CHAPTER SIX

Bringing research ‘down from the skies’

During the 1940s the scientists engaged by the Colonial Office were generally able to undertake projects of fundamental research in the chemistry of tropical products along lines of their own choosing. The notion that scientific researchers required the freedom to select their own research problems was a principle upheld by the CPRC and also officials at the Colonial Office concerned with the operation of the CDW Acts. By the early 1950s, however, officials at the Colonial Office were concerned that the work overseen by the CPRC was not making a tangible contribution to the economic development of the colonies. Officials complained that very few of the products developed through research were in commercial production. Colonial product research undertaken in Britain was subsequently reformulated with a focus on the analysis and assessment of tropical commodities in response to queries by business or governments. Most of the programmes of work previously done in university departments across Britain were terminated and investigation was instead concentrated under one roof in a new Colonial Products Laboratory. This marked the end of a period in which the emphasis had been on fundamental research in an academic setting and a return to the commercial intelligence work that had been traditionally undertaken by the Imperial Institute.

The work prosecuted in the two laboratories that had been created in Trinidad was not initially included in the reform of product research. By 1955, however, the programme of research at the STL was also being re-examined and there were concerns over the future of the CMRI. The CMRI and the STL had previously been promoted as institutions at the cutting edge of international scientific research whilst at the same time performing an important service in stimulating industry across the British Caribbean and wider Colonial Empire. The potential
of new industry based on the use of cane sugar was endorsed in a report sponsored by the Caribbean Commission, and singled out for praise by the mission of British industrialists that had visited the Caribbean in 1952. When Colonial Office officials considered the achievements of Britain in terms of technical work of benefit to the colonies, carbohydrate chemistry was identified as an area where Britain could demonstrate it was a world leader. Wiggins’ laboratory had attracted international acclaim and a number of organisations concerned with sugar research had sent funds and scientists to him, including the Sugar Foundation of New York. Despite all of this, none of the industrial ventures that emerged from the work in Trinidad were flourishing by the mid 1950s, and the Colonial Office had become increasingly critical of the work of the laboratory.

This chapter will consider the broader factors that limited the success of the CPRC programmes, such as changing political conditions in the colonies in the post-war period. Apart from this, there is a need to consider why, in a relatively short period of time, Colonial Office administrators seemed to have lost their enthusiasm for long-term programmes of fundamental research. The original vision of scientific research and colonial development did not place emphasis on rapid results, and the apparatus endorsed by officials for research in Britain and its colonies did not give a determining role to colonial governments or business in deciding what research would be done. In addition, the question of how the findings of research would be translated into practice was largely left unaddressed, following the model of the research councils at home. The early 1950s saw a significant change of heart at the Colonial Office and this chapter will consider both the external and internal factors that contributed to the demise of the agreement at the Colonial Office that undirected fundamental research had an important role to play in economic development.

Changes at the Colonial Office

The criticisms that were made about the work of the CPRC by the end of the 1940s represented a marked reversal of a previous approach in which officials had endorsed the claim that there needed to be a focus on programmes of fundamental research into the chemistry of colonial products. The consensus in the early 1940s between scientists and officials on the need to encourage work of this type emerged at a time when the Colonial Office faced a pressing need to restore the credibility of its policies. The crisis in the British Empire in the late 1930s in which Britain had to deal with widespread revolt in its colonies...
and critical scrutiny of its actions by other nations, most problem-
atically the USA, had led Britain to announce in 1940 that a new era
of colonial development was beginning. This included the declaration
that Britain was committed to extensive fundamental research into
tropical problems, a claim that was intended to be significant in a
number of ways. The in-depth study of basic conditions was said to
provide the foundation of knowledge upon which development plans
would be based. In this way, fundamental research, as the study of
fundamental issues, was assurance that Britain’s new commitment to
developing its colonies would work in practice. The Colonial Office
were also concerned that attracting highly qualified and ambitious sci-
entific researchers for work on colonial problems could be difficult as
these individuals were most likely to seek university appointments
in Britain. When officials announced that the Colonial Office would
sponsor fundamental research they hoped that this would signal
Colonial Office commitment to providing the sort of conditions for
scientists that could be found through academic study or work with
one of Britain’s research councils.

When scientists from the research councils – the MRC, ARC and
DSIR – advocated a commitment to fundamental research in the
colonies, they sought most frequently freedom for scientists from
oversight by individuals that were not qualified and experienced
researchers themselves. The result was a string of research labora-
tories and stations in the Colonial Empire that enjoyed a significant
degree of autonomy with respect to the administration of the colony
in which they were based. This included arrangements that purpos-
vively limited the influence that the Agricultural, Medical or Veterinary
Departments had over the research agenda of these new laboratories,
on the grounds that the technical personnel of these departments were
not well qualified in research. It is important to note, that in terms of
the work that was done in these laboratories, and also some British
universities, there was often a lot of short-term, practical problem
solving. Elite British scientists did not intend to dictate that all work
that went on in colonial research establishments had to be long-term
fundamental research, their intention was to ensure that decisions
about the work to be done were delegated to the scientists who worked
in these institutions. Scientists were being given the freedom to pursue
long-term and even speculative studies, if they wished to. The idea
of fundamental research was deployed more for its rhetorical value
than as a description of the work to be done; it denoted freedom for
researchers to choose for themselves.

The consensus that was established in the early 1940s on the need
for fundamental research was partly constructed from agreement
between scientists and officials that colonial research needed to be endowed with a higher status. It was also forged, however, from two different sets of priorities. Scientists wished to see their preferred administrative arrangements introduced for research workers so that scientists controlled the research agenda. Officials found utility in the idea of ‘fundamental research’ for wider political reasons derived from the urgent need to demonstrate that Britain was taking its colonial responsibilities seriously and resist pressure from the US to place all dependent territories under the authority of some new international body in the post-war world. By the end of the 1940s, the most urgent economic and political issues facing Britain were different. There was far less reason for officials to support the notion that colonial development required programmes of fundamental research.

The suggestion that reform of research into tropical products was necessary was first raised when the work of the CPRC was amalgamated with that of the Colonial Products Advisory Bureau in 1947. The Colonial Products Advisory Bureau had previously been part of the Imperial Institute at South Kensington. It was transferred to the Colonial Office as the Imperial College of Science and Technology was scheduled to take over the building where the Imperial Institute had been housed since 1893. In discussion about a merger between the Colonial Products Advisory Bureau and CPRC through some form of common supervision it became clear that the Colonial Office had concerns over the past work of the CPRC and saw the merger as an opportunity for reorganisation. The result was a reduction in the amount of long-term exploratory investigation undertaken in Britain and a focus instead on the commercial evaluation of tropical commodities. This was less a new chapter in the history of work on colonial products and more the revival of the traditional functions of the Imperial Institute as an analytical and advisory service for colonial governments and British business.

