–10; Professor of Chemistry, the Presidency College, Madras, 1910–19; President, Chemistry Section, Indian Science Congress, 1917; Forest Chemist, Forest Research Institute and College, Dehra Dun, 1919–25; Honorary Secretary, Indian Science Congress, 1914–26; Professor of Organic Chemistry, Indian Institute of Science, Bangalore, 1925–27; Professor of Chemistry University of College of North Wales, Bangor, 1930–42; Vice-President and President, Chemical Society, 1940–55; Secretary, Chemical Society, 1945–49; member, ARC, 1944–49; President, Section B, British Association, 1947; Chairman of the Board, Pest Infestation Laboratory, 1949–52.