The Colonial Office stated that its desire to reorganise the CPRC stemmed from concerns that the work undertaken in universities in Britain had not proven particularly useful. In the words of J. G. Hibbert, who had replaced Charles Carstairs as Head of the Research Department of the Colonial Office in 1947, product research needed to be ‘brought down from the skies’, and in the future, decisions over work needed to be made with ‘its practical applicability to Colonial conditions as a primary consideration rather than possibly a secondary one’. Hibbert was critical of the way that Simonsen had encouraged scientific researchers to pursue problems of scientific interest rather than directing attention to solving the problems facing the colonies, and he wanted more time to be spent addressing requests from colonial...
governments. In private, officials expressed a low opinion of the abilities of Simonsen as an administrator and even as a scientist, and the chair of the CPRC, Lord Hankey, also came in for criticism on the basis that he had showed no inclination to rein in the scientists on the committee.

A more critical attitude towards scientists involved in organising colonial research was apparent at the Colonial Office across the board from 1947. This coincided with the replacement of Charles Carstairs by J. G. Hibbert as Head of the Research Department. Carstairs had been very receptive to the claims made by the high-powered researchers engaged by the office about the necessity of programmes of fundamental research and he showed technocratic tendencies in his recommendations, including promoting the role of scientific data in planning. Hibbert was much more sceptical about the assertions of elite scientific advisors. He was a vocal participant in some fierce debates involving the scientists appointed to organise research in the colonies during the 1940s, most especially the Colonial Medical Research Committee (CMRC). This body had attempted to reorganise the structures that existed for the administration of research at the Colonial Office so that the CMRC had the final word on the allocation of scientists and funding in the colonies, relegating the administrative officials in the Colonial Office Research Department to a subordinate role. Apart from concern that giving scientists complete authority resulted in projects that reflected the narrow interests of individual scientists rather than the needs of the colonies, there was also alarm over the fact that scientists in London did not seem to understand that their projects might be badly received by the subject people of the British Colonial Empire. Medical researchers associated with the MRC who sat on the CMRC seemed oblivious to the fact that the intrusive medical surveys they sought to fund might provoke unrest amongst colonised peoples, and they seemed ignorant of rising political consciousness in the colonies.

The priorities and methods of the Colonial Office were reformulated during the tenure of Arthur Creech Jones, who became Secretary of State for the Colonies in 1946. Creech Jones expressed the aim of colonial policy in the Colonial Office’s annual report of 1948 as being to ‘guide the colonial territories to responsible self-government within the Commonwealth in conditions that ensure to the people concerned both a fair standard of living and freedom from oppression from any quarter’. The eventual independence of the colonies was set out as the goal of policy, although the Colonial Office believed that progress towards self-government would be gradual and require tutelage by Britain. New policies were created that were intended to increase
African representation on administrative bodies in the colonies in preparation for independence.8 The new African Policy, largely created by the Head of the African Division, Andrew Cohen, had as its central aim the promotion of local government in the African territories as a way to offer Africans the experience of running of local services.9 Officials believed recognising and working with nationalist sentiment would ensure the path to self-government was peaceful and orderly and newly independent nations would seek to be part of the Commonwealth. In the case of the British West Indies, constitutional changes had been occurring since 1945 that gave an increasingly greater voice to elected Caribbean politicians on colonial legislatures.

The raising of concerns by officials about the implications of centrally contrived research projects reflected the fact that greater opportunities were being given to the inhabitants of Britain’s colonies to have a say in the running of their own affairs after 1947. Under Arthur Creech Jones, the Colonial Office moved away from its stance of the early 1940s, when it had promoted the need for direct intervention by the office in colonial affairs. This earlier approach had been prompted by frustration over the slow rate of progress in colonial development, attributed to the laissez-faire attitudes of the past and inadequacies of the colonial administrations when it came to planning development. Under this policy, Sydney Caine had celebrated the work of the CRC for taking the initiative when it came to organising scientific research. After 1947, a general trend towards devolved responsibility for policy meant that colonial governments could no longer be merely instructed by the Colonial Office with respect to new initiatives. Instead, progress was said to occur through a process of consultation and advice.10 With this shift in the relationship between the Colonial Office and the colonies, the original arrangements for colonial research, in which research schemes in Britain’s colonies were devised and implemented by committees in London, seemed at best to be out of step with developments in policy and, at worst, threatened to produce violent opposition from colonial peoples.

The notion that scientists did not understand the changing political conditions that existed in Britain’s colonies was only one of the reasons why officials declared that the scientists they worked with could not be allowed to have complete freedom with regard to colonial research.11 Hibbert believed that scientists did not generally make good administrators, as expressed in a confidential memorandum about the organisation of colonial research in 1947:

I am afraid that it is true that scientists as a whole are frequently extremely temperamental and intolerant of any opinion opposed to their
own. This is occasionally due to conceit and the fact that they have achieved success in some specified and rather limited sphere. It is in other cases due to an inferiority complex. Scientists as a whole have not got a good business or organizing sense, although there are of course outstanding exceptions like Sir Henry Tizard. That is another reason why the final word should lie with people who have.12

When giving reasons why scientists could not be allowed complete authority over research, Hibbert and other officials invoked long-standing ideas about the differences between ‘generalists’ and ‘specialists’. The archetypal civil servant administrator was said to be a generalist by virtue of a broad education in law or the humanities and traditionally a class background that meant a certain distance, and therefore impartiality, with respect to matters of trade and manufacturing. These endowments supposedly led to the broad and unbiased view of any matter necessary for sound and sensible policy-making.13 Scientists, on the other hand, were specialists and therefore devoted to a single field. They were considered to be partisan, with a propensity to advance only those things they knew and favoured. In this memorandum of 1947, written in response to complaints that emerged from the recent African Governors’ Conference about the low status of scientists, Hibbert seemed to be suggesting that the distinction between administrators and scientists was more than the product of education and experience but arose from differences in their psychological disposition. Whatever informed Hibbert’s views, the important outcome of these claims about the abilities of scientists were summarised in the last sentence. By 1947, the Colonial Office asserted that when it came to scientific research in Britain’s colonies, the ‘final word’ needed to lie with officials.

There is also the question of the impact of Britain’s post-war economic crisis on official attitudes towards scientific advisors and colonial product research. In 1948, the colonies were being urged to increase the output of primary products and increase the speed of development in order to earn dollars and produce foodstuffs and raw materials in short supply in Britain. These goals were presented as compatible with the ambition of the CDW Acts and wider Colonial Office policy on the basis that an increase in production would strengthen colonial economies. A drive to increase primary products was therefore presented as part of the development of the potential of the colonies, something that was a necessary precursor to independence.14 The revival of the claim that what was good for Britain was also good for the colonies belied the fact that controls on imports and currency meant the colonies were frustrated in their goal of securing capital goods and other materials for industrial development.15

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At the Colonial Office there was a move towards ensuring ‘the correct balance’ existed between development schemes of social and economic value, meaning in practice a greater emphasis on economic schemes, particularly those that might contribute to increasing production of commodities, to the ultimate benefit of Britain. The Colonial Research Committee was renamed the Colonial Research Council in 1948 and was asked to maintain close contact with the Colonial Economic Development Council that had been created to ensure that the plans of the Colonial Office, and the ten-year plans being produced by colonial governments, had sufficient economic focus. A Colonial Primary Products Committee was set up in May 1947 to consider how to increase outputs of a range of identified commodities, and it included amongst its members a representative from the CPRC. The need to identify sources of key materials from within the sterling area so as to reduce dollar expenditure had a direct impact on the research agenda of the CPRC when the committee was asked to help find a source of cortisone within the British Empire in 1949. Cortisone was an effective treatment for rheumatoid arthritis, but Britain’s ability to purchase the drug from the US was threatened by the devaluation of the pound in 1949 and the rearmament drive prompted by the outbreak of the Korean War that placed further restrictions on dollar expenditure. The CPRC collaborated with the MRC and Glaxo in undertaking a search of plant steroids in the colonies that could be used to produce cortisone. This included engaging Thaysen to study ergosterol from yeast grown at the Food Yeast Factory in Jamaica, and the investigation of East African sisal as a potential raw material. Ergosterol did not prove to be as suitable as sisal. The latter furnished a source of hecogenin that could be used to produce cortisone, and Glaxo launched this product on the British market in 1955.

While the CPRC took up a new project in direct response to Britain’s post-war economic crisis, it was not the case that the council reorientated the overall direction of its work in 1947. While it seems likely that the new climate at the Colonial Office that privileged quicker and more discernible improvements in economic development was key to the criticisms that were being made about the past work of the CPRC by Hibbert and others, the committee was not immediately asked to refocus its work in a more practical or short-term direction. The annual report for 1947–48 produced by the council began by reiterating the claim that the work sponsored by the council ‘must, of necessity, be of a long-term nature’. Readers were assured that this approach was appropriate because, the report claimed, the CPRC had received plenty of interest by firms in its research and was doing its utmost to ensure that results and patents were well advertised. This did
not amount to a significant turn towards ensuring greater, and faster, utility. It can be contrasted with the reformulation of the work of the Committee for Colonial Agricultural, Animal Health and Forestry Research that reported in 1948 that, ‘the urgent need of the times is for a rapid expansion of production in the colonies’. The committee announced it had decided not to focus on programmes of fundamental research for the time being but to ‘concentrate on problems of applied research for the solution of which the essential fundamental knowledge often already existed’.19

It seems likely that the Colonial Office decided to wait until Hankey and Simonsen stepped down from the CPRC before making any changes in the organisation of product research. In 1947 it was agreed that no encouragement should be given to either Simonsen or Hankey to stay on beyond their official retirement age.20 The two men left in 1952 and the Colonial Office replaced the CPRC with the Colonial Products Council (CPC) on the 1 January 1954. Most of the original scientists that had comprised the CPRC retired or resigned, including Haworth and Heilbron. The chemist Sir Charles Dodds (Courtauld Professor of Biochemistry, University of London and Director of the Courtauld Institute of Biochemistry) replaced Hankey as the Chairman, and the new Director of Research was Dr R. A. E. Galley, who was also responsible for the research work of the Colonial Insecticides Committee.21 The secretaries of the MRC, ARC and the DSIR remained on the body, along with Solly Zuckerman from the Lord President’s Office. In a new initiative the Colonial Office appointed representatives from industry: Dr H. J. Channon from Unilever and Dr R. Holroyd from ICI, with the declared aim of ensuring that the future work of the council was of more obvious practical value.22

In the period between 1954 and 1959, the research work at British universities and research institutions was greatly reduced, with only the sugar research at Birmingham and forest products research at Princes Risborough continuing to be supported. The termination of the other research schemes in university departments dealing with derivatives of eugenol, citrus oils, and colonial fats and oils was done on the basis that very few products that were discovered or created by these projects, which in some cases had spanned ten years, were produced commercially. With respect to the sugar research at Birmingham University, the two compounds that had been considered most likely to have a commercial future were sodium levulinate and dextran. The first was found to be an effective anti-freeze, with several advantages over ethylene glycol. The CPRC stated in their report for 1947–48 that several firms had applied to work the patent for this compound, but it is not clear what became of this interest.23 In 1955 it
was reported to the CPRC that the firm Argus Chemical Corporation (New York) had offered to pay Wiggins’ team, then based in the West Indies, for the information necessary to start commercial production of levulinic acid. The intention was to use this sugar derivative in the production of plastics, to be manufactured either on the Virgin Islands or in Trinidad. This particular scheme was subsequently abandoned on commercial grounds. The compound dextran, for which scientists at Birmingham developed a new synthetic process, fared better and was commercially produced as a blood plasma substitute. After successful clinical trials in Britain and the USA, dextran was marketed under the name Intradex.

Norman Haworth and Maurice Stacey had been working on a new process to make dextran from sugar since 1937 and their work came to fruition in 1943 when they developed a way to produce dextran from sucrose through the actions of a micro-organism named Betacoccus Arabinosaceous ‘Birmingham’. This work was supported by the CPRC after 1943, and in February 1949 the MRC put dextran through clinical trials at the Lister Institute, the Burns Research Unit at the Birmingham Accident Hospital and the MRC Blood Transfusion Research Unit. The results of the trials were good; dextran resuscitated patients better than saline, it was free of contamination by disease, and it could be manufactured in large quantities and kept in refrigerated storage so could be stockpiled for use in an emergency. The CPRC promoted the discovery of a new process to make dextran from sugar for its contribution to the economic development of the British Empire, saying it was ‘the first steps towards the establishment in the sugar-growing colonies of important industries based on sugar as a raw material, the ultimate goal which the Council had in mind when inaugurating its research programme on sugar’. Hankey wrote to The Times in October 1950 in order to publicise the success of Haworth and Stacey and praise the CPRC for offering the prospect of developing industry in Britain’s Caribbean colonies.

Dextran was initially produced by the East Anglia Chemical Company in liaison with Haworth and Stacey, who had taken out a patent, and Haworth became a director of the firm from 1948. The commercial production of the compound was not without its problems, however. The unforeseen issue affecting research into finding new uses for sugar in the period after the end of the war was the shortage of sugar in Britain. Any firm expressing an interest in producing a sugar derivative could find it very hard to secure sufficient quantities of the raw material to carry out pilot plant trials. The Ministry of Supply controlled sugar allocations amongst firms in Britain and maintained a system of sugar rationing for the British consumer until autumn 1953.
The MRC wrote to the Ministry of Supply in 1947 asking that the East Anglia Chemical Company be given a quota of acetone (made from sugar) so it could manufacture a supply of dextran for clinical trials in Britain, stating that an alternative to blood plasma was badly needed because of the decline in blood donors in Britain since the end of the war.\(^{34}\) The request was approved, and after the success of the MRC trials, commercial production at a factory in Aycliffe, Yorkshire, began in 1949 and orders of Intradex were placed by the Army, Air Force and Blood Transfusion Service.\(^{35}\) The East Anglia Chemical Company changed its name to Dextran Ltd in 1950 and was then bought by Glaxo in 1952.\(^{36}\)

Dextran was an exception to the more general trend in which the CPRC failed to find a firm willing to manufacture its products on an industrial scale. The commercial development of some of these was hampered by restrictions on the supply of raw materials during the 1940s.\(^{37}\) Sugar and molasses had gone from being abundant, low-cost starting materials before the outbreak of the war to relatively difficult to acquire and expensive raw materials by the post-war period. To make matters worse, the government abolished the inconvenience allowance in 1945 that had previously ensured that alcohol fermented from molasses was an affordable starting compound for Britain’s chemical manufacturing industry. By 1951, the prospect of any serious future for molasses and sugar as raw materials for chemical manufacturing in Britain seemed over when it was announced that ICI had switched to using oil as a starting material to manufacture synthetics.

Chemical firms in Britain had lagged behind those of the US during the interwar period when it came to using components from oil to make their products. The Second World War was the turning point when Britain’s need for aviation fuel led to substantial expansion in domestic oil-refining capacity. Further motivation for increases in capacity came after 1947 when the need to reduce dollar expenditure prompted Esso, Shell and British Petroleum to invest in new refineries, so that by 1954, Britain was the fourth largest refiner of oil in the world.\(^{38}\) With expansion of oil refining came the increasing use of fractions from oil by chemical firms. ICI was a producer of aviation fuel itself during the war and entered into agreements with petroleum companies afterwards. The firm’s move away from molasses was complete in 1952 when it opened an oil cracking plant at the enormous ICI site at Wilton on Teesside, using petroleum supplied by the Anglo-Iranian Oil Company.\(^{39}\) Anglo-Iranian also formed the company British Petroleum Chemicals with DCL in 1947. DCL had been the biggest producer of alcohol for the chemical industry in Britain before the Second World War and it had been a major source of inspiration for the officials that
created the CPRC as a way to resolve the crisis of the Caribbean sugar industry in 1943. After the Second World War, however, it no longer pursued a line of business based on alcohol from molasses.40

In September 1954, Charles Dodds, the chair of the newly reformulated CPC, reopened the discussions over the future direction which colonial products research should take. Dodds told Hilton Poynton of the Colonial Office that he was worried that ‘the Colonial Office was not really getting value for money which it was spending on Colonial Products research’.41 Echoing the earlier comments of Hibbert, Dodds expressed the view that research in the past had failed to address the problems of economic development. The decision was made to change the name of the Colonial Products Advisory Bureau to the Colonial Products Laboratory and make it the main location for research.42 It was also decided that the CPC should be ‘more rigorous in our scrutiny of some of the grants made to universities and other research workers for “farmed out” work’.43 The advantage of this arrangement, in which research funds were no longer mainly spent on work outsourced to universities but done in the Colonial Products Laboratory was that it brought colonial products research under the direct control of the Colonial Office.44 New premises were opened on Gray’s Inn Road in December 1957 and the title of the laboratory was changed again to the Tropical Products Institute. The word ‘colonial’ was dropped in an attempt to encourage newly independent territories to continue using the services of the laboratory.45

In the period between the establishment of the CPC and the move to new premises, meetings of the council were dominated by discussion of the work of the new Colonial Products Laboratory, with very little of the plans and objectives of the original CPRC remaining. In general, the work of the laboratory consisted of responding to business and government enquiries that related to the whole range of natural products found in the Colonial Empire, and occasionally outside. Investigations were short term and applied in their approach, orientated towards the solution of specific queries, in contrast to some (but not all) of the more free-ranging and exploratory investigations sponsored by the CPRC. The Colonial Products Laboratory and then the Tropical Products Institute typically advised British business on the suitability of producing colonial agricultural products as commodities or the condition of markets for products. Technical advice was offered on processing techniques and an analytical service was provided for assessing the quality of colonial produce.46 In April 1959, the Tropical Products Institute was transferred from the Colonial Office to the DSIR and the CPC replaced by the Tropical Products Institute Committee.
After 1953, the CPC largely provided a commercial intelligence service, much as the Imperial Institute had done in the past. The revival of the assessment of colonial products as the key function of product research, and a decline in the isolation of the constituents of tropical products and time-consuming exploration of their chemical pathways, reflected the changing political and economic conditions under which the Colonial Office operated. After 1947, new demands were placed upon the colonies because of domestic economic needs, and officials were asked to ensure that the initiatives they oversaw prioritised rapid economic development. In addition, the research committees at the Colonial Office found they were operating under different financial circumstances by the end of the 1940s. During the early years of the operation of the CDW Acts, the Colonial Office had struggled to spend its annual research allocation because of a shortage of scientific personnel and equipment. One of the big challenges that faced officials was ensuring that colonial research was attractive enough that high-flying British scientists might consider a career in the British Colonial Empire. The idea that the Colonial Office had to compete with universities and research institutes run by the MRC, ARC and DSIR for scientific manpower meant that officials were easily persuaded that they needed to provide working conditions similar to those enjoyed by ambitious scientists at home. Officials were informed by the elite representatives of the research councils that advised them that this meant affording scientific researchers a great deal of latitude in choosing their research problems and making arrangements to ensure scientists were supervised only by other well-qualified scientists and not less-well-qualified technical staff or administrators. By the early 1950s, however, things had changed. In March 1949 the CMRC were told there was a sudden freeze on the spending of research funds as the annual limit of expenditure for 1949/1950 had been reached. Again, in 1951 some research committees were told to rein in their spending as the projects they proposed outstripped the funds available to them.

By the early 1950s there were also changes in the anticipated timescale of decolonisation. An emphasis on long-term projects of fundamental research was uncontroversial in 1943 when decolonisation was described as being at least a generation away in Britain’s African colonies. Official expectations about the likely timing of independence changed a great deal from 1947, making short-term results that had clear benefits much more desirable. Taken together, the combination of a perception that the pace of change with regard to self-government had increased, Treasury demands for a focus on rapid economic change, and the fact that research fund finances were now tight, produced a climate in which officials asked whether they were getting ‘value for
money’ when it came to research. A greater sense of urgency and increased accountability when it came to spending tended to work against an approach that privileged freedom for scientific researchers to pursue projects over the long term, above other considerations.

The factors that had underpinned the consensus over the need for an expansion of ‘fundamental research’ in the early 1940s did not pertain by the early 1950s. The passing of the 1940 CDW Act had occurred at a moment when Britain needed a powerful demonstration that it was taking its colonial responsibilities seriously. The goal was to offset revelations about the extent of deprivation in the British West Indies and elsewhere by an announcement that a new era of social improvement and economic progress had begun. The fact that the term ‘fundamental research’ was broad enough to encompass a range of meanings and inflections was important for building the consensus that existed before 1947. Officials embraced the idea of fundamental research for its promise of secure knowledge as a platform for development; the scientists that worked with officials used the idea of fundamental research first and foremost as a synonym for freedom from oversight by non-scientists. Officials were not unsympathetic to the promotion of scientific autonomy – they understood that this was an important component of the professional identity of scientific researchers and therefore acknowledgement of this was needed to attract new recruits – but the rhetorical value of a commitment to substantial expansion of fundamental research across the Colonial Empire lay elsewhere for them. By the end of the 1940s, the Colonial Office was dealing with a different set of priorities that were not so compatible with the idea of long-term, in-depth investigation of problems that had been selected by scientists without the input of business or colonial governments. The different economic and political conditions that emerged after 1947 tended to create an emphasis on faster and more tangible change whilst avoiding actions that might provoke unrest. Quick returns were needed that would increase the speed of development in the colonies and bring economic relief to Britain. These benefits needed to be provided under more straitened financial circumstances at the Colonial Office and had to fit in with the new and shorter timescale of decolonisation.

The laboratories in Trinidad

While the research programmes of the STL at the ICTA and the CMRI were not initially subject to the same scrutiny as the projects funded by the CPRC in British universities, by 1955, the CPC was beginning to express concerns over the utility of the work in Trinidad. New industries based on the production of food yeast, power alcohol, levulinic
acid, sugar cane wax and ammoniated molasses as cattle feed were all failing to thrive in the West Indies, and by 1958, Wiggins’ successor at the STL, Dr W. S. Wise, rejected the notion of further research into by-product processing. Instead, the laboratory shifted its attention to technical problems arising through the sugar-extraction process. By 1961, the STL had been closed and research into improving the process of sugar manufacturing was transferred to the Faculties of Agriculture and Engineering at the University of the West Indies. The CMRI closed in the same year.

Members of the CPC visited Wiggins’ laboratory three times between 1954 and 1956 to report on the operation of the sugar technology scheme. The first visitor, Alexander Todd, was generally complimentary, reporting to the CPC the great potential of the sugar cane wax factory that had been given Pioneer Industry status in Barbados. The Barbados factory made a wax from locally grown canes that retailed at £500 per ton, comparing well with carnauba wax that sold at £900–£1,000 per ton and Cuban sugar cane wax at £600 per ton, both of which were used by the Johnson Co in the USA. Todd was also positive about levulinic acid, a plant for which was planned on the Virgin Islands by the Argus Chemical firm. He reported the news that the Quaker Oats Co had gone into partnership with the US chemical firm Dupont to produce another lucrative sugar derivative, furfural, in Puerto Rico as evidence of the viability of factories that used sugar to make useful chemical compounds. Todd sounded the first note of caution, however, when he observed while there was evidence of interest in the research of the STL, it was not coming from the sugar manufacturers in the BWISA, the research association jointly run by sugar companies and the Colonial Office to fund Wiggins’ laboratory.

With regard to the CMRI, Todd praised the work that was being done, such as the study of the microbiological processes that occurred during fermentation of cocoa beans, but said he felt the small laboratory was too isolated. The CMRI was located in a suburb of Port-of-Spain, some distance from the concentration of scientists at the Imperial College of Tropical Agriculture in central Trinidad. Todd’s comment was the beginning of lengthy but ultimately unresolved discussion about moving the CMRI to the ICTA, the University College of the West Indies in Jamaica or the Colonial Products Laboratory in London. The first director of the CMRI, A. C. Thaysen (who resigned in 1951 and was replaced by W. G. C. Forsyth), had rejected the suggestion that the laboratory be established at the ICTA on the grounds that he wanted the CMRI to be in a more prominent public location in order for it to be a highly visible symbol of scientific progress for Trinidad. Thaysen’s communications show him to be an ardent defender of his
own freedom when it came to determining the research programme of the CMRI and it is likely that he feared association with the ICTA might infringe this, something that was especially problematic as he did not appear to rate the college very highly. Visitors to the CMRI during the 1950s were concerned by the low staff morale, however, and believed the isolation of the unit was responsible. Todd was recorded as saying at a CPC meeting in 1956:

He did not understand how it [the CMRI] had come to be sited in Trinidad where it was cut off by busy city communications from the ICTA which was the only place in the Island with the proper sort of research climate. The Institute was a small unit in a remote Island in a very large region.54

It seems that the efforts that had been made to elevate the CMRI to the status of a beacon of progress and international scientific advance, promoting Trinidad from merely being ‘a remote island’ and instead placing it on the ‘scientific map’, were not readily apparent to the next generation of scientific advisors at the Colonial Office. The CPC were concerned that the laboratory was not tenable in the long term and thought that transfer to another location was necessary if it was to survive after Trinidadian independence.55

The next CPC visitor to Trinidad was P. C. Spensley, who was a great deal more critical about the work of the STL than Todd had been. Spensley visited the STL in 1955 and commented that it had the atmosphere of a university department rather than an industrial research association laboratory of the type funded by the DSIR in Britain. He said that the laboratory was not paying enough attention to the needs of the sugar industry, it was not adequately exploring the commercial value of products, and not enough pilot plant work was being done. The CPC heard that at the meeting of the Sugar Research Scheme Advisory Committee held that year, the BWISA had requested that the laboratory provide more commercial information to them. They asked that Wiggins set out very clearly each phase from discovery of a chemical to pilot plant production to full-scale commercial factory production and provide an indication of the economic potential of a product by reference to market surveys and production costs.56

In private, R. F. Innes, Research Director of the Sugar Manufacturers Association (Jamaica) Ltd, told Spensley that ‘considerable elements of the BWI Sugar Industry are uneasy about the lack of concrete results so far achieved, and also feel that insufficient attention is being paid to the actual problems being experienced by producers’. He said that Wiggins did not visit the sugar factories enough.57 Spensley commented that Wiggins was ‘an organic chemist of academic inclination and
ambition’ and raised a query about whether it was most appropriate to locate the STL at the ICTA, a teaching establishment. Spensley also criticised the freedom that had been given to Wiggins, but on different grounds from those that had been previously invoked at the Colonial Office. Spensley complained that the firm that had applied to work the new process to produce levulinic acid developed at the STL was American and planned to set up its factory on the US Virgin Islands. Little benefit from the discovery of the new process to make levulinic acid was therefore accruing to either Britain or its colonies, apart from the royalties that would be paid out on Wiggins’ patent. Spensley raised the question of whether allowing foreign firms to benefit from the research at the STL conformed to the original terms of the research association. He was also critical of the fact that Wiggins had accepted funds for research and fellowships from foreign organisations – the STL had been given a prestigious grant by the Sugar Foundation of New York and money for a fellowship by the Hawaiian Planters Association, something that had been celebrated as evidence of the standing of the laboratory at ‘the forefront of the Sugar Research Institutes of the World’. According to Spensley, developments of this type distracted the laboratory from its proper purpose of providing benefit to the BWISA.

Dodds and Galley, the Chair and Research Director of the CPC respectively, visited the Caribbean in May 1956 and attended a meeting of the BWISA. This was Wiggins’ last meeting with the association as he had resigned his position and was due to leave Trinidad in September. In his subsequent report, Dodds echoed the criticisms that had been made by Spensley. Again the failures of the research at the STL to generate commercially successful products were attributed to Wiggins, who was said to have not adequately considered the economic implications of the laboratory’s research. This time Dodds and Galley were able to refer to the recent closure of the sugar cane wax factory in Barbados that had finished operating after four years of experimentation and development. The reason given for the closure was that the factory in Barbados was 3,000 miles from the US market where there were already firms in position producing waxes. Dodds used the end of this venture as an example of the ‘the neglect of economic considerations that preceded some new projects in the West Indies’. In future, research schemes needed to be preceded by proper assessment of the potential market, possibly by using consultants, and there needed to be much more contact with colonial governments. Criticisms were also made about the utility of the work of the CMRI. The laboratory had isolated a compound it named comirin from a local bacterium and promoted it as an anti-fungal agent. A patent was taken out by the
National Research and Development Corporation but then further research by the MRC and the Antibiotics Research Station cast doubt on its usefulness, and by 1956, the CPC decided to stop pursuing it.

One outcome of the criticisms that were made about the STL was that the CPC decided to reduce the money for the sugar scheme. This marked the end of a period in which sugar had been given priority over other areas of product research funded by the Colonial Office. Spensley wished the CPC to broaden its support for other industries and added that it was not desirable for the CPC to continue to fund a project in which it had no direct say. The dissatisfaction expressed by the CPC about the work done at the STL, and to some extent at the CMRI, can be understood as part of the more general concerns that were being raised about the work that had previously been funded by the CPRC, most importantly that practical outputs had never been given sufficient priority. With the retirement and then death of Norman Haworth, and the replacement of the original chemists such as Simonsen, the STL and CMRI no longer had a cheerleader. The hopes of officials such as Caine for new industry in the Caribbean based on surplus sugar had been eroded during the 1940s as it became clear that chemical firms in Britain were not persuaded of the viability of this vision, even with Colonial Office expressions of support for schemes of this type. The claim that sugar could be a raw material for industry in Britain had far less credibility now that it was clear that British chemical manufacturing was investing in ethylene and other derivatives from fractions of oil. The only real prospect for sugar was that it could be used to create ventures in the Caribbean itself, possibly serving a regional market or as the raw material for exports to North or South America.

The hopes of Simonsen, Caine and Stockdale that the British West Indies sugar manufacturers would diversify their interests turned out to be misplaced. The annual reports of the BWISA between 1943 and 1955 indicate that manufacturers saw their future prosperity lying overwhelmingly with increases in the volume of sugar production, and the negotiation of a guaranteed price from the British government for sugar exports. In May 1956, the BWISA told the CPC that they did not want another academic research worker, ‘who would try to get them to enter the chemical industry’. Instead, they wanted a sugar technologist to head the STL and a focus on improvements to the technical process of sugar manufacturing. Asked what their aim was, the BWISA responded that they wanted to produce sugar more quickly and cheaply.

There were a number of wider political and economic factors that worked to discourage sugar producers from diversifying into new chemical derivatives of sugar in the late colonial period. In April 1949 the
Labour Party announced its intention to nationalise sugar refining if it won the next election. The Colonial Office debated whether the subsidiaries of Tate & Lyle, such as Caroni in Trinidad and the West India Sugar Company in Jamaica, would be nationalised. The Ministry of Food told the Colonial Office that the Labour Party intended to take over any sugar interest in the colonies that was owned by a British company and place it either under the control of a statutory authority or transfer it to the Colonial Development Corporation or Overseas Food Corporation. News circulated that Tate & Lyle was proposing to its shareholders that the firm sell off Caroni so this company would not be part of any nationalisation scheme. Rumours of nationalisation reached St Kitts and the Colonial Office received a report that M. R. Bradshaw, president of St Kitts-Nevis Trades and Labour Union, had declared at a public meeting that he had received assurance from Arthur Creech Jones that the St Kitts Basse Terre sugar factory was to be nationalised. Uncertainty about the future was also produced by the continuing strikes and acts of sabotage on many of the estates in Britain’s Caribbean colonies, and relations between the sugar companies and their workforces were often very poor. Trinidad saw repeated unrest on its sugar estates in the post-war period, and a proliferation of unions made cooperation and consensus difficult to attain. We can also wonder about the discussions that seem likely to have occurred at firms such as Tate & Lyle about the fate of sugar operations once independence came for Britain’s West Indian possessions. Although nationalisation did not become reality in the period before independence, and in the case of Trinidad it was not until 1970 that the government purchased the majority equity of Caroni, the threat of government control and the continuing labour discontent seems likely to have contributed to a sense of insecurity amongst sugar manufacturers that would not have encouraged them to expand their Caribbean activities in this period.

Economic conditions also militated against the success of new ventures in the British Caribbean using sugar as a raw material. The Barbados sugar cane wax factory was not the only enterprise using surplus sugar or molasses that failed to flourish. In 1950, a company producing alcohol, the Anhydrous Alcohol Company, was set up by the Sugar Manufacturers Association of Jamaica. The association had submitted a proposal to the Jamaican government to turn a surplus of molasses on the island into anhydrous alcohol that could be mixed with petrol and sold to consumers as a power alcohol. The project was pitched as a way to reduce unemployment and find an outlet for a by-product in excess. The Sugar Manufacturers Association argued that a reduction in imports of petrol would help the colony’s balance of
trade position and greater self-sufficiency in fuel was of benefit in the advent of war. There was also the prospect of using alcohol to establish other new industries such as plastics and paints. The Industrial Development Committee of Jamaica recommended the acceptance of the proposal for new legislation to make admixture compulsory up to 15 per cent, with an excise duty of 4d per gallon to be imposed and that the project receive Pioneer Industries status for four years. 70

Before making his final decision, the Governor of Jamaica asked the Shell Company to solicit the views of experts on the use of power alcohols. Shell submitted a report on the performance of cars using petrol/alcohol blends in Cuba produced under a government scheme. This report suggested that the maximum alcohol content was around 15 or 16 per cent, at which point the anti-knock properties of the fuel improved, but beyond this, the acceleration of the car was affected. 71 DCL was also consulted and gave some technical advice, including the comment that the use of petrol/alcohol mixtures extended the life of an engine as the fuel gave smoother and cooler running. 72

The Colonial Office was very positive about the development in Jamaica. Willis noted for his colleagues that the Jamaican sugar manufacturers aimed to dispose of 4 million gallons of molasses in their alcohol scheme. 73 The Economics Department commented that it fitted well with the more general aim of cultivating secondary industry in the colonies. At a meeting with officials in July 1950, Simonsen said that the question of the British Caribbean making power alcohol had come up in 1943 and whilst the conclusion at the time had been that the West Indies did not produce a sufficient volume of molasses to make a scheme viable, he supported the Jamaican proposal as it would release petrol for sale in dollar counties and the anti-knock properties of alcohol would reduce imports of lead tetraethyl that involved dollar expenditure. It would also bring experts into the colony that might help create other new chemical industry. Simonsen expressed his satisfaction that the creation of an alcohol factory in Jamaica was fulfilling the recommendations that he had made all along, saying in a letter to Eastwood, ‘This is, of course, a policy which I have for a long time advocated for all sugar growing Colonies.’ 74 The discussion of an alcohol industry in Jamaica resurrected other discussions about using the by-products of sugar cane. The potential of bagasse was brought up and a report produced that stated that there had been an investigation into the possibility of using bagasse in Trinidad to make wallboard and newspaper. For a period, the Trinidad-based subsidiary of Tate & Lyle, Caroni, had exported 3,000–4,000 tons of bagasse to the UK for use by the firm Celotex to make insulating board, but the firm was now reported to be changing over to straw. The economics of building
a wallboard factory in Trinidad had been explored by Caroni and it had been concluded that the factory would be too small to be economic. The needs of the local market could be met in around two and half weeks of production and the high costs of freight for a heavy and bulky product prohibited its exportation. Additionally, Caroni had no success in interesting paper manufacturers in using bagasse for newsprint.\textsuperscript{75}

The anhydrous alcohol project in Jamaica was approved by the legislature before suddenly coming under threat in 1953. The Jamaican government claimed to have received a ‘disquieting report from one of the oil companies’ that warned of serious technical problems, such as a tendency to vapour lock and engine corrosion. The opinion of DCL was again sought and the firm referred to the popularity of Discol during the interwar period with the remark, ‘we could not make sufficient to meet public demand and they were quite prepared to pay 2d per gallon more for it than other nationally distributed fuel’.\textsuperscript{76} By March, however, it was clear that the Jamaican government had changed its mind about the anhydrous alcohol scheme, stating that it could not bear the estimated loss of revenue of around £90,000 per year that would result from excise duty of only 4d per gallon each year for the first four years.

There was strong reaction to the news in the Jamaica newspaper, the \textit{Daily Gleaner}, not least as the plant to make alcohol had already been constructed and production had begun only then for the government to rescind its agreement, seemingly after pressure from the oil companies. The newspaper linked the failure of the project to the closure of the food yeast factory, another enterprise that used surplus products from sugar manufacture. The newspaper claimed that the yeast factory provided an important source of protein for Jamaicans.\textsuperscript{77} The Ministry of Food in Britain had created the Food Yeast Company Ltd and the Colonial Food Yeast Company in 1941 to manufacture edible food yeast. This strain of yeast had been originally developed by Thaysen when he worked at the DSIR’s Chemical Research Laboratory at Teddington. The yeast was considered to have value on two counts – it grew on molasses and sugar, therefore providing a use for products in oversupply, and it had a high vitamin B and protein content and so could be a useful dietary supplement for Europe and the Far East during the war and, in the longer term, the colonies. The West Indian Sugar Company (a subsidiary of Tate & Lyle) were managing agents for the Colonial Food Yeast Company in the British West Indies and a factory was created next door to the WISCO estate at Frome using funds from the 1940 CDW Act. The operation of the factory was troubled, however, and the company barely made a profit and in some years made a loss. The price of sugar and molasses was higher than anticipated after the end of the war.
and the company also struggled to generate demand. For a period, the Malayan government bought a large amount of food yeast, but by the end of 1947 it had stopped. The Oxo Company placed one order but did not make another and the UN Relief Organization in Korea placed two orders but also then did not renew. Colonial governments were exhorted to purchase the yeast but few did. Trials were done in the British West Indian colonies in which straw-coloured flakes of dried yeast were incorporated into the menus provided in various types of institution – hospitals, dispensaries, the leper settlement of Antigua, schools in the Bahamas and Barbados, and also in gravies, stews and buns sold in British Guiana and Jamaica. Thaysen, the head of the CMRI, continued to advise on improving the process of food yeast manufacturing and recommended using it to fortify flour in Trinidad, reporting that sales of loaves from the island’s bakeries had been excellent. In general, however, the complaints were the same: the yeast was unpalatable and the price was too high. The CDC declined to take over the factory and recommended instead that WISCO take it on, but the UK government decided that selling a government-funded factory to a subsidiary of Tate & Lyle was not appropriate. By August 1952, it was decided to close the factory down.

The Jamaican Gleaner claimed that the failure of the venture was due to inadequate promotion, ‘the truth is that a serious attempt has never been made to put the product on the world’s markets. No commercial operator of such a venture would have relied on marketing arrangements as rudimentary as those attempted by the Food Yeast organization.’ The paper linked the termination of both the food yeast factory and the alcohol plant to a wider failure by government to instigate industrial development in Jamaica, ‘In summary, in the midst of all the propaganda and drive and advertising for industrial development two important industrial schemes with which the Government is intimately connected are being scrapped. These two matters deserve immediate re-investigation.’

The failures of sugar cane wax, levulinic acid, the food yeast factory and anhydrous alcohol show some of the obstacles facing new industry in the Caribbean using sugar. The costs of raw materials, building storage facilities and freight were all high and business struggled to find sufficiently large markets. New industry was highly dependent on government aid. The Pioneer Industries Legislation created in Jamaica, Trinidad and Barbados provided for income tax relief and the free import of machinery and helped support the sugar cane wax factory in Barbados for a period. This aid does not appear to have compensated for the problems that faced new industries, however, or was short lived, as in the case of Jamaica.
The CPC did not dwell on the wider economic and policy conditions that determined the success of sugar-based products or the fact that sugar manufacturers were not always committed to diversifying their interests. They focused their concerns on the work of the STL, particularly the notion that the researchers at the laboratory had not given sufficient consideration to the commercial viability of compounds and that its work had been too academic. Both the solution to the question of how to encourage new industry based on sugar, and then the criticism of that solution, were entirely focused on the operation of research.

To what extent was the CPC correct in seeing the fault as a failure of the STL to prioritise the commercial potential of products? The suggestion in some of the reports produced about the STL was that Wiggins lacked a certain industry-mindedness – that he was too academic. In fact, Wiggins was a product of Norman Haworth’s laboratory at the University of Birmingham that had forged close ties with industry over decades. From 1926 Haworth was a consultant to ICI Dyestuffs in Blackley and remained so throughout his life, even beyond his formal retirement from Birmingham. One of Haworth’s students, Maurice Stacey, said of Haworth, ‘So many of his research students found their career at Blackley that at times some sections looked like an extra-mural arm of Birmingham University.’ Apart from ICI, Haworth and Stacey were members of the consultancy team formed to advise Glaxo in the 1930s and the laboratory at Birmingham retained a close relationship with the firm.81 Haworth was also a consultant from 1942 to the Birmingham Chemical Company of Lichfield and helped to found Nelson’s Silk Co of Lancaster that manufactured cellulose acetate and employed many of Haworth’s students, some of whom went on to form Nelsons Acetate Ltd in 1950.82 As for Wiggins, on his resignation from the STL, he returned to Britain and took up the post of Research Director of the firm Aspro-Nicholas Ltd in Slough, a manufacturer of pharmaceutical, agricultural and household products.

The idea that scientists who advocated the idea of fundamental research into the chemistry of carbohydrates resided in an ivory tower far removed from the needs of industry does not appear to be an accurate description of the group at Birmingham that included Haworth, Stacey and Wiggins. Chemical firms in Britain often had close links with academic departments before the Second World War and the fact that many of Haworth’s students went on to work at ICI and other smaller companies suggests the importance of informal networks that had taken years to develop. There may not have been formal apparatus in place in Britain to communicate needs to researchers and results to users but information passed between business and universities
through informal, unrecorded or unpreserved communication on both sides. Similar contacts simply did not exist in the Caribbean. Wiggins appears to have tried to generate new networks by combining his duties as a researcher and laboratory director with time spent publicising the activities of the STL to attract new research fellows and funds, whilst also attending regional and international meetings and visiting companies. The research association formed was intended to cultivate a relationship between scientists and firms, but the reality was that the sugar companies had only ever agreed to participate in this arrangement reluctantly, and they lacked personnel with the right skills and knowledge to take up the discoveries made by Wiggins and his team. The reasons for the limited development of industry based on sugar in the region were far wider and more complex than any failure on the part of the researchers based at the STL.

Conclusion

Scientific research into colonial products had been promoted in the early 1940s as a way to deal with the problem of oversupply of commodities such as sugar on the world market. Frank Stockdale and Sydney Caine suggested that research was the key to establishing sugar as a raw material to make fuels and synthetic goods and diversifying the economies of the British West Indies. The search for new uses for sugar was done through in-depth analysis of the chemistry of this product and the elaboration of pathways to produce things like furfural, an intermediate used in the chemical industry to produce large numbers of different commercial products. In line with the wider approach to the organisation of scientific research at the time, scientists at Birmingham University and then the STL in Trinidad were given a great deal of freedom in determining their research programme.

The use of fundamental research as a synonym for freedom was a particular feature of the vision of scientific research that originated and was promoted by the research councils in Britain in the period after First World War. When representatives from these research councils were invited by the Colonial Office to create new arrangements for research in 1943, they promoted the idea of fundamental research into colonial problems and used this term to ensure that particular apparatus for research was created that provided for autonomy. Interestingly, scientists who came to the Colonial Office to join the CPC at the end of the 1940s did not show the same attachment to the activity of fundamental research and were more likely to assess research in terms of its usefulness than concern themselves with the need to ensure that researchers in the colonies were not in a subordinate position. There
are a number of possible explanations for the criticisms that were made by Dobbs and Spensley about the work that had previously been done in the chemistry of colonial products. There is the possibility that the Colonial Office had become more circumspect in choosing its scientific advisors, taking the opportunity to engage scientists who were more likely to support the views of officials as they stood after 1947. It may be that scientists generally felt more confident about their professional standing by 1950 and so the concerns about the need to ensure a high status for research workers that had previously preoccupied individuals such as W. C. C. Topley and Edward Mellanby did not seem so important. It is also possible that the arrangements created for colonial research on the advice of representatives of the MRC, ARC and DSIR actually afforded research workers greater freedom in the colonies than scientists who worked at establishments at home. Spensley certainly believed that the STL did not operate as a laboratory run by a DSIR research association would do in Britain; that it was in fact more like a university department. Laboratories in Britain’s colonies were more isolated than equivalent establishments in Britain, colonial governments often paid them very little attention and they were often very self-contained.

By the end of the 1940s, neither officials nor some of the scientists at the Colonial Office were convinced of the utility of fundamental research. As priorities at the Colonial Office and for Britain changed, scientific research into fields such as tropical products was reorganised to focus on more obvious practical issues. In particular, the idea of creating industry that used sugar as a raw material no longer seemed a realistic proposition by the mid 1950s. The era in which chemicals in Britain were made from coal or alcohol distilled from molasses ended with the Second World War. It had become apparent that the plans made by the Colonial Office to try to create a new future for the Caribbean in which sugar was reinvented as an industrial material coincided with the moment at which ICI and other companies were exploring a future based on oil. Sugar manufacturers were not interested in diversifying their work, and business ventures in the Caribbean suffered from a lack of government assistance in overcoming the problem of small local markets and expensive freight costs between islands and the South and North American mainland.

Notes

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2 Ibid.
3 TNA, CO 927/201/6.
BRINGING RESEARCH ‘DOWN FROM THE SKIES’

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6 S. Clarke, “The research council system and the politics of medical and agricultural research in the Colonial Empire, 1940–1952”, Medical History 57 (2013), 338–358.
7 Ibid.
8 Ibid.
9 Lee and Petter, The Colonial Office, War and Development Policy, p. 171; Havinden and Meredith, Colonialism and Development, pp. 204–205.
10 Hyam, The Labour Government and the End of Empire, pp. xxiv–xxx; Pearce, Turning Point in Africa.
11 TNA, CO 927/175/1.
12 TNA, CO 927/14/1.
13 Gummett, Scientists in Whitehall.
14 The Colonial Empire (1947–1948), Cmd 7433; Hyam, The Labour Government and the End of Empire, pp. 42–45; TNA, CO 847/36/4.
15 TNA, CO 852/870/2.
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17 Cantor, “Cortisone and the politics of empire”, 463–493; Quirke, “Making British cortisone”, 645–674.
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44 Ibid.
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47 TNA, CO 913/3.
48 TNA, CO 911/5.
49 Pearce, Turning Point in Africa, pp. 61, 79, 85.
SCIENCE AT THE END OF EMPIRE

50 Pearce, Turning Point in Africa, Conclusion.
51 TNA, CO 927/371.
52 TNA, CO 900/5.
53 Ibid.
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62 TNA, CO 899/5.
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69 TNA, CO 152/526/3.
